BUILDING STANDARDS COMMISSION
2525 Natomas Park Drive, Suite 130
Sacramento, California 95833-2936
(916) 263-0916 FAX (916) 263-0959

November 7, 2012

Victor Cuevas, Code Engineer
Department of Building and Safety
City of Los Angeles
201 North Figueroa Street
Los Angeles, CA 90012

Dear Mr. Cuevas:

This letter is to acknowledge receipt on June 29, 2012 of the City of Los Angeles submittal pertaining to Ordinance Nos. 181561, 181685, 181756, 181757, and 181758 with findings and is acceptable for filing. Your filing attests to your understanding that according to Health and Safety Code §17958.7 no modification or change to the California Building Standards Code shall become effective or operative for any purpose until the findings and the modifications or changes have been filed with the California Building Standards Commission (the Commission).

This letter attests only to the filing of these local modifications with the Commission, which is not authorized by law to determine the merit of the filing. As a reminder, local modifications are specific to a particular edition of the Code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the Code is published.

In addition, should you receive Fire Protection District ordinances for ratification, it is required to submit the ratified ordinances to the Department of Housing and Community Development [Health and Safety Code Section 13869.7(c)], ATTENTION: State Housing Law Program Manager, rather than the Commission. Likewise, ordinances containing energy efficiency standards may require approval from the California Energy Commission pursuant to Public Resources Code Section 25402.1(h)(2).

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,

Enrique M. Rodriguez
Associate Construction Analyst

cc: Chron
Local Filings

CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "BUD" OVROM
GENERAL MANAGER

RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

June 25, 2012

Council File No. 10-2335

Jim McGowan, Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

FILING OF EXPRESS FINDINGS AND DETERMINATION PERSUANT TO SECTION
17958.7 OF THE HEALTH AND SAFETY CODE

On June 21, 2011, the Los Angeles City Council adopted an ordinance to amend the Los Angeles Municipal Code (LAMC) by incorporating portions of the 2009 International Building Code and the 2010 California Building Code and adopt the findings that make the modifications to the California Building Code to be reasonably necessary because of local climatic, geological or topographical conditions.

Enclosed with this transmittal is a copy of the findings along with the modifications (the ordinance) to the California Building Code. The Department of Building and Safety, City of Los Angeles will consider this as complying with Section 17958.7 of the Health and Safety Code.

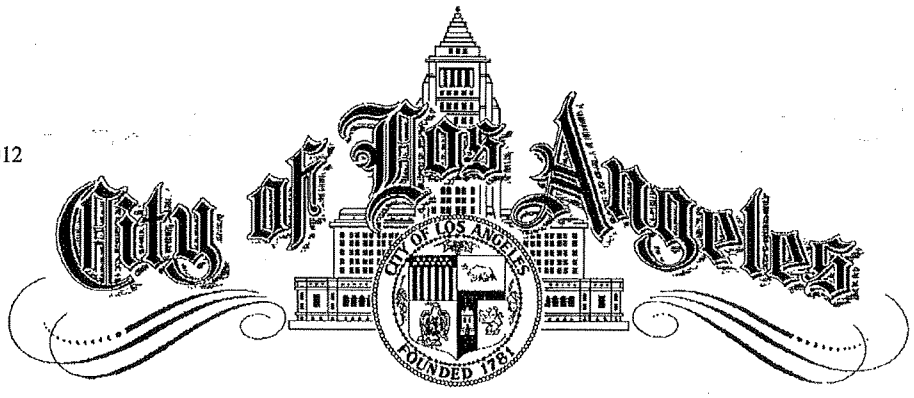
If you have any questions regarding this matter, please contact the Code Engineer, Mr. Victor Cuevas at (213) 482-0409.

Robert "Bud" Ovrom
General Manager

Attachments

City Hall East
200 N. Main Street
Room 800
Los Angeles, CA 90012

(213) 978-8100 Tel
(213) 978-8312 Fax
CTrutanich@lacity.org
www.lacity.org/atty



CARMEN A. TRUTANICH
City Attorney

REPORT NO. R11-0212

JUN 07 2011

REPORT RE:

DRAFT ORDINANCE AMENDING ARTICLES 1 AND 8 OF CHAPTER IX OF THE LOS ANGELES MUNICIPAL CODE

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File 10-2335

Honorable Members:

We are transmitting to you for your consideration, approved as to form and legality, a final draft ordinance amending Articles 1 and 8 of Chapter IX of the Los Angeles Municipal Code to incorporate by reference certain portions of the 2009 International Building Code and the 2010 Edition of the California Building Code, and to make local administrative changes.

Summary of Ordinance Provisions

When this matter was presented to the Planning and Land Use Management (PLUM) Committee, the Committee requested that the City Attorney prepare the final ordinance based on the amended proposed ordinance submitted at the Committee meeting by the Department of Building and Safety (DBS) and attached to the Council file. The enclosed draft ordinance would update the Los Angeles Municipal Code to incorporate certain portions of the 2009 International Building Code and the 2010 Edition of the California Building Code. In addition, the final ordinance includes minor amendments to effect local administrative changes to the Los Angeles Municipal Code, Chapter IX, Articles 1 and 8.

CEQA Determination

Regarding a finding pursuant to the California Environmental Quality Act (CEQA), the Department of Building and Safety recommended you find that adoption of the ordinance is exempt from the provisions of CEQA under Article II, Section 2(m) of the City's CEQA Guidelines because the ordinance establishes design standards for the construction of buildings and structures for enforcement purposes only and it can be seen with certainty that adoption of the ordinance will not cause a physical change that would constitute a significant effect on the environment. If the City Council concurs, it should adopt this finding prior to or concurrent with its action on the ordinance.

Council Rule 38 Referral

The draft ordinance was sent, pursuant to Council Rule 38, to the Department of Building and Safety with a request that they provide comments, if any, when this matter is taken up for consideration.

If you have any questions regarding this matter, please contact Deputy City Attorney Adrienne Khorasanee at (213) 978-8246. She or another member of this Office will be present when you consider this matter to answer any questions you may have.

Very truly yours,

CARMEN A. TRUTANICH, City Attorney

By 
PEDRO B. ECHEVERRIA
Chief Assistant City Attorney

PBE/ASK:pj
Transmittal

ORDINANCE NO. 181758

An ordinance amending Articles 1 and 8 of Chapter IX of the Los Angeles Municipal Code to incorporate by reference certain portions of the 2009 International Building Code and the 2010 Edition of the California Building Code, and to make local administrative changes.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Section 91.101.1 of the Los Angeles Municipal Code is amended to read as follows:

91.101.1. Title. This article shall be known as the Los Angeles Building Code or Building Code or LABC, a portion of the Los Angeles Municipal Code (LAMC), and wherever the word Code is used in this article it shall mean the Los Angeles Building Code. Article 1.5 of Chapter IX of the LAMC shall collectively be known as the Los Angeles Residential Code or LARC. The provisions of the LARC for one- and two-family dwellings shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory structures. In addition to the LARC, Sections of Chapters 1, 11A, 11B, 17, 31B, 34, 63, 67, 70, 71, 72, 81, 89, 92, 93 and 96 of the LABC shall also be applicable to one- and two-family dwellings and townhouses unless stated otherwise.

The Los Angeles Building Code and the Los Angeles Residential Code adopt by reference portions of the California Building Code (CBC) or the California Residential Code (CRC) respectively.

EXCEPTION: Live/work units complying with the requirements of Section 419 of the California Building Code shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the California Building Code when constructed under the California Residential Code for one- and two-family dwellings shall conform to Section 903.3.1.3 of the California Building Code.

Sec. 2. Section 91.105.5.4 of the Los Angeles Municipal Code is amended to read as follows:

91.105.5.4. Authority of the Commission. The commission shall have and exercise the following powers:

1. To hear and determine written appeals brought by any person from actions taken by the Department of Building and Safety (department) in the enforcement of the requirements of Section 19955, et seq., of the California

Health and Safety Code, the provisions of state law dealing with access to public accommodations by physically disabled persons.

2. To hear and determine written appeals brought by any person from the rulings, decisions and determinations of the department granting or denying applications for exceptions pursuant to Health and Safety Code Section 19957.

3. To hear and determine written appeals brought by any persons where it is alleged that there is error or abuse of discretion in any order, requirement, decision, interpretation or other determination made by the department in the enforcement or administration of Section 1.8 et seq., Chapter 1, Division I of California Building Code and any other federal, state or municipal handicapped access and adaptability requirements.

All appeals shall be reviewed by the department. The department may reverse or modify the action appealed from at any time prior to final action by the commission. Any such new action may then be appealed to the commission.

4. To respond to the department's request for advice on any matter within the department's jurisdiction relating to access to public accommodations and housing by the physically disabled.

5. To exercise the authority granted in Section 91.105.6.

Sec. 3. Paragraph 5 of Section 91.106.4.1 of the Los Angeles Municipal Code is amended to read as follows:

5. The department shall have the authority to withhold a demolition or relocation permit for a residential building composed of two or more residential rental units under the following circumstances:

A. When the applicant states that the purpose for demolition or relocation is to construct a condominium, stock cooperative or community apartment project, permits shall be withheld until all necessary tentative tract or preliminary parcel maps for such new subdivision have been approved by the city.

B. This Exception 5 shall not apply if the building is to be demolished and is:

(i) Constructed of unreinforced masonry construction and built pursuant to a building permit issued prior to October I, 1933, or

(ii) To be demolished pursuant to a demolition order issued by the department under authority set forth in Division 89 of Article I of Chapter IX of the Los Angeles Municipal Code.

C. This Exception 5 shall not apply if the applicant demonstrates to the satisfaction of the department that the site will be developed with housing for low to moderate income households, which housing is to be developed, constructed or acquired with federal, state or local government financial assistance.

D. This Exception 5 shall not apply to two family dwellings or to apartment houses and apartment hotels containing three dwelling units, provided that at least one dwelling unit in each such building is occupied by a record owner of the property.

Sec. 4. Paragraph 11 of Section 91.106.4.1 of the Los Angeles Municipal Code is amended to read as follows:

11. The Department shall have the authority to withhold a building permit for a residential building composed of two or more residential rental units, under the following circumstances:

A. When the applicant states that the purpose for a building permit is to construct a condominium, stock cooperative or community apartment project, permits shall be withheld until all necessary tentative tract or preliminary parcel maps for the new subdivision have been approved by the city.

Sec. 5. Section 91.400 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.400. BASIC PROVISIONS.

Chapter 4 of the California Building Code is hereby adopted by reference, except that Sections 403.1, 403.5.2, 403.6, 403.6.1, and 403.6.2 are not adopted. Instead, Sections 91.403.1, 91.403.5.2 and 91.403.6 are added to Article I, Division 4 of the Los Angeles Municipal Code to read as follows.

91.403.1. Applicability. New high-rise buildings and new Group I-2 occupancies having occupied floors located more than 75 feet above the lowest level of fire department vehicle access shall comply with CBC Sections 403.2 through 403.6.

EXCEPTION: Except as indicated, the provisions of CBC Section 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport control towers in accordance with CBC Section 412.3.

2. Open parking garages in accordance with CBC Section 406.3. Provisions of CBC Sections 403.4.7 and 403.4.8 shall apply.

3. Buildings with Group A-5 occupancy in accordance with CBC Section 303.1. Provisions of CBC Sections 403.4.7 and 403.4.8 shall apply.

4. Special industrial occupancies in accordance with CBC Section 503.1.1. Provisions of CBC Sections 403.4.7 and 403.4.8 shall apply.

5. Buildings such as power plants, lookout towers, steeples, grain houses and similar structures with noncontinuous human occupancy, when so determined by the enforcing agency.

For existing high-rise buildings, see CBC Section 3414 and for existing Group R occupancies, see CBC Section 3413.13.

For the purpose of this Section 91.403.1, in determining the level from which the highest occupied floor is to be measured, the enforcing agency should exercise reasonable judgment, including consideration of overall accessibility to the building by fire department personnel and vehicular equipment. When a building is located on sloping terrain and there is building access on more than one level, the enforcing agency may select the level that provides the most logical and adequate fire department access.

Sec. 6. Sections 91.403.5.2 and 91.403.6 are added to the Los Angeles Municipal Code to read as follows:

91.403.5.2. Additional Exit Stairway. For buildings other than Group R-2 that are more than 420 feet (128 m) in building height, one additional exit stairway meeting the requirements of CBC Sections 1009 and 1022 shall be provided in addition to the minimum number of exits required by CBC Section 1021.1. The total width of any combination of remaining exit stairways with one exit stairway removed shall not be less than the total width required by CBC Section 1005.1. Scissor stairs shall not be considered the additional exit stairway required by this Section.

91.403.6. Elevators. Elevator installation and operation in high-rise buildings shall comply with CBC Chapter 30.

Sec. 7. Section 91.703.3 of the Los Angeles Municipal Code is amended to read as follows:

91.703.3. Alternative Methods for Determining Fire Resistance. The application of any of the alternative methods listed in this Section shall be based on the fire exposure and acceptance criteria specified in ASTM E 119 or UL 263. The required fire resistance of a building element shall be permitted to be established by any of the following methods or procedures:

1. Fire-resistance designs documented in approved sources.

2. Prescriptive designs of fire-resistance-rated building elements, component or assemblies as prescribed in CBC Section 720.

3. Calculations in accordance with CBC Section 721.

4. Engineering analysis based on a comparison of building element, component or assemblies designs having fire-resistance ratings as determined by the test procedures set forth in ASTM E 119 or UL 263.

5. Alternative protection methods as allowed by Section 91.104.2.6 of this Code.

Sec. 8. Section 91.1207.11.3 of the Los Angeles Municipal Code is amended to read as follows:

91.1207.11.3. Airport Noise Sources. Residential structures and all other structures identified in Section 91.1207.1 located where the annual L_{dn} or CNEL (as defined in Title 21, Division 2.5, Chapter 6, Section 5001,California Code of Regulations) exceeds 60 db, shall require an acoustical analysis showing that the proposed design will achieve the prescribed allowable interior level.

EXCEPTION: New single family detached dwellings and all non-residential noise sensitive structures located outside the noise impact boundary of 65 db CNEL are exempt from Section 91.1207.

Alterations or additions to all noise sensitive structures, within the 65 db and greater CNEL shall comply with Section 91.1207. If the addition or alteration cost exceeds 75% of the replacement cost of the existing structure, then the entire structure must comply with Section 91.1207.

For public-use airports or heliports, the L_{dn} or CNEL shall be determined from the Aircraft Noise Impact Area Map prepared by the Airport Authority. For military bases, the L_{dn} shall be determined from the facility Air Installation Compatible Use Zone (AICUZ) plan. For all other airports or heliports, or public-use airports or heliports for which a land-use plan has not been developed, the L_{dn} or CNEL shall be determined from the noise element of the general plan of the local jurisdiction.

When aircraft noise is not the only significant source, noise levels from all sources shall be added to determine the composite site noise level.

Sec. 9. Division 13 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1300. GENERAL.

In order to comply with the purpose of this division, buildings shall be designed to comply with the requirements of Part 6, Title 24 of the California Building Standards Code - California Energy Code, 2008 Edition.

91.1301. SOLAR ENERGY COLLECTORS.

Approved collectors which function as building components shall comply with the applicable provisions of the Code.

Approved collectors located above or upon a roof and not functioning as building components shall not reduce the required fire-resistant or fire-retardant classification of the roof-covering materials.

Sec. 10. Section 91.1405 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1405. INSTALLATION OF WALL COVERINGS.

Section 1405 of the California Building Code is adopted by reference.

Sec. 11. Table 1507.3.7 of Division 15 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

TABLE 1507.3.7
CLAY AND CONCRETE TILE ATTACHMENT [a, b, c]

<table>
<tr><th colspan="4">GENERAL – CLAY OR CONCRETE ROOF TILE</th></tr>
<tr><th>Maximum basic wind speed (mph)</th><th>Mean roof height (feet)</th><th>Roof slope up to <3:12</th><th>Roof slope 3:12 and over</th></tr>
<tr><td>85</td><td>0-60</td><td rowspan="2">Two fasteners per tile.</td><td rowspan="2">Two fasteners per tile.</td></tr>
<tr><td>100</td><td>0-40</td></tr>
<tr><td>100</td><td>>40-60</td><td colspan="2">The head of all tiles shall be nailed. The nose of all eave tiles shall be fastened with approved clips. All rake tiles shall be nailed with two nails. The nose of all ridge, hip and rake tiles shall be set in a bead of roofer's mastic.</td></tr>
</table>

110	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
120	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
130	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
All	>60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.

TABLE 1507.3.7 (Cont.)
CLAY AND CONCRETE TILE ATTACHMENT [a, b, c]

INTERLOCKING CLAY OR CONCRETE ROOF TILE WITH PROJECTING ANCHOR LUGS [d, e] **(Installations on solid sheathing with battens)**				
Maximum basic wind speed (mph)	**Mean roof height (feet)**	**Roof slope up to <5:12**	**Roof slope 5:12 <12:12**	**Roof slope 12:12 and over**
85	0-60	Minimum slope is 4:12. One fastener per tile.	One fastener per tile. Tiles with installed weight less than 9 lbs./sq. ft. require a minimum of one fastener per tile.	One fastener required for every tile. Tiles with installed weight less than 9 lbs./sq. ft. require a minimum of one fastener per tile.
100	0 – 40			
100	>40-60	The head of all tiles shall be nailed. The nose of all eave tiles shall be fastened with approved clips. All rake tiles shall be nailed with two nails. The nose of all ridge, hip and rake tiles shall be set in a bead of roofer's mastic.		
110	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.		
120	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.		
130	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.		
All	>60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.		

TABLE 1507.3.7 (Cont.)
CLAY AND CONCRETE TILE ATTACHMENT [a, b, c]

INTERLOCKING CLAY OR CONCRETE ROOF TILE WITH PROJECTING ANCHOR LUGS (Installations on solid sheathing without battens)		
Maximum basic wind speed (mph)	**Mean roof height (feet)**	**Minimum roof slopes 4 units vertical in 12 units horizontal Maximum slope 7 units vertical in 12 units horizontal**
85	0-60	One fastener per tile.
100	0-40	One fastener per tile.
100	>40-60	The head of all tiles shall be nailed. The nose of all eave tiles shall be fastened with approved clips. All rake tiles shall be nailed with two nails. The nose of all ridge, hip and rake tiles shall be set in a bead of roofer's mastic.
110	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
120	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
130	0-60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.
All	>60	The fastening system shall resist the wind forces in CBC Section 1609.5.3.

For SI: one inch = 25.4 mm, one foot = 304.8 mm, one mile per hour = 0.447 m/s, one pound per square foot= 4.882 kg/m^2.

[a] Minimum fastener size. Hot dipped galvanized ring shank or other corrosion-resistant nails not less than No. 11 gage with 5/16-inch head. Fasteners shall be long enough to penetrate into the sheathing 0.75 inch or through the thickness of the sheathing, whichever is less. Attaching wire for clay and concrete tile shall not be smaller than 0.083 inch and shall be copper, brass or stainless steel.

[b] Snow areas. A minimum of two fasteners per tile are required or battens and one fastener.

[c] Roof slopes greater than 24:12. The nose of all tiles shall be securely fastened.

[d] Horizontal battens. Battens shall be not less than one-inch by two-inch nominal. Provisions shall be made for drainage by a minimum of 1/8-inch riser at each nail or by four-foot-long battens with at least a 0.5-inch separation between battens. Horizontal battens are required for slopes over 7:12.

[e] Perimeter fastening areas include three tile courses but not less than 36 inches from either side of hips or ridges and edges of eaves and gable rakes.

Sec. 12. Section 91.1600 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1600. BASIC PROVISIONS.

Chapter 16 of the CBC is adopted by reference with the following exceptions, modifications and additions:

91.1603. CONSTRUCTION DOCUMENTS

Section 1603 of the CBC is adopted by reference, except CBC Section 1603.1.9 is not adopted and in lieu Section 91.1603.1.9 is added.

91.1603.1.9 Systems and Components Requiring Special Inspections for Seismic resistance. Construction documents or specifications shall be prepared for those systems and components requiring special inspection for seismic resistance as specified in Section 1707.1 by the registered design professional responsible for their design and shall be submitted for approval in accordance with Section 91.106.3.3. Reference to seismic standards in lieu of detailed drawings is acceptable.

Sec. 13. Section 91.1609 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1609. WIND LOADS.

Section 1609 of the CBC is adopted by reference, and Section 91.1609.1.1.3 is added.

91.1609.1.1.3. High Wind Velocity Areas. The Superintendent of Building may designate certain areas of the City as "**high wind velocity areas**" when evidence or studies indicate that the wind velocity results in damage to structures conforming to the minimum requirements of this Code. The Superintendent of Building may specify additional requirements over and above those required by this Code with respect to the following:

1. Glazing of openings in exterior walls.
2. Anchorage of post and beam construction.
3. Cantilever overhangs.
4. Roofing and roof framing.

Sec. 14. Section 91.1612 of the Los Angeles Municipal Code is added to read as follows:

SEC. 91.1612. FLOOD LOADS.

Section 1612 of the CBC is adopted by reference, except CBC Section 1612.5 is not adopted and in lieu Section 91.1612.5 is added.

91.1612.5. Flood Hazard Documentation. The following documentation shall be prepared and sealed by a registered design professional and submitted to the Department:

1. For construction in flood hazard areas not subject to high-velocity wave action:

1.1. The elevation of the lowest floor, including the basement member.

1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.2.1 of ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2 of ASCE 24.

1.3. For dry floodproofed nonresidential buildings, construction documents shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.

2. For construction in flood hazard areas subject to high-velocity wave action:

2.1. The elevation of the bottom of the lowest horizontal structural.

2.2. Construction documents shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.2.3. For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m2) or more than 20 psf (0.96 kN/m2), construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

Sec. 15. Section 91.1613 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1613. EARTHQUAKE LOADS.

Section 1613 of the CBC is adopted by reference, CBC Section 1613.6.7 is not adopted and in lieu of it Section 91.1613.6.7 is added, and Sections 91.1613.8 through 91.1613.8.2, 91.1613.9 through 91.1613.9.10.5 and 91.1613.10 through 91.1613.10.5 are amended or added, respectively, to read as follows.

91.1613.6.7. Minimum Distance for Building Separation.

$$\delta_M = C_d \delta_{max} \quad \text{(Equation 16-44)}$$

Where:

Cd = Deflection amplification factor in Table 12.2-1 of ASCE 7.

Δmax = Maximum displacement defined in Section 12.8.4.3 of ASCE 7.

91.1613.8. Additional Seismic Requirements.

91.1613.8.1. Suspended Ceilings. Minimum design and installation standards for suspended ceilings shall be determined in accordance with the requirements of C.B.C. Section 2506.2.1 and this Section.

91.1613.8.1.1. Scope. This part contains special requirements for suspended ceilings and lighting systems. The provisions of Section 13.5.6 of ASCE 7 shall apply except as modified here.

91.1613.8.1.2. General. The suspended ceilings and lighting systems shall not be located more than six feet (1828 mm) below the structural floor or roof system above unless the entire system is designed by a licensed engineer or architect.

91.1613.8.1.3. Design and Installation Requirements.

91.1613.8.1.3.1. Bracing at Discontinuity. Positive bracing to the structure shall be provided at changes in the ceiling plane elevation or at discontinuities in the ceiling grid system.

91.1613.8.1.3.2. Support for Appendages. Cable trays, electrical conduits and piping shall be independently supported and independently braced from the structure.

91.1613.8.1.3.3. Sprinkler Heads. All sprinkler heads (drops) except fire-resistance-rated floor/ceiling or roof/ceiling assemblies, shall be designed to allow for free movement of the sprinkler pipes with oversize rings, sleeves or adaptors through the ceiling tile in accordance with Section 13.5.6.2.2(e) of ASCE 7.

Sprinkler heads penetrating fire-resistance-rated floor/ceiling or roof/ceiling assemblies shall comply with CBC Section 713.

91.1613.8.1.3.4. Perimeter Members. A minimum wall angle size of at least a two-inch (51 mm) horizontal leg shall be used at perimeter walls and interior full height partitions. The first ceiling tile shall maintain 3/4-inch (19 mm) clear from the finish wall surface. An equivalent alternative detail that will provide sufficient movement due to

anticipated lateral building displacement may be used in lieu of the long leg angle subject to the approval of the Superintendent of Building.

91.1613.8.1.4. Special Requirements for Means of Egress. Suspended ceiling assemblies located along means of egress serving an occupant load of 30 or more shall comply with the following provisions:

1. **General.** Ceiling suspension systems shall be connected and braced with vertical hangers attached directly to the structural floor or roof system above and along the means of egress serving an occupant load of 30 or more and at lobbies accessory to Group A Occupancies. Spacing of vertical hangers shall not exceed two feet (610 mm) on center along the entire length of the suspended ceiling assembly located along the means of egress or at the lobby.

2. **Assembly Device.** All lay-in panels shall be secured to the suspension ceiling assembly with two hold-down clips minimum for each tile within a four-foot (1219 mm) radius of the exit lights and exit signs.

3. **Emergency Systems.** Independent supports and braces shall be provided for light fixtures required for exit illumination. Power supply for exit illumination shall comply with the requirements of CBC Section 1006.3.

4. **Supports for Appendage.** Separate support from the structural floor or roof system above shall be provided for all appendages such as light fixtures, air diffusers, exit signs, and similar elements.

91.1613.8.2. Wood Diaphragms Supporting Concrete or Masonry Walls. In addition to other requirements of this division for lateral-force-resisting systems, wood diaphragms shall comply with the following provisions:

1. **Continuous Tie Spacing.** The spacing of continuous ties shall not exceed 40 feet. Added chords of diaphragms may be used to form subdiaphragms to transmit the anchorage forces to the main continuous crossties.

2. **Anchorage Force.** The maximum diaphragm shear used to determine the depth of the subdiaphragm shall not exceed 75% of the maximum diaphragm shear.

3. **Horizontal Irregularities.** Chords and drag strut members in diaphragms having horizontal structural irregularities listed in Table 12.3-1 of ASCE 7 shall be designed for forces in Section 12.3.3.4 of ASCE 7.

91.1613.9.4.2.2. Base Shear. In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5.0 for bearing wall and building

frame systems. The total base shear shall include the forces tributary to the base level diaphragm including forces from the base level diaphragm.

91.1613.9.8. Primary and Secondary Anchorage and Diaphragm Strut Design. Primary and secondary anchors and diaphragm struts shall be designed in accordance with the following provisions:

1. **Fasteners.** All bolted fasteners used to develop connections to wood members shall be provided with square plate washers at all bolt heads and nuts. Washers shall be minimum 3/16 inch (4.8 mm) thick and two-inch (51 mm) square for 1/2-inch (12.7 mm) diameter bolts, and 1/4-inch (6.4 mm) thick and 2-1/2-inch (64 mm) square for 5/8-inch (15.9 mm) diameter or larger bolts. Nuts shall be finger tight with ½ wrench turn prior to covering.

6. **Steel Element of Structural Wall Anchorage System.** The strength design forces for steel elements of the structural wall anchorage system, with the exception of anchor bolts and reinforcing steel, shall be increased by 1.4 times the forces otherwise required.

91.1613.9.9.2. Base Shear. In developing the base shear for seismic design, the response modification coefficient (R) shall not exceed 5.0 for bearing wall and building frame systems.

91.1613.9.9.4. Drift Limitations. The story drift below the base level diaphragm shall not exceed 0.007 times the story height at strength design force level. The total drift from the base level diaphragm to the top of the foundation shall not exceed ¾ of an inch (19 mm). Where the story height or the height from the base level diaphragm to the top of the foundation varies because of a stepped footing or story offset, the height shall be measured from the average height of the top of the foundation. The story drift shall not be reduced by the effect of horizontal diaphragm stiffness.

91.1613.10. Earthquake Recording Instrumentation.

91.1613.10.1. Applicability. The requirements of this Section shall apply to buildings for which permits were issued after July 1, 1965.

91.1613.10.2. General. Every new building over six stories in height with an aggregate floor area of 60,000 square feet (5574 m^2) or more and every new building over ten stories in height regardless of the floor area shall be equipped with at least three approved recording accelerographs.

EXCEPTION: A building selected by the State of California as part of its Strong Motion Instrumentation Program (Section 2700, Chapter 8, Division 2, California Public Resources Code) need not comply with this Section until it ceases to be part of the program.

All new buildings that are designed using the nonlinear response history procedure of "Seismic Response History Procedures" of Chapter 16 of ASCE 7 shall be equipped with a structural monitoring system in accordance with standards established by the Superintendent of Building.

91.1613.10.3. Maintenance. Maintenance and service of the instruments shall be provided by the owner of the building subject to the approval of the Superintendent of Building. Data produced by the instruments shall be made available to the Superintendent of Building on request.

Maintenance and service of the instruments shall be performed annually and shall be performed only by an approved testing agency. The owner shall file with the Department a written report from an approved testing agency certifying that each instrument has been serviced and is in proper working condition. This report shall be submitted when the instruments are installed and annually thereafter. Each instrument shall have affixed to it an externally visible tag specifying the date of the last maintenance or service and the printed name and address of the testing agency performing the service.

91.1613.10.4. Location. For new buildings requiring accelerographs per Section 91.1613.10.2, the instruments shall be located in the basement, mid-height and near the top of the building. Each instrument shall be located so that access is maintained at all times and is unobstructed by room contents. A sign stating "MAINTAIN CLEAR ACCESS TO THIS INSTRUMENT" in one-inch block letters shall be posted in a conspicuous location at the instrument.

91.1613.10.5. Instrumentation of Existing Buildings. All owners of existing structures selected by the Department shall provide accessible space for the installation of appropriate earthquake-recording instruments. Locations of the instruments shall be determined by the engineer of record and approved by the Department. The owners shall make arrangements with the Department to provide, maintain and service the instruments as required above. Data shall be the property of the Department, but copies of individual records shall be made available to the public on request with the payment of an appropriate fee.

All legally existing instruments shall be maintained and serviced in proper working condition. Each instrument shall be maintained and serviced as specified by Section 91.1613.10.3 and shall be provided with a sign as required by Section 91.1613.10.4.

Sec. 16. Section 91.1614 of the Los Angeles Municipal Code is renumbered as Section 91.1616 and amended to read as follows:

SEC. 91.1616. MODIFICATIONS TO ASCE 7.

91.1616.1. General. The text of ASCE 7 shall be modified as indicated in this Section. Modify ASCE 7, Section 12.2.3.1 Exception 3 to read as follows:

3. Detached one and two family dwellings up to two stories in height of light frame construction.

91.1616.2. The text of ASCE 7 shall be modified as indicated in this Section. Modify ASCE 7, Table 12.8-2 by adding the following:

Structure Type	Ct	x
Eccentrically braced steel frames and buckling-restrained braced frames	0.03 (0.0731)[a]	0.75

91.1616.3. General. The text of ASCE 7 shall be modified as indicated in this Section. Modify ASCE 7, Section 12.8.7 by amending Equation 12.8-16 as follows:

$\square = P_x \square I / V_x h_{sx} C_d$ (12.8-16)

91.1616.4. General. The text of ASCE 7, Section 12.11.2.2.3 is modified to read as follows:

12.11.2.2.3. Wood Diaphragms. In wood diaphragms, the continuous ties shall be in addition to the diaphragm sheathing. Anchorage shall not be accomplished by use of toe nails or nails subject to withdrawal nor shall wood ledgers or framing be used in cross-grain bending or cross-grain tension. The diaphragm sheathing shall not be considered effective as providing ties or struts required by this Section.

For wood diaphragms supporting concrete or masonry walls, wood diaphragms shall comply with the following when structures assigned to seismic Design Category D, E, or F:

1. The spacing of continuous ties shall not exceed 40 feet. Added chords of diaphragms may be used to form subdiaphragms to transmit the anchorage forces to the main continuous crossties.

2. The maximum diaphragm shear used to determine the depth of the subdiaphragm shall not exceed 75% of the maximum diaphragm shear.

91.1616.5. General. The text of ASCE 7, Section 12.12.4 is modified to read as follows:

12.12.4. Deformation Compatibility for Seismic Design Category D through F. For structures assigned to Seismic Design Category D, E, or F, every structural component not included in the seismic force-resisting system in the direction under consideration shall be designed to be adequate for the gravity load effects and the seismic forces resulting from displacement to the design story drift (D) as determined in accordance with Section 12.8.6 (see also Section 12.12.1).

EXCEPTION: Reinforced concrete frame members not designed as part of the seismic force-resisting system shall comply with Section 21.9 of ACI 318.

Where determining the moments and shears induced in components that are not included in the seismic force-resisting system in the direction under consideration, the stiffening effects of adjoining rigid structural and nonstructural elements shall be considered and a rational value of member and restraint stiffness shall be used.

When designing the diaphragm to comply with the requirements stated above, the return walls and fins/canopies at entrances shall be considered. Seismic compatibility with the diaphragm shall be provided by either seismically isolating the element or by attaching the element and integrating its load into the diaphragm.

Sec. 17. Section 91.1703 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1703. APPROVALS.

Section 1703 of the CBC is adopted by reference, except Sections 1703.1, 1703.2, 1703.3, 1703.4, 1703.4.1, 1703.4.2, 1703.6, and 1703.6.2 of the CBC are not adopted and in lieu Sections 91.1703.1, 91.1703.2, 91.1703.3, 91.1703.4, 91.1703.4.1, 91.1703.4.2, 91.1703.6, and 91.703.6.2 are added.

91.1703.1. Approved Agency. An approved agency shall provide all information as necessary for the Superintendent of Building to determine that the agency meets the applicable requirements pursuant to Section 98.0503 of this Code.

91.1703.2. Written Approval. Any material, appliance, equipment, system or method of construction meeting the requirements of this Code shall be approved in writing after satisfactory completion of the required tests and submission of required test reports pursuant to Sections 98.0501 and 98.0502 of this Code.

91.1703.3. Approved Record. For any material, appliance, equipment, system or method of construction that has been approved, a record of that approval, including the

conditions and limitations of the approval, shall be kept on file in the Department and shall be open to public inspection at appropriate times.

91.1703.4. Performance. Specific information consisting of test reports conducted by an approved testing agency in accordance with standards referenced in Division 35 of this Code, or other information as necessary, shall be provided for the Superintendent of Building to determine that the material meets the applicable Code requirements, including Sections 98.0501 and 98.0502 of this Code.

91.1703.4.1. Research and Investigation. Sufficient technical data shall be submitted to the Superintendent of Building to substantiate the proposed use of any material or assembly. If it is determined that the evidence submitted is satisfactory proof of performance for the use intended, the Superintendent of Building shall approve the use of the material or assembly subject to the requirements of this Code. The costs, reports and investigations required under these provisions shall be paid by the permit applicant as required by Sections 98.0501, 98.0502 and 98.0503 of this Code.

91.1703.4.2. Research Reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this Code, shall consist of valid research reports from approved sources as required in Sections 98.0501 and 98.0502 of this Code.

91.1703.6. Evaluation and Follow-up Inspection Services. Where structural components or other items regulated by this Code are not visible for inspection after completion of a prefabricated assembly, the applicant shall submit a report of each prefabricated assembly. The report shall indicate the complete details of the assembly, including a description of the assembly and its components, the basis upon which the assembly is being evaluated, test results and similar information and other data as necessary for the Superintendent of Building to determine conformance to this Code. Such a report shall be approved by the Superintendent of Building.

91.1703.6.2. Test and Inspection Records. Copies of necessary test and inspection records shall be filed with the Superintendent of Building.

Sec. 18. Section 91.1704 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1704. SPECIAL INSPECTIONS.

Section 1704 of the CBC is adopted by reference, except that Sections 1704.1, 1704.1.1, 1704.1.2, 1704.2.2, 1704.3.1.1, 1704.3.1.2, 1704.3.1.3, 1704.4, 1704.7, 1704.8 and 1704.9 of the CBC are not adopted and in lieu Sections 91.1704.1, 91.1704.1.1, 91.1704.1.2, 91.1704.1.3, 91.1704.1.4, 91.1704.1.4.1, 91.1704.1.4.2, 91.1704.2.2, 91.1704.3.1.1, 91.1704.3.1.2, 91.1704.3.1.3, 91.1704.4, 91.1704.7, 91.1704.7.1, 91.1704.8, 91.1704.9, 91.1704.17, 91.1704.18, 91.1704.19, 91.1704.20, 91.1704.21, 91.1704.21.1, 91.1704.21.2, 91.1704.21.3, 91.1704.21.4, 1704.21.5,

91.1704.22, 91.1704.22.1, and 91.1704.22.2 are added or amended, respectively, to read as follows:

91.1704.1. General. Where application is made for construction as described in this Section, the owner or the registered design professional in charge who is acting as the owner's agent shall employ one or more deputy inspectors to provide inspections during construction on the types of work listed in Sections 91.1704 and 91.1707. The Registered Deputy Inspector shall be a qualified person as set forth in Section 91.1704.1.3 and shall demonstrate competence to the satisfaction of the Superintendent of Building for inspection of the particular type of construction or operation requiring special inspection. The Registered Deputy Inspector shall be approved by and shall be responsible to the registered design professional in charge of the design of the structure.

The special inspections shall be in addition to the inspections made by the employees of the Department as set forth in Section 91.108 of this Code.

All special inspections shall be made by a Registered Deputy Inspector. Whenever the term "Special Inspector" is used in this Code, it shall mean "Registered Deputy Inspector" as described in Section 91.1704.1.3.

EXCEPTIONS:

1. Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the Superintendent of Building.

2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by applicable state statutes and regulations governing the professional registration and certification of engineers or architects.

3. Unless otherwise required by the Superintendent of Building, special inspections are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

4. The provisions of Health and Safety Code Part 6, Division 13 and Chapter 3, Division 1 of Title 25 of the California Code of Regulations, commencing with Section 3000, shall apply to the construction and inspection of factory-built housing as defined in Health and Safety Code Section 19971.

91.1704.1.1. Statement of Special Inspections. The permit applicant shall in accordance with Section 91.106.3.3 of this Code submit a statement of special

inspections prepared by the registered design professional in responsible charge as a condition for permit issuance. The statement of special inspection shall provide information in accordance with Section 91.1705 of this Code.

EXCEPTIONS:

1. A statement of special inspections is not required for structures designed and constructed in accordance with the conventional construction provisions of CBC Section 2308.

2. The statement of special inspections is permitted to be prepared by a qualified person approved by the Superintendent of Building for construction not designed by a registered design professional.

91.1704.1.2. Report Requirement. In addition to all the requirements of Section 91.1704.1.4, Registered Deputy Inspectors shall keep records of inspections. The Registered Deputy Inspector shall furnish inspection reports to the Superintendent of Building and to the registered design professional in charge. Reports shall indicate that work inspected was done in conformance with approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Superintendent of Building and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the Superintendent of Building prior to the start of work.

91.1704.1.3. Registered Deputy Inspector. Application for registration as a Registered Deputy Inspector shall be made to the Superintendent of Building on a form furnished by the Department. A separate application shall be made for each type of registration desired. Registration is available for the following types of inspections: Reinforced Concrete (RC), Structural Masonry (SM), Structural Steel/Welding (SSW), Grading (GD), Sprayed Fire resistant Materials (SFRM), Methane Barrier (MB) and Wood (WD).

A committee appointed by the Superintendent of Building shall examine each applicant as to his or her experience and training for performing the duties of an inspector of the type for which application has been made. Additionally, the applicant will be examined on the applicant's knowledge of the Los Angeles Municipal Code and Register Deputy Inspector duties, responsibilities and procedures. When satisfied as to the fitness of the applicant, the Superintendent of Building shall issue a Certificate of Registration. Upon application for renewal of a Certificate of Registration, the applicant shall be reexamined to ascertain the applicant's fitness to perform the duties of inspector of the type for which application has been made.

EXCEPTION: If the Department determines that the initial examination (which includes general knowledge, code requirements and plan comprehension)

for the special inspector program under the International Code Council (ICC) is equivalent to the above-described initial or renewal examination, then the Department may accept the results of the ICC examination in lieu of the Department's examination in that category; however, the Department will be examining the applicant's knowledge of the Los Angeles Municipal Code and deputy inspector duties, responsibilities and procedures.

The Superintendent of Building shall issue separate Certificate of Registration for each type of registration requiring special inspection in accordance with Sections 91.1704 and 91.707 of this Code and as determined by the Superintendent of Building for any construction requiring either continuous or periodic special inspection.

Nothing here shall be deemed to prohibit any one person from being qualified for more than one type of special inspection, provided he or she applies, pays the required fees, takes the required examinations and is duly qualified by the Superintendent of Building for each type.

Each Certificate of Registration shall expire three years from the date of issuance, but may be renewed by the Superintendent of Building within a grace period of 30 days thereafter.

The Department shall maintain a list of the names of all Registered Deputy Inspectors, showing the type of work each has been authorized to inspect. This list shall be available to the public.

Upon evidence satisfactory to the Superintendent of Building of incompetence, of willful or negligent failure to observe or report violations of this Code, or of any other failure to perform properly and effectively the duties assumed by a Registered Deputy Inspector, the Superintendent of Building may revoke, suspend or refuse to renew any Certificate of Registration. But prior to that action, the holder shall be given an opportunity to appear before the Superintendent of Building and be heard.

Except where there is an employee of the City of Los Angeles inspecting buildings or structures being erected or repaired by the City, no Registered Deputy Inspector shall receive any compensation whatsoever from the City. A Registered Deputy Inspector shall undertake and perform the duties of inspection solely on the request of the owner or the owner's agent. The designation shall be deemed to indicate that the duties incident to the inspection are within the course and scope of the Registered Deputy Inspector's employment by the owner or agent, and except where the Registered Deputy Inspector is in fact an employee of the City, the Registered Deputy Inspector shall not be deemed an employee of the City, the contractor, a subcontractor or a material vendor for any purpose.

91.1704.1.4. Duties and Responsibilities of the Registered Deputy Inspector.

1. The Registered Deputy Inspector employed on any work must be present during the execution of all the work the Registered Deputy Inspector has undertaken to inspect. The Registered Deputy Inspector shall notify the Department of the commencement of inspection of a job and shall specify the type of inspection for which the Registered Deputy Inspector has been engaged. This notification shall be made no later than the last working day preceding the commencement of inspection. The Registered Deputy Inspector shall report to the job sufficiently in advance of construction to review the plans and to inspect all materials to be used or concealed within the work; shall inspect the construction, erection, placing or other use of the materials; and shall observe whether there is compliance with the Code as to all of the foregoing. During the execution of the work, the Registered Deputy Inspector shall not undertake or engage in any other task or occupation that will interfere with the proper performance of his or her duties relating to the inspections. The Registered Deputy Inspector shall report, as directed, to the Superintendent of Building, noting all violations of this Code that have occurred and any other information as may be required. At the conclusion of the Registered Deputy Inspector's duties on any project, which has been completed in accordance with this Code, the Registered Deputy Inspector shall submit a report to the Department setting forth the portion of the work inspected. The report shall be made on forms supplied by the Department and shall be filed in the records of the Department.

2. Nothing here shall be deemed to authorize any Registered Deputy Inspector to approve any inspection required by this Code, other than the special inspection for which the Registered Deputy Inspector was hired.

3. Where, in the opinion of the Department, the magnitude or complexity of a job warrants it, additional Registered Deputy Inspectors may be required.

4. Where, in the opinion of the Department, the Registered Deputy Inspector is negligent in the performance of the Deputy Inspector's duties, the job shall be stopped.

5. Nothing herein shall be deemed to authorize any registered deputy inspector to approve the pouring of concrete, the placement of masonry, structural steel or fill prior to the approval of the regular building inspector.

91.1704.1.4.1. Fees for Registered Deputy Inspector.

1. **New Application.** Before accepting any application for registration as a Registered Deputy Inspector, the Department shall collect a new examination fee of $528.00. A separate application shall be submitted and a separate examination fee shall be collected for each additional type of

registration desired. When the applicant passes the examination(s), a Certificate(s) of Registration for each type of examination passed shall be issued. If the applicant fails to pass an examination, the applicant may reapply and again pay the examination fees. No refund(s) will be given to the applicant after the Department has administered the examination(s).

2. **Renewal Application**. Before renewing a Certificate of Registration as a Registered Deputy Inspector, the Department shall collect a renewal Registration and examination fee in the amount of $482.00. A separate application shall be submitted and a separate examination fee shall be collected for each additional type of renewal registration desired. When the applicant passes the examination(s), a Certificate(s) of Registration for each type of examination passed shall be issued. If the applicant fails to pass the examination(s), the applicant may reapply, however the applicant must again pay the renewal Registration and examination fees before the Department can issue the Certificate of Registration(s). No refund(s) will be given to applicant after the Department has administered the examination.

3. **International Code Council (ICC) Certification(s)**. International Code Council (ICC) Certification(s) is required prior to taking the Department's new or renewal examination(s). In addition to ICC's certification, the Department's examination will be required for each type of registration and fees collected as specified in this Section.

EXCEPTION:

If the ICC does not have an examination for a Department registration, the applicant will be required to take the Department examination only.

The ICC Certification may not be required when the Department registration is utilized by the Department of Public Works for City business only.

91.1704.1.4.2. Failure to Pass Examination for Registered Deputy Inspector. Every applicant who fails to pass a new or renewal examination(s) shall not be eligible for re-examination until 30 days after taking the previous examination.

91.1704.2.2. Fabricator Approval. Pursuant to LAMC Section 96.200, special inspections required by this Code are not required where the work is done on the premises of an Approved Fabricator licensed and approved to perform the work without special inspection. Approval shall be based upon review of the fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by the Department. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the Superintendent of Building stating that the work was performed in accordance with the approved construction documents.

91.1704.3.1.1. Structural Steel. Welding inspection for structural steel shall be in accordance with AWS D1.1.

91.1704.3.1.2. Cold-Formed Steel. Welding inspection for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

91. 1704.3.1.3. Reinforcing Steel. Welding inspection for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.

91.1704.4. Concrete Construction. The special inspections and verifications for concrete construction shall be as required by this Section and CBC Table 1704.4.

EXCEPTIONS: Special inspection shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less in height that are fully supported on earth or rock, where the structural design of the footing is based on a specified compressive strength, f'c, no greater than 2,500 pounds per square inch (psi) (17.2 MPa).

2. Continuous concrete footings supporting walls of buildings three stories or less above the grade plane that are fully supported on earth or rock where:

2.1. The footings support walls of light-frame construction;

2.2. The footings are designed in accordance with CBC Table 1805.4.2; or

2.3. The structural design of the footing is based on a specified compressive strength, f'c, no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction.

3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).

4. Concrete foundation walls constructed in accordance with CBC Table 1807.1.6.2.

5. Concrete patios, driveways and sidewalks, on grade.

91.1704.7. Soils. Special inspections defined per Sections 7008.2 and 7011.3 of this Code for existing site soil conditions, fill placement and load-bearing requirements shall

be as required by this Section and Table 1704.7. The approved geotechnical report, and the construction documents prepared by the registered design professionals shall be used to determine compliance. During fill placement, the special inspector shall determine that proper materials and procedures are used in accordance with the provisions of the approved geotechnical report, as specified in CBC Section 1803.5.

EXCEPTION: Special inspection is not required during placement of controlled fill having a total depth of 12 inches (305 mm) or less and where the fill is not used for graded slopes or for support of footings or foundations.

TABLE 1704.7
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	X
2. Verify excavations are extended to proper depth and have reached proper material.	—	X
3. Perform classification and testing of compacted fill materials.	—	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X[a]	X[a]
5. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	—	X

a. Frequency of special inspections to be determined by the registered design professional responsible for the project.

91.1704.7.1. Grading. A registered Grading Inspector is required under all conditions here the site grading or foundation earthwork planned on a project has any of the following:

1.1. A contiguous grading area exceeding 60,000 square feet (5574 m2).

1.2. An excavated or filled slope steeper than 2 horizontal in 1 vertical (50 percent slope).

1.3. An excavated slope exceeding 40 feet (12,192 mm) in height and the top of which is within 20 feet (6096 mm) of a property line coterminous with improved private property or a public way.

1.4. Foundation excavations below a 1 horizontal in 1 vertical plane inward and down from the property line.

EXCEPTION: The department may waive continuous inspection where minor areas or heights are involved and no unusual hazards exist.

91.1704.8. Driven Deep Foundations and Connecting Grade Beams. Special inspections shall be performed during installation and testing of driven deep foundation elements as required by CBC Table 1704.8. The approved geotechnical report, required by CBC Section 1803.2, and the construction documents prepared by the registered design professional in responsible charge shall be used to determine compliance. Special inspections for connecting grade beams shall be in accordance with Section 91.1704.4 of this Code.

91.1704.9. Cast-in-Place Deep Foundations and Connecting Grade Beams. Special inspections shall be performed during installation and testing of cast-in-place deep foundation elements as required by CBC Table 1704.9. The approved geotechnical report, required by CBC Section 1803.2, and the construction documents prepared by the registered design professional in responsible charge shall be used to determine compliance. Special inspections for connecting grade beams shall be in accordance with Section 91.1704.4 of this Code.

91.1704.17. Certifications by Architect, Engineer or Geologist. If a structure or portion of a structure has been designed to utilize higher stresses requiring continuous inspection, the architect or engineer in charge of the design shall certify by signature to the Department that to the best of his or her knowledge, the structure or portion utilizing higher stresses was constructed in conformity with the approved design. If the grading or foundation earthwork has required continuous inspection, the responsible engineering geologist or soils engineer shall certify by signature to the Department that to the best of his or her knowledge the field work was completed in conformity with the technical design data.

91.1704.18. Department's Responsibility. The employment of a Registered Deputy Inspector for any work does not deprive the Department of the right to make periodic or called inspections of all or portions of the work. On any work requiring continuous inspection by a Registered Deputy Inspector, the called inspections required by Section 91.108 of this Code may be delegated to the Registered Deputy Inspector by the Superintendent of Building.

91.1704.19. Structural, Termite and Fungus Damage. Every building raised from its foundation shall be inspected. If there is any superficial evidence of structural damage, termites or fungus growth, the permittee shall remove and renew the damaged or infested members before reseating the building or moving it from its existing site or into the City.

91.1704.20. Emergencies or Catastrophes. In the event of an emergency or of a major catastrophe in the City, the Department may deputize Emergency Building Inspectors for the Department. The inspectors shall receive no compensation from the

City, and they shall be appointed for the periods of time the Department deems advisable.

91.1704.21. Special Activity Inspection. In addition to the construction or work inspected as described in Sections 91.108 and 91.1704 through 91.1718 of this Code, there are other construction activities that are sufficiently important to the structural stability of the structure, the occupants of and the fire and life safety of the structure that inspection by a specially qualified inspector of these activities is necessary in order to ensure compliance with the requirements of this Code. These special activity inspections may occur during off-site fabrication or during on-site construction.

Inspections by Department Approved Special Activity Inspectors will be required in accordance with regulations promulgated by the Superintendent of Building where:

1. The structure is more than five stories or 60 feet (18,288 mm) in height.

2. The structure exceeds 50,000 square feet (4645 m^2) of ground area or 200,000 square feet (18 580 m^2) of total floor area.

3. Nondestructive structural testing methods are utilized.

4. The quality identification markings of the materials used are not inspectable after installation.

5. The manner of use of materials precludes full inspection after installation.

EXCEPTION: The Department may waive continuous or periodic inspection required by this Section where minor quantities are involved and no unusual hazards exist.

In addition to the projects included in the above categories, the Superintendent of Building may require Special Activity inspections if the Superintendent determines that these inspections are needed to ensure compliance with the provisions of this Code and the work involves:

1. Unique, novel or innovative construction;

2. Highly complex or intricate construction;

3. Unique, novel or innovative grading, earth support or foundation procedures; or

4. New methods of construction not yet provided for in the rules and regulations.

Special Activity inspection authority will be determined on a case by case basis and will require Deputy Inspector registration. The Superintendent of Building shall adopt rules and regulations implementing the provisions of this Section. These regulations may establish and set the requirements for different types of Department Approved Special Activity Inspectors.

91.1704.21.1. Special Activity Inspection Authority.

91.1704.21.2. Registration. The procedures and conditions of registration as a Special Activity Inspector shall be the same as applicable to a Registered Deputy Inspector under Section 91.1704.1.3, except that the extent and duration of special inspection authority shall be as specified in the rules and regulations adopted by the Superintendent of Building.

91.1704.21.3. Duties. Except as otherwise indicated by regulations promulgated by the Superintendent of Building, the duties and responsibilities for a Special Activity Inspector shall be the same as specified for a Registered Deputy Inspector under Section 91.1704.1.4 of this Code.

91.1704.21.4. Fees. The procedures for the examination, registration and renewal of authority as a Special Activity Inspector shall be the same as specified for Registered Deputy Inspectors under Section 91.1704.1.3 of this Code.

91.1704.21.5. Renewal Process. Section 91.1704.1.3 applies to the application, examination and renewal process for registration as a Special Activity Inspector.

91.1704.22. Certification of Welders.

91.1704.22.1. The Department shall establish procedures, rules and regulations for the issuance of Welder's Certifications.

A fee of $110.00 shall be paid on each application for certification or renewal. $50.00 of the fee shall be paid prior to the Department's examination for a new certification and the remaining amount shall be paid after the examination. Certificates shall be issued for a period of three years and may be renewed for additional three-year periods.

91.1704.22.2. The Superintendent of Building shall suspend or revoke any certificate upon evidence of failure of the person so certified to conduct welding operations in compliance with any of the conditions upon which it is based, or where quality of workmanship is not equivalent to that required by the code, or for any of the reasons set forth in Article 8, Chapter IX of the Los Angeles Municipal Code. Any action shall be in accordance with the provisions of Article 8, Chapter IX of the Los Angeles Municipal Code.

Sec. 19. Section 91.1705 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1705. STATEMENT OF SPECIAL INSPECTIONS.

Section 1705 of the CBC is adopted by reference, except Sections 1705.2 and 1705.3 of the CBC are not adopted and in lieu Sections 91.1705.2 and 91.1705.3 are added.

91.1705.2. Content of Statement of Special Inspections. The statement of special inspections shall identify the following:

1. The materials, systems, components, research reports and work required to have special inspection or testing by the Superintendent of Building or by the registered design professional responsible for each portion of the work.

2. The type and extent of each special inspection.

3. The type and extent of each test.

4. Additional requirements for special inspection or testing for seismic or wind resistance as specified in CBC Sections 1705.3, 1705.4 or Sections 91.1707 or 91.1708 of this Code.

5. For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

91. 1705.3 Seismic Resistance. The statement of special inspections shall include seismic requirements for cases covered in CBC Sections 1705.3.1 through 1705.3.5.

EXCEPTION: Seismic requirements can be excluded from the statement of special inspections for structures designed and constructed in accordance with the following:

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods, SDS, as determined in Section 1613.5.4, does not exceed 0.5g; and the height of the structure does not exceed 35 feet (10 668 mm) above grade plane; or

2. The structure is constructed using a reinforced masonry structural system or reinforced concrete structural system; the design spectral response acceleration at short periods, SDS, as determined in Section 1613.5.4, does not exceed 0.5g, and the height of the structure does not exceed 25 feet (7620 mm) above grade plane; or

3. Detached one- or two-family dwellings not exceeding two stories above grade plane, provided the structure is not assigned to Seismic Design Category D, E, or F and does not have any of the following plan or vertical irregularities in accordance with Section 12.3.2 of ASCE 7:

3.1. Torsional irregularity.

3.2. Nonparallel systems.

3.3. Stiffness irregularity—extreme soft story and soft story.

3.4. Discontinuity in capacity—weak story.

Sec. 20. Section 91.1707 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1707. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.

Section 1707 of the CBC is adopted by reference, except Sections 1707.1, 1707.2 and 1707.8 of the CBC are not adopted and in lieu Sections 91.1707.1, 91.1707.2, 91.1707.2.1, 91.1707.8 and 91.1707.10 are added.

91.1707.1. Special Inspections for Seismic Resistance. Special inspections itemized in CBC Sections 1707.3 through 1707.7, and Sections 91.1707.2, 91.1707.8 and 91.1707.10 are required for the following, unless exempted by the exceptions of Section 91.1704.1, 91.1705.3, or CBC Section 1705.3.1:

1. The seismic-force-resisting systems in structures assigned to Seismic Design Category C, D, E or F as determined in CBC Section 1613.

2. Designated seismic systems in structures assigned to Seismic Design Category D, E or F.

3. Architectural, mechanical and electrical components in structures assigned to Seismic Design Category C, D, E or F that are required in CBC Sections 1707.7 and 1707.8.

91.1707.2. Structural Steel. Continuous special inspection is required for structural welding in accordance with AISC 341 and during the fabrication and erection of buildings over 160 feet (48,768mm) in height with structural steel moment-resisting frames. A Registered Deputy Inspector under the supervision of the engineer responsible for the structural design shall be present during the performance of all structural welding or the installation of all high-strength bolts whether in a fabricator's shop or at the job site.

EXCEPTIONS:

1. Single-pass fillet welds not exceeding 5/16-inch (7.9mm) in size.

2. Floor and roof deck welding.

91.1707.2.1. Certification. For buildings exceeding 160 feet (48,768mm) in height, the engineer responsible for the structural design and the general contractor responsible for the construction, or their competent authorized representatives, shall make periodic inspections of the work at the site to verify general compliance with the approved plans, specifications and change orders. The engineer and general contractor shall submit a statement in writing to the Department stating that they know from personal knowledge that the materials installed and the structural work performed is in compliance with the approved plans, specifications and change orders.

The phrase "personal knowledge" as used above in reference to the engineer and general contractor means the knowledge resulting from the general observation by the engineer and the general supervision by the contractor of the work, as required by both in the superintendence of the building's construction, and as distinguished from the continuous personal superintendence of the special inspector and/or deputy inspector who are continuously at the site during the progress of the work. The exercise of reasonable diligence to obtain the facts is required and anyone who intentionally remains unaware may be charged with knowledge. The interpretation of personal knowledge as it applies to the special inspector and/or deputy inspector is that the inspector(s) must have actual personal knowledge that the requirements of the plans and specifications are being carried out, which is obtained by the inspector's continuous observation of the work of construction at the site in all stages of its progress.

91.1707.8. Designated Seismic System Verifications. The Registered Deputy Inspector shall examine designated seismic systems requiring seismic qualification in accordance with CBC Section 1708.4 and verify that the label, anchorage, and mounting conforms to the certificate of compliance and any applicable research report.

91.1707.10. Structural Inspection - Concrete. During the construction of all buildings over 160 feet (48,768 mm) in height with concrete special moment-resisting space frames, a structural inspector under the supervision of the engineer responsible for the structural design shall be present to inspect the materials and workmanship for conformance with approved plans, specifications and change orders involved in construction of the ductile frames and shear walls. This inspection may be made by one or more structural inspectors, provided that at least one structural inspector is present during the placement of all concrete and reinforcement in the structural frame and shear walls.

The number of structural inspectors to be provided for each structure shall be determined by the engineer responsible for the structural design, provided that more

than one structural inspector shall be provided where the magnitude of a structure prevents a single inspector from adequately performing the inspection.

The owner shall provide for each structural inspector. Each structural inspector shall be paid by the owner directly or through the person responsible for the structural design. Each structural inspector shall be responsible to the person who prepared the structural design.

The inspection by the structural inspector or inspectors shall be in addition to inspections made by Department employees as specified in Section 91.108 of this Code and by Registered Deputy Inspectors as specified for other parts of the work in Section 91.1704.1 this Code.

Prior to the issuance of the Certificate of Occupancy, each structural inspector shall submit a report in writing to the engineer and the Department certifying that the portions of the structural frame inspected by the inspector were constructed in accordance with the approved plans, specifications, change orders and Division 19 of this Code.

Sec. 21. Section 91.1708 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1708. STRUCTURAL TESTING FOR SEISMIC RESISTANCE.

Section 1708 of the CBC is adopted by reference, except Section 1708.3 of the CBC is not adopted and in lieu Section 91.1708.3 is added.

91.1708.3. Structural Steel. The testing described in the quality assurance plan shall be as required by AISC 341 and the additional requirements in this Section. Nondestructive testing shall be performed by an approved agency and the written report, including the test results, shall be submitted for evaluation by the Superintendent of Building. The acceptance criteria for nondestructive testing shall be as required in AWS D1.1 as specified by the registered design professional.

Base metal thicker than 1.5 inches (38 mm), where subject to through-thickness weld shrinkage strains, shall be ultrasonically tested for discontinuities behind and adjacent to those welds after joint completion. Any material discontinuities shall be accepted or rejected on the basis of ASTM A 435 or ASTM A 898 (Level 1 criteria) and criteria as established by the registered design professional(s) in responsible charge, and the construction documents.

Sec. 22. Section 91.1709 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1709. CONTRACTORS RESPONSIBILITY.

Section 1709 of the CBC is adopted by reference, and Sections 91.1709.2, 91.1709.2.1, 91.1709.2.2, 91.1709.2.3, 91.1709.2.4, 91.1709.2.5, and 91.1709.2.6 are added.

91.1709.2. CERTIFIED LICENSED CONTRACTORS.

91.1709.2.1. Registration. Application for registration as a certified licensed contractor shall be made to the Superintendent of Building on a form furnished by the Department and a separate application shall be made for each type of registration desired. Before the application can be accepted, the applicant must furnish proof satisfactory to the Department that the applicant holds a valid active California State Contractor's License in the same specialty as the certification requested.

91.1709.2.2. Application.

1. **Form.** Application for a Certificate of Registration shall be made on a form furnished by the Department.

2. **Information Necessary.** The application shall bear the name and address of the applicant and, if the applicant is employed by a firm, partnership or corporation, the names of the principal officers should also be included. The application shall carry other information deemed necessary by the Department.

3. **Verification.** The applicant shall declare that the information contained in the application is true and correct.

4. **Fee.** The application shall be accompanied by an examination fee of $188.

91.1709.2.3. Examination.

1. **Examination Required.** Before issuance of a Certificate of Registration, the applicant shall have successfully passed the examination required for the issuance of the Certificate of Registration within 90 days preceding the date of the issuance. To be eligible for the examination for a Certificate of Registration, the applicant shall have a valid California State Contractor's License in an appropriate specialty and a valid City Business Tax Certificate.

2. **Board of Examiners.** The Superintendent of Building and/or Board of Examiners composed of three qualified persons appointed by the

Superintendent shall conduct examinations. The results of every examination shall be subject to the approval of the Superintendent of Building. Each examiner shall serve at the pleasure of the Superintendent of Building and shall serve for a period of one year unless reappointed by the Superintendent.

3. **Scope of Examination.** The examination shall, in the judgment of the Superintendent of Building, fairly determine the ability of the applicant to perform properly the work, which he or she would be authorized to do by the Certificate of Registration requested, and may include the following:

a. A written test.

b. Practical tests as may be required.

c. An oral interview as may be required.

d. Other tests as may be required by the Board of Examiners.

4. **Time of Examination.** The applicant shall be examined as soon as practicable after filing an application.

5. **Rules and Regulations.** The Department shall have the authority to establish rules and regulations for the conduct of examinations.

6. **Fitness of Applicant.** Any applicant may be required to submit satisfactory proof of his or her fitness to carry out the intent of this Code.

7. **Failure to Pass.** An applicant who fails to pass an examination shall not be eligible for another examination until four weeks after taking the previous examination.

91.1709.2.4. Issuance of Certificates.

1. The Superintendent of Building shall issue separate Certificates of Registration for each of the following categories:

a. FAU/AC units; evaporative coolers.

b. Domestic water piping/plumbing fixtures/hot water heaters/solar panels.

c. Reroofing and roof repair.

d. Electrical equipment/fixtures/smoke detectors.

e. Masonry and concrete fences.

f. Masonry chimney repairs.

g. Shower pan replacement.

Nothing here prohibits any person from being qualified for more than one type of certification, provided the person makes application, pays the required fees, takes the required examinations and is duly qualified by the Superintendent of Building for each type of certification.

2. Upon payment of a $45.00 fee, the Department may issue a Certificate of Registration to every applicant who passes the required examination for a Certified Licensed Contractor.

3. Each Certificate of Registration shall expire 12 months from the date of issuance.

4. The Superintendent of Building shall keep on file a list, open to public inspection, of the names of all registered certified licensed contractors, showing the type of work each has been authorized to inspect.

5. **Renewal of Certificates.** Expired Certificates of Registration may be renewed at any time within 30 days following the date of expiration. After a Certificate of Registration has been expired for 30 days, it may not be renewed; rather, a new application for a new certificate must be submitted at that time.

91.1709.2.5. Exhibition of Certificate.

1. Every person having a fixed place of business shall keep his or her Certificate of Registration posted in some conspicuous location at his or her place of business during the time the certificate is in force.

2. Every person not having a fixed place of business shall carry his or her Certificate of Registration with him or her at all times while doing any inspections or other work pursuant to this certificate.

91.1709.2.6. Revocation of Certificate. The Superintendent of Building may revoke, suspend or refuse to renew any Certificate of Registration upon a showing of incompetence, willful or negligent failure to observe or report violations of this Code, or failure to maintain a valid active California State Contractor's License in the same specialty as the certification. Prior to any action, the holder shall be given an opportunity to appear before the Superintendent of Building and be heard.

Suspension or revocation of any Certificate of Registration issued under this Section shall be in accordance with the provisions of Article 8, Chapter IX of the Los Angeles Municipal Code.

Sec. 23. Section 91.1710 of the Los Angeles Municipal Code is added to read as follows:

SEC. 91.1710. STRUCTURAL OBSERVATIONS.

Section 1710 of the CBC is adopted by reference, except that Sections 1710.1 and 1710.2 of the CBC are not adopted and in lieu Sections 91.1710.1 and 91.1710.2 are added.

91.1710.1. General. Where required by the provisions of Section 91.1710.2 of this Code or CBC Section 1710.3, the owner shall employ the registered design professional in charge for the structural design, or another registered design professional designated by the registered design professional in charge for the structural design to perform structural observations as defined by CBC Section 1702.

The owner or owner's representative shall coordinate and call a preconstruction meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected subcontractors and deputy inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first report submitted to the Superintendent of Building.

Observed deficiencies shall be reported in writing to the owner's representative, Registered Deputy Inspector, contractor and the Superintendent of Building. Upon the form prescribed by the Superintendent of Building, the structural observer shall submit to the Superintendent of Building a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies, which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer, which states that all observed deficiencies have been resolved, is required before acceptance of the work by the Superintendent of Building.

91.1710.2. Structural Observations for Seismic Resistance. Structural observations shall be provided for those structures included in Seismic Design Category D, E or F, as determined in Section 91.1613 of this Code, where one or more of the following conditions exist:

1. The structure is classified as Occupancy Category III or IV in accordance with CBC Section 1604.5.

2. The height of the structure is greater than 75 feet (22860 mm) above the base.

3. The structure is classified as Occupancy Category I or II in accordance with CBC Section 1604.5 and a lateral design is required for the structure or portion thereof.

EXCEPTION: One-story wood framed Group R-3 and Group U Occupancies less than 2000 square feet in area, provided the adjacent grade is not steeper than 1 unit vertical in 10 units horizontal (10% sloped), assigned to Seismic Design Category D.

4. When so designated by the registered design professional in responsible charge of the structural design.

5. When such observation is specifically required by the Department.

Sec. 24. Section 91.1712 of the Los Angeles Municipal Code is added to read as follows:

SEC. 91.1712. ALTERNATIVE TEST PROCEDURE.

Section 1712 of the CBC is adopted by reference, except Section 1712.1 of the CBC is not adopted and in lieu Section 91.1712.1 is added.

91.1712.1.General. In the absence of approved rules or other approved standards pertaining to new materials or assemblies, the Superintendent of Building shall make, or cause to be made, any necessary tests and investigations; or the Superintendent of Building shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 91.104.2.6 of this Code. The cost of all tests and other investigations required under the provisions of this Code shall be borne by the permit applicant.

Sec. 25. Section 91.1716 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1716. MATERIAL AND TEST STANDARDS.

Section 1716 of the CBC is adopted by reference, except Sections 1716.1, 1716.1.1, and 1716.2 of the CBC are not adopted and in lieu Sections 91.1716.1, 91.1716.1.1, and 91.1716.2 are added.

91. 1716.1. Test Standards for Joist Hangers and Connectors.

91. 1716.1.1. Test Standards for Joist Hangers. The vertical load-bearing capacity, torsional moment capacity, and deflection characteristics of joist hangers shall be determined in accordance with ASTM D 1761 using lumber having a specific gravity of 0.49 or greater, but not greater than 0.55, as determined in accordance with AF&PA

NDS for the joist and headers. Required testing shall be conducted or witnessed by an approved agency.

EXCEPTION: The joist length shall not be required to exceed 24 inches (610 mm).

91. 1716.2. Concrete and Clay Roof Tiles. Required tests for concrete and clay roof tiles shall be conducted or witnessed by an approved testing agency.

Sec. 26. Section 91.1801.1 of the Los Angeles Municipal Code is amended to read as follows:

91.1801.1. Scope. The provisions of this division shall apply to building and foundation systems in those areas not subject to scour or water pressure by wind and wave action. Buildings and foundations subject to those scour or water pressure loads shall be designed in accordance with Division 16 of this Code.

Requirements governing grading and earthwork construction, including excavation and fills, are set forth in Division 70 of this Code.

Hillside buildings (buildings constructed on slopes steeper than one unit vertical in three units horizontal [33.3%] slope) shall comply with Section 91.1613.9 of this Code (seismic design provisions for hillside buildings) and this division.

Sec. 27. Section 91.1803 of the Los Angeles Municipal Code is added to read as follows:

SEC. 91.1803. GEOTECHNICAL INVESTIGATION.

Section 1803 of the CBC is adopted by reference, except Section 1803.5.6 of the CBC is not adopted and in lieu Section 91.1803.5.6 is added.

91.1803.5.6. Rock Strata. Where subsurface explorations at the project site indicate variations or doubtful characteristics in the structure of the rock upon which foundations are to be constructed, a sufficient number of borings shall be made to a depth of not less than ten feet (3048 mm) below the level of the foundations and to a depth that would allow investigation of any unsupported bedding planes or any other rock discontinuities that could influence the foundation stability to provide assurance of the soundness of the foundation bed and its load-bearing capacity.

Sec. 28. Section 91.1805 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1805 DAMPPROOFING AND WATERPROOFING.

Section 1805 of the CBC is adopted by reference, except Section 1805.4.3 of the CBC is not adopted and in lieu Section 91.1805.4.3 is added.

91.1805.4.3. Drainage Discharge. The floor base and foundation perimeter drain shall discharge by gravity or mechanical means into an approved drainage system that complies with the Plumbing Code.

Sec. 29. Section 91.1806 of the Los Angeles Municipal Code is added to read as follows:

SEC. 91.1806. PRESUMPTIVE LOAD BEARING VALUES OF SOILS.

Section 1806 of the CBC is adopted by reference, except Section 1806.2 of the CBC is not adopted and in lieu Section 91.1806.2 is added.

91.1806.2. Presumptive Load-bearing Values. The load-bearing values used in design for supporting soils near the surface shall not exceed the values specified in CBC Table 1806.2 unless data to substantiate the use of higher values are submitted and approved. Where the Department has reason to doubt the classification, strength or compressibility of the soil, the requirements of Section 1803.5.2 shall be satisfied.

Presumptive load-bearing values shall apply to materials with similar physical characteristics and dispositions.

Mud, organic silt, organic clays, peat or uncertified fill shall not be assumed to have a presumptive load-bearing capacity.

Sec. 30. Section 91.1807 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1807. FOUNDATION WALLS, RETAINING WALLS, AND EMBEDED POST AND POLES.

Section 1807 of the CBC is adopted by reference, except Section 1807.1.4 and 1807.1.6 the CBC is not adopted and in lieu Sections 91.1807.1.4 and 91.1807.1.6 are added.

91.1807.1.4. Permanent Wood Foundation Systems. Permanent wood foundation systems shall be designed and installed in accordance with AF & PA PWF and as otherwise approved by the Department. Lumber and plywood shall be treated in accordance with AWPA U1 (Commodity Specification A, Use Category 4B and Section 5.2) and shall be identified in accordance with Section 2303.1.8.1. Permanent wood foundation systems shall not be used for structures assigned to Seismic Design Category D, E, F.

EXCEPTION: Accessory buildings not used for human occupancy and less than 120 square feet (11.1 m2) in area may be supported on treated wood mud sills.

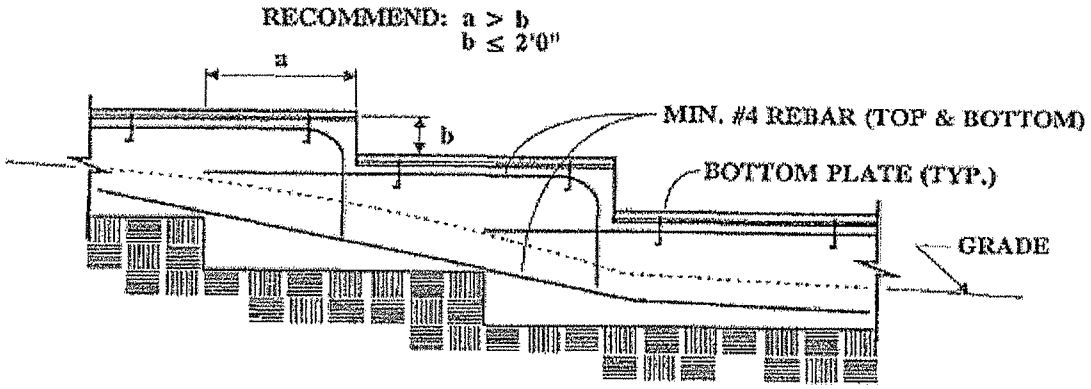
91.1807.1.6. Prescriptive Design of Concrete and Masonry Foundation Walls. Concrete and masonry foundation walls that are laterally supported at the top and bottom shall be permitted to be designed and constructed in accordance with this Section. Prescriptive design of foundation walls shall not be used for structures assigned to Seismic Design Category D, E, or F.

Sec. 31. Section 91.1809 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1809. SHALLOW FOUNDATIONS.

Section 1809 of the CBC is adopted by reference, except Section 1809.3 and 1809.4 are not adopted and in lieu Sections 91.1809.3, 91.1809.4, 91.1809.7 and 91.1809.12 are added.

91.1809.3. Stepped Footing. The top surface of footings shall be level. The bottom surface of footings shall be permitted to have a slope not exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings shall be stepped where it is necessary to change the elevation of the top surface of the footing or where the surface of the ground slopes more than one unit vertical in 10 units horizontal (10-percent slope). This stepping requirement shall also apply to the top surface of grade beams supporting walls. Footings shall be reinforced with four ½ inch diameter (12.7 mm) deformed reinforcing bars. Two bars shall be placed at the top and bottom of the footings as shown in Figure 1809.3 of this Code.



STEPPED FOUNDATIONS
FIGURE 1809.3

91.1809.4. Depth and Width of Footings. The minimum depth of footings below the surface of undisturbed soil, compacted fill material or CLSM shall be 12 inches (305

mm). Where applicable, the requirements of CBC Section 1809.5 shall also be satisfied. The minimum width of footings shall be 12 inches (305mm).

91.1809.7. Prescriptive Footings for Light-Frame Construction. Where a specific design is not provided concrete or masonry-unit footings, supporting walls of light-frame construction shall be permitted to be designed in accordance with Table 1809.7. Prescriptive footings in Table 1809.7 shall not exceed one story above grade for structures assigned to Seismic Design Category D, E, or F.

TABLE 1809.7
PRESCRIPTIVE FOOTINGS SUPPORTING WALLS OF LIGHT-FRAMED CONSTRUCTION [a, b, c, d, e]

NUMBER OF FLOORS SUPPORTED BY THE FOOTING [f]	WIDTH OF FOOTING (inches)	THICKNESS OF FOOTING (inches)
1	12	6
2	15	6
3	18	8[g]

For SI: one inch = 25.4 mm, one foot = 304.8 mm

a. Depth of footings shall be in accordance with Section 1809.4.

b. The ground under the floor is permitted to be excavated to the elevation of the top of the footing.

c. Not Adopted.

d. See CBC Section 1908 for additional requirements for footings of structures assigned Seismic Design Category C, D, E or F.

e. For thickness of foundation walls, see Section 91.1807.1.6 of this Code.

f. Footings are permitted to support a roof in addition to the stipulated number of floors. Footings supporting roof only shall be as required for supporting one floor.

91.1809.12. Timber Footings. Timber footings shall be permitted for buildings of Type V construction and as otherwise approved by the Department. Such footings shall be treated in accordance with AWPA U1 (Commodity Specification A, Use Category 4B). Treated timbers are not required where placed entirely below permanent water level, or where used as capping for wood piles that project above the water level over submerged or marsh lands. The compressive stresses perpendicular to grain in untreated timber footings supported upon treated piles shall not exceed 70 percent of the allowable stresses for the species and grade of timber as specified in the AF&PA NDS. Timber footings shall not be used in structures assigned to Seismic Design Category D, E, or F.

Sec. 32. Section 91.1810 of the Los Angeles Municipal Code is added to read as follows:

91.1810. DEEP FOUNDATIONS.

Section 1810 of the CBC is adopted by reference, except Sections 1810.3.1.5, 1810.3.2.4, 1810.3.3.1.4, and 1810.3.10.4 of the CBC are not adopted and in lieu Sections 91.1810.3.1.5, 91.1810.3.2.4, 91.1810.3.3.1.4 and 91.1810.3.10.4 are added.

91.1810.3.1.5. Helical Piles. Helical piles shall be designed and manufactured in accordance with accepted engineering practice to resist all stresses induced by installation into the ground and service loads. Helical piles shall not be used for support of new structures. Helical piles may be used to underpin foundations of existing structures or retrofit or remediate deficient foundations of existing structures. Helical piles shall not be used to resist any horizontal loads.

91.1810.3.2.4. Timber. Timber deep foundation elements shall be designed as piles or poles in accordance with AF&PA NDS. Round timber elements shall conform to ASTM D 25. Sawn timber elements shall conform to DOC PS-20. Timber deep foundation shall not be used in structures assigned to Seismic Design Category D, E, or F.

91.1810.3.3.1.4. Allowable Frictional Resistance. The assumed frictional resistance developed by any uncased cast-in-place deep foundation element shall not exceed one-sixth of the bearing value of the soil material at minimum depth as set forth in CBC Table 1806.2, up to a maximum of 500 psf (24 kPa), unless a greater value is allowed by the Department on the basis of a geotechnical investigation as specified in Section 1803 or a greater value is substantiated by a load test in accordance with CBC Section 1810.3.3.1.2. Frictional resistance and bearing resistance shall not be assumed to act simultaneously.

91.1810.3.10.4. Seismic Reinforcement. For structures assigned to Seismic Design Category C, a permanent steel casing shall be provided from the top of the micropile down to the point of zero curvature. For structures assigned to Seismic Design Category D, E or F, the micropile shall be considered as an alternative system in accordance with Section 91.104.2.6 of this Code. The alternative system design, supporting documentation and test data shall be submitted to the Department for review and approval.

Sec. 33. Division 19 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.1900. BASIC PROVISIONS.

Chapter 19 of the CBC is adopted by reference, except that Sections 1908.1, 1908.1.2, 1908.1.8 and 1909.4 of the CBC are not adopted and Sections 91.1908.1, 91.1908.1.2, 91.1908.1.8, 91.1908.1.11, 91.1908.1.12, 91.1908.1.13, 91.1908.1.14 and 91.1909.4 of this Code are added.

91.1908.1. General. The text of ACI 318 shall be modified as indicated in CBC Sections 1908.1.1 through 1908.1.14.

91.1908.1.2. ACI 318, Section 21.1.1. Modify ACI 318 Sections 21.1.1.3 and 21.1.1.7 to read as follows:

21.1.1.3 – Structures assigned to Seismic Design Category A shall satisfy requirements of Chapters 1 to 19 and 22; Chapter 21 does not apply. Structures assigned to Seismic Design Category B, C, D, E or F also shall satisfy 21.1.1.4 through 21.1.1.8, as applicable. Except for structural elements of plain concrete complying with Section 1908.1.8 of the California Building Code, structural elements of plain concrete are prohibited in structures assigned to Seismic Design Categories C, D, E or F.

21.1.1.7 – Structural systems designated as part of the seismic-force-resisting system shall be restricted to those permitted by ASCE 7. Except for Seismic Design Category A, for which Chapter 21 does not apply, the following provisions shall be satisfied for each structural system designated as part of the seismic-force-resisting system, regardless of the Seismic Design Category:

(a) Ordinary moment frames shall satisfy 21.2.

(b) Ordinary reinforced concrete structural walls and ordinary precast structural walls need not satisfy any provisions in Chapter 21.

(c) Intermediate moment frames shall satisfy 21.3.

(d) Intermediate precast structural walls shall satisfy 21.4.

(e) Special moment frames shall satisfy 21.5 through 21.8.

(f) Special structural walls shall satisfy 21.9.

(g) Special structural walls constructed using precast concrete shall satisfy 21.10.

All special moment frames and special structural walls shall also satisfy 21.1.3 through 21.1.7. Concrete tilt-up wall panels classified as intermediate precast structural wall system shall satisfy 21.9 in addition to 21.4.2 and 21.4.3 for structures assigned to Seismic Design Category D, E, or F.

91.1908.1.8. ACI 318, Section 22.10. Delete ACI 318, Section 22.10, and replace with the following:

22.10 – Plain concrete in structures assigned to Seismic Design Category C, D, E or F.

22.10.1 – Structures assigned to Seismic Design Category C, D, E or F shall not have elements of structural plain concrete, except as follows:

(a) Concrete used for fill with a minimum cement content of two (2) sacks of Portland cement per cubic yard.

(b) Isolated footings of plain concrete supporting pedestals or columns are permitted, provided the projection of the footing beyond the face of the supported member does not exceed the footing thickness.

(c) Plain concrete footings supporting walls are permitted, provided the footings have at least two continuous longitudinal reinforcing bars. Bars shall not be smaller than No. 4 and shall have a total area of not less than 0.002 times the gross cross-sectional area of the footing. For footings that exceed 8 inches (203 mm) in thickness, a minimum of one bar shall be provided at the top and bottom of the footing. Continuity of reinforcement shall be provided at corners and intersections.

91.1908.1.11. ACI 318, Section 21.6.4.1. Modify ACI 318, Section 21.6.4.1 to read as follows:

Where the calculated point of contraflexure is not within the middle half of the member clear height, provide transverse reinforcement as specified in ACI 318 Section 21.6.4.1. items (a) through (c), over the full height of the member.

91.1908.1.12. ACI 318, Section 21.6.4. Modify ACI 318, Section 21.6.4, by adding Section 21.6.4.8 to read as follows:

21.6.4.8 – At any section where the design strength, $\square P_n$, of the column is less than the sum of the shears V_e computed in accordance with ACI 318 Sections 21.5.4.1 and 21.6.5.1 for all the beams framing into the column above the level under consideration, transverse reinforcement as specified in ACI 318 Sections 21.6.4.1 through 21.6.4.3 shall be provided. For beams framing into opposite sides of the column, the moment components may be assumed to be of opposite sign. For determination of the design strength, $\square P_n$, of the column, these moments may be assumed to result from the deformation of the frame in any one principal axis.

91.1908.1.13. ACI 318, Section 21.6.4. Modify ACI 318, Section 21.9.4, by adding Section 21.9.4.6 to read as follows:

21.9.4.6 – Walls and portions of walls with $P_u > 0.35P_o$ shall not be considered to contribute to the calculated strength of the structure for resisting earthquake-induced forces. Such walls shall conform to the requirements of ACI 318 Section 21.13.

91.1908.1.14. ACI 318, Section 21.11.6. Modify ACI 318, Section 21.11.6, by adding the following:

Collector and boundary elements in topping slabs placed over precast floor and roof elements shall not be less than 3 inches (76 mm) or 6 d_b thick, where d_b is the diameter of the largest reinforcement in the topping slab.

91.1909.4. Design. Structural plain concrete walls, footings and pedestals shall be designed for adequate strength in accordance with ACI 318, Sections 22.4 through 22.8.

EXCEPTION: For Group R-3 occupancies and buildings of other occupancies less than two stories above grade plane of light-frame construction, the required edge thickness of ACI 318 is permitted to be reduced to 6 inches (152 mm), provided that the footing does not extend more than 4 inches (102 mm) on either side of the supported wall. This exception shall not apply to structural elements designed to resist seismic lateral forces for structures assigned to Seismic Design Category D, E, or F.

Sec. 34. Division 21 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2100. BASIC PROVISIONS.

Chapter 21 of the CBC is adopted by reference with the following exceptions, modifications and additions:

SEC. 91.2113. MASONRY CHIMNEYS.

Section 2113 of the CBC is adopted by reference, except Section 2113.3 of the CBC is not adopted and in lieu Section 91.2113.3 is added.

91.2113.3. Seismic Reinforcing. Masonry or concrete chimneys shall be constructed, anchored, supported and reinforced as required in this division. In Seismic Design Category C or D, masonry and concrete chimneys shall be reinforced and anchored as detailed in CBC Sections 2113.3.1, 2113.3.2 and 2113.4. In Seismic Design Category A or B, reinforcement and seismic anchorage is not required. In Seismic Design Category E or F, masonry and concrete chimneys shall be reinforced in accordance with the requirements of CBC Sections 2101 through 2108.

Notwithstanding any other provisions of this Code, an existing masonry chimney which is altered or repaired more than ten percent of its replacement cost within a 12-month period shall have its entire chimney structure comply with the current requirements of this Code or other standards approved by the Superintendent of Building.

Sec. 35. Division 22 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2200. BASIC PROVISIONS.

Chapter 22 of the CBC is adopted by reference, except that Section 2204 of the CBC is not adopted and in lieu Sections 91.2204, 91.2204.1, 91.2204.1.1, 91.2204.1.1.1, 91.2204.1.2, 91.2204.2, 91.2204.2.1 and 91.2205.4 are added.

SEC. 91.2204. CONNECTIONS.

91.2204.1. Welding. The details of design, workmanship and technique for welding, inspection of welding and qualification of welding operators shall conform to the requirements of the specifications listed in CBC Sections 2205, 2206, 2207, 2209 and 2210. Special inspection of welding shall be provided where required by Section 91.1704 of this Code.

All welding, except when performed at the shop of an approved fabricator, shall be done by operators certified by the Department for the type of operation involved in accordance with the provisions of CBC Section 1704.3.1.

Complete details of location, type, size and amount of all welds shall be clearly shown on the plans. Where symbols are used on the plans, they shall be the "**Standard Welding Symbols**," AWS A 2.4, of the American Welding Society (AWS). When it is necessary to use a special erection sequence of welding to minimize locked-up stresses or distortion, the Department may require the erection sequence of welding to be shown on the plans.

Welding procedures are qualified if they are in accordance with the AWS. Other welding procedures require special qualification approval by the Department. Each application for a special qualification shall be accompanied by a fee of $50.00.

91.2204.1.1. Consumables for Welding.

91.2204.1.1.1. Seismic Force Resisting System (SFRS) Welds. All welds used in members and connections in the SFRS shall be made with filler metals meeting the requirements specified in AWS D1.8 Clause 6.3. AWS D1.8 Clauses 6.3.5, 6.3.6, 6.3.7 and 6.3.8 shall apply only to demand critical welds.

91.2204.1.1.2. Demand Critical Welds. Where welds are designated as demand critical, they shall be made with filler metals meeting the requirements specified in AWS D1.8 Clause 6.3.

91.2204.2. Bolting. Section 2204.2 of the CBC is adopted by reference.

91.2204.2.1. Anchor Rods. Section 2204.2.1 of the CBC is adopted by reference.

91.2205.4. Modifications to AISC 341, Part I, 13, Members, Special Concentrically Braced Frames (SCBF) Modifications. AISC 341, Part 1, 13, is modified to add a new Section as follows:

AISC 341, 13.2f - Member Types. The use of rectangular HSS are not permitted for bracing members, unless filled solid with cement grout having a minimum compressive strength of 3000 psi (20.7 MPa) at 28 days. The effects of composite action in the filled composite brace shall be considered in the sectional properties of the system where it results in the more severe loading condition or detailing.

Sec. 36. Section 91.2304 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2304. GENERAL CONSTRUCTION REQUIREMENTS.

Section 2304 of the CBC is adopted by reference, except Section 2304.9.1, Table 2304.9.1, and 2304.11.7 of the CBC are not adopted and in lieu Sections 91.2304.9.1, Table 2304.9.1 and 91.2304.11.7 are added.

91.2304.9.1. Fastener Requirements. Connections for wood members shall be designed in accordance with the appropriate methodology in CBC Section 2301.2. The number and size of fasteners connecting wood members shall not be less than that set forth in CBC Table 2304.9.1. Staple fasteners in CBC Table 2304.9.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

EXCEPTION: Staples may be used to resist or transfer seismic forces when the allowable shear values are substantiated by cyclic testing and approved by the building official.

Table 2304.9.1 Add new footnote q to CBC Table 2304.9.1 as follows:

q. Staples shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

91.2304.11.7. Wood Used In Retaining Walls and Cribs. Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 (Commodity Specifications A or F) for soil and fresh water use. Wood shall not be used in retaining walls or cribs for structures assigned to Seismic Design Category D, E or F.

Sec. 37. Section 91.2305 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2305. GENERAL DESIGN REQUIREMENTS FOR LATERAL FORCE-RESISTING SYSTEM.

Section 2305 of the CBC is adopted by reference, except that Sections 91.2305.4 and 91.2305.5 are added.

91.2305.4. Quality of Nails. In Seismic Design Category D, E or F, mechanically driven nails used in wood structural panel shear walls shall meet the same dimensions as that required for hand-driven nails, including diameter, minimum length and minimum head diameter. Clipped head or box nails are not permitted in new construction. The allowable design value for clipped head nails in existing construction may be taken at no more than the nail-head-area ratio of that of the same size hand-driven nails.

91.2305.5. Hold-down Connectors. In Seismic Design Category D, E or F, hold-down connectors shall be designed to resist shear wall overturning moments using approved cyclic load values or 75 percent of the allowable seismic load values that do not consider cyclic loading of the product. Connector bolts into wood framing shall require steel plate washers on the post on the opposite side of the anchorage device. Plate size shall be a minimum of 0.229 inch by 3 inches by 3 inches (5.82 mm by 76 mm by 76 mm) in size. Hold-down connectors shall be finger tight and ½ turn just prior to covering the wall framing.

Sec. 38. Section 91.2306 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2306. ALLOWABLE STRESS DESIGN.

Section 2306 of the CBC is adopted by reference, except that Sections 2306.2.1, 2306.3 and 2306.7 of the CBC are not adopted and in lieu Sections 91.2306.2.1, 91.2306.3, 91.2306.7, and Tables 2306.2.1(3), 2306.2.1(4), 2306.3(1), 2306.3(2) are added.

91.2306.2.1. Wood Structural Panel Diaphragms. Wood structural panel diaphragms shall be designed and constructed in accordance with AF&PA SDPWS. Wood structural panel diaphragms are permitted to resist horizontal forces using the allowable shear capacities set forth in CBC Table 2306.2.1(1) or CBC Table 2306.2.1(2). For structures assigned to Seismic Design Category D, E or F, the allowable shear capacities shall be set forth in Table 2306.2.1(3) or 2306.2.1(4). The allowable shear capacities in CBC Table 2306.2.1(1) or CBC 2306.2.1(2) are permitted to be increased 40 percent for wind design.

Wood structural panel diaphragms fastened with staples shall not be used to resist seismic forces in structures assigned to Seismic Design Category D, E or F.

EXCEPTION: Staples may be used for wood structural panel diaphragms when the allowable shear values are substantiated by cyclic testing and approved by the building official.

Wood structural panel diaphragms used to resist seismic forces in structures assigned to Seismic Design Category D, E or F shall be applied directly to the framing members.

EXCEPTION: Wood structural panel diaphragm is permitted to be fastened over solid lumber planking or laminated decking, provided the panel joints and lumber planking or laminated decking joints do not coincide.

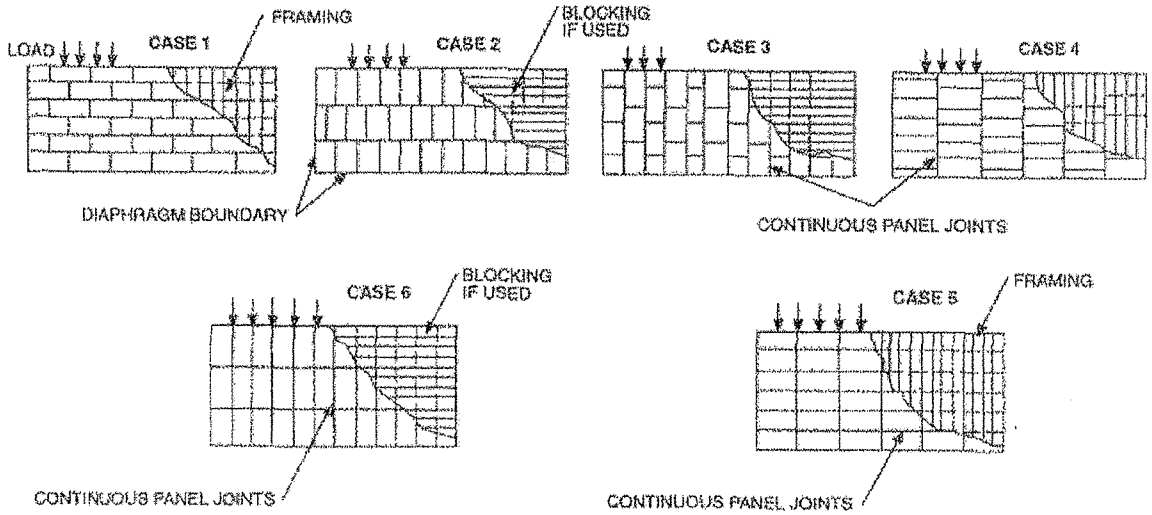
TABLE 2306.2.1(3)

ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL DIAPHRAGMS WITH FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE[a] FOR SEISMIC LOADING[g] FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F

PANEL GRADE	COMMON NAIL SIZE	MINIMUM FASTENER PENETRATION IN FRAMING (inches)	MINIMUM NOMINAL PANEL THICKNESS (inch)	MINIMUM NOMINAL WIDTH OF FRAMING MEMBERS AT ADJOINING PANEL EDGES AND BOUNDARIES[f] (inches)	BLOCKED DIAPHRAGMS				UNBLOCKED DIAPHRAGMS	
					Fastener spacing (inches) at diaphragm boundaries (all cases) at continuous panel edges parallel to load (Cases 3,4), and at all panel edges (Cases 5, 6)[b]				Fastener spaced 6" max. at supported edges[b]	
					6	4	2 ½[c]	2[c]	Case 1 (No unblocked edges or continuous joints parallel to load)	All other configurations (Cases 2, 3, 4, 5 and 6)
					Fastener spacing (inches) at other panel edges (Cases 1,2,3 and 4)[b]					
					6	6	4	3		
Structural I Grades	8d (2 ½" x 0.131")	1 3/8	3/8	2	270	360	530	600	240	180
				3	300	400	600	675	265	200
	10d[d] (3" x 0.148")	1 ½	15/32	2	320	425	640	730	285	215
				3	360	480	720	820	320	240
Sheathing, single floor and other grades covered in DOC PS1 and PS2	6d[e] (2" x 0.113")	1 ¼	3/8	2	185	250	375	420	165	125
				3	210	280	420	475	185	140
	8d (2 ½" x 0.131")	1 3/8		2	240	320	480	545	215	160
				3	270	360	540	610	240	180
	8d (2 ½" x 0.131")	1 3/8	7/16	2	255	340	505	575	230	170
				3	285	380	570	645	255	190
	8d (2 ½" x 0.131")	1 3/8	15/32	2	270	360	530	600	240	180
				3	300	400	600	675	265	200
	10d[d] (3" x 0.148")	1 ½		2	290	385	575	655	255	190
				3	324	430	650	735	290	215
	10d[d] (3" x 0.148")	1 ½	19/32	2	320	425	640	730	285	215
				3	360	480	720	820	320	240

TABLE 2306.2.1(3)–continued

ALLOWABLE SHEAR (PUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL DIAPHRAGMS WITH FRAMING OF DOUGLAS FIR-LARCH, OR SOUTHERN PINE[e] FOR SEISMIC LOADING[h] FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATERGORY D, E OR F



For SI: 1 inch = 25.4 mm, 1 pound per foot = 14.5939 N/m.

a. For framing of other species: (1) Find specific gravity for species of lumber in AF&PA NDS. (2) For nails find shear value from table above for nail size for actual grade and multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1-(0.5-SG)], where SG = Specific Gravity of the framing lumber. This adjustment factor shall not be greater than 1.

b. Space fasteners maximum 12 inches o.c. along intermediate framing members (6 inches o.c. where supports are spaced 48 inches o.c.).

c. Framing at adjoining panel edges shall be 3 inches nominal or thicker, and nails at all panel edges shall be staggered where panel edge nailing is specified at 2 ½ inches o.c. or less.

d. Framing at adjoining panel edges shall be 3 inches nominal or thicker, and nails at all panel edges shall be staggered where both of the following conditions are met: (1) 10d nails having penetration into framing of more than 1 ½ inches and (2) panel edge nailing is specified at 3 inches o.c. or less.

e. 8d is recommended minimum for roofs due to negative pressures of high winds.

f. The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.

g. For shear loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.

TABLE 2306.2.1(4)

ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL BLOCKED DIAPHRAGMS UTILIZING MULTIPLE ROWS OF FASTENERS (HIGH LOAD DIAPHRAGMS) WITH FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE[a] FOR SEISMIC LOADING[b,f,g] FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATERGORY D, E OR F

PANEL GRADE[c]	COMMON NAIL SIZE	MINIMUM FASTENER PENETRATION IN FRAMING (inches)	MINIMUM NOMINAL PANEL THICKNESS (inch)	MINIMUM NOMINAL WIDTH OF FRAMING MEMBERS AT ADJOINING PANEL EDGES AND BOUNDARIES[e] (inches)	LINES OF FASTENERS	BLOCKED DIAPHRAGMS			
						Cases 1 and 2[d]			
						Fastener Spacing Per Line at Boundaries (inches)			
						4		2 1/2	
						Fastener Spacing Per Line at Other Panel Edges (inches)			
						6	4	4	3
Structural I grades	10d common nails	1 ½	15/32	3	2	605	815	875	1,150
				4	2	700	915	1,005	1,290
				4	3	875	1,220	1,285	1,395
			19/32	3	2	670	880	965	1,255
				4	2	780	990	1,110	1,440
				4	3	965	1,320	1,405	1,790
			23/32	3	2	730	955	1,050	1,365
				4	2	855	1,070	1,210	1,565
				4	3	1,050	1,430	1,525	1,800
Sheathing, single floor and other grades covered in DOC PS1 and PS2	10d common nails	1 ½	15/32	3	2	525	725	765	1,010
				4	2	605	815	875	1,105
				4	3	765	1,085	1,130	1,195
			19/32	3	2	650	860	935	1,225
				4	2	755	965	1,080	1,370
				4	3	935	1,290	1,365	1,485
			23/32	3	2	710	935	1,020	1,335
				4	2	825	1,050	1,175	1,445
				4	3	1,020	1,400	1,480	1,565

For SI: 1 inch = 25.4 mm, 1 pound per foot = 14.5939 N/m.

a. For framing of other species: (1) Find specific gravity for species of lumber in AF&PA NDS. (2) For nails find shear value from table above for nail size for actual grade and multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1-(0.5-SG)], where SG = Specific Gravity of the framing lumber. This adjustment factor shall not be greater than 1.

b. Fastening along intermediate framing members: Space fasteners a maximum of 12 inches on center, except 6 inches on center for spans greater than 32 inches.

c. Panels conforming to PS1 or PS 2.

d. This table gives shear values for Cases 1 and 2 as shown in Table 2306.2.1(3). The values shown are applicable to Cases 3, 4, 5 and 6 as shown in Table 2306.2.1(3), providing fasteners at all continuous panels edges are spaced in accordance with the boundary fastener spacing.

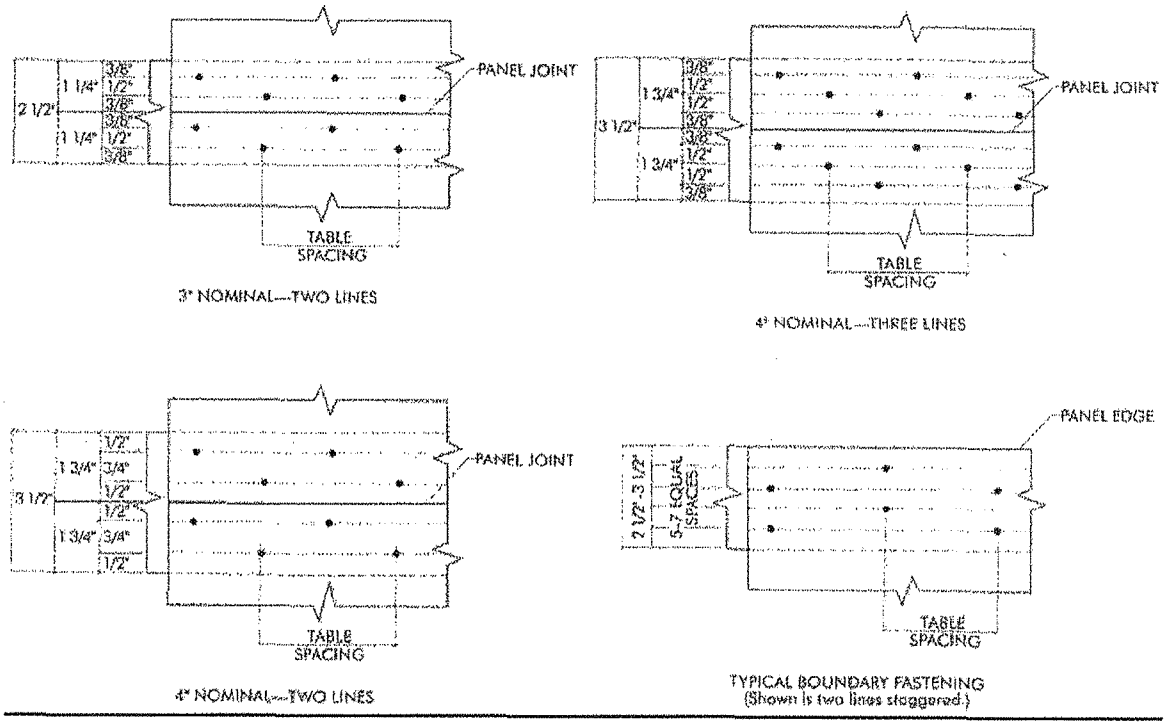
e. The minimum nominal depth of framing members shall be 3 inches nominal. The minimum nominal width of framing members not located at boundaries or adjoining panel edges shall be 2 inches.

f. High load diaphragms shall be subject to special inspection in accordance with CBC Section 1704.6.1.

g. For shear loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.

TABLE 2306.2.1(4)–continued

ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL BLOCKED DIAPHRAGMS UTILIZING MULTIPLE ROWS OF FASTENERS (HIGH LOAD DIAPHRAGMS) WITH FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE[a] FOR SEISMIC LOADING[b,f,g]
FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATERGORY D, E OR F



NOTE: SPACE PANEL END AND EDGE JOINT 1/8-INCH. REDUCE SPACING BETWEEN LINES OF NAILS AS NECESSARY TO MAINTAIN MINIMUM 3/8-INCH FASTENER EDGE MARGINS, MINIMUM SPACING BETWEEN LINES IS 3/8-INCH

91.2306.3. Wood Structural Panel Shear Walls. Wood structural panel shear walls shall be designed and constructed in accordance with AF&PA SDPWS. Wood structural panel shear walls are permitted to resist horizontal forces using the allowable shear capacities set forth in Table 2306.3(1). For structures assigned to Seismic Design Category D, E or F, the allowable shear capacities shall be set forth in Table 2306.3(2). The allowable shear capacities in Table 2306.3(1) are permitted to be increased 40 percent for wind design.

Wood structural panel shear walls used to resist seismic forces in structures assigned to Seismic Design Category D, E or F shall not be less than 4 feet by 8 feet (1219 mm by 2438 mm), except at boundaries and at changes in framing. Wood structural panel thickness for shear walls shall not be less than 3/8 inch thick and studs shall not be spaced at more than 16 inches on center.

The maximum allowable shear value for three-ply plywood resisting seismic forces in structures assigned to Seismic Design Category D, E or F is 200 pounds per foot (2.92 kn/m). Nails shall be placed not less than 1/2 inch (12.7 mm) in from the panel edges and not less than 3/8 inch (9.5mm) from the edge of the connecting

members for shear greater than 350 pounds per foot (5.11kN/m). Nails shall be placed not less than 3/8 inch (9.5 mm) from panel edges and not less than 1/4 inch (6.4 mm) from the edge of the connecting members for shears of 350 pounds per foot (5.11kN/m) or less.

Wood structural panel shear walls fastened with staples shall not used to resist seismic forces in structures assigned to Seismic Design Category D, E or F.

EXCEPTION: Staples may be used for wood structural panel shear walls when the allowable shear values are substantiated by cyclic testing and approved by the building official.

Wood structural panel shear walls used to resist seismic forces in structures assigned to Seismic Design Category D, E or F shall be applied directly to the framing members.

TABLE 2306.3(2)

ALLOWABLE SHEAR (POUNDS PER FOOT) FOR WOOD STRUCTURAL PANEL SHEAR WALLS WITH FRAMING OF DOUGLAS FIR-LARCH OR SOUTHERN PINE[a] FOR SEISMIC LOADING[b, h, j, k, l] FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F

PANEL GRADE	MINIMUM NOMINAL PANEL THICKNESS (inch)	MINIMUM FASTENER PENETRATION IN FRAMING (inches)	ALLOWABLE SHEAR VALUE FOR SEISMIC FORCES PANELS APPLIED DIRECTLY TO FRAMING				
			COMMON NAIL SIZE	Fastener spacing at panel edges (inches)			
				6	4	3	2[e]
Structural I sheathing	3/8	1 3/8	8d (2½"x0.131" common)	200	200	200	200
	7/16	1 3/8	8d (2½"x0.131" common)	255	395	505	670
	15/32	1 3/8	8d (2½"x0.131" common)	280	430	550	730
		1 1/2	10d (3"x0.148" common)	340	510	665[f]	870
Sheathing, plywood siding[g] except Group 5 Species	3/8[c]	1 3/8	8d (2½"x0.113")	160	200	200	200

For SI: 1 inch = 25.4 mm, 1 foot = 25.4 mm, 1 pound per foot = 14.5939 N/m.

a. For framing of other species: (1) Find specific gravity for species of lumber in AF&PA NDS. (2) For nails find shear value from table above for nail size for actual grade and multiply value by the following adjustment factor: Specific Gravity Adjustment Factor = [1-(0.5-SG)], where SG = Specific Gravity of the framing lumber. This adjustment factor shall not be greater than 1.

b. Panel edges backed with 2-inch nominal or thicker framing. Install panels either horizontally or vertically. Space fasteners maximum 6 inches on center along intermediate framing members for 3/8-inch and 7/16-inch panels installed on studs spaced 24 inches on center. For other conditions and panel thickness, space fasteners maximum 12 inches on center on intermediate supports.

c. 3/8-inch panel thickness or siding with a span rating of 16 inches on center is the minimum recommended where applied direct to framing as exterior siding. For grooved panel siding, the nominal panel thickness is the thickness of the panel measured at the point of nailing.

d. Allowable shear values are permitted to be increased to values shown for 15/32-inch sheathing with same nailing provided (a) studs are spaced a maximum of 16 inches on center, or (b) panels are applied with long dimension across studs.

e. Framing at adjoining panel edges shall be 3 inches nominal or thicker, and nails shall be staggered where nails are spaced 2 inches on center or less.

f. Framing at adjoining panel edges shall be 3 inches nominal or thicker, and nails shall be staggered where both of the following conditions are met: (1) 10d (3"x0.148") nails having penetration into framing of more than 1-1/2 inches and (2) nails are spaced 3 inches on center or less.

g. Values apply to all-veneer plywood. Thickness at point of fastening on panel edges governs shear values.

h. Where panels applied on both faces of a wall and nail spacing is less than 6 inches o.c. on either side, panel joints shall be offset to fall on different framing members. Or framing shall be 3-inch nominal or thicker at adjoining panel edges and nails at all panel edges shall be staggered.
i. Where shear design values exceed 350 pounds per linear foot, all framing members receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal member, or two 2-inch nominal members fastened together in accordance with CBC Section 2306.1 to transfer the design shear value between framing members. Wood structural panel joint and sill plate nailing shall be staggered at all panel edges. See Section 4.3.6.1 and 4.3.6.4.3 of AF&PA SDPWS for sill plate size and anchorage requirements.
j. Galvanized nails shall be hot dipped or tumbled.
k. For shear loads of normal or permanent load duration as defined by the AF&PA NDS, the values in the table above shall be multiplied by 0.63 or 0.56, respectively.
l. The maximum allowable shear value for three-ply plywood resisting seismic forces is 200 pounds per foot (2.92 kn/m).

91.2306.7 Shear Walls Sheathed with Other Materials. Shear walls sheathed with portland cement plaster, gypsum lath, gypsum sheathing or gypsum board shall be designed and constructed in accordance with AF&PA SDPWS. Shear walls sheathed with these materials are permitted to resist horizontal forces using the allowable shear capacities set forth in CBC Table 2306.7. Shear walls sheathed with portland cement plaster, gypsum lath, gypsum sheathing or gypsum board shall not be used to resist seismic forces in structures assigned to Seismic Design Category E or F.

Shear walls sheathed with lath, plaster or gypsum board shall not be used below the top level in a multi-level building for structures assigned to Seismic Design Category D.

Sec. 39. Section 91.2308 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2308. CONVENTIONAL LIGHT-FRAME CONSTRUCTION.

Section 2308 of the CBC is adopted by reference, except that Sections 2308.3.4, 2308.12.1, 2308.12.2, 2308.12.4 and 2308.12.5 of the CBC are not adopted and in lieu Sections 91.2308.3.4, 91.2308.12.1, 91.2308.12.2, 91.2308.12.4, 91.2308.12.5 and Table 2308.12.4 are added.

91.2308.3.4. Braced Wall Line Support. Braced wall lines shall be supported by continuous foundations.

EXCEPTION: For structures with a maximum plan dimension not over 50 feet (15240 mm), continuous foundations are required at exterior walls only for structures not assigned to Seismic Design Category D, E or F.

91.2308.12.1. Number of Stories. Structures of conventional light-frame construction shall not exceed one story in height in Seismic Design Category D or E.

91.2308.12.2. Concrete or Masonry. Concrete or masonry walls and stone or masonry veneer shall not extend above the basement.

EXCEPTION: Stone and masonry veneer is permitted to be used in the first story above grade plane in Seismic Design Category D provided the following criteria are met:

1. The type of brace in accordance with CBC Section 2308.9.3 shall be Method 3 and the allowable shear capacity in accordance with CBC Table 2306.4.1 of this division shall be a minimum of 350 plf (5108 N/m).

2. The bracing of the first story shall be located at each end and at least every 25 feet (7620 mm) on center but not less than 45 percent of the braced wall line.

3. Hold-down connectors shall be provided at the ends of braced walls for the first floor to foundation with an allowable design of 2,100 pounds (9341 N).

4. Cripple walls shall not be permitted.

5. Anchored masonry and stone wall veneer not exceeding five inches (127 mm) in thickness shall conform to the requirements of Division 14 of this Code and shall not extend more than five feet (1524 mm) above the first story finished floor.

91.2308.12.4. Braced Wall Line Sheathing. Braced wall lines shall be braced by one of the types of sheathing prescribed by CBC Table 2308.12.4 as shown in CBC Figure 2308.9.3. The sum of lengths of braced wall panels at each braced wall line shall conform to CBC Table 2308.12.4. Braced wall panels shall be distributed along the length of the braced wall line and start at not more than 8 feet (2438 mm) from each end of the braced wall line. Panel sheathing joints shall occur over studs or blocking. Sheathing shall be fastened to studs, top and bottom plates and at panel edges occurring over blocking. Wall framing to which sheathing used for bracing is applied shall be nominal 2 inch wide [actual 1 1/2 inch (38 mm)] or larger members, spaced a maximum of 16 inches on center. Nailing shall be minimum 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center, and 12 inches on center along intermediate framing members. Braced wall panel construction types shall not be mixed within a braced wall line. Braced wall panels required by CBC Section 2308.12.4 may be eliminated when all of the following requirements are met:

1. One story detached Group U occupancies not more than 25 feet in depth or length.

2. The roof and three enclosing walls are solid sheathed with 1/2-inch nominal thickness wood structural panels with 8d common nails placed 3/8 inches from panel edges and spaced not more than 6 inches on center along all panel edges and 12 inches on center along intermediate framing members. Wall

openings for doors or windows are permitted provided a minimum 4 foot wide wood structural braced panel with minimum height to length ratio of 2 to 1 is provided at each end of the wall line and that the wall line be sheathed for 50% of its length.

Wood structural panel sheathing shall be minimum of 15/32 inch thick nailed with a 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

TABLE 2308.12.4
WALL BRACING IN SEISMIC DESIGN CATEGORIES D AND E
(Minimum Length of Wall Bracing per each 25 Linear Feet of Braced Wall Line[a])

CONDITION	SHEATHING TYPE[b]	$S_{DS} < 0.50$	$0.50 \leq S_{DS} < 0.75$	$0.75 \leq S_{DS} < 1.00$	$S_{DS} > 1.00$
One Story	G-P[c]	10 feet 8 inches	14 feet 8 inches	18 feet 8 inches	25 feet 0 inches
	S-W[d]	5 feet 4 inches	8 feet 0 inches	9 feet 4 inches	12 feet 0 inches

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Minimum length of panel bracing of one face of the wall for S-W sheathing shall be at least 4'-0" long or both faces of the wall for G-P sheathing shall be at least 8'-0" long; h/w ratio shall not exceed 2:1. For S-W panel bracing of the same material on two faces of the wall, the minimum length is permitted to be one-half the tabulated value but the h/w ratio shall not exceed 2:1 and design for uplift is required.

b. G-P = gypsum board, lath and portland cement plaster or gypsum sheathing boards; S-W = wood structural panels.

c. Nailing as specified below shall occur at all panel edges at studs, at top and bottom plates and, where occurring, at blocking: For 1/2-inch gypsum board, 5d (0.113 inch diameter) cooler nails at 7 inches on center; For 5/8-inch gypsum board, No. 11 gage (0.120 inch diameter) at 7 inches on center; For gypsum sheathing board, 1 3/4 inches long by 7/16-inch head, diamond point galvanized nails at 4 inches on center; For gypsum lath, No. 13 gage (0.092 inch) by 1 1/8 inches long, 19/64-inch head, plasterboard at 5 inches on center; For Portland cement plaster, No. 11 gage (0.120 inch) by 1 1/2 inches long, 7/16- inch head at 6 inches on center;

d. S-W sheathing shall be a minimum of 15/32" thick nailed with 8d common placed 3/8 inches from panel edges and spaced not more than 6 inches on center and 12 inches on center along intermediate framing members.

91.2308.12.5. Attachment of Sheathing. Fastening of braced wall panel sheathing shall not be less than that prescribed in Table 2308.12.4 of this division or CBC Section 2304.9.1. Wall sheathing shall not be attached to framing members by adhesives. Staple fasteners in Table 2304.9.1 shall not be used to resist or transfer seismic forces in structures assigned to Seismic Design Category D, E or F.

EXCEPTION: Staples may be used to resist or transfer seismic forces when the allowable shear values are substantiated by cyclic testing and approved by the building official.

All braced wall panels shall extend to the roof sheathing and shall be attached to parallel roof rafters or blocking above with framing clips (18 gauge minimum) spaced at maximum 24 inches (6096 mm) on center four 8d nails per leg (total 8d nails per clip). Braced wall panels shall be laterally braced at each top corner and at maximum 24 inch (6096 mm) intervals along the top plate of discontinuous vertical framing.

Sec. 40. Division 25 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2503. INSPECTIONS.

Section 2503 of the CBC is adopted by reference, CBC Section 2503.1 is not adopted and in lieu Sections 91.2503.1 is added.

91.2503.1. Inspection. Lath and gypsum board shall be inspected in accordance with Section 91.108.5.3.

Sec. 41. Division 27 of Article 1 Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.2700. BASIC PROVISIONS.

Chapter 27 of the C.B.C. is hereby adopted by reference, except that Sections 91.2702.15.1 and 91.2702.2.18.1 are being added.

91.2702.2.15.1. Fuel Supply. An on-premises fuel supply, sufficient for not less than 6-hour full- load operation of the emergency and standby source(s), shall be provided. This fuel supply shall not be less than 8-hour when the load also includes fire pump(s).

91.2702.2.18.1. Fuel Supply. An on-premises fuel supply, sufficient for not less than 6-hour full-load operation of the standby power source(s), shall be provided.

Sec. 42. Section 91.3002 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.3002. HOISTWAY ENCLOSURES.

Section 3002 of the CBC is adopted by reference, except that Sections 3002.1.1, 3002.1.2, 3002.3 exceptions 1 and 2 only, 3002.4.4a, 3002.5, 3002.8, 3002.9 and 3002.9.1 through 3002.9.5 of the CBC are not adopted and in lieu Sections 91.3002.1.1 and 91.3002.3 are added.

91.3002.1.1. Opening Protectives. Openings in hoistway enclosures shall be protected as required in Division 7 of this Code.

91.3002.3. Emergency Signs. An approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.

Sec. 43. Section 91.3007 is added to the Los Angeles Municipal Code to read as follows:

SEC. 91.3007. FIRE SERVICE ACCESS ELEVATOR.

Section 3007 of the CBC is not adopted.

Sec. 44. Section 91.3008 is added to the Los Angeles Municipal Code to read as follows:

SEC. 91.3008. OCCUPANT EVACUATION ELEVATORS.

Section 3008 of the CBC is not adopted by reference.

Sec. 45. Section 91.3110 of the Los Angeles Municipal Code is deleted, and Section 91.3111 is added to read as follows:

SEC. 91.3111. PATIO COVERS.

91.3111.1. General. Section I101.1 of Appendix I of the CBC is adopted by reference.

91.3111.2. Definitions. Section I101.2 of Appendix I of the CBC is adopted by reference.

91.3111.3. Exterior Openings. Section I101.3 of Appendix I of the CBC is adopted by reference.

91.3111.4. Structural Provisions. Section I101.4 of Appendix I of the CBC is adopted by reference.

Sec. 46. Division 32 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.3200. BASIC PROVISIONS.

Chapter 32 of the CBC is adopted by reference with the following exceptions, modifications and additions:

SEC. 91.3201. GENERAL.

Section 3201 of the CBC is adopted by reference, except Sections 3201.1 and 3201.3 of the CBC are not adopted and in lieu Sections 91.3201.1 and 91.3201.3 are added.

91.3201.1. Scope. The provisions of this division shall govern the encroachment of structures into the public right-of-way.

No portion of any projection from any building over any roadway shall be lower than an elevation of 14 feet (4267 mm) above the roadway surface.

91.3201.3. Other Laws. The provisions of this division shall not be construed to permit the violation of other laws or ordinances regulating the use and occupancy of public property.

Projections into the public right-of-way shall require the approval of the Department of Public Works.

SEC. 91.3202. GENERAL.

Section 3202 of the CBC is adopted by reference, except Sections 3202.3.1 and 3202.3.3 of the CBC is not adopted and in lieu Section 91.3202.3.1 is added.

91.3202.3.1. Awnings, Canopies, Marquees and Signs. Awnings, canopies, marquees and signs shall be constructed so as to support applicable loads as specified in Division 16 of this Code. Awnings, canopies, marquees and signs with less than 15 feet (4572 mm) clearance above the sidewalk shall not extend into or occupy more than two-thirds the width of the sidewalk measured from the building. Stanchions or columns that support awnings, canopies, marquees and signs shall be located not less than two feet (610 mm) in from the curb line.

Plans and specifications and the type, design, arrangement and location of every marquee shall be approved by the Board of Cultural Affairs Commissioners of the City of Los Angeles and the Board of Public Works prior to the issuance of a building permit.

Sec. 47. Section 91.3304 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.3304. SITE WORK.

Section 3304 of the CBC is adopted by reference, except Section 3304.1.4 of the CBC is not adopted and in lieu Section 91.3304.1.4 is added.

91.3304.1.4. Fill Supporting Foundations. Fill to be used to support the foundations of any building or structure shall comply with CBC Section 1804.5 and Division 70 of this Code. Special inspections of compacted fill shall be in accordance with CBC Section 1704.7.

Sec. 48. Division 34 of Article 1 of Chapter IX of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.3401. GENERAL.

Chapter 34 of the California Building Code is adopted by reference, except Sections 3401.1, 3401.2, 3401.3, 3401.4.1, 3403.1.1, 3404.1.1, 3405.1, 3405.1.2, 3405.2.1, 3408.1, 3409.1 and 3410 are not adopted and in lieu Sections 91.3401.1,

91.3401.2, 91.3401.3, 91.3401.4.1, 91.3405.1, 91. 3405.1.2. 91.3405.2.1, 91.3408.1, 91.3409.1 and 91.3410 are added.

91.3401.1. Scope. In addition of the requirements of Chapter 34 of the CBC, existing buildings and structures shall comply with the applicable regulations of Divisions 81, 82, 83, 84, 85, 86, 88, 89 and 91 of this Code and the voluntary earthquake hazard reduction standards of Divisions 92, 93, 94, 95 and 96 of this Code.

Alteration, repair or additions to existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300-02.

91.3401.2. Maintenance. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by the CBC shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the Department shall have the authority to require a building or structure to be reinspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures. Maintenance of buildings and structures shall comply with Division 81 and 86 of this Code.

91.3401.3. Compliance. Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy in the California Fire Code, California Mechanical Code, California Plumbing Code, California Residential Code, and California Electrical Code.

[HCD 1] See Chapter CBC 34, Sections 3403.1.4.3, 3403.1.1 and 3404.1.1 and CCR Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Article 1, Section 1 for existing buildings or structures.

Where there are different requirements in this Code, the most restrictive requirement shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

91.3401.4.1. Existing Materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the Department to be dangerous to life, health or safety. Where such conditions are determined to be dangerous to life, health or safety, they shall be mitigated or made safe.

91.3403.1.1. Replacement, Retention and Extension of Original Materials. [HCD1]. The replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure may remain, provided the aggregate value of work in any 1 year does not exceed 10 percent of the replacement value, and provided further that no hazardous conditions exist and

provided such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.

Alterations, repairs or rehabilitation of the existing portion in excess of 10 percent of the replacement value of building or structure may be made provided all the work conforms to this Code for a new building and that no hazardous conditions or substandard buildings are continued or created in the remainder of the building as a result of such work.

Whenever the aggregate value of the addition, alterations, repairs, or rehabilitation of the existing portion is in excess of 50 percent of the replacement cost of the building or structure, the entire building or structure shall be made to conform to this Code.

91.3404.1.1. Replacement, Retention and Extension of Original Materials. [HCD1]. The replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure may remain, provided the aggregate value of work in any one year does not exceed 10 percent of the replacement value, and provided further that no hazardous conditions and such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.

Alterations, repairs or rehabilitation of the existing portion in excess of 10 percent of the replacement value of building or structure may be made provided all the work conforms to this Code for a new building and that no hazardous conditions or substandard buildings as are continued or created in the remainder of the building as a result of such work.

Whenever the aggregate value of the addition, alterations, repairs, or rehabilitation of the existing portion is in excess of 50 percent of the replacement value of the building or structure, the entire building or structure shall be made to conform to this Code.

91.3405.1. General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section 3401.2. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 3401.2, Division 81, and ordinary repairs exempt from a permit in accordance with Section 106, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this Section.

EXCEPTION: For state-owned buildings, including those owned by the University of California and the California State University and the Judicial Council, the requirements of CBC Sections 3405.2 through 3405.4 are replaced by the requirements of CBC Sections 3417 through 3423.

91.3405.1.2. Replacement, Retention and Extension of Original Materials. [HCD1] The replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure may remain, provided the aggregate value of work in any 1 year does not exceed 10 percent of the replacement value, and provided further that no hazardous conditions exists and provided such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.

Alterations, repairs or rehabilitation of the existing portion in excess of 10 percent of the replacement value of building or structure may be made provided all the work conforms to this Code for a new building and that no hazardous conditions or substandard buildings as are continued or created in the remainder of the building as a result of such work.

Whenever the aggregate value of the addition, alterations, repairs, or rehabilitation of the existing portion is in excess of 50 percent of the replacement cost of the building or structure, the entire building or structure shall be made to conform to this Code.

91.3405.2.1. Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the code official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of this Code for wind and earthquake loads. Evaluation for earthquake loads shall be required if the substantial structural damage was caused by or related to earthquake effects or if the building is in Seismic Design Category C, D, E or F. Wind loads for this evaluation shall be those prescribed in Section 1609. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 or loads required by the code effective at the time of the original construction whichever is greater. Values of R, W_0 and C_d for the existing seismic force-resisting system shall be those specified by this Code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of an intermediate or special system.

91.3408.1. Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the Department, the use or occupancy of existing buildings

shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this Code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use. Change of occupancy, use and rating classification as prescribed in Division 88 shall also comply with Division 82.

91.3409.1. Historic Buildings. Historic buildings or structures shall comply with Section 91.8119 of this Code.

Buildings or structures that are relocated in whole or in part into or within the City of Los Angeles shall comply with the provisions of Division 83 of this Code.

Sec. 49. Section 91.6105 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.6105. SEPARATION FROM OIL WELLS.

No school, hospital, sanitarium or assembly occupancy shall be within 200 feet from the center of the oil well casing.

No public utility fuel manufacturing plant or public utility electrical generating, receiving or distribution plant shall be located within 200 feet from the center of the oil well casing.

No building more than 400 square feet (37m2) in area and taller than 36 feet in height shall be erected within 50 feet from the center of an oil well casing.

A distance separation between the exterior wall of the building and the center of an oil well casing shall be maintained with a horizontal distance equal to 1 ½ times the building's height, provided however, that that distance need not exceed 200 feet. The building height for this provision shall be measured vertically from the adjacent lowest ground elevation to the ceiling of the top story.

EXCEPTIONS: The distance separation may be reduced to the following:

1. 35 feet separation if a solid 6 inches thick masonry wall and no shorter than 6 feet tall to be constructed within 50 feet from the building in between the oil well and all portions of the building.

2. 26 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no openings and one hour fire resistive construction with a 3 foot high fire rated parapet.

3. 15 feet if any portion of the building exterior walls within 50 feet from the center of an oil well casing shall be constructed with no

openings and two-hour fire resistive construction with a 3 foot high fire rated parapet.

Sec. 50. Section 91.6215 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.6215. REFERENCED STANDARDS.

ASTM D 635-03	Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position	Section 91.6207.1.1
NFPA 70-08	National Electrical Code	Sections 91.6206.1, 91.6206.2
NFPA 701-99	Methods of Fire Test for Flame Propagation of Textiles and Films	Section 91.6206.1.1

Sec. 51. Section 91.6302.3 of the Los Angeles Municipal Code is amended to read as follows:

91.6302.3. Special Ventilation. A mechanical exhaust ventilation system capable of effectively removing cooking odors, smoke, steam, grease and vapors shall be provided at or above cooking equipment such as ranges, griddles, ovens, deep fat fryers, barbecues and rotisseries.

All hoods, ducts, fans and other devices provided to ventilate the cooking areas of commercial food preparation equipment in commercial food establishments shall be installed as required by and in compliance with the provisions of the Los Angeles Mechanical Code. Rooms in which exhaust systems are installed shall be provided with acceptable air inlets to admit at least as much air as is exhausted by these systems.

Ducts penetrating a ceiling or floor shall be enclosed in a shaft enclosure conforming to the requirements of CBC Section 708. Where a shaft enclosure is not required by CBC Section 708, ducts that convey grease vapors shall be enclosed in a one-hour fire-resistive shaft. The shaft shall be separated from the duct by a minimum three-inch air space vented to the outside air.

Sec. 52. Section 91.6302.5 of the Los Angeles Municipal Code is amended to read as follows:

91.6302.5. Dressing Rooms.

A room enclosure or designated area, separated from toilets, food storage, food preparation areas, and utensil washing areas, shall be provided where employees may change and store clothes. No employee shall store clothing or personal effects in any other area on the premises.

Where there are five or more operators, a room shall be provided where operators may change and store their outer garments. Such room shall be provided with self-closing doors and shall be separated from toilet rooms, food storage rooms or food preparation areas. No person shall dress or undress or store his/her clothing in any room other than as provided herein. Clothes changing rooms shall be maintained in a clean and sanitary conditions.

EXCEPTION: Individual lockers to store clothes will be accepted in lieu of dressing facilities where there are fewer than five employees on any shift and provided the plan layout is approved by the Los Angeles County Health Department.

Sec. 53. Section 91.6304.3 of the Los Angeles Municipal Code is amended to read as follows:

91.6304.3. Additional Requirements for Installation of Bars, Grills, Grates or Similar Devices. In addition to the requirements of Section 1029, all bars, grills, grates or similar devices shall comply with the following:

1. A permit is obtained from the Department of Building and Safety and a fee is paid as required in Section 91.107.4.5 of this Code. Any permit so issued shall be valid for a period of 90 days from its issuance. The Department may allow a "certified installer" to be used, in lieu of obtaining a permit, in accordance with Section 91.1709.2.

2. Any person who willfully or knowingly, with the intent to deceive, makes a false statement or representation, or knowingly fails to disclose a material fact in any documentation required by the Department to ascertain facts relative to this Section, Section 91.107.4.5 or to Section 91.1709.2 of this Code, including any oral or written evidence presented, shall be guilty of a misdemeanor.

Sec. 54. Section 91.6703 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.6703. LIMITATIONS.

The provisions of this division shall not be applicable to latching or locking devices on exit doors to the extent that the provisions of this division are contrary to the

provisions of Division 10 of this article, nor shall the regulations of this division be construed to waive any other provision of this Code.

No person shall sell, offer for sale, advertise, display for sale or install any metal bars, grilles, grates, security roll-down shutters or similar devices manufactured or installed to preclude human entry through windows and exterior doors without a label attached to each product, printed in at least ten-point type and that reads as follows: "A building permit is required in most cases for the installation of this product. If this product is installed in a sleeping room, unless excepted by the provisions of CBC Section 1029, the device must be equipped with a quick-release latch operable from inside and the dwelling unit provided with an approved smoke detector."

Sec. 55. Section 91.7003 of the Los Angeles Municipal Code is amended to revise the definition of **SOILS ENGINEER (GEOTECHNICAL ENGINEER)** to read as follows:

SOILS ENGINEER (GEOTECHNICAL ENGINEER) shall mean a civil engineer duly licensed by the State of California who is experienced in the application of the principles of soil mechanics in the investigation, evaluation and design of civil works involving the use of earth materials.

Sec. 56. Section 91.7005.2 of the Los Angeles Municipal Code is amended to read as follows:

91.7005.2. Building Foundations. Building foundations and temporary shoring shall be designed and constructed as specified in Division 18 and Division 33 of this Code.

Sec. 57. Section 91.7005.3 of the Los Angeles Municipal Code is amended to read as follows:

91.7005.3. Removal of Ground Cover. The existing vegetative ground cover of any watershed in any hillside area shall not be destroyed, removed or damaged except pursuant to lawful grading, use or occupancy of the property. Except for California native oak, bay, black walnut and sycamore trees regulated by the provisions of Article 7 of Chapter I or Article 6 of Chapter IV of the Los Angeles Municipal Code, removal of trees and shrubbery will be allowed where such work will not disturb the turf, sod or other existing vegetative ground cover. Whenever such ground cover is removed or damaged pursuant to a grading permit, the permittee shall restore and maintain approved ground cover, or shall accomplish such other erosion control protection as is required. Such erosion control shall be completed within 30 days after cessation of the grading work where no valid building permit is in effect for the site.

Sec. 58. Section 91.7006.2 of the Los Angeles Municipal Code is amended to read as follows:

91.7006.2. Report Requirement. Reports shall be submitted to the Department for review and approval in, but not limited to, the following circumstances:

1. Soils and/or geological reports are required when they are stipulated in a Grading Preinspection Report prepared in accordance with Section 91.107.3.2 of this Code.

2. Soils and geological reports are required for all grading work in excess of 5,000 cubic yards (3825 m^3) of cut or fill, or a combination thereof.

3. Soils reports are required when the design of the foundations does not conform to the requirements of Division 18 of this article.

4. Soils and/or geological reports may be required when previously unknown adverse soils or geologic conditions are revealed during construction.

5. Soils and/or geological reports may be required to evaluate liquefaction, slope instability and surface ground rupture resulting from earthquake motions in accordance with CBC Section 1802.

The Superintendent of Building may require a geotechnical investigation in accordance with CBC Section 1802.2 to address the potential of liquefaction when, during the course of an investigation, all of the following conditions are discovered:

1. Shallow ground water, 50 feet (15240 mm) or less.

2. Unconsolidated sandy alluvium.

Sec. 59. Section 91.7012 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.7012. PLANTING AND IRRIGATION OF CUT AND FILL SLOPES IN HILLSIDE AREAS.

91.7012.1. General. All fill and cut slopes in designated hillside areas shall be planted and irrigated to promote the growth of ground cover plants to protect the slopes against erosion, as required in this Section.

The owner shall be responsible for planting and maintaining all slopes where such is required in this Section.

Planting and irrigation shall comply with the provisions of Sections 12.40, 12.41 and 12.42 of Article 2 of Chapter 1 of the Los Angeles Municipal Code.

91.7012.2. Minimum Requirements.

91.7012.2.1. Low Slopes to 15 Feet (4572 mm) in Vertical Height. Slopes with vertical height of less than 15 feet (4572 mm) shall comply with the following:

1. Plant with grass or ground cover plants.

2. An irrigation system shall be installed to irrigate these slopes.

3. The owner shall water the slopes which have been planted with grasses and/or ground cover plants at sufficient time intervals to promote growth.

EXCEPTION: Where the Department finds the slope is located in such an area as to make hand watering possible, conveniently located hose bibs will be accepted in lieu of the required irrigation system when a hose no longer than 50 feet (15 240 mm) would be necessary.

91.7012.2.2. Slopes over 15 Feet (4572 mm) in Vertical Height. Slopes with vertical height over 15 feet (4572 mm) shall comply with the following:

1. Plant with grass or ground cover plants.

2. In addition to grass or ground cover plants, approved shrubs having a one gallon minimum size shall be planted on the slope at 10 feet (3048mm) on center in both directions or trees at 20 feet (6096 mm) on center in both directions. A combination of shrubs and trees may be utilized. The plants and planting pattern may be varied on the recommendation of the landscape architect.

3. Install an adequate irrigation system during grading prior to planting of the shrubs and trees and before grading is approved.

91.7012.3. Special Requirements for Sprinkler Systems.

91.7012.3.1. Plans for the sprinkler system shall be submitted to and approved by the Department prior to installation.

91.7012.3.2. Irrigation systems shall be designed to provide a uniform water coverage at a rate of precipitation of not more than 3/10 inch (7.6 mm) per hour on the planted slope. In no event shall the duration of sprinkling be permitted such as to create a saturated condition and cause an erosion problem, or allow the discharge of excess water into any public or private street.

91.7012.3.3. A check valve and balance cock shall be installed in the system where the drainage from sprinkler heads will create an erosion problem.

91.7012.3.4. Adequate backflow protection shall be installed in each irrigation system as required by the Plumbing Code.

91.7012.3.5. A functional test of the irrigation system shall be performed by the installer for every sprinkler system prior to approval.

91.7012.3.6. Where PVC pipes are used on slopes, they shall be a minimum of schedule 40 and embedded at least eight inches (203 mm) below grade. Such pipes may be exposed for above ground installations provided they are ASTM rated as resistant to ultraviolet sunlight. All risers, sprinkler heads, valves and fittings shall be brass or galvanized metal, or rated as sunlight resistant.

91.7012.4. Plants. All plants required by this Section shall be selected with consideration given to deep-rooted plants needing limited watering, low maintenance and having fire-retardant characteristics.

Sec. 60. Section 91.8101 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.8101. GENERAL PROVISIONS.

91.8101.1. Purpose. The purpose of this division is to establish minimum standards to regulate and encourage the proper maintenance and use of existing buildings, structures and premises in order to safeguard life, limb, health, property and public welfare.

Sec. 61. Section 91.8103.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8103.2. Repair, Rehabilitation, Alteration, and Addition. Repair, rehabilitation, alteration, and addition shall comply to Division 34 of this Code.

Sec. 62. Section 91.8103.3 of the Los Angeles Municipal Code is added to read as follows:

91.8103.3. Group I Occupancy. Buildings classed in Group I Occupancy because of the use or character of the occupancy that are not more than three stories in height, that were established prior to March 4, 1972, and that have been continuously operated as that use or character since that time shall comply with CBC Section 3415.

Sec. 63. Section 91.8106 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.8106. FIRE DISTRICT REQUIREMENTS.

91.8106.1. Fire Sprinklers. In an existing building in Fire District No. 1, every story which has a floor surface elevation more than four feet lower than the highest elevation of the floor landing or tread of any required exit from the story, and is used for keeping, storing, manufacturing, repairing or processing any combustible material, shall be sprinklered.

EXCEPTION: Building that is occupied only as a single-family dwelling.

Sec. 64. Section 91.8203 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 91.8203. CHANGE OF OCCUPANCY GROUP OR GROUP DIVISION.

Every change of occupancy to one classified in a different group or a different division of the same group, as described in Division 3 of this Code, shall require a new Certificate of Occupancy whether or not any alterations to the building are required by this Code. For the purpose of this subdivision, the occupancy group and division of interconnected assembly rooms shall be based on the total occupant load in such rooms.

If the building or portion thereof does not conform to the requirements of this Code for the proposed occupancy group or division, the building or portion thereof shall be made to conform. The Department may issue a new Certificate of Occupancy without stating therein that all of the requirements of the Code have been met and without requiring compliance with all such requirements if it is found that the change in occupancy group or division will result in no overall increase in hazard to life, limb, health, property or public welfare.

EXCEPTIONS: Changes of occupancy group or division may be made without establishing that the building complies with current structural requirements of this Code under any of the following conditions:

1. In buildings constructed on or after October 6, 1933, a change of occupancy group or division may be made to establish any occupancy group or division provided the building is not substantially altered.

2. In buildings which are within the scope of Division 88, a change of occupancy group or division may be made to establish any occupancy group or division, provided the building complies or is made to comply with the requirements of Division 88.

3. Except for the Groups A, E, and I Occupancies, which were constructed prior to October 6, 1933, and are not within the scope of Division 88, a change of occupancy group or division may be made to

another of equal or lesser hazard. A change to a higher hazard occupancy group, or to a Group A, E or I Occupancy, shall not be made in buildings constructed prior to October 6, 1933, except for Type I buildings as provided for in Item 4 of this exception.

4. In Type I buildings constructed prior to October 6, 1933, and not within the scope of Division 88, a change to a higher hazard grouping (as listed in Item 3 of this exception) or to a Group A, E, or I Occupancy will be individually considered, taking into account the general structural requirements in effect at the time the building was constructed, the structural system used in the building, the condition of the structural system, the proposed occupancy group or division, the occupant load and other pertinent conditions.

If the building or portion thereof does not conform to the requirements of this Code for the proposed occupancy group or division, then a building permit is required and the application for change of occupancy shall require a plan submittal. The plan shall be of sufficient clarity to show that it conforms to the requirements of this Code by showing the existing conditions and proposed alterations in detail.

Sec. 65. Section 91.8308.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8308.2. In the case of a building located outside the City limits of the City of Los Angeles, an additional fee of $525.00 shall be paid for each application. In addition to the fee, a mileage charge of 65 cents per mile (1609 m) shall be paid for any inspection which is made 10 miles (16090 m) or more beyond City limits. Mileage shall be measured in a straight line from the point 10 miles (16090 m) beyond the City limits which is nearest to the location of the building to be inspected, to the location of the building, and return to said point of departure.

Sec. 66. Section 91.8502.1.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.1.2. Emergency Escape. Every room below the fourth story where occupants sleep in Joint Living and Work Quarters shall be provided with an emergency escape or rescue window or door, which complies with the requirements of CBC Section 1026.

EXCEPTION: The emergency escape or rescue window or door may open directly into an existing court, provided:

A. The court is accessible to the Fire Department.

B. The court is provided with a minimum of one direct exit to a corridor, exit stairway, exit passageway, exterior exit stairway, exterior exit balcony, or exterior exit ramp, or existing fire escape. The existing fire

escape shall be structurally sound and shall not serve as an exit for an assembly use.

C. All openings in walls surrounding the court shall be protected as required by CBC Section 705.3 or be provided with an approved water curtain.

Sec. 67. Section 91.8502.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.2. Exterior Wall and Exterior Opening Protection. Existing construction of the exterior walls may be maintained without complying with current exterior fire resistive wall construction.

Existing unprotected exterior openings, which are not allowed or are required to be protected due to their proximity to a property line, may be maintained without complying with the requirements of CBC Section 705.8 provided the openings are protected with an approved water curtain. Openings in the exterior walls that are not allowed by CBC Section 705.8 due to their proximity to a property line, may not be used to satisfy other code requirements, such as light and ventilation, smoke control or emergency escape.

Sec. 68. Section 91.8502.3.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.3.2. Smoke Dampers. If a smoke-control system serves more than one floor, then smoke dampers shall be installed in the main exhaust air ducts and the main supply air ducts serving each floor and shall comply with the activation requirements of C.B.C. Section 716.3.3. The smoke dampers shall be installed in a manner that will prevent the movement of smoke from one floor to another floor when the dampers are closed. The vertical risers of the main exhaust air duct shall be installed in metal ducts complying with the requirements for product-conveying ducts in Chapters 5 and 6 of the Mechanical Code.

In the firefighter's control panel, all smoke dampers within the same smoke-control zone shall be actuated by one On-Auto-Off switch in accordance with CBC Section 909.16.3, except that an alternate actuation method may be allowed when approved by both the Fire Department and the Department.

Combination fire and smoke dampers, and smoke dampers shall be listed to conform to UL 555 and they shall be accessible for inspection, service and repair. Pneumatic tubing to operate these dampers shall be of noncombustible materials.

Sec. 69. Section 91.8502.5 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.5. Fire Alarm System. If a fire alarm system is required by CBC Section 907.2.8 or 907.2.12.2 for a new building of the same type of construction and occupancy, or installed at the option of the owner, then the entire building shall have fire alarm systems that are in full compliance with CBC Section 907.2.8. In a high-rise building, the fire alarm systems shall be supplied by a generator used as an emergency system in accordance with CBC Section 403.11. For all other buildings, an alternate source of power may be used provided it is approved by both the Fire Department and the Department.

High-rise buildings shall be provided with a central control station (fire control room) that complies with all the requirements of CBC Section 403.4.5 and Section 57.118.02 of the Fire Code including the minimum room dimensions of ten feet.

Sec. 70. Section 91.8502.7.1 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.7.1. Corridors. All public corridors serving the occupants of the Joint Living and Work Quarters shall comply with all the requirements of CBC Section 1018, except as follows:

1. Existing nonconforming fire-resistive walls and ceiling of a corridor constructed of wood lath and plaster, which are in good condition, may be acceptable as equivalent to the required one-hour fire-resistive construction.

2. Existing doors between the corridor and the Joint Living and Work Quarters that are part of the historic fabric of a Qualified Historical Building may be allowed to remain provided approved smoke gaskets and self-closing and latching devices to prevent smoke penetration are installed on the door, or the existing door shall be replaced with a door conforming to the requirements of CBC Section 1018.1.

Sec. 71. Section 91.8502.7.4 of the Los Angeles Municipal Code is amended to read as follows:

91.8502.7.4. Exit Stairway. All exit stairways shall be enclosed and shall comply with all the requirements of CBC Section 1022. Existing exit stairway enclosures may be allowed to pass through the first-floor elevator lobby, provided an approved fire-rated smoke-sealed door is placed in front of the elevator door on the first floor or there is another exit stairway enclosure leading directly to the public way.

Sec. 72. Section 91.8602.8.1 of the Los Angeles Municipal Code is amended to read as follows:

91.8602.8.1. All requirements of this Code with respect to exits shall be complied with.

EXCEPTIONS:

1. The provisions of CBC Section 708 which require shaft enclosures need not be complied with, provided the provisions of this Section are met.

2. Every boiler using liquid or solid fuel shall be housed in a boiler room separated from the remainder of the building by two-hour fire-resistive construction with openings protected by a fire assembly having a one-and-one-half-hour fire-resistive rating.

3. Every boiler using fuel gas shall be housed in a boiler room separated from the rest of the building by one-hour fire-resistive construction with openings protected by a fire assembly having a one-hour fire-resistive rating.

4. Each gas piping system serving a Group E Occupancy shall be provided with a gas shutoff valve designed to close the flow of gas to the piping system and a label designating such valve. The label shall be of corrosion-resistant metal with letters at least three inches high, stating: **"GAS SHUT-OFF VALVE"**.

5. Any fire-warning system required to be installed by the Los Angeles Fire Department pursuant to the provisions of Article 7, Chapter V of the Municipal Code shall meet the requirements of Article 760 of the California Electrical Code adopted by the City of Los Angeles.

Sec. 73. Section 91.8603.1.1 of the Los Angeles Municipal Code is amended to read as follows:

91.8603.1.1. Existing Residential Building. Except as otherwise provided in LAMC Section 91.8603.1.2, the provisions of CBC Section 907.2.11 shall apply to every dwelling unit, efficiency dwelling unit, guest room and suite in any building where the original building permit was issued prior to May 18, 1980. The smoke detectors may be battery operated until August 1, 1983, at which time the smoke detectors shall be located and permanently wired as required in CBC Section 907.2.11.

Nothing in this Section shall be construed to waive the requirement for permanently wired smoke detectors, which was in effect at the time the original building permit for the building was issued.

Every permanently wired smoke detector installed in a corridor or area giving access to the sleeping rooms shall be located within 12 feet six inches of the sleeping room. Where the location of the detector is less than 12 feet six inches of an appliance, which produces products of combustion other than a forced-air heating unit, a photoelectric type detector shall be required. There shall be no more than one door

separating that type of detector from any room used for sleeping purposes. A permanently wired smoke detector installed pursuant to a permit issued prior to July 31, 1981, need not comply with this paragraph until replaced.

Sec. 74. Section 91.8603.1.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8603.1.2. Existing Apartment Hotels and Hotels Over 75 Feet in Height. Every existing apartment hotel more than 75 feet in height and containing no more than nine dwelling units and every existing hotel more than 75 feet in height, where the original building permit for the building was issued prior to May 18, 1980, shall comply with the provisions of CBC Section 907.2.11 not later than August 1, 1981.

EXCEPTION: The operative date for compliance may be delayed until August 1, 1982, if the Department determines that the building complies with either the provisions of CBC Sections 420 and 602.2 or CBC Section 3412.

Notwithstanding any other provision here to the contrary, every guest room in any apartment hotel or hotel described in this Section when used as a light-housekeeping room, as that term is described in Section 91.8116.1 of this Code, shall be provided with smoke detectors in compliance with the provisions of CBC Section 907.2.11 and the provisions of Section 91.8603.2 of this Code pertaining to photoelectric type smoke detectors located in corridors or areas giving access to sleeping rooms. Smoke detectors may be battery operated until August 1, 1982, at which time the smoke detectors shall be located and permanently wired as required by CBC Section 907.2.11.

Sec. 75. Section 91.8603.2.1 of the Los Angeles Municipal Code is amended to read as follows:

91.8603.2.1. Existing One-Family Dwellings. After July 31, 1980, existing one-family dwellings shall be provided with smoke detectors, which may be battery operated, located as specified in CBC Section 907.2.11 for Group R, Division 3 Occupancies, if:

1. The dwelling is sold or exchanged and the original building permit was issued prior to May 19, 1980; or

2. Alterations, repairs or additions requiring a permit are made or reroofing or shower pan replacement is performed by a Certified Licensed Contractor pursuant to Section 91.108.12 of this Code with a valuation in excess of $1,000.00; or

3. One or more sleeping rooms are added or created; or

4. Bars, grilles, grates, roll-down security shutters, or similar devices are installed on all emergency escape windows and exterior doors of any sleeping rooms.

Nothing in this Section shall be construed to waive the requirement to permanently install wired smoke detectors, which were required at the time the original building permit for the building was issued.

For the purposes of this subsection, the term "permit" shall not include permits required for the repair or replacement of electrical, plumbing or mechanical equipment.

Sec. 76. Section 91.8603.2.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8603.2.2 Existing Two-Family Dwellings. Every building containing two dwelling units and not more than five guest rooms, where the original building permit was issued prior to May 18, 1980, shall comply with the provisions of CBC Section 907.2.11 and the provisions of LAMC Section 91.8603.2.1 pertaining to photoelectric-type smoke detectors located in corridors or areas giving access to sleeping rooms. Smoke detectors may be battery operated until August 1, 1983, at which time the smoke detectors shall be located and permanently wired as required by CBC Section 907.2.11.

Nothing in this Section shall be construed to waive a requirement to install permanently wired smoke detectors, which were required at the time the original building permit for the building was issued.

Sec. 77. Section 91.8604.2.3 of the Los Angeles Municipal Code is amended to read as follows:

91.8604.2.3. Shaft Enclosures. Every opening in a floor shall be enclosed as required by CBC Section 708 for shaft enclosures, provided, however, that existing enclosure walls constructed of wood lath and plaster or equivalent fire-resistive materials and which are in good condition may be accepted in lieu of enclosure wall construction.

Corridor exits, which are interrupted by stairwell enclosures required by this subdivision, shall be provided with exit door fire assemblies, which will close automatically when activated by an approved smoke detector.

EXCEPTIONS:

1. The shaft protection required by this paragraph may be omitted if the building is sprinklered throughout.

2. Existing metal elevator doors need not be replaced if they are in good condition. These doors may have openings protected with wire glass.

Sec. 78. Section 91.8605.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8605.2. General. Notwithstanding any provisions of this Code to the contrary, the following requirements shall apply to emergency homeless shelters operated during a shelter crisis, as provided for in Government Code Section 8698, et seq. Other than the requirements set forth below, the facilities need not comply with the requirements of this Code for Group R occupancies unless otherwise specified in this Code:

1. The maximum occupant load allowed in these facilities shall be the number determined appropriate by the professional service provider operating the facility and/or the Community Development Department of the City of Los Angeles, but in no event resulting in less than 50 square feet of usable area per occupant.

2. **Fire Safety Requirements.**

A. All exits shall comply with Division 33 of Article 7 of Chapter V of Division 10 of this Code.

B. Smoke detection devices shall be provided in all sleeping areas and shall be installed in accordance with Division 112 of Article 7 of Chapter V of this Code and CBC Section 907.2.11.

C. A fire alarm system capable of arousing occupants shall be installed in accordance with Division 122 of Article 7 of Chapter V of this Code and CBC Section 907.1.

D. The use of any open flames and the possession or storage of any combustibles shall not be permitted.

EXCEPTION: The Superintendent of Building may approve the use of open flames and storage of combustibles in these buildings with concurrence of the Fire Department.

E. Sleeping quarters shall be limited to the ground floor only.

3. **Security.**

A. An adequate number of security personnel shall remain on the premises during actual occupancy for the protection of the occupants and property.

B. Adequate lighting for security purposes shall be provided at all times.

4. **Light, Heating, Ventilation and Sanitation.**

A. Exterior openings for natural light and ventilation shall be provided as required for Group R occupancy, CBC Sections 1203 and 1205.

B. All sleeping areas shall be provided with heating facilities capable of maintaining a room temperature of 70°F at a point eight feet above the floor.

C. Every building shall be provided with at least one water closet or at least two separate toilet facilities where both sexes are accommodated. Additional water closets shall be provided for each sex at the rate of one for every 20 beds in excess of 20.

5. **Additional Requirements.**

A. Operating procedures shall be developed by the professional service provider and approved by the Community Development Department of the City of Los Angeles. These procedures shall be designed to maintain order and safety within the Emergency Homeless Shelter.

B. Emergency Homeless Shelters shall be open for occupancy between the hours of 6:00 p.m. and 6:00 a.m. of the following day.

Sec. 79. Section 91.8808.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8808.2. Lateral Forces on Elements of Structures. Parts or portions of structures shall be analyzed and designed for lateral loads in accordance with Sections 91.8808.1 of this Code and ASCE 7, but not less than the value from the following formula:

$$F_p = IC_pSW_p \quad (8\text{-}2)$$

For the provisions of this Section, the product of IS need not exceed the values as set forth in Table No. 88-E.

EXCEPTION: Unreinforced masonry walls in buildings not having a Rating Classification I may be analyzed in accordance with Section 91.8809.

The value of Cp need not exceed the values set forth in Table No. 88-F.

Sec. 80. Section 91.8808.6.3 of the Los Angeles Municipal Code is amended to read as follows:

91.8808.6.3. Unreinforced Masonry Walls. Except as modified here, unreinforced masonry walls shall be analyzed as specified in the applicable parts of CBC Sections 2106 and 2107 to withstand all vertical loads as specified in Division 16 of this Code in addition to the seismic forces required by this Division.

Substantial changes in wall thickness or stiffness shall be considered in the analysis for out-of-plane and in-plane wall stability, and the wall shall be restrained against out-of- plane instability by anchorage and bracing to the roof or floor diaphragm in accordance with Section 91.8808.3 of this Code.

EXCEPTION: Variations in wall stiffness caused by nominal openings such as windows and exit doors need not be considered.

No allowable tension stress will be permitted in unreinforced masonry walls. Walls not capable of resisting the required design forces specified in this division shall be strengthened or shall be removed and replaced.

EXCEPTIONS:

1. Unreinforced masonry walls in buildings not classified as a Rating Classification I pursuant to Table No. 88-A may be analyzed in accordance with Section 91.8809 of this Code.

2. Unreinforced masonry walls which carry no design loads other than their own weight may be considered as veneer if they are adequately anchored to new supporting elements.

Sec. 81. Section 91.8809.2.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8809.2.2. Veneer. Veneer shall be anchored with approved anchor ties conforming to the required design capacity specified in Section 91.1405 of this Code and placed at a maximum spacing of 24 inches (610 mm).

EXCEPTION: Existing veneer anchor ties may be acceptable provided the ties are in good condition and conform to the minimum size, maximum spacing and material requirements specified in the provisions of the Los Angeles Building Ordinances in effect prior to October 6, 1933. Said provisions specified that veneer anchor ties shall be corrugated galvanized iron strips not less than one inch (25 mm) in width, eight inches (203 mm) in length and 1/16 inch (1.6 mm) in thickness and shall be located and laid in every alternate course in the vertical height of the wall at a spacing not to exceed 17 inches (432 mm) on center horizontally. As an alternate, said provisions specified that such ties may be laid in every fourth course vertically at a spacing not to exceed nine inches (229 mm) on center horizontally.

The existence and condition of existing veneer anchor ties shall be verified as follows:

1. An approved testing laboratory shall verify the location and spacing of the ties and shall submit a report to the Department for approval as a part of the structural analysis.

2. The veneer in a selected area shall be removed to expose a representative sample of ties (not less than four) for inspection by the Department.

Sec. 82. Section 91.8809.5.3 of the Los Angeles Municipal Code is amended to read as follows:

91.8809.5.3. In-Place Shear Tests. The bed joints of the outer wythe of the masonry shall be tested in shear by laterally displacing a single brick relative to the adjacent bricks in that wythe. The mortar in the opposite head joint of the brick to be tested shall be removed and cleaned prior to testing. The minimum quality mortar in 80 percent of the shear tests shall not be less than the total of 30 psi (206.9 kPa) plus the axial stress in the wall at the point of the test. The shear stress shall be based on the gross area of both bed joints and shall be that shear stress at which movement of the masonry is first measured or at which cracking first appears.

An internal caliper, graduated in 0.001 of an inch (0.025 mm) increments shall be used to measure movement of the masonry unit. A hydraulic jack equipped with a pressure gauge graduated in increments of 50 psi (345 kPa) or less shall be used. The jack load shall be applied at a rate not exceeding 5,000 pounds (22 240 N) per minute.

The test shall be conducted by a minimum of two technicians. Load and displacement readings shall be recorded at the following intervals:

1. At a caliper reading of 0.001 inch (0.025 mm);

2. At first visually observed sign of movement or cracking of the mortar or masonry unit;

3. At a caliper reading of 0.02 inch (0.51 mm); and

4. The ultimate load on the unit.

The masonry unit to be tested shall not be located adjacent to a bond course in a brick wall laid in common bond. Tests to evaluate the mortar quality of structural walls shall not be conducted in masonry veneer.

Walls with mortar values which are consistently low and do not meet the minimum quality values specified in this Section shall be entirely pointed per Chapter

A1, Section A103 and A106.3.3.9 of 2007 California Existing Building Code except that the depth of joint penetration shall be 1-l/2 inch (38 mm) in lieu of the 3/4 inch (19 mm) specified.

Sec. 83. Tables 88-H, 88-I and 88-L in Division 88 of Article IX of the Los Angeles Municipal Code are amended to read as follows:

TABLE NO. 88-H
VALUES FOR EXISTING MATERIALS

EXISTING MATERIALS OR CONFIGURATION OF MATERIALS [1]	ALLOWABLE VALUES
1. HORIZONTAL DIAPHRAGMS	
(a) Roofs with straight sheathing and roofing applied directly to the sheathing.	100 lbs. per foot for seismic shear.
(b) Roofs with diagonal sheathing and roofing applied directly to the sheathing.	400 lbs. per foot for seismic shear.
(c) Floors with straight tongue-and-groove sheathing.	150 lbs. per foot for seismic shear.
(d) Floors with straight sheathing and finished wood flooring.	300 lbs. per foot for seismic shear.
(e) Floors with diagonal sheathing and finished wood flooring.	450 lbs. per foot for seismic shear.
(f) Floors or roofs with straight sheathing and plaster applied to the joist or values for items 1(a) and 1(c) rafters.[2]	Add 50 lbs. per foot to the allowable values for items 1(a) and 1(c).
2. SHEAR WALL Wood stud walls with lath and plaster	100 lbs. per foot each side for seismic shear.
3. PLAIN CONCRETE FOOTINGS	f_c'= 1500 psi unless otherwise shown by tests
4. DOUGLAS FIR WOOD	Allowable stress same as No. 1 D.F. [3]
5. REINFORCING STEEL	f_y= 18,000 lbs. per square inch maximum
6. STRUCTURAL STEEL	f_y= 20,000 lbs. per square inch maximum

For SI: 1 pound per foot = 0.0146 N/m, 1 pound per square inch (psi) = 6.895 kPa.

Notes:

1. Material must be sound and in good condition.
2. The wood lath and plaster must be reattached to existing joists or rafters in a manner approved by the Department.
3. Stresses given may be increased for combinations of loads as specified in Section 91.8808.7.2 of this Code.

TABLE NO. 88-I
ALLOWABLE VALUES OF NEW MATERIALS USED IN CONJUNCTION WITH EXISTING CONSTRUCTION

NEW MATERIALS OR CONFIGURATION OF MATERIALS [1]	ALLOWABLE VALUES
1. HORIZONTAL DIAPHRAGMS	
Plywood sheathing applied directly over existing straight sheathing with ends of plywood sheets bearing on joists or rafters and edges of plywood located on center of individual sheathing boards.	Same as specified in CBC Table 2306.2.1.(1) and 2306.2.1.(2) for blocked diaphragms.
2. SHEAR WALLS	
a. Plywood sheathing applied directly over existing wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing.	Same as values specified in CBC Table 2306.3 for shear walls.
b. Dry wall or plaster applied directly over existing wood studs.	75 percent of the values specified in CBC Table 2306.7.
c. Dry wall or plaster applied to plywood sheathing over existing wood studs.	33 1/3 percent of the values specified in CBC Table 2306.7.
3. SHEAR BOLTS	
Shear bolts and shear dowels embedded a minimum of eight inches into unreinforced masonry walls. Bolt centered in a 2-1/2 inch-diameter hole with drypack or an approved non-shrink grout around circumference of bolt or dowel. [1, 3]	133 percent of the values for plain solid masonry specified in Table No. 88-M. No values larger than those given for 3/4 inch bolts shall be used.
4. TENSION BOLTS	
Tension bolts and tension dowels extending entirely through unreinforced masonry secured with bearing plates on far side of wall with at least 30 square inches of area. [2, 3, 4]	1200 lbs. per bolt or dowel.
5. COMBINATION SHEAR AND TENSION WALL ANCHORS	
a. Bolts extending to the exterior face of the wall with a 2-1/2 inch round plate under the head. Install as specified for shear bolts. Spaced not closer than 12 inches on centers. [1, 2, 3]	600 lbs. per bolt for tension.[4] See Item 3 (SHEAR BOLTS) for shear values.
b. Bolts or dowels extending to the exterior face of the wall with a 2-1/2 inch round plate under the head and drill at an angle of 22-1/2 degrees to the horizontal. Installed as specified for shear bolts. [1, 2, 3]	1200 lbs per bolt or dowel for tension.[4] See Item 3 (SHEAR BOLTS) for shear values.
c. Through bolt with bearing plate for	See Item 4 (TENSION BOLTS) for

tension per Item 4. Combined with minimum eight-inch grouted section for shear per Item 3.	tension values.[4] See Item 3 (SHEAR BOLTS) for shear values.
6. INFILLED WALLS	
Reinforced masonry infilled openings in existing unreinforced masonry walls with keys or dowels to match reinforcing.	Same as values specified for unreinforced masonry walls.
7. REINFORCED MASONRY	
Masonry piers and walls reinforced per CBC Section 2106 and Section 91.2107 of this Code.	Same as values determined per CBC Section 2106.
8. REINFORCED CONCRETE	
Concrete footings, walls and piers reinforced as specified in Division 19 of this Code and designed for tributary loads.	Same as values specified in Division 19 of this Code.
9. EXISTING FOUNDATION LOADS	
Foundation loads for structures exhibiting no evidence of settlement.	Calculated existing foundation loads due to maximum dead load plus live load may be increased 25 percent for deadload, and may be increased 50 percent for dead load plus seismic load required by this division.

For SI: 1 inch = 25.4 mm, 1 square inch = 645.16 mm^2, 1 pound = 4.45 N.

1. Bolts and dowels to be tested as specified in Section 91.8809.6 of this Code.
2. Bolts and dowels to be 1/2-inch minimum in diameter.
3. Drilling for bolts and dowels shall be done with an electric rotary drill. Impact tools shall not be used for drilling holes or tightening anchor and shear bolt nuts.
4. Allowable bolt and dowel values specified are for installations in minimum three wythe walls. For installations in two wythe walls, use 50 percent of the value specified, except that no value shall be given to tension bolts that do not extend entirely through the wall and are secured with bearing plates on the far side.

TABLE NO. 88-L
ALLOWABLE VALUES OF NEW MATERIALS USED IN CONJUNCTION WITH EXISTING CONSTRUCTION

NEW MATERIALS OR CONFIGURATION OF ALLOWABLE VALUES	NEW AND EXISTING MATERIALS [1]
1. HORIZONTAL DIAPHRAGMS	
Plywood sheathing applied directly over existing straight sheathing with ends of plywood sheets bearing on joists or rafters and edges of plywood located on center of individual sheathing boards.	225 lbs. per foot for seismic shear.
2. CROSS WALLS [2, 3]	
a. Plywood sheathing applied directly over existing wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing.	1.33 times the values specified in CBC Table 2306.3 for shear walls.
b. Drywall or plaster applied directly over existing wood studs.	100 percent of the values specified in CBC Table 2306.7.

1. Materials must be sound and in good condition.
2. For cross walls, values of all materials may be combined, except the total combined value shall not exceed 300 lbs. per foot for seismic shear.
3. The cross wall aspect ratio for drywall, plaster and gypsum wall board shall be a maximum height to width ratio of 1:1, and for plywood shall be a maximum height to width ratio of 2:1.

Sec. 84. Section 91.8903.1.6 of the Los Angeles Municipal Code is amended to read as follows:

91.8903.1.6. Removal of Utilities. Utility connections of electricity and gas shall be removed from buildings within the scope of Section 91.8903.1.4 by the appropriate utility agency and shall not be reconnected until clearance is obtained from the department.

Sec. 85. Section 91.8903.1.7 of the Los Angeles Municipal Code is amended to read as follows:

91.8903.1.7. Recordation. At the time that the Department serves the order described in Section 91.8903.1 of this Code, the Department shall file with the Office of the County Recorder a certificate stating that the subject building has been determined to be either a hazardous building, a substandard residential building, or a nuisance, that it has been ordered repaired or demolished, and that the owner thereof has been so notified.

After the building has been repaired or demolished, the Department shall file with the Office of the County Recorder a certificate terminating the above recorded status of the subject building.

Sec. 86. Section 91.8903.1.8 is added to the Los Angeles Municipal Code to read as follows:

91.8903.1.8. Manner of Giving Notice. The orders described in this Section shall be given in writing and may be given either by personal delivery thereof to the person to be notified or by deposit in the United States mail in a sealed envelope, postage prepaid, addressed to such person to be notified at the address as shown on the last equalized assessment roll. Service by mail shall be deemed to have been completed at the time of deposit in the post office. The failure of any owner or other person to receive such notice shall not affect in any manner the validity of any of the proceedings taken thereunder. Proof of giving any notice may be made by an affidavit of any employee of the City which shows service in conformity with this Section.

Sec. 87. Section 91.8903.2.4 of the Los Angeles Municipal Code is amended to read as follows:

91.8903.2.4. No person shall enter, occupy or be present in a building which has been posted by the Department pursuant to this Section. Any person who enters, occupies or is present in a building which has been posted by the Department pursuant to this Section shall be guilty of a misdemeanor. This prohibition shall not apply to public officers or public employees acting within the course and scope of their employment or in the performance of their official duties; or owners, persons acting with the consent of the building owner, the owner's agent, or person in lawful possession acting in the course of complying with an order issued pursuant to the provisions of this Chapter.

Notwithstanding any other provision of the Los Angeles Municipal Code to the contrary, a police officer with the Los Angeles Police Department shall have the authority to enter any building posted by the Department pursuant to this Section, and arrest anyone present in violation of this Section.

Sec. 88. Section 91.8906.2 of the Los Angeles Municipal Code is amended to read as follows:

91.8906.2. Collection of Repair and Demolition Costs. Whenever the Department has caused the repair, securing, cleaning or demolition of any building, structure, or portion of a building, structure or any premises, all costs incurred under the provisions of this division of this Code shall be a personal obligation against the property owner or responsible interested parties in charge or control of the property, recoverable by the City in an action before any court of competent jurisdiction. These costs shall include an amount equal to 40 percent of the cost to perform the actual work to cover the City's costs for administering any contract and supervising the work required. In addition to this personal obligation and all other remedies provided by law, the City may collect any judgment, fee, cost, or charge, including any permit fees, fines, late charges, or interest, incurred in relation to the provisions of this Section as provided in Los Angeles Administrative Code Sections 7.35.1 through 7.35.8.

Sec. 89. Section 91.9108.2 of the Los Angeles Municipal Code is amended to read as follows:

91.9108.2. Special Requirements for Wall Anchors and Continuity Ties. The steel elements of the wall anchorage systems and continuity ties shall be designed by the allowable stress design method using a load factor of 1.7. The 1/3 stress increase permitted by CBC Section 1605.3.1.1 shall not be permitted for materials using allowable stress design methods.

The strength design specified in CBC Section 1912, using a load factor of 2.0 in lieu of 1.4 for earthquake loading, shall be used for design of embedment in concrete.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

> **EXCEPTION:** Existing cast-in-place shear anchors may be used as wall anchors if the tie element can be readily attached to the anchors and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing, and through analysis showing that the bolts are capable of resisting the total shear load while being acted upon by the maximum tension force due to earthquake. Criteria for analysis and testing shall be determined by the Superintendent.

Expansion anchors are not allowed without special approval of the Superintendent. Attaching the edge of plywood sheathing to steel ledgers is not considered as complying with the positive anchoring requirements of the Code; and attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this Code unless testing and/or analysis are performed, which establish shear values for the attachment perpendicular to the edge of the deck.

Sec. 90. Section 91.9108.3 of the Los Angeles Municipal Code is amended to read as follows:

91.9108.3. Development of Anchor Loads into the Diaphragm. Development of anchor loads into roof and floor diaphragms shall comply with Section 91.1615.4 and Section 12.11 of ASCE 7.

> **EXCEPTION:** If continuously tied girders are present, then the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm).

In wood diaphragms, anchorage shall not be accomplished by use of toe nails or nails subject to withdrawal, nor shall wood ledgers, top plates or framing be used in cross-grain bending or cross-grain tension. The continuous ties required by Section 91.1615.4 and Section 12.11 of ASCE 7 shall be in addition to the diaphragm sheathing.

Lengths of development of anchor loads in wood diaphragms shall be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

At reentrant corners, continuity collectors may be required for existing return walls not designed as shear walls, to develop into the diaphragm a force equal to the lesser of the rocking or shear capacity of the return wall, or the tributary shear, but not exceeding the capacity of the diaphragm. Shear anchors for the return wall shall be commensurate with the collector force. If a truss or beam, other than rafters or purlins, is supported by the return wall or by a column integral with the return wall, an independent secondary column, is required to support the roof or floor members whenever rocking or shear capacity of the return wall is governing.

Seismic deflection shall be determined at the return walls, and fins/canopies at entrances, to ensure deflection compatibility with the diaphragm, by either seismically isolating the element or attaching the element and integrating its load into the diaphragm.

Sec. 91. Section 91.9408.3 of the Los Angeles Municipal Code is amended to read as follows:

91.9408.3. Structural Observation by the Engineer or Architect of Record. The owner shall employ the engineer or architect of record, or other engineer or architect designated by the engineer or architect of record, to perform structural observations as required by CBC Section 1710.

Sec. 92. Section 91.9510.2 of the Los Angeles Municipal Code is amended to read as follows:

91.9510.2. Base Shear for Analysis. The base shear used to determine story drifts shall be determined using 75 percent of that currently required by Section 12.8.1 of the ASCE 7.

WHERE:

R = 1.4 for concrete frame buildings with masonry infill and all other reinforced concrete buildings.

EXCEPTION: R = 1.0 for single story buildings.

The R value in Table 12.2-1 of ASCE 7 of this Code for new building design shall not be used for story drift determination.

Sec. 93. Section 91.9510.4 of the Los Angeles Municipal Code is amended to read as follows:

91.9510.4. Vertical Distribution of Forces. The base shear shall be distributed over the height of the structure in conformance with Formula (10-1).

$$C_{vx} = \frac{w_x h_x^k}{\sum_{i=1}^{n} w_i h_i^k} \qquad (10\text{-}1)$$

WHERE:

C_{vx} = vertical distribution factor to be applied to V to obtain the story force at level x.

K = an exponent related to building period as follows:

For buildings having a period of 0.5 seconds or less, k = 1.0

For buildings having a period of 2.5 seconds or more, k = 2.0

For buildings having a period between 0.5 and 2.5 seconds, k may be taken as two or determined by linear interpolation between one and two.

Sec. 94. The definition of **REINFORCED MASONRY WALL** in Section 91.9603 of the Los Angeles Municipal Code is amended to read as follows:

REINFORCED MASONRY WALL is a masonry wall that has 50 percent or more of the reinforcing steel required by Section 2.3 or Section 3.3 of ACI 530-05/ASCE 5-05/TMS 402-05 (MSJC).

Sec. 95. Section 91.9604.1 of the Los Angeles Municipal Code is amended to read as follows:

91.9604.1. Wall Panel Anchorage. Concrete and masonry walls shall be anchored to all floors and roofs which provide lateral support for the wall. The anchorage shall provide a positive direct connection between the wall and floor or roof construction capable of resisting a horizontal force equal to 30 percent of the tributary wall weight for all buildings, and 45 percent of the tributary wall weight for essential buildings, or a minimum force of 250 pounds per linear foot of wall, whichever is greater.

EXCEPTION: Using 75 percent of the design force as specified in Section 12.11 of ASCE 7 and completely in compliance with all the requirements as specified in that Section is considered equivalent to the requirements specified in this Section and Section 91. 9604.2 of this Code.

The required anchorage shall be based on the tributary wall panel assuming simple supports at floors and roof.

EXCEPTION: An alternate design may be approved by the Superintendent of Building when justified by well established principles of mechanics.

Sec. 96. Section 91.9604.2 of the Los Angeles Municipal Code is amended to read as follows:

91.9604.2. Special Requirements for Wall Anchors and Continuity Ties. The steel elements of the wall anchorage systems and continuity ties shall be designed by the allowable stress design method using a load factor of 1.7. The 1/3 stress increase permitted by CBC Section 1605.3.1.1 shall not be permitted for materials using allowable stress design methods.

The strength design specified in CBC Section 1912, using a load factor of 2.0 in lieu of 1.4 for earthquake loading, shall be used for the design of embedment in concrete.

Wall anchors shall be provided to resist out-of-plane forces, independent of existing shear anchors.

EXCEPTION: Existing cast-in-place shear anchors may be used as wall anchors if the tie element can be readily attached to the anchors and if the engineer or architect can establish tension values for the existing anchors through the use of approved as-built plans or testing, and through analysis showing that the bolts are capable of resisting the total shear load while being acted upon by the maximum tension force due to seismic loading. Criteria for analysis and testing shall be determined by the Superintendent of Building.

Expansion anchors are not allowed without special approval of the Superintendent of Building. Attaching the edge of plywood sheathing to steel ledgers is not considered as complying with the positive anchoring requirements of the Code; and attaching the edge of steel decks to steel ledgers is not considered as providing the positive anchorage of this Code unless testing and analysis are performed, which establish shear values for the attachment perpendicular to the edge of the deck.

Sec. 97. Section 91.9604.3 of the Los Angeles Municipal Code is amended to read as follows:

91.9604.3. Development of Anchor Loads into the Diaphragm. Development of anchor loads into roof and floor diaphragms shall comply with Section 91.1615.4 and Section 12.11 of ASCE 7.

EXCEPTION: If continuously tied girders are present, then the maximum spacing of the continuity ties is the greater of the girder spacing or 24 feet (7315 mm).

In wood diaphragms, anchorage shall not be accomplished by use of toe nails or nails subject to withdrawal, nor shall wood ledgers, top plates or framing be used in cross-grain bending or cross-grain tension. The continuous ties required by Section 91.1615.4 and Section 12.11 of ASCE 7 shall be in addition to the diaphragm sheathing.

Lengths of development of anchor loads in wood diaphragms shall be based on existing field nailing of the sheathing unless existing edge nailing is positively identified on the original construction plans or at the site.

At reentrant corners, continuity collectors may be required for existing return walls not designed as shear walls, to develop into the diaphragm a force equal to the lesser of the rocking or shear capacity of the return wall, or the tributary shear but not exceeding the capacity of the diaphragm. Shear anchors for the return wall shall be commensurate with the collector force. If a truss or beam other than rafters or purlins is supported by the return wall or by a column integral with the return wall, an independent secondary column is required to support the roof or floor members whenever rocking or shear capacity of the return wall is governing.

Sec. 98. Section 98.0403.2 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 98.0403.2. PROCEDURES FOR APPEALS TO THE DEPARTMENT AND TO THE BOARD.

(a) Appeals to the Department under Power Granted in Section 98.0403.1.

1. Such appeals shall be made in writing, upon appropriate forms provided therefor by the Department.

2. An appeal processing fee of $130.00 for the first item and $39.00 for each additional item shall be paid by the appellant prior to the Department processing the appeal and making a determination.

In addition to the appeal processing fee required by this subdivision, an inspection fee of $84.00 per inspection shall be paid by the appellant when, in the opinion of the Department, the appeal requires field inspections to verify site conditions. Miscellaneous Fees as provided for in Section 98.0415 (f) may be collected to prepare a written report.

An additional inspection fee as described in Section 98.0412(a) may be charged by the Department for each inspection necessary to verify compliance with the conditions established by the determination of the Department.

EXCEPTIONS:

A. No appeal fee shall be required on any appeal from an order arising from an area-wide survey, conducted by the Department, of buildings used for one family housing, if the work required to bring the unit into compliance with the Los Angeles Municipal Code is the same as specified in the order.

B. No appeal fee shall be required for any appeal on a child-care facility if the owner or operator is a nonprofit child-care organization that has filed a notarized affidavit to that effect with the Department.

3. If the Superintendent determines that an item of request involves a material, device or method of construction appropriate for a General Approval under Section 98.0501 of the Los Angeles Municipal Code, such request shall be accompanied by a filing fee of $165.00 for each request submitted which includes such item.

A supplemental fee as specified in Section 98.0501(b)4 shall be charged to cover processing time in excess of one hour. If the Department determines that the material submitted with the appeal request substantiates the claim made therein, and no request to hold a hearing is pending, the Department may grant a conditional approval of such request.

4. In any appeal the appellant making the request shall cause to be made, at the appellant's own expense, any tests required by the Department to substantiate the claims therein.

5. The Department may hold any hearings it deems appropriate to consider the appeal.

(b) **Appeals to the Board under the Power Granted by Section 98.0403.1(b).**

1. Such appeals shall be made in writing, upon appropriate forms provided therefor by the Department.

2. Appeals shall be accompanied by a filing fee based upon the subject of the request as set forth in Tables 4-A or 4-B of this division.

EXCEPTIONS:

A. No filing fee shall be required on any appeal from an order arising from an area-wide survey, conducted by the Department, of buildings used for one family housing, if the work

required to bring the unit into compliance with the Los Angeles Municipal Code is the same as specified in the order.

B. No filing fee shall be required for any appeal on a child care facility if the owner or operator is a nonprofit child care organization that has filed a notarized affidavit to that effect with the Department.

3. If the Board determines that evidence is required to be taken or that further investigation is necessary to decide any such appeal, the Board may refer the matter to a hearing examiner for hearing and report in accordance with provisions of Charter Section 217 or to an ordinance-established advisory board, or may refer the matter to the Department for further investigation and report, whichever the Board deems most appropriate.

4. In any appeal, the appellant or person making such request shall cause to be made, at the appellant's own expense, any tests required by the Board to substantiate the claims therein.

5. In addition to any other appeal fees required by this subsection, each appeal shall be accompanied by an inspection fee of $84.00 per inspection when, in the opinion of the Department, the appeal requires field inspections to verify site conditions. The Department may charge an additional inspection fee as specified in Section 98.0412(a) for each inspection necessary to verify compliance with the conditions established by the Board in any approval or conditional approval.

6. Miscellaneous Fees as provided for in Section 98.0415 (f) may be collected to prepare a written report.

TABLE NO. 4-A
FILING FEES* FOR APPEALS

Group Occupancy	FIRST ITEM FOR SINGLE BUILDING TYPE OF BUILDING**				Each Additional Item
	V	IV	III	I & II	
R-3 & U	$215.00	$215.00	$215.00	$215.00	$76.00
All Others	354.00	354.00	354.00	632.00	215.00
All other filing fees not covered in the above schedule including appeals pursuant to Los Angeles Municipal Code Section 12.26, shall be $500.00 for the first item and $150.00 for each additional item.					

* See Section 91.105.4 for fees for referral to the Sign Advisory Committee.
** Accessory building, structures or appendages will be considered the same as main building and occupancy.

TABLE NO 4-B
FILING FEES* FOR APPEALS GRADING AND SOIL REQUIREMENTS

Number of Lots	Construction Requirements	Unstable Soil of Geology	Each Additional Item
1-5 Lots	$280	$480	$115
6 or more lots	580	880	280

* See Section 91.105.3 for fees for referrals to the Engineering Geology Advisory Committee.

Sec. 99. Section 98.0415 of the Los Angeles Municipal Code is amended to read as follows:

98.0415. CLERICAL, ISSUING OR RESEARCH FEES AND MISCELLANEOUS FEES.

The Department may collect a fee from the applicant or appellant for the following types of services:

(a) Correction of address for permit	$ 34.00
(b) Transfer of name of permittee to any other person	48.00
(c) Permit issuing fee for:	
Electrical, plumbing, mechanical and elevator permits	23.00
Building permits	27.00
(d) Supplementary permit issuing fee	19.00
(e) Supplementary or preliminary plan check or study fee	$104.00 per staff hour or portion thereof
(f) Fee for report*	$104.00 per staff hour or portion thereof

* A minimum fee of $104.00 shall be payable when a request for a written report on a property or code item is made and any balance shall be due prior to the release of the report. Written reports for which this fee is applicable shall include, but not limited to, interpretation of the public records for the property (document research), termination of covenants and agreements, written interpretation or request for modification of the codes (municipal and/or other codes and regulations), and issuance of reports seeking the status of code violations, permitted use, etc. of a property or other similar purposes.

Sec. 100. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, at its meeting of JUN 21 2011.

JUNE A. LAGMAY, City Clerk

By _____
Deputy

Approved JUN 28 2011

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By Adrienne S. Khorasanee (ASE)
ADRIENNE S. KHORASANEE
Deputy City Attorney

Date June 7, 2011

File No. CF 10-2335

M:\Real Prop_Env_Land Use\Land Use\Adrienne Khorasanee\Ordinances\2011 Building Code Ordinance (FINAL).doc

DECLARATION OF POSTING ORDINANCE

I, MARIA VIZCARRA, state as follows: I am, and was at all times hereinafter mentioned, a resident of the State of California, over the age of eighteen years, and a Deputy City Clerk of the City of Los Angeles, California.

Ordinance No. 181758 – Amending Articles 1 and 8 of Chapter IX of the Los Angeles Municipal Code to incorporate by reference certain portions of the 2009 International Building Code and the 2010 Edition of the California Building Code, and to make local administrative changes - a copy of which is hereto attached, was finally adopted by the Los Angeles City Council on **June 21, 2011**, and under the direction of said City Council and the City Clerk, pursuant to Section 251 of the Charter of the City of Los Angeles and Ordinance No. 172959, on **June 29, 2011** I posted a true copy of said ordinance at each of the three public places located in the City of Los Angeles, California, as follows: 1) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; 2) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; 3) one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

Copies of said ordinance were posted conspicuously beginning on **June 29, 2011** and will be continuously posted for ten or more days.

I declare under penalty of perjury that the foregoing is true and correct.

Signed this **29th** day of **June 2011** at Los Angeles, California.

Maria Vizcarra, Deputy City Clerk

Ordinance Effective Date: August 8, 2011 **Council File No. 10-2335**

Rev. (2/21/06)

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 California Building Code (CBC).**

WHEREAS, the City of Los Angeles has **geological conditions**, such as earthquake faults. The City of Los Angeles is bounded on the east by the San Andreas Fault and interlaced with other earthquake faults, which run through, adjacent and under the City; and

WHEREAS, the City is located in Seismic Zone 4, which is considered by experts to be the most seismically active of the four seismic zones in the world; and

WHEREAS, seismic experts predict a massive earthquake on one of these faults within the next 30 years and several earthquakes similar in intensity to the Northridge Earthquake during the same period; and

WHEREAS, the 1994 Northridge Earthquake which was a moderate size (6.8 magnitude) earthquake caused extensive damage to buildings and structures, including damage to more than 115,000 buildings, moderate to major damage to more than 3,000 buildings and the vacating of about 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 people who lost their lives in the earthquake, but there could have been several thousand fatalities had the earthquake occurred at midday when most buildings were occupied instead of 4:31 in the morning; and

WHEREAS, massive earthquakes pose unusual and extraordinary stresses on buildings and structures requiring more stringent building regulations than would otherwise be required; and

WHEREAS, a major earthquake would break water lines making fire fighting more difficult and would break gas lines and electric lines, making a high risk of fires breaking out in all areas of the City; and

WHEREAS, there was a fire in the Fairfax Area of the City of Los Angeles in 1986, due to the high volume of methane gas seepage through cracks in the concrete floor of a building; and

WHEREAS, in 1999, large pockets of methane gas in the subsurface geological formation was discovered in various areas of Los Angeles; and

WHEREAS, the City of Los Angeles has **topographic conditions**, natural and man-made, such as the natural hills, mountains and the coastal region, as well as the man-made harbors and highly concentrated areas of high-rise buildings.

WHEREAS, the City of Los Angeles is situated in a coastal region of hills and mountains containing dry wild native brush and other native and non-native vegetation; and

WHEREAS, this region of flat land and hillside areas creates a natural basin, which has high strong winds alongside foothills and other areas of the City; and

WHEREAS, in 1982 fires in the flat areas of neighboring Orange County were spread from one wood shake and wood shingle roof covered building to the next wood shake and wood shingle roof covered building by the strong Santa Ana winds, and

WHEREAS, the dry brush areas of the local Santa Monica hillsides and the strong canyon winds or the dry Santa Ana winds contributed to past fires in the Los Angeles area, such as, the 1961 Bel Air and Brentwood Canyon, 1977 Topanga Canyon and 1993 Malibu Canyon fires, and

WHEREAS, widespread fires caused by either earthquakes or brush fires would impact the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, the highly concentrated area of high-rise buildings, traffic congestion and possible gridlock may jeopardize the quick response to fires by the Fire Department that could reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the mountainous terrain is now identified as the Very High Fire Hazard Severity Zone and the highly concentrated area of high-rise buildings is identified as Fire District 1; and

WHEREAS, the City of Los Angeles has **climatic conditions** that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the fire danger to all exposed combustible materials; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, widespread fires caused by either earthquakes or brush fires would limit the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, quick response to fires by the Fire Department will reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

NOW, THEREFORE, in order to provide adequate protection under the local climatic, geological and topographical conditions set forth above, the City of Los Angeles makes the following findings and determinations:

Section 91.101.1 is an **administrative amendment** necessary to clarify applicability of the Los Angeles Municipal Code (LAMC), the Los Angeles Building Code and the Los Angeles Residential Code.

Section 91.105.5.4 is an **administrative amendment** necessary to clarify the powers and authority of the Los Angeles Department of Building and Safety Board of Commissioners.

Section 91.106.4.1.5 is an **administrative amendment** necessary to correct the Department's authority regarding the ability to withhold permits.

Section 91.106.4.1.11 is an **administrative amendment** necessary to correct the Department's authority regarding the ability to withhold permits and to be consistent with the zoning code.

Section 91.403.1 is an **administrative amendment** necessary to clearly indicate the necessary safety features required for high-rise buildings.

Section 91.403.1 is an **administrative amendment** necessary to clearly indicate the necessary safety features required for high-rise buildings.

Section 91.403.5.2 is an **administrative amendment** necessary to eliminate the exception which allows super high-rise buildings to provide an evacuation elevator in lieu of the third stair, since ANSI does not have testing standards for these systems.

Section 91.403.6 is an **administrative amendment** necessary to indicate that all elevator installations and operation in high-rise buildings need to comply with Chapter 30 of the CBC.

Section 91.703.3 is an **administrative amendment** necessary to correctly reference section 91.104.2.6 to the LAMC and not to the CBC regarding testing standards.

Section 91.1207.11.3 is an **administrative amendment** necessary to correct code references to the California Code of Regulations and to correct typing errors.

Section 91.1301 is an **administrative amendment** necessary to eliminate redundancy for solar energy collectors which are found in Chapter 15 of the CBC.

Section 91.1405 is an **administrative amendment** necessary to eliminate previous local amendments adopted, and to reinstate section 1405 of the CBC which is now adopted by reference.

Table 1507.3.7 is modified through an **administrative amendment** necessary to correct code references.

Section 91.1603.1.9 is an **administrative amendment** to correct code references to existing local amendments found in the respective section on existing inspection programs related to "Special Inspection for Seismic resistance".

Section 91.1609.1.1.3 is an existing **technical amendment** necessary due to existing local amendments for "High Wind Velocity Areas".

Section 91.1612.5 is a **technical amendment** necessary to define specific requirements regarding Flood Hazard documentation specific to existing requirements of the region.

Section 91.1613.6.7 is a **technical amendment** necessary due to geological conditions. The inclusion of the importance factor in this equation has the unintended consequence of reducing the minimum seismic separation distance for important facilities such as hospital, school, police and fire station, etc. from adjoining structures. The proposal to omit the importance factor from Equation 16-44 will ensure that a safe seismic separation distance is provided.

Sections 91.1613.8 through 91.1613.8.1.4 are an **administrative amendment** necessary to accommodate the relocation of existing LA City provisions for suspended ceilings due to changes in the 2010 California Building Code and to correct the referenced sections.

Section 91.1613.8.2 is an **administrative amendment** necessary to accommodate the relocation of this existing LA City provision for wood diaphragm supporting Concrete or Masonry walls, due to changes in the 2010 California Building Code and to correct the referenced sections.

Section 91.1613.9.4.2.2 is a **technical amendment** necessary to make the Los Angeles Building Code (LABC), consistent with the State of California Code in the development of the Base Shear, by making the R value reflect strength design factors.

Section 91.1613.9.9.4 is a **technical amendment** necessary to make the Drift Limitations be consistent with the current strength design limitations based on current ASCE design standards.

Section 91.1613.10 is an **administrative amendment** necessary to revise this code section due to additions of code sections to the 2010 California Building Code.

Section 91.1613.10.1 is an **administrative amendment** necessary to revise this code section by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1613.10.2 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1613.10.3 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1613.10.4 is an Section 91.1616.3 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1613.10.5 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code and to correct a referenced code section.

Section 91.1616 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1616.1 is an **administrative amendment** necessary to make the LABC consistent with the State of California Building Code.

Section 91.1616.2 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1616.3 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1616.4 is an **administrative amendment** necessary to relocate this code section and by renumbering the code section to accommodate addition of code sections to the 2010 California Building Code and to correct referenced code sections.

Section 91.1616.5 is an **administrative amendment** necessary to re-number this code section and to accommodate addition of code sections to the 2010 California Building Code.

Section 91.1703.1 is an **administrative amendment** necessary to clarify that Approved Agencies must also comply with other local Municipal regulations.

Section 91.1703.2 is an **administrative amendment** necessary to clarify that all record of approvals will be kept by the Department and not with the Building Official.

Section 91.1703.3 is an **administrative amendment** necessary to clarify that all record of approvals will be kept by the Department and not with the Building Official.

Section 91.1703.4 is an **administrative amendment** necessary to clarify that all record of approvals will be kept with the Department and not with the Building Official.

Section 91.1703.4.1 is an **administrative amendment** necessary to clarify that technical data must be submitted to the Superintendent of Building and not the Building Official. This terminology is consistent with the rest of the Los Angeles Building Code.

Section 91.1703.4.2 is an **administrative amendment** necessary to direct the user to maintain compliance with research reports as indicated in other sections of the Los Angeles Building Code.

Section 91.1703.6 is an **administrative amendment** necessary to maintain consistency regarding the term "Superintendent of Building" and not the Building Official, which is found throughout the Los Angeles Building Code.

Section 91.1703.6.2 is an **administrative amendment** necessary to maintain consistency regarding the term "Superintendent of Building" and not the Building Official, which is found throughout the Los Angeles Building Code

Section 91.1704.1 is an **administrative amendment** necessary to clarify that special inspection is not necessary for "U" occupancies or other structures which are accessory residential building per section 312.1.

Section 91.1704.1.1 is an **administrative amendment** necessary to clarify the local administrative requirements necessary for filling for a Statement of Special Interest.

Section 91.1704.1.2 is an **administrative amendment** necessary to clarify the proper record keeping requirements for deputy inspectors, the proper way to maintain records and correction process when necessary.

Section 91.1704.1.3 is an **administrative amendment** necessary to outline the application submittal process, the testing requirements and the certification process for Registered Deputy Inspectors.

Section 91.1704.1.4 is an **administrative amendment** necessary to outline the duties responsibilities of Registered Deputy Inspectors

Section 91.1704.1.4.1 is an **administrative amendment** necessary to update the fees for new and renewal of applications.

Section 91.1704.1.4.2 is an **administrative amendment** necessary to outline the waiting time of 30 days, for applicants to re-exam, if they fail to pass an exam.

Section 91.1704.2.2 is an **administrative amendment** necessary to outline the requirements for an approved "Fabricator".

Section 91.1704.3.1.1 is an **administrative amendment** necessary to clarify that only the Steel welding inspection requirements need to be in accordance with AWS D1.1 and not the inspector's qualifications. The inspector's qualifications are subject to separate LA City criteria.

Section 91.1704.3.1.2 is an **administrative amendment** necessary to clarify that only the Cold-Formed Steel inspection requirements need to be in accordance with AWS D1.1 and not the inspector's qualifications. The inspector's qualifications are subject to separate LA City criteria.

Section 91.1704.4 is a **technical amendment** necessary to insure a greater level of stability at the foundation of buildings or structures. Results from the 1994 Northridge earthquake indicated that a lot of damages were attributed to lack of quality control during construction resulting in poor performance of the building or structure.

Section 91.1704.7 is an **administrative amendment** necessary to clarify the need for special inspection for soils and the frequency of the deputy inspections necessary.

Section 91.1704.7.1 is an **administrative amendment** necessary to clarify when a grading inspector is required for grading.

Section 91.1704.8 is a **technical amendment** necessary to clarify some technical terminology and correct a code section referenced.

Section 91.1704.9 is a **technical amendment** necessary to provide a definition for "Cast-in-Place Deep Foundations and Connecting Grade Beams" and to specify the special inspection requirements as required in the referenced 2010 CBC inspection tables.

Section 91.1704.17 is an **administrative amendment** necessary to outline the required certification from the architect, engineer or geologist of the fact that a structure or portion of a structure has been built in conformance with their design and when special inspection is required.

Section 91.1704.18 is an **administrative amendment** necessary to clarify that even when a deputy inspector is performing his or her work, the department may still come in and perform inspections.

Section 91.1704.19 is an **administrative amendment** necessary to clarify the requirements for when a deputy inspector finds termites or termite damage on a building with a raised floor foundation.

Section 91.1704.20 is an **administrative amendment** necessary to clarify that during an emergency the department may deputize Emergency Building Inspectors without any compensation from the City.

Section 91.1704.21 is an **administrative amendment** necessary to outline the requirements for Special Activity Inspection.

Section 91.1704.21.1 is an **administrative amendment** necessary to outline the Section number and Title regarding the Special Activity Inspection Authority.

Section 91.1704.21.2 is an **administrative amendment** necessary to outline the registration requirements for Special Activity Inspection.

Section 91.1704.21.3 is an **administrative amendment** necessary to outline the duties for Special Activity Inspection.

Section 91.1704.21.4 is an **administrative amendment** necessary to outline the fees for Special Activity Inspection.

Section 91.1704.21.5 is an **administrative amendment** necessary to outline the renewal process for Special Activity Inspection.

Section 91.1704.22 is an **administrative amendment** necessary to outline the Section number and Title for Certification of Welders in the City of Los Angeles.

Section 91.1704.22.1 is an **administrative amendment** necessary to establish the certification fees for Certification of Welders.

Section 91.1704.22.2 is an **administrative amendment** necessary to outline the authority of the Superintendent of Building to revoke a license when the workmanship is not meeting the minimum code requirements.

Section 91.1705.2 is an **administrative amendment** necessary to correct code section references for the Statement of Special Inspection section.

Section 91.1705.3 is a **technical amendment** necessary to clarify that only detached one-or two-family dwellings not exceeding two stories and not assigned to seismic design category D, E, or F are exempt when no plan or vertical irregularities exists. This amendment carries forward the recommendations by the Los Angeles Uniform Regional Code Program (LARUCP).

Section 91.1707.1 is an **administrative amendment** necessary to add a section 1707.10 which includes concrete structural inspection for concrete.

Section 91.1707.2 is a **technical amendment** necessary to clarify that structural steel welding requires continuous inspection and all other welding requirements per AISC for structural steel. Also, a registered deputy inspector is required during the fabrication of steel moment frames used in buildings exceeding a building height of 160 feet. Due to the high seismic activity in the LA region, higher levels of safety must be enforced to maintain quality assurance levels.

Section 91.1707.2.1 is a **technical amendment** necessary to clarify that when a building exceeds a height of 160 feet, the engineer and contractor will need to acknowledge in writing that the materials used and the structural work performed, is in compliance with the approved plans. Due to the high seismic activity in the LA region, higher levels of safety must be enforced to maintain quality assurance levels.

Section 91.1707.8 is an **administrative amendment** necessary to clarify that in the City of LA special inspectors are known as "deputy inspectors" and other approved structural systems, may be categorized as alternate methods of constructions through the research report process.

Section 91.1707.10 is a **technical amendment** necessary to clarify that when a building exceeds a height of 160 feet, continuous inspection of the reinforcement and placement of the concrete, and the engineer and contractor will need to acknowledge in writing that the materials used and the structural work performed, is in compliance with the approved plans.

Due to the high seismic activity in the LA region, higher levels of safety must be enforced to maintain quality assurance levels.

Section 91.1708.3 is a **technical amendment** necessary to clarify that Non-destructive testing by an approved Testing Agency, in addition to the steel testing as required per AISC. Also, base metal thicker than 1.5 inches subject to through-thickness weld shrinkage strains, shall be ultrasonically tested for discontinuity behind and adjacent to those welds after joint completion. Any material discontinuities shall be accepted or rejected on the basis of ASTM 435 or ASTM A 898. Due to the high seismic activity in the LA region, higher levels of safety must be enforced to maintain quality assurance levels.

Section 91.1709.2 is an **administrative amendment** necessary to outline the registration and filing process for the certification of "Certified Licensed Contractors".

Section 91.1709.2.2 is an **administrative amendment** necessary to outline the application process, the necessary information on the application, and the fee required to file for the license and certification of "Certified Licensed Contractors".

Section 91.1709.2.3 is an **administrative amendment** necessary to outline the examination, Board Examiners, scope of examination, time, rules fitness of applicant and failure to pass, when applying for "Certified Licensed Contractors".

Section 91.1709.2.4 is an **administrative amendment** necessary to outline the issuance and renewal of the Certificates for "Certified Licensed Contractors".

Section 91.1709.2.5 is an **administrative amendment** necessary to outline exhibition of certificate of the license for "Certified Licensed Contractors".

Section 91.1709.2.6 is an **administrative amendment** necessary to outline possibility of revocation due to incompetence, neglect or failure to observe or report violations of the Building Code for "Certified Licensed Contractors".

Section 91.1710.1 is an **administrative amendment** necessary to clarify the requirements to obtain the services of a structural observer and the duties and responsibilities of the observer to provide an observation report.

Section 91.1710.2 is a **technical amendment** necessary due to Geologic conditions in the Southern California area which high seismic activity and

warrants a higher degree of scrutiny and attention in the construction of seismic resistance components.

Section 91.1712.1 is an **administrative amendment** necessary to clarify that the Superintendent of Building may request testing of new materials or assemblies which are not within the realm of the approved standards.

Section 91.1716.1.1 is an **administrative amendment** necessary to clarify that testing of joist hangers must be conducted in an approved test lab.

Section 91.1716.1.2 is an **administrative amendment** necessary to clarify that testing of Concrete and Clay Roof Tiles must be conducted in an approved test lab.

Section 91.1801.1 is an **administrative amendment** necessary to clarify that, projects subject to scour or water pressure by wind and wave action loads must be designed per Chapter 16 of this code. Also, grading and earthwork must comply with LABC Chapter 70. Lastly, hillside buildings constructed on slopes steeper than 33.33 percent slope shall comply with LABC Section 1613.9.

Section 91.1803.5.6 is a **technical amendment** necessary to clarify that the necessary depth at which testing of the Rock Strata below a building foundation will allow investigation at any unsupported bedding planes or at any rock discontinuities that could the foundation stability and foundation capacity.

Section 91.1805.4.3 is an **administrative amendment** necessary to clarify that drainage discharge must comply with the Plumbing Code.

Section 91.1806.2 is an **administrative amendment** necessary to clarify the necessary test soil data when the Superintendent of Building has reason to doubt the soil values per code, the proper testing procedures must be followed.

Section 91.1807.1.4 is a **technical amendment** necessary to clarify the process of Prescriptive Design of Concrete and Masonry Foundation Walls is limited to areas in Seismic Design Category D, E and F, which are high seismic activity due to Geologic conditions.

Section 91.1809.3 is a **technical amendment** necessary to provide a detail for stepped foundations which is not covered in the code elsewhere. Due to geologic conditions, details such as this one are necessary in various projects.

Section 91.1809.4 is a **technical amendment** necessary to clarify the depth and width of footings below the surface of undisturbed soil and the compacted fill material. Being that throughout the City, the topographic and soil conditions require more stable footings with a proper depth from the top surface of undisturbed soil and not just the top surface

Section 91.1809.7 is a **technical amendment** necessary to provide an option for prescriptive foundation construction limited to one story buildings.

Section 91.1809.12 is a **technical amendment** necessary to provide an option for wood foundations for Type V buildings limited to structures in Seismic Design Category D, E or F.

Section 91.1810.3.1.5 is a **technical amendment** necessary to allow Helical piles to underpin foundations used to support existing structures or retrofit and not for new construction.

Section 91.1810.3.2.4 is a **technical amendment** necessary due to Geological conditions. The use of deep timber piles is not allowed in structures assigned to Seismic Design Category D, E or F.

Section 91.1810.3.3.1.4 is an **administrative amendment** necessary for written language to be consistent with the Los Angeles Building Code.

Section 91.1810.3.10.4 is an **administrative amendment** necessary code Sections referenced to be consistent with the Los Angeles Building Code Sections.

Section 91.1908.1 is an **administrative amendment** necessary to address further amendments added or modified in this division.

Section 91.1908.1.2 is an **administrative amendment** necessary due to the recommendations by the Los Angeles Uniform Regional Code Program (LARUCP), additional sections have been added.

Section 91.1908.1.8 is an **administrative amendment** necessary due to the recommendations by the Los Angeles Uniform Regional Code Program (LARUCP), additional sections have been added.

Sections 91.1908.1.11 through 91.1908.1.14 are **technical amendments** necessary to carry over critical provisions for the design of concrete columns in moment frames from the UBC. Increased confinement is critical to the integrity of such columns and these modifications ensure that is provided for when certain thresholds are exceeded.

Section 91.1909.4 is a **technical amendment** necessary to carry forward the previous 1999 and 2002 LARUCP amendments limit this exception to not apply to elements designed to resist seismic lateral forces for structures assigned to Seismic Design Category D, E, or F.

Section 91.2113.3 is an **administrative amendment** to make the first paragraph of the Section consistent with the CBC and carry forward the second paragraph with what was originally required for the repair of chimneys as previously required under the original amendment.

Section 91.2204.1 is an **administrative amendment** to make carry forward existing local amendments related to the approval of licensed fabricator shops and welding procedures.

Section 91.2204.1.1.1 and 91.2204.1.1.2 are **administrative amendment** to make carry forward existing local amendments related to the welding requirements for Seismic Force Resisting System Welds and Demand Critical Welds as specified in AWS.

Sections 91.2205.4 is **technical amendment** necessary modifications recommended by both SEAOSC Seismology and Steel Committee due to recent test results on braces used in steel concentrically braces frames (SCBF) which indicate that many commonly used sections and brace configurations do not meet seismic performance expectations.

Section 91.2304.9.1 and Table 91.2304.9.1 are **technical amendments** necessary to clarify that Staples are not allowed to be used to resist or transfer seismic forces. This is substantiated by cyclic testing. This is due to geological conditions. The poor performance (strength and drift control) in the cyclic testing of using staple fasteners in resisting or transferring seismic forces, and due to the geological reason. These amendments are a continuation of adoptions.

Section 91.2304.11.7 is a **technical amendment** necessary geological conditions since there is insufficient data to show the wood retaining or crib walls is effective in supporting structures and buildings during a seismic event, and due to the climate zone in the Southern California area to have major winds, fire and rain related disasters.

Section 91.2305.4 is a **technical amendment** necessary due to geological conditions. Failure and poor performance were observed in 1994 Northridge earthquake. The panel construction using pneumatic nail guns reaches ultimate load capacity and fails at substantially less lateral deflection than those using same size hand-driven nails. The amendment is also a continuation of a similar amendment adopted during previous code adoption cycles.

Section 91.2305.5 is a **technical amendment** necessary due to geological conditions. This is amendment is due to geological. Using a safety factor of 75% is due to the insufficient of acceptance report on dynamic testing protocol, and adding steel plate washer is due to the poor performance observed in 1994 Northridge earthquake. The amendment is also a continuation of a similar amendment adopted during previous code adoption cycles.

Section 91.2305.2.5 is a **technical amendment** necessary to prohibit the use of wood diaphragm in rotation based on numerous failures observed in the 1994 Northridge earthquake.

Table 2305.3.11 is an **administrative amendment** necessary to clarify the table name

Section 91.2306.2.1 is a **technical amendment** necessary to limit the use of tables 2306.1.(3) Table 2306.2.1(4) to structures in Seismic Design Category D, e or F and the use of Staples on wood diaphragms.

Tables 2306.2.1(3) and 2306.2.1(4) are an **administrative amendment** necessary carry to forward the use of these tables. This is due to geological conditions. These tables do not allow the use of staples in Seismic Design Categories D, E, or F.

Section 91.2306.3 is a **technical amendment** necessary due to geological conditions. The structural panels fastened with staples do not exhibit the same behavior as the wood panels fastened with common nails in the cyclic testing. In lieu of strike-out all capacities on the Tables that utilized by staples, new Tables are introduced particularly for the seismic design loads in the SDC D, E, or F. The revision will leave the door open to use staples per CBC Tables for those areas where the seismic activity is not significant (SDC A or B) within the Southern California area. The amendment also prohibits the use of panels placed over gypsum sheathing to prevent the undesirable performance of nails under cyclic earthquake displacements.

Table 2306.3(2) is a **technical amendment** that puts additional restrictions on the design of wood structural panel diaphragms and shear walls. The proposed modification to place certain design and construction limits on structural wood panel shear walls thus resulting in improved quality of construction and performance of structures need to be incorporated into the code to assure that new buildings and additions to existing buildings are designed and constructed in accordance with the scope and objective of the International Building Code.

Section 91.2306.7 is a **technical amendment** necessary due to geological conditions. The LARCUP Structural Code committee recommends limited use of shear walls sheathed with other materials, since shear walls sheathed with other materials showed poor performance in the 1994 Northridge earthquake. The committee also allowed to maintain all capacities that shown on Table without reduction since all the shear walls sheathed with other material shall be designed under R=2.0, not R=6.5. To penalize the use of shear walls with other materials by R=2 and a capacity reduction is not the intent.

Section 91.2308.3.4 is a **technical amendment** necessary due to geological conditions. Interior walls may take over half of the seismic loading imposed on simple buildings. Without a continuous footing, the loads may be transferred through other non-structural elements which are not designed to take the combined seismic and gravity loads. The amendment is also a continuation of a similar amendment adopted during previous code adoption cycles.

Section 91.2308.12.1 is an **administrative amendment** necessary to clarify the definition of one story. The definition as written is slightly ambiguous related to the height of a structure height above grade plane.

Section 91.2308.12.2 is an **administrative amendment** necessary to clarify the Section language as written.

Section 91.2308.12.4 and Table 91.230812.4 are **technical amendments** necessary due to Local Geologic Conditions. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings. The amendment is to continue similar amendments adopted during previous code adoption cycles.

Section 91.2308.12.5 is a **technical amendment** necessary due to Local Geologic Conditions. The structural panels fastened with staples do not exhibit the same behavior as the wood panels fastened with common nails in cyclic testing. This amendment is a continuation of a similar amendments adopted during previous code adoption cycles.

Section 91.2503.1 is an **administrative amendment** necessary to reference an existing inspection Section.

Sections 91.2702.15.1 and 91.2702.18.1 are an **administrative amendment** necessary to be consistent with the existing Electrical Code requirements for High-Rose Buildings under the 2011 Los Angeles Electrical Code.

Section 91.3002.1.1 is an **administrative amendment** necessary to reference a Division of the LAMC as opposed to a reference Chapter of the CBC.

Section 91.3002.3 is an **administrative amendment** necessary since the Elevator Code adopts the State of California Code of Regulations Title 8, Division 1, Subchapter 6, Group IV Elevator Safety Orders, which governs the design, erection, construction, installation, service and operation of conveyances as defined in the California Labor Code 7300.1 and is more restrictive.

Section 91.3007 is an **administrative amendment** to not adopt this Section of the CBC since the Elevator Code adopts the State of California Code of Regulations Title 8, Division 1, Subchapter 6, Group IV Elevator Safety Orders, which governs the design, erection, construction, installation, service and operation of conveyances as defined in the California Labor Code 7300.1 and is more restrictive.

Section 91.3008 is an **administrative amendment** to not adopt this Section of the CBC since the Elevator Code adopts the State of California Code of Regulations Title 8, Division 1, Subchapter 6, Group IV Elevator Safety Orders, which governs the design, erection, construction, installation, service and operation of conveyances as defined in the California Labor Code 7300.1 and is more restrictive.

Sections 91.3111 through Section 91.3111.4 are an **administrative amendment** necessary to adopt by reference Sections I101.1 through I101.4 of Appendix I of the 2010 CBC.

Sections 91.3201.1 through Section 91.3202.3.1 are **administrative amendments** necessary to be consistent with local ordinance in regards to allowance of any encroachment over public right of way.

Section 91.3304.1.4 is an **administrative amendment** necessary to be consistent with the current local amendments related to grading.

Section 91.3401.2 through Sections 91.3409.1, are necessary **administrative amendments** to be consistent with existing current local amendments related existing buildings.

Section 91.6105 is a local **administrative amendment,** necessary require that schools, hospitals, sanitariums must be kept a distance of 200 feet from an oil well.

Section 91.6215 is an **administrative amendment** necessary to correct the referenced test standards.

Section 91.6302.3 is an **administrative amendment to a local amendment** necessary to increase the number of employees for when a dressing room is required from four to five, and to correct reference CBC code Sections.

Section 91.6304.3 is an **administrative amendment** necessary to update and make consistent revised CBC and LABC code Sections.

Section 91.6703 is an **administrative amendment** to be consistent with the State of California Code. Emergency egress section is now CBC section 1029. "Openable" and it revises the word to operable.

Section 91.7003 is an **administrative amendment** necessary to add the definition of "Soils Engineer (Geotechnical Engineer)".

Section 91.7005.2 is an **administrative amendment** necessary to include another local LABC code Section to the compliance requirements.

Section 91.7005.3 is a local **administrative amendment,** necessary to be consistent with the existing protective tree ordinance in the LAMC.

Section 91.7006.2 is an **administrative amendment** necessary to be consistent with CBC requirements.

Section 91.7012.1 is an **administrative amendment** necessary to maintain consistency with LABC Chapter 1.

Section 91.7012.2.1 is an **administrative amendment** necessary to update and to conform to the requirements in Chapter 1 of the LAMC. The Department of Building and Safety no longer reviews or approves plant types for landscaping.

Section 91.7012.2.2 is an **administrative amendment** necessary to update and to conform to the requirements in Chapter 1 of LAMC. The Department of Building and Safety no longer reviews or approves plant types for landscaping.

Sections 91.7012.2.3 through 91.7012.4 are local **administrative amendments,** necessary to be consistent with the requirements found in the LAMC. The Department of Building and Safety no longer reviews or approves landscaping requirements.

Section 91.8101.1 is an **administrative amendment** necessary to correct clarify written language.

Section 91.8103.2 is an **administrative amendment** necessary to correct clarify written language and to reference CBC standards along with necessary compliance of existing local amendments.

Section 91.8103.2 is an **administrative amendment** necessary to correct referenced CBC code Sections.

Section 91.8106.1 is an **administrative amendment** necessary to correct clarify written language.

Section 91.8203 is an **administrative amendment** necessary to update local LA City amendments.

Section 91.8208.2 is an **administrative amendment** necessary to add meter units to existing mile units in the current local amendments.

Section 91.8502.1.2 and 91.8502.2 are an **administrative amendment** necessary to correct the referenced CBC code Sections for protected openings.

Section 91.8502.3.2 is an **administrative amendment** necessary to correct the referenced CBC code Sections for Smoke Damper requirements.

Section 91.8502.5 is an **administrative amendment** necessary to correct the referenced CBC code Sections.

Section 91.8502.7.1 is an **administrative amendment** necessary to correct the referenced CBC code Sections.

Section 91.8502.7.4 is an **administrative amendment** necessary to correct the referenced CBC code Sections related to Corridors.

Section 91.8602.8.1 is an **administrative amendment** necessary to correct a code reference to the CBC.

Section 91.8603.1.1 is an **administrative amendment** to correct a code referenced CBC Sections.

Section 91.8603.1.2 is an **administrative amendment** necessary to correct the referenced CBC code Sections for Smoke Alarms.

Section 91.8603.2.1 is an **administrative amendment** necessary to correct the referenced CBC code Sections for Smoke Alarms.

Section 91.8603.2.2 is an **administrative amendment** necessary to correct the referenced CBC code Sections for Smoke Alarms.

Section 91.8604.2.3 is an **administrative amendment** necessary to correct the referenced CBC code Sections related to shaft enclosure.

Section 91.8605.2 is an **administrative amendment** necessary to correct the referenced CBC code Sections for Smoke Alarms.

Section 91.8808.2 is an **administrative amendment** necessary to be consistent with the State of California Code. CBC Section 1630, "minimum design lateral force and related effects", was removed and replaced by ASCE 7.

Section 91.8808.6.3 is an **administrative amendment** necessary to be consistent with the State of California Code. CBC Section 2106.5.1 was removed from CBC 2010 and replaced by Masonry structures and components shall comply with the requirements in Section 1.17 of TMS 402/ACI 530/ASCE 5.

Section 91.8809.2.2 is an **administrative amendment** necessary to be consistent with the State of California Code. CBC Section 1403.4.3 does not existing and Section 1403.4.3 "Anchored Veneer" in CBC 2001 was replaced by Section 1405 "INSTALLATION OF WALL COVERINGS" in CBC 2007 and CBC 2010.

Section 91.8809.5.3 is an **administrative amendment** necessary to be consistent with the State of California Code. Refer non-adopted code (U.B.C.). Revised to sections in 2007 California Existing Building Code or 2010 California Existing Building Code (If it is available) which include U.B.C. Standard 21-8 as a referenced standards.

Tables 88-H and 88-I are an **administrative amendment** to correct typing errors and to correct CBC code Sections referenced.

Section 91.8903.1.6 is an **administrative amendment** necessary to consolidate authority granted by provisions of Article 3 of this chapter directly into this division.

Section 91.8903.1.7 is an **administrative amendment** necessary to renumber this Section.

Section 91.8903.1.8 is an **administrative amendment** necessary to renumber this Section.

Section 91.8903.2.4 is an **administrative amendment** necessary to integrate "intent of the code" to facilitate interpretation for enforcement.

Section 91.8906.2 is an **administrative amendment** necessary to improve consistency with Section 8903 of this division.

Section 91.9108.2 is an **administrative amendment** necessary to be consistent with CBC Sections related to "Anchorage" requirements.

Section 91.9108.2 is an **administrative amendment** necessary to be consistent with CBC Sections related to "Anchorage Loads" requirements.

Section 91.9408.3 is an **administrative amendment** necessary to be consistent with CBC Sections related to Structural Observation.

Section 91.9510.2 is an **administrative amendment** necessary to be consistent with CBC Sections and to correct the right table referenced.

Section 91.9510.4 is an **administrative amendment** necessary to be correct the noted design formula.

Section 91.9603 is an **administrative amendment** necessary to correct the definition of "Reinforced Masonry Wall" as defined by the latest ACI referenced design standard.

Section 91.9604.1 is an **administrative amendment** necessary to provide an option to allow engineers to use the latest seismic design criteria per ASCE 7. To use 75% of the design load under 2006 IBC will still be in the higher demand than the 1997 UBC for the steel design, and for the bolt design in concrete.

Section 91.9604.2 is an **administrative amendment** necessary to CBC Section referenced.

Section 91.9604.3 is an **administrative amendment** necessary to CBC Section referenced.

Section 98.0403.2 is an **administrative amendment** necessary to clarify the "Miscellaneous Fee" definition.

Table 4-A and Table 4-B are an **administrative amendment** necessary to correct the LAMC Section referenced from 12.26K to 12.26 and to update fees from previously approved ordinance No. 180868.

CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "BUD" OVROM
GENERAL MANAGER

RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

June 25, 2012

Council File No. 10-2335

Jim McGowan, Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

FILING OF EXPRESS FINDINGS AND DETERMINATION PERSUANT TO SECTION
17958.7 OF THE HEALTH AND SAFETY CODE

On June 21, 2011, the Los Angeles City Council adopted an ordinance to amend the Los Angeles Municipal Code (LAMC) by incorporating portions of the 2009 International Residential Code and the 2010 California Residential Code and adopt the findings that make the modifications to the California Residential Code to be reasonably necessary because of local climatic, geological or topographical conditions.

Enclosed with this transmittal is a copy of the findings along with the modifications (the ordinance) to the California Residential Code. The Department of Building and Safety, City of Los Angeles will consider this as complying with Section 17958.7 of the Health and Safety Code.

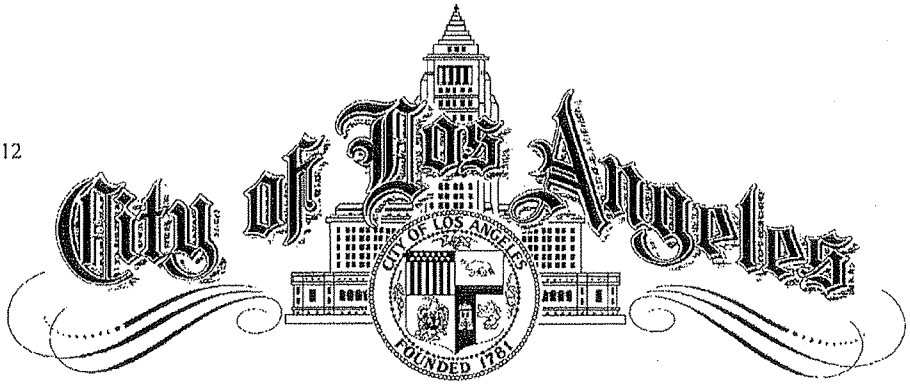
If you have any questions regarding this matter, please contact the Code Engineer, Mr. Victor Cuevas at (213) 482-0409.

Robert "Bud" Ovrom
General Manager

Attachments

City Hall East
200 N. Main Street
Room 800
Los Angeles, CA 90012

(213) 978-8100 Tel
(213) 978-8312 Fax
CTrutanich@lacity.org
www.lacity.org/atty



CARMEN A. TRUTANICH
City Attorney

REPORT NO. R11-0190

MAY 25 2011

REPORT RE:

DRAFT ORDINANCE AMENDING CHAPTER IX OF THE LOS ANGELES MUNICIPAL CODE TO ESTABLISH THE LOS ANGELES RESIDENTIAL CODE

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File 10-2335

Honorable Members:

We are transmitting to you for your consideration, approved as to form and legality, a draft ordinance incorporating the California Residential Code (CRC) as revised, to establish the Los Angeles Residential Code.

Summary of Ordinance Provisions

When this matter was considered by your Honorable Planning and Land Use Management (PLUM) Committee, the Committee requested that the City Attorney prepare the final ordinance based on the proposed ordinance submitted at the Committee meeting by the Department of Building and Safety (DBS) and attached to the Council file.

The enclosed ordinance incorporates the CRC with modifications, exceptions and additions to reflect local topographical and geological conditions within the Los Angeles/Long Beach region, the possibility of earthquakes and the special needs for buildings constructed on hillside locations.

CEQA Determination

We recommend that, prior to adoption of this ordinance, you determine that your action is exempt from the California Environmental Quality Act ("CEQA") under State CEQA Guidelines sections 15060(c)(2) and (3) because it will not result in a direct, or reasonably foreseeable indirect physical change in the environment as the ordinance establishes design standards for the construction of buildings and structures for enforcement purposes only. In addition, council may determine that adoption of the ordinance is exempt from CEQA under City CEQA Guidelines Article II, Section 1 (General Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

If the Council concurs with the above, it may comply with CEQA by making one or all of these determinations prior to or concurrent with its action on the ordinance. It is also recommended that you direct Staff to cause the filing of a Notice of Exemption in accordance with CEQA Guidelines Section 15062.

Council Rule 38 Referral

The draft ordinance was sent, pursuant to Council Rule 38, to the Department of Building and Safety with a request that they provide any comments directly to the City Council or its Committees when the matter is considered.

If you have any questions regarding this matter, please contact Deputy City Attorney Kim Rodgers Westhoff at (213) 978-8242. She or another member of this Office will be present when you consider this matter to answer any questions you may have.

Very truly yours,

CARMEN A. TRUTANICH, City Attorney

By 
PEDRO B. ECHEVERRIA
Chief Assistant City Attorney

PBE/KRW:pj
Transmittal

family dwellings shall conform to Section 903.3.1.3 of the California Building Code.

ARTICLE 1.5, DIVISION 2

SEC. 91.5.200. BASIC PROVISIONS.

Chapter 2 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

SEC. 91.5.201. GENERAL.

SEC. 91.5.201.4. Terms Not Defined. The definitions in Webster's Third New California Dictionary of the English Language, Unabridged, shall be considered as providing ordinarily accepted meanings.

SEC. 91.5.202. DEFINITIONS.

Section 202 of the CRC is adopted by reference, except that the following CRC definitions are not adopted:

ATTIC, HABITABLE.

BUILDING OFFICIAL.

FAMILY.

LOT.

The following definitions are adopted:

BUILDING OFFICIAL. See Los Angeles Municipal Code Section 91.202.

LOT. See Los Angeles Municipal Code Section 12.03.

SUPERINTENDENT OF BUILDING. See Los Angeles Municipal Code Section 91.202.

ARTICLE 1.5, DIVISION 3

SEC. 91.5.300. BASIC PROVISIONS.

Chapter 3 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

SEC. 91.5.301.1.3. Engineered Design. When a building of otherwise conventional construction contains structural elements exceeding the limits of CRC Section R301 or otherwise not conforming to this Code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the Los Angeles Building Code is permitted for all buildings and structures, and parts thereof, included in the scope of this Code.

Buildings with masonry or concrete walls or of light frame construction exceeding two stories shall have an engineered design in accordance with the Los Angeles Building Code.

SEC. 91.5.301.1.3.2. Woodframe Structures. The Building Official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than two stories and basement in height located in Seismic Design Category A, B, or C. Notwithstanding other provisions of law, the law establishing these provisions is found in Business and Professions Code Sections 5537 and 6737.1.

The Building Official shall require construction documents to be approved and stamped by a California licensed architect or engineer for all dwellings of woodframe construction more than one story in height located in Seismic Design Category D_o, D_1, D_2, or E.

SEC. 91.5.301.1.4. Seismic Design Provisions for Buildings Constructed On Or Into Slopes Steeper Than One Unit Vertical In Three Units Horizontal (33.3 Percent Slope). The design and construction of new buildings and additions to existing buildings when constructed on or into slopes steeper than one unit vertical in three units horizontal (33.3 percent slope) shall comply with Section 91.1613.9 of the Los Angeles Municipal Code.

TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP[e]	ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARDS[g]	AIR FREEZING INDEX[i]	MEAN ANNUAL TEMP[j]
	Speed[d] (mph)	Topographic effects[k]		Weathering[a]	Frost line depth[b]	Termite[c]					
0	85	No	D_2/E	Negligible	12"	Yes	39° to 44°	No	See Flood Map	0	61.1°

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., "negligible," "moderate" or "severe") for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.

c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [FigureR301.2(4)].Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e. *Temperatures* shall be permitted to reflect local climates or local weather experience as determined by the building official.

f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.

g. The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction's entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRMs and FBFMs or other flood hazard map adopted by the authority having jurisdiction, as amended.

h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall fill in this part of the table with "NO."

i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99%) value on the National Climatic Data Center data table "Air Freezing Index- USA Method (Base 32°)" at www.ncdc.noaa.gov/fpsf.html.

j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)" at www.ncdc.noaa.gov/fpsf.html.

k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with "YES." Otherwise, the jurisdiction shall indicate "NO" in this part of the table.

SEC. 91.5.301.2.2.2.5. Irregular Buildings. Prescriptive construction as regulated by this code shall not be used for irregular structures located in Seismic Design Categories C, D_0, D_1 and D_2. Irregular portions of structures shall be designed in accordance with accepted engineering practice to the extent the irregular features affect the performance of the remaining structural system. When the forces associated with the irregularity are resisted by a structural system designed in accordance with accepted engineering practice, design of the remainder of the building shall be permitted using the provisions of this code. A building or portion of a building shall be considered to be irregular when one or more of the following conditions occur:

1. When exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required;

2. When a section of floor or roof is not laterally supported by shear walls or braced wall lines on all edges;

Exception: Portions of floors that do not support shear walls or braced wall panels above, or roofs, shall be permitted to extend no more than 6 feet (1829 mm) beyond a shear wall or braced wall line.

3. When the end of a braced wall panel occurs over an opening in the wall below;

4. When an opening in a floor or roof exceeds the lesser of 12 feet (3658 mm) or 50 percent of the least floor or roof dimension;

5. When portions of a floor level are vertically offset;

6. When shear walls and braced wall lines do not occur in two perpendicular directions;

7. When stories above-grade partially or completely braced by wood wall framing in accordance with CBC Section R602 or steel wall framing in accordance with CBC Section R603 include masonry or concrete construction;

Exception: Fireplaces, chimneys and masonry veneer as permitted by this code. When this irregularity applies, the entire story shall be designed in accordance with accepted engineering practice.

SEC. 91.5.301.2.2.3.5.1. AISI S230, Section B1. AISI S230, Section B1 is modified to read as follows:

Where No. 8 screws are specified, the required number of screws in a steel-to-steel connection shall be permitted to be reduced in accordance with the reduction factors in Table B1-1, when larger screws are used or when sheets of steel are being

connected and are thicker than 33 mils (0.84mm). When applying the reduction factor, the resulting number of screws shall be rounded up.

SEC. 91.5.311.2. Egress Door. At least one egress door shall be provided for each dwelling unit. The egress door shall be side-hinged, and shall provide a minimum clear width of 32 inches (813 mm) when measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). The minimum clear height of the door opening shall not be less than 78 inches (1981 mm) in height measured from the top of the threshold to the bottom of the stop. This is accomplished by providing a door not less than 3 feet in width and 6 feet 8 inches in height. Egress doors shall be readily openable from inside the dwelling without the use of a key or special knowledge or effort. Every interior door in a doorway through which occupants pass shall have a minimum width of 32 inches (813 mm).

SEC. 91.5.322.1.4.1. Determination of Design Flood Elevations. If design flood elevations are not specified, the building official is authorized to require the applicant to:

1. Obtain and reasonably use data available from a federal, state or other source; or

2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered civil engineer who shall document that the technical methods used reflect currently accepted engineering practice. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

ARTICLE 1.5, DIVISION 4

SEC. 91.5.400. BASIC PROVISIONS.

Chapter 4 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

SEC. 91.5.401.1. Application. The provisions of this division shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions of this division, the design and construction of foundations in areas prone to flooding as established by Table R301.2(1) shall meet the provisions of CRC Section R322. Wood foundations shall be designed and installed in accordance with AF&PA PWF.

Exception: The provisions of this Chapter shall be permitted to be used for wood foundations only in the following situations:

1. In buildings that have no more than two floors and a roof;

2. When interior basement and foundation walls are constructed at intervals not exceeding 50 feet (15 240 mm).

Wood foundations in Seismic Design Category D_0, D_1, or D_2 shall not be permitted.

Exception: In non-occupied, single-story, detached storage sheds and similar uses other than carport or garage, provided the gross floor area does not exceed 200 square feet, the plate height does not exceed 12 feet in height above the grade at any point, and the maximum roof projection does not exceed 24 inches.

SEC. 91.5.403.1.2. Continuous Footing in Seismic Design Categories D_0, D_1, and D_2. The braced wall panels at exterior walls of buildings located in Seismic Design Categories D_0, D_1, and D_2 shall be supported by continuous footings. All required interior braced wall panels in buildings shall also be supported by continuous footings.

SEC. 91.5.403.1.3. Seismic Reinforcing. Concrete footings located in Seismic Design Categories D_0, D_1, and D_2, as established in Table R301.2(1), shall have minimum reinforcement. Bottom reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

In Seismic Design Categories D_0, D_1, and D_2 where a construction joint is created between a concrete footing and a stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing, have a standard hook and extend a minimum of 14 inches (357 mm) into the stem wall.

In Seismic Design Categories D_0, D_1, and D_2 where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing and have a standard hook.

In Seismic Design Categories D_0, D_1, and D_2 masonry stem walls without solid grout and vertical reinforcing are not permitted.

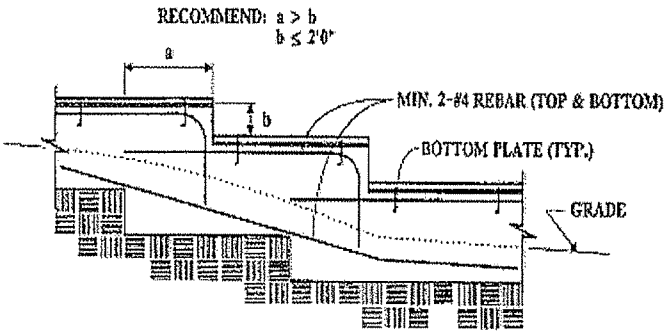
Exception: In detached one- and two-family dwellings located in Seismic Design Category A, B, or C which are three stories or less in height and constructed with stud bearing walls, plain concrete footings without longitudinal reinforcement supporting walls and isolated plain concrete footings supporting columns or pedestals are permitted.

SEC. 91.5.403.1.5. Slope. The top surface of footings shall be level. The bottom surface of footings shall not have a slope exceeding one unit vertical in 10 units horizontal (10-percent slope). Footings shall be stepped where it is necessary to change the elevation of the top surface of the footings or where the slope of the bottom

elevation of the top surface of the footings or where the slope of the bottom surface of the footings will exceed one unit vertical in ten units horizontal (10-percent slope).

For structures located in Seismic Design Categories D_0, D_1, and D_2, or E, stepped footings shall be reinforced with four ½-inch diameter (12.7 mm) deformed reinforcing bars. Two bars shall be placed at the top and bottom of the footing as shown in figure 91.5.403.1.5.

Figure 91.5.403.1.5
STEPPED FOOTING



STEPPED FOUNDATIONS

SEC. 91.5.404.2. Wood Foundation Walls. Wood foundation walls shall be constructed in accordance with the provisions of CRC Sections R404.2.1 through R404.2.6 and with the details shown in CRC Figures R403.1(2) and R403.2(3). Wood foundation walls shall not be used for structures located in Seismic Design Category D_0, D_1, or D_2.

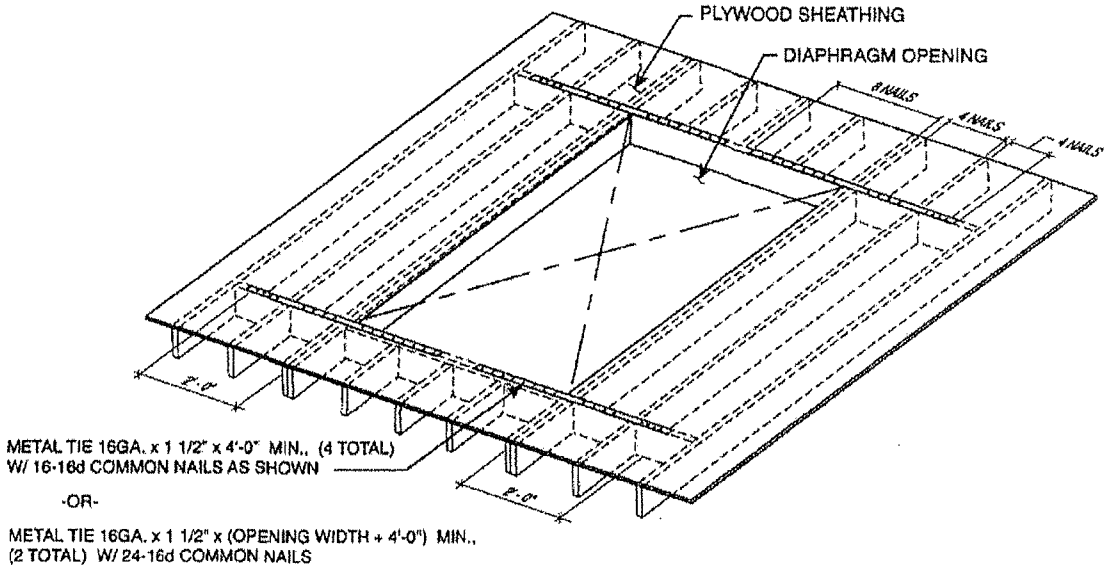
ARTICLE 1.5, DIVISION 5

SEC. 91.5.500. BASIC PROVISIONS.

Chapter 5 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

SEC. 91.5.501.1. Application. The provision of this Division shall control the design and construction of the floors for all buildings including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment weighing less than 400 lbs and maximum height of 4 feet above the floor or attic level.

SEC. 91.5.503.2.4. Openings in Horizontal Diaphragms. Openings in horizontal diaphragms with a dimension perpendicular to the joist that is greater than 4 feet (1.2 m) shall be constructed in accordance with Figure 91.5.503.2.4.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. Blockings shall be provided beyond headers.
b. Metal ties not less than 0.058 inch [1.47 mm (16 galvanized gage)] by 1.5 inches (38 mm) wide with eight 16d common nails on each side of the header-joist intersection. The metal ties shall have a minimum yield of 33,000 psi (227 MPa).
c. Openings in diaphragms shall be further limited in accordance with Section R301.2.2.2.5.

Figure 91.5.503.2.4

ARTICLE 1.5, DIVISION 6

SEC. 91.5.600. BASIC PROVISIONS.

Chapter 6 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

TABLE 91.5.602.3(1)
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER [a, b, c]	SPACING OF FASTENERS
	Roof		
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2 1/2" x 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie rafter, face nail or 1 ¼" 20 gauge ridge strap	3-10d (3" x 0.128")	—
5	Rafter to plate, toe nail	2-16d (3 1/2" x 0.135")	—
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	4-16d (3 1/2" x 0.135") 3-16d (3 1/2" x 0.135")	— —
	Wall		
7	Built-up corner studs	10d (3" x 0.128")	24" o.c.
8	Built-up header, two pieces with ½" spacer	16d (3 1/2" x 0.135")	16" o.c. along each edge
9	Continued header, two pieces	16d (3 1/2" x 0.135")	16" o.c. along each edge
10	Continuous header to stud, toe nail	4-8d (2 1/2"x 0.113")	—
11	Double studs, face nail	10d (3" x 0.128")	24" o.c.
12	Double top plates, face nail	10d (3" x 0.128")	24" o.c.
13	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (3 1/2" x 0.135")	—
14	Sole plate to joist or blocking, face nail	16d (3 1/2" x 0.135")	16" o.c.
15	Sole plate to joist or blocking at braced wall panels	3-16d (3 1/2" x 0.135")	16" o.c.
16	Stud to sole plate, toe nail	3-8d (2 1/2" x 0.113") or 2-16d (3 1/2" x 0.135")	— —
17	Top or sole plate to stud, end nail	2-16d (3 1/2" x 0.135")	—
18	Top plates, laps at corners and intersections, face nail	2-10d (3" x 0.128")	—
19	1"brace to each stud and plate, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 ¾"	— —
20	1" x 6"sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 ¾"	— —
21	1" x 8"sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 3 staples 1 ¾"	— —
22	Wider than 1" x 8"sheathing to each bearing, face nail	3-8d (2 1/2" x 0.113") 4 staples 1 ¾"	— —

(continued)

Floor				
23	Joist to sill or girder, toe nail		3-8d (2 1/2" x 0.113")	—
24	1" x 6" subfloor or less to each joist, face nail		2-8d (2 1/2" x 0.113") 2 staples 1 ¾"	— —
25	2" subfloor to joist or girder, blind and face nail		2-16d (3 1/2" x 0.135")	—
26	Rim joist to top plate, toe nail (roof applications also)		8d (2 1/2" x 0.113")	6" o.c.
27	2" planks (plank & beam – floor & roof)		2-16d (3 1/2" x 0.135")	at each bearing
28	Built-up girders and beams, 2-inch lumber layers		10d (3" x 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
29	Ledger strip supporting joists or rafters		3-16d (3 1/2" x 0.135")	At each joist or rafter

ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER [b, c, e]	SPACING OF FASTENERS	
			Edges (inches)[f]	Intermediate Supports [c, e] (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing				
30	3/8" – ½"	6d common (2" x 0.113") nail (subfloor wall) [f] 8d common (2 ½" x 0.131") nail (roof)	6	12 [g]
31	5/16" – ½"	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 ½" x 0.131") nail (roof) [f]	6	12 [g]
32	9/16" – 1"	8d common (2 ½" x 0.131")	6	12 [g]
33	1 1/8" – 1 ¼"	10d common (3" x 0.148") or 8d common (2 ½" x 0.131") deformed nail	6	12
Other wall sheathing [h]				
34	1/2 structural cellulosic fiberboard sheathing	½" galvanized roofing nail,	3	6
35	25/32 structural cellulosic fiberboard sheathing	1 ¾" galvanized roofing nail,	3	6
36	1/2" gypsum sheathing [d]	1 ½" galvanized roofing nail; 1 ¼" screws, Type W or S	7	7
37	5/8" gypsum sheathing [d]	1 ¾" galvanized roofing nail; 1 5/8" screws, Type W or S	7	7
Wood structural panels, combination subfloor underlayment to framing				
38	¾" and less	6d deformed (2" x 0.120") nail or 8d common (2 ½" x 0.131") nail	6	12
39	7/8" – 1"	8d common (2 ½" x 0.131") nail or 8d deformed (2 ½" x 0.120") nail	6	12
40	1 1/8" – 1 1/4"	10d common (3" x 0.148") nail or 8d deformed (2 ½" x 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1ksi = 6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.

b. Staples are 16 gauge wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.

d. 4-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on Table 91.5.602.3(2).

f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2 ½" x 0.120") nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable endwall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.

i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

TABLE 91.5.602.3(2)
ALTERNATE ATTACHMENTS

NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION[a, b] OF FASTENER AND LENGTH (inches)	SPACING[c] OF FASTENERS	
		Edges (inches)	Intermediate supports (inches)
Wood structural panels subfloor, roof and wall sheathing to framing and particleboard wall sheathing to framing[f]			
Up to ½			
	0.097 – 0.099 Nail 2 ¼	3	6
19/32 and 5/8	0.113 Nail 2	3	6
	0.097 – 0.099 Nail 2 ¼	4	8
23/32 and ¾			
	0.097 – 0.099 Nail 2 ¼	4	8
1			
	0.113 Nail 2 ¼	3	6
	0.097 - 0.099 Nail 2 ½	4	8
NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION[a,b] OF FASTENER AND LENGTH (inches)	SPACING[c] OF FASTENERS	
		Edges (inches)	Body of panel (inches)
Floor underlayment; plywood-hardboard-particleboard[f]			
Plywood			
¼ and 5/16	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	3	6
11/32, 3/8, 15/32, and 1/2	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8[e]
19/32, 5/8, 23/32, 3/4	1 1/2 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8
Hardboard[f]			
0.200	1 1/2 long ring-grooved underlayment nail	6	6
	4d cement-coated sinker nail	6	6
	Staple 18 ga., 7/8 long (plastic coated)	3	6

(*continued*)

Particleboard			
1/4	4d ring-grooved underlayment nail	3	6
	Staple 18 ga., 7/8 long, 3/16 crown	3	6
3/8	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 1/8 long, 3/8 crown	3	6
½, 5/8	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 5/8 long, 3/8 crown	3	6

For SI: 1 inch = 25.4 mm.

a. Nail is a general description and may be T-head, modified round head or round head.

b. Staples shall have a minimum crown width of 7/16 inch on diameter except as noted.

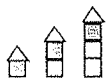
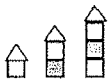
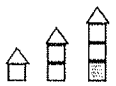
c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.

d. Fasteners shall be placed in a grid pattern throughout the body of the panel.

e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.

f. Hardboard underlayment shall conform to ANSI/AHA A135.4.

TABLE 91.5.602.10.1.2(2)[a, b, c]
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY
(AS A FUNCTION OF BRACED WALL LINE LENGTH)

SOIL CLASS D [a] WALL HEIGHT = 10 FT 10 PSF FLOOR DEAD LOAD 15 PSF ROOF/CEILING DEAD LOAD BRACED WALL LINE SPACING ≤25 FT			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE			
Seismic Design Category (SDC)	Story Location	Braced Wall Line Length	Method LIB	Methods [d] DWB, SFB, GB, PBS, PCP, HPS	Method WSP	Continuous Sheathing
SDC A and B and Detached Dwellings in C						
SDC C		10	2.5	2.5	1.6	1.4
		20	5.0	5.0	3.2	2.7
		30	7.5	7.5	4.8	4.1
		40	10.0	10.0	6.4	5.4
		50	12.5	12.5	8.0	6.8
		10	NP	4.5	3.0	2.6
		20	NP	9.0	6.0	5.1
		30	NP	13.5	9.0	7.7
		40	NP	18.0	12.0	10.2
		50	NP	22.5	15.0	12.8
		10	NP	6.0	4.5	3.8
		20	NP	12.0	9.0	7.7
		30	NP	18.0	13.5	11.5
		40	NP	24.0	18.0	15.3
		50	NP	30.0	22.5	19.1
SDC D_0, D_1		10	NP	6.0	2.0	1.7
		20	NP	12.0	4.0	3.4
		30	NP	18.0	6.0	5.1
		40	NP	24.0	8.0	6.8
		50	NP	30.0	10.0	8.5
		10	NP	NP	4.5	3.8
		20	NP	NP	9.0	7.7
		30	NP	NP	13.5	11.5
		40	NP	NP	18.0	15.3
		50	NP	NP	22.5	19.1
		10	NP	NP	6.0	5.1
		20	NP	NP	12.0	10.2
		30	NP	NP	18.0	15.3
		40	NP	NP	24.0	20.4
		50	NP	NP	30.0	25.5

(*continued*)

TABLE 91.5.602.10.1.2(2)[a, b, c]—continued
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY
(AS A FUNCTION OF BRACED WALL LINE LENGTH)

SOIL CLASS D [a] WALL HEIGHT = 10 FT 10 PSF FLOOR DEAD LOAD 15 PSF ROOF/CEILING DEAD LOAD BRACED WALL LINE SPACING ≤25 FT			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE			
Seismic Design Category (SDC)	Story Location	Braced Wall Line Length	Method LIB	Methods [d] DWB, SFB, GB, PBS, PCP, HPS	Method WSP	Continuous Sheathing
SDC D_2		10	NP	8.0	2.5	2.1
		20	NP	16.0	5.0	4.3
		30	NP	24.0	7.5	6.4
		40	NP	32.0	10.0	8.5
		50	NP	40.0	12.5	10.6
		10	NP	NP	5.5	4.7
		20	NP	NP	11.0	9.4
		30	NP	NP	16.5	14.0
		40	NP	NP	22.0	18.7
		50	NP	NP	27.5	23.4
		10	NP	NP	NP	NP
		20	NP	NP	NP	NP
		30	NP	NP	NP	NP
		40	NP	NP	NP	NP
		50	NP	NP	NP	NP

For SI: 1 foot = 304.8 mm, 1 pound per square foot = 47.89 Pa.

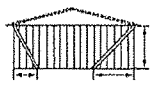
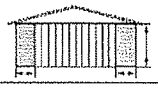
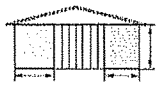
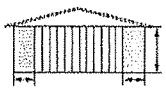
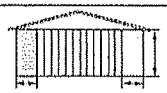
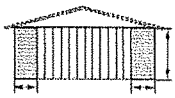
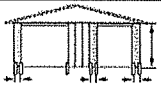
a. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.5 of the International Building Code.

b. Foundation cripple wall panels shall be braced in accordance with Section R602.10.9.

c. Methods of bracing shall be as described in Sections R602.10.2, R602.10.4 and R602.10.5.

d. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D_0, D_1, and D_2. Methods DWB, SFB, PBS, and HPS are not permitted in SDC D_0, D_1, and D_2.

TABLE 91.5.602.10.2
INTERMITTENT BRACING METHODS [a]

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
LIB	Let-in-bracing	1 x 4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d nails per stud including top and bottom plate metal: per manufacturer
DWB	Diagonal wood boards	¾ " (1" nominal) for maximum 24" stud spacing		2-8d (2 ½" x 0.113") nails or 2 staples, 1 ¾per stud
WSP	Wood structural panel (see Section R604)	15/32"		8d common (2 ½" x 0.131) nails at 6" spacing (panel edge) at 12" spacing (intermediate supports), 3/8" edge distance to panel edge
SFB	Structural fiberboard sheathing	½" or 25/32" for maximum 16" stud spacing		1 ½"galvanized roofing nails or 8d common (2 ½" x0.131) nails at 3"spacing (panel edges) at 6" spacing (intermediate supports)
GB	Gypsum board	½"		Nails or screws at 7" spacing at panel edges including top and bottom plates; for all braced wall panel locations for exterior sheathing nail or screw size, see Table R602.3(1); for interior gypsum board nail or screw size, see Table R702.3.5
PBS	Particleboard sheathing (see Section R605)	3/8" or ½" for maximum 16" stud spacing		1 1/2" galvanized roofing nails or 8d common (2 1/2" x 0.131) nails at 3" spacing (panel edges) at 6 spacing (intermediate supports)
PCP	Portland cement plaster	See Section R703.6 For maximum 16" stud spacing		1 ½", 11 gage, 7/16" head nails at 6" spacing
HPS	Hardboard panel siding	7/16" For maximum 16" stud spacing		0.092" dia., 0.225" head nails with length to accommodate 11/2" penetration into studs at 4" spacing (panel edges), at 8" spacing (intermediate supports)
ABW	Alternate braced wall	See Section R602.10.3.2		See Section R602.10.3.2
PFH	Intermittent portal frame	See Section R602.10.3.3		See Section R602.10.3.3
PFG	Intermittent portal frame at garage	See Section R602.10.3.4		See Section R602.10.3.4

a. Methods GB and PCP braced wall panel h/w ratio shall not exceed 1:1 in SDC D_0, D_1, and D_2.
Methods LIB, DWB, SFB, PBS, HPS, and PFG are not permitted in SDC D_0, D_1, and D_2.

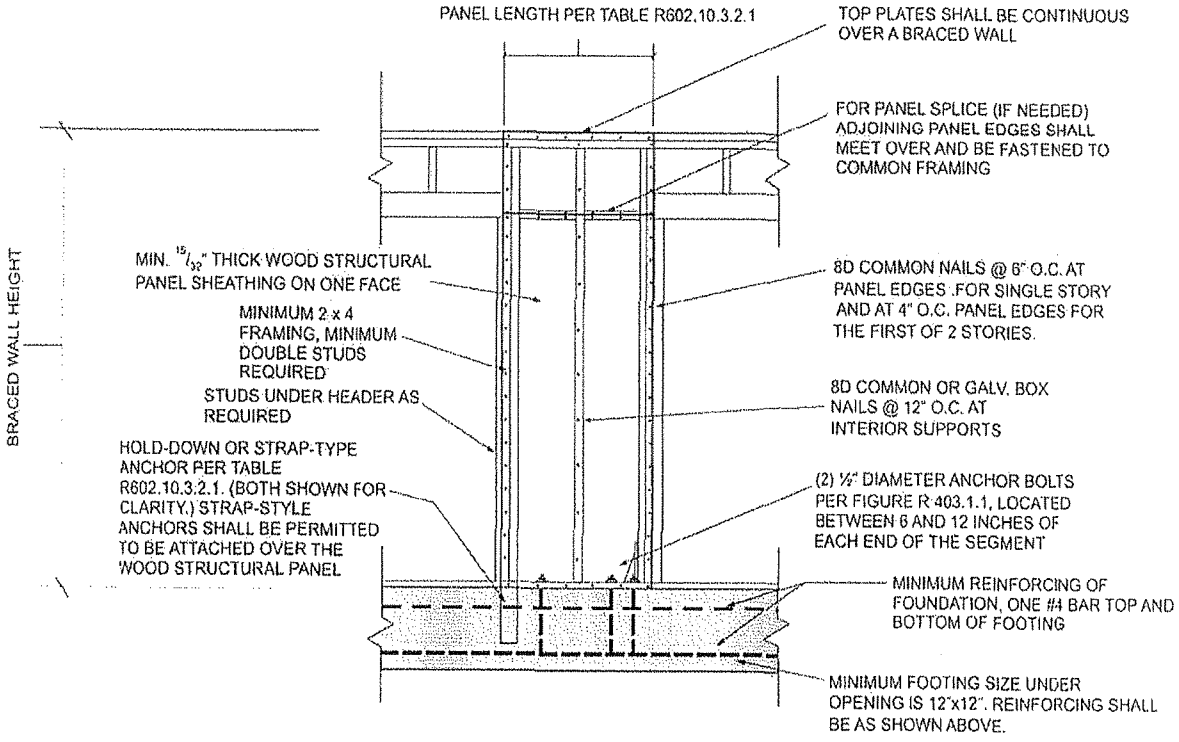


Figure 91.5.602.10.3.2
ALTERNATE BRACED WALL PANEL

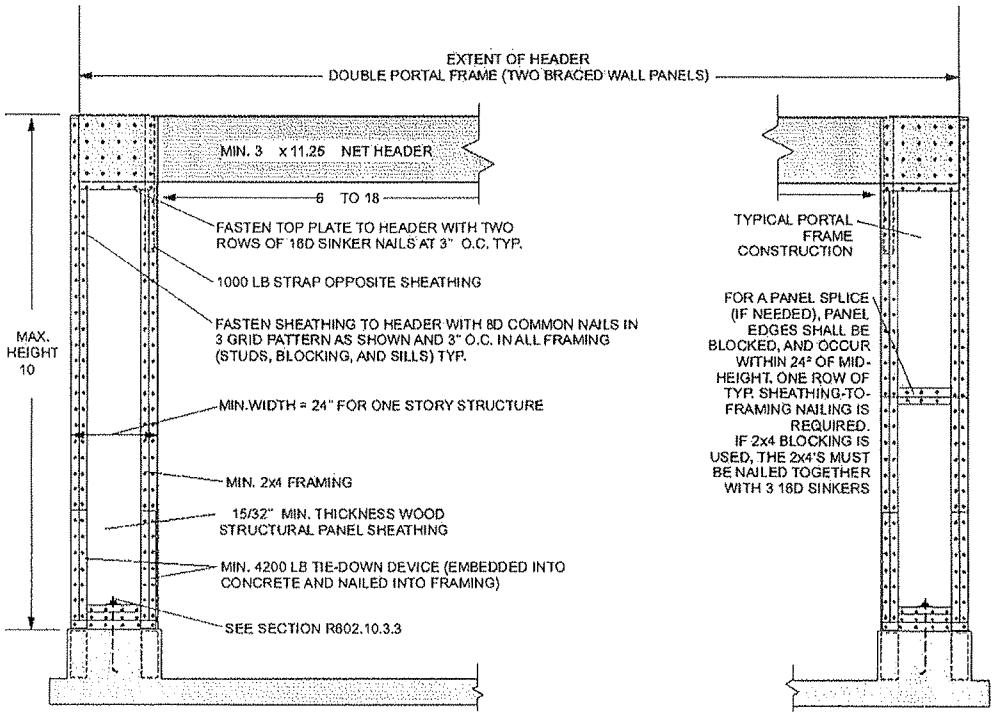


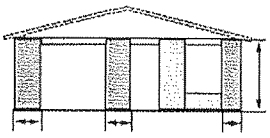
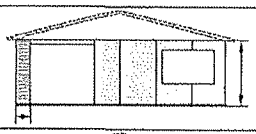
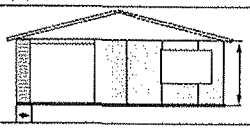
Figure 91.5.602.10.3.3
METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS AT DETACHED GARAGE DOOR OPENINGS.

SEC. 91.5.602.10.3.3. Method PFH: Portal Frame with Hold-Downs. Method PFH braced wall panels constructed in accordance with one of the following provisions are also permitted to replace each 4 feet (1219 mm) of braced wall panel as required by Section 91.5.602.10.3 for use adjacent to a window or door opening with a full-length header:

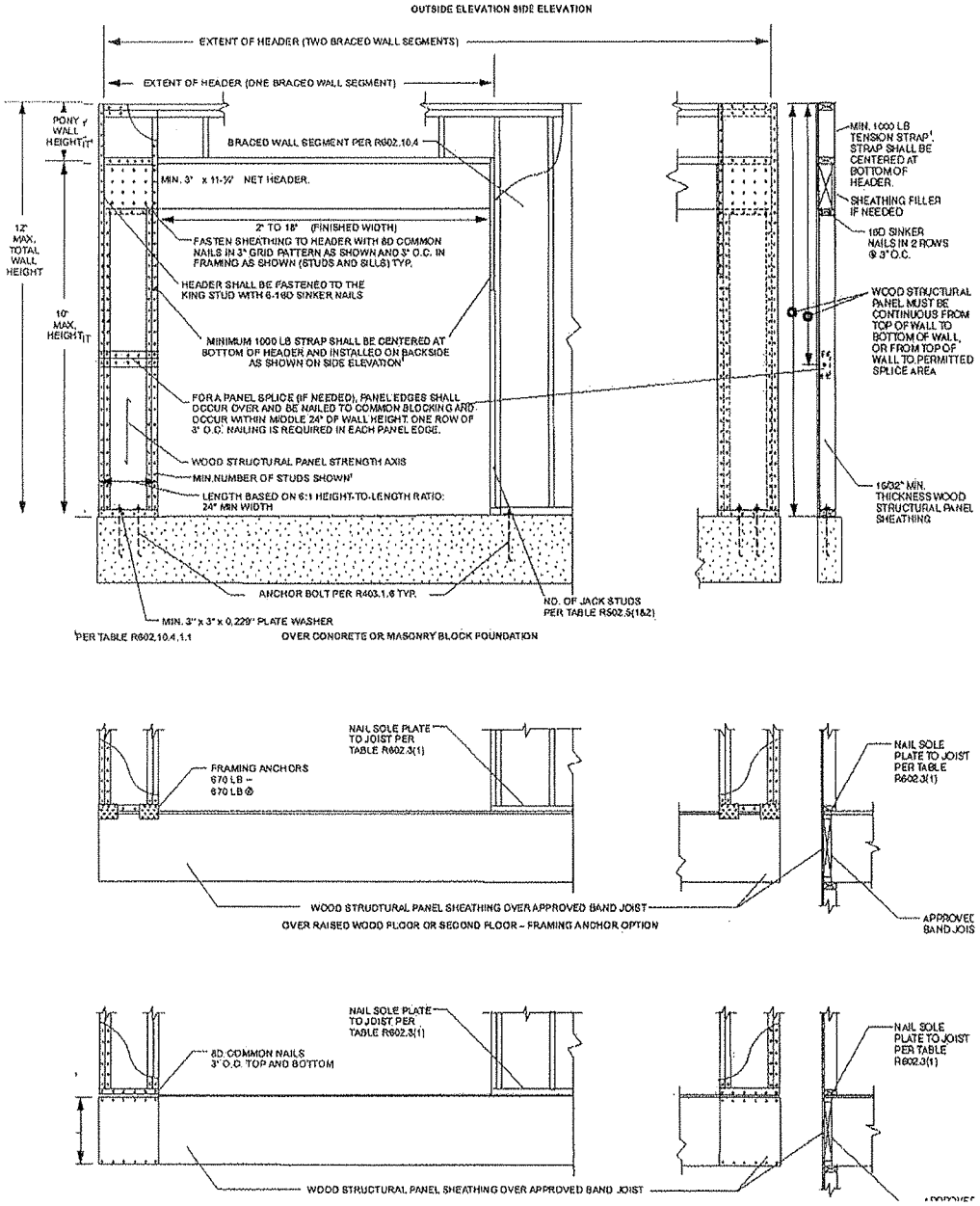
1. Each panel shall be fabricated in accordance with Figure 91.5.602.10.3.3. The wood structural panel sheathing shall extend up over the solid sawn or glued-laminated header and shall be nailed in accordance with Figure 91.5.602.10.3.3. A spacer, if used with a built-up header, shall be placed on the side of the built-up beam opposite the wood structural panel sheathing. The header shall extend between the inside faces of the first full-length outer studs of each panel. One anchor bolt not less than 5/8-inch-diameter (16 mm) and installed in accordance with CRC Section R403.1.6 shall be provided in the center of each sill plate. The hold-down devices shall be an embedded-strap type, installed in accordance with the manufacturer's recommendations. The panels shall be supported directly on a foundation which is continuous across the entire length of the braced wall line. The foundation shall be reinforced as shown on Figure 91.5.602.10.3.2. This reinforcement shall be lapped not less than 24 inches (610 mm) with the reinforcement required in the continuous foundation located directly under the braced wall line.

2. In the first story of two-story buildings, each wall panel shall be braced in accordance with item 1 above, except that each panel shall have a length of not less than 24 inches (610 mm).

TABLE 91.5.602.10.4.1
CONTINUOUS SHEATHING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
CS-WSP	Wood structural panel	15/32"		8d common (2" x 0.113") nails at 6" spacing (panel edges) and at 12" spacing (intermediate supports)
CS-G	Wood structural panel adjacent to garage openings and supporting roof load only [a, b]	15/32"		See method CS-WSP
CS-PF	Continuous portal frame	See Section R602.10.4.1		See Section R602.10.4.1

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 47.89 Pa.
a. Applies to one wall of a garage only.
b. Roof covering dead loads shall be 3 psf or less.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

Figure 91.5.602.10.4.1.1
METHOD CS-PF: CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION

SEC. 91.5.603.2.4. Fastening Requirements. Screws for steel-to-steel connections shall be installed with a minimum edge distance and center-to-center spacing of 1/2 inch (12.7 mm), shall be self-drilling tapping and shall conform to ASTM C 1513. Structural sheathing shall be attached to cold-formed steel studs with minimum No. 8 self-drilling tapping screws that conform to ASTM C 1513. Screws for attaching structural sheathing to cold-formed steel wall framing shall have a minimum head diameter of 0.292 inch (7.4 mm) with countersunk heads and shall be installed with a minimum edge distance of 3/8 inch (9.5 mm). Gypsum board shall be attached to cold-formed steel wall framing with minimum No. 6 screws conforming to ASTM C 954 or ASTM C 1513 with a bugle head style and shall be installed in accordance with CRC Section R702. For all connections, screws shall extend through the steel a minimum of three exposed threads. All fasteners shall have rust inhibitive coating suitable for the installation in which they are being used, or be manufactured from material not susceptible to corrosion.

Where No. 8 screws are specified in a steel-to-steel connection, the required number of screws in the connection is permitted to be reduced in accordance with the reduction factors in Table R603.2.4, when larger screws are used or when the sheets of steel being connected is thicker than 33 mils (0.84mm). When applying the reduction factor, the resulting number of screws shall be rounded up.

SEC. 91.5.606.2.4. Parapet Walls. Unreinforced solid masonry parapet walls shall not be less than 8 inches (203 mm) thick and their height shall not exceed four times their thickness. Unreinforced hollow unit masonry parapet walls shall be not less than 8 inches (203 mm) thick, and their height shall not exceed three times their thickness. Masonry parapet walls in areas subject to wind loads of 30 pounds per square foot (1.44 kPa) or located in Seismic Design Category D_0, D_1 or D_2, or on townhouses in Seismic Design Category C shall be reinforced in accordance with Section R606.12.

SEC. 91.5.606.12.2.2.3. Reinforcement of Requirements for Masonry Elements. Masonry elements listed in Section R606.12.2.2.2 shall be reinforced in either the horizontal or vertical direction as shown in Figure R606.11(3) and in accordance with the following:

1. Horizontal reinforcement. Horizontal joint reinforcement shall consist of at least one No. 4 bar spaced not more than 48 inches (1219 mm). Horizontal reinforcement shall be provided within 16 inches (406 mm) of the top and bottom of these masonry elements.

2. Vertical reinforcement. Vertical reinforcement shall consist of at least one No. 4 bar spaced not more than 48 inches (1219 mm). Vertical reinforcement shall be within 16 inches (406mm) of the ends of masonry walls.

ARTICLE 1.5, DIVISION 7

SEC. 91.5.700. BASIC PROVISIONS.

Chapter 7 of the CRC is hereby adopted by reference.

ARTICLE 1.5, DIVISION 8

SEC. 91.5.800. BASIC PROVISIONS.

Chapter 8 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

TABLE 91.5.802.5.1(9)

RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS[a, b, c, d, e, f, h]

RAFTER SLOPE	RAFTER SPACING (inches)	GROUND SNOW LOAD (psf)															
		20[g]				30				50				70			
		Roof span (feet)															
		12	20	28	36	12	20	28	36	12	20	28	36	12	20	28	36
		Required number of 16d common nails[a, b] per heel joint splices[c, d, e, f]															
3:12	12	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	16	5	8	10	13	5	8	11	14	6	11	15	20	8	14	20	26
	24	7	11	15	19	7	11	16	21	9	16	23	30	12	21	30	39
4:12	12	3	5	6	8	3	5	6	8	4	6	9	11	5	8	12	15
	16	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	24	5	8	12	15	5	9	12	16	7	12	17	22	9	16	23	29
5:12	12	3	4	5	6	3	4	5	7	3	5	7	9	4	7	9	12
	16	3	5	6	8	3	5	7	9	4	7	9	12	5	9	12	16
	24	4	7	9	12	4	7	10	13	6	10	14	18	7	13	18	23
7:12	12	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	16	3	4	5	6	3	4	5	6	3	5	7	9	4	6	9	11
	24	3	5	7	9	3	5	7	9	4	7	10	13	5	9	13	17
9:12	12	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	16	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	24	3	4	6	7	3	4	6	7	3	6	8	10	4	7	10	13
12:12	12	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5
	16	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	24	3	4	4	5	3	3	4	6	3	4	6	8	3	6	8	10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. 40d box nails shall be permitted to be substituted for 16d common nails.

b. Nailing requirements shall be permitted to be reduced 25 percent if nails are clinched.

c. Heel joint connections are not required when the ridge is supported by a load-bearing wall, header or ridge beam.

d. When intermediate support of the rafter is provided by vertical struts or purlins to a loadbearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span.

e. Equivalent nailing patterns are required for ceiling joist to ceiling joist lap splices.

f. When rafter ties are substituted for ceiling joists, the heel joint connection requirement shall be taken as the tabulated heel joint connection requirement for two-thirds of the actual rafter-slope.

g. Applies to roof live load of 20 psf or less.

h. Tabulated heel joint connection requirements assume that ceiling joists or rafter ties are located at the bottom of the attic space. When ceiling joists or rafter ties are located higher in the attic, heel joint connection requirements shall be increased by the following factors:

H_C/H_R	Heel Joint Connection Adjustment Factor
1/3	1.5
1/4	1.33
1/5	1.25
1/6	1.2
1/10 or less	1.11

where:
H_C = Height of ceiling joists or rafter ties measured vertically above the top of the rafter support walls.
H_R = Height of roof ridge measured vertically above the top of the rafter support walls.

SEC. 91.5.802.8. Lateral Support. Roof framing members and ceiling joists having a depth-to-thickness ratio exceeding 2 to 1 based on nominal dimensions shall be provided with lateral support at points of bearing to prevent rotation. For roof rafters with ceiling joists attached per Table R602.3(1), the depth-thickness ratio for the total assembly shall be determined using the combined thickness of the rafter plus the attached ceiling joist.

SEC. 91.5.802.10.2. Design. Wood trusses shall be designed in accordance with accepted engineering practice. The design and manufacture of metal-plate-connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a registered professional.

SEC. 91.5.803.2.4. Openings in Horizontal Diaphragms. Openings in horizontal diaphragms shall conform to Section 91.R503.2.4.

ARTICLE 1.5, DIVISION 9

SEC. 91.5.900. BASIC PROVISIONS.

Chapter 9 of the CRC is hereby adopted by reference.

ARTICLE 1.5, DIVISION 10

SEC. 91.5.1000. BASIC PROVISIONS.

Chapter 10 of the CRC is hereby adopted by reference with the following exceptions, modifications and additions.

SEC. 91.5.1001.3.1. Vertical Reinforcing. For chimneys up to 40 inches (1016 mm) wide, four No. 4 continuous vertical bars adequately anchored into the concrete foundation shall be placed between wythes of solid masonry or within the cells of hollow unit masonry and grouted in accordance with Section R609. Grout shall be prevented from bonding with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys more than 40 inches (1016 mm) wide, two additional No. 4 vertical bars adequately anchored into the concrete foundation shall be provided for each additional flue incorporated into the chimney or for each additional 40 inches (1016 mm) in width or fraction thereof.

Sec. 2. **Urgency Clause.** The City Council finds and declares that this Ordinance is required for the immediate protection of the public peace, health and safety for the following reason: In order for the City of Los Angeles to facilitate a seamless transition with the State of California and its Residential Code and maintain predictability and streamlined case processing for the benefit of economic development during distressed times, it is necessary to immediately adopt the foregoing exceptions, modifications and additions to the California Residential Code. Additionally, the California Residential Code becomes effective on January 1, 2011 and the amendments to that code as reflected herein must be adopted by the City Council and become effective as soon as possible. The Council, therefore, with the Mayor's concurrence, adopts this ordinance to become effective upon publication pursuant to Los Angeles City Charter Section 253.

Sec. 3. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, **by a vote of not less than three-fourths** of all its members, at its meeting of JUN 21 2011.

JUNE LAGMAY, City Clerk

By _____
Deputy

Approved JUN 28 2011

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By _____
KIM RODGERS WESTHOFF
Deputy City Attorney

Date 3/21/2011

File No(s). CF 10-2335

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\Residential Code 11-30-2010.1.doc

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 California Building Residential Code (CRC).**

WHEREAS, the City of Los Angeles has **geological conditions**, such as earthquake faults. The City of Los Angeles is bounded on the east by the San Andreas Fault and interlaced with other earthquake faults, which run through, adjacent and under the City; and

WHEREAS, the City is located in Seismic Zone 4, which is considered by experts to be the most seismically active of the four seismic zones in the world; and

WHEREAS, seismic experts predict a massive earthquake on one of these faults within the next 30 years and several earthquakes similar in intensity to the Northridge Earthquake during the same period; and

WHEREAS, the 1994 Northridge Earthquake which was a moderate size (6.8 magnitude) earthquake caused extensive damage to buildings and structures, including damage to more than 115,000 buildings, moderate to major damage to more than 3,000 buildings and the vacating of about 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 people who lost their lives in the earthquake, but there could have been several thousand fatalities had the earthquake occurred at midday when most buildings were occupied instead of 4:31 in the morning; and

WHEREAS, massive earthquakes pose unusual and extraordinary stresses on buildings and structures requiring more stringent building regulations than would otherwise be required; and

WHEREAS, a major earthquake would break water lines making fire fighting more difficult and would break gas lines and electric lines, making a high risk of fires breaking out in all areas of the City; and

WHEREAS, there was a fire in the Fairfax Area of the City of Los Angeles in 1986, due to the high volume of methane gas seepage through cracks in the concrete floor of a building; and

WHEREAS, in 1999, large pockets of methane gas in the subsurface geological formation was discovered in various areas of Los Angeles; and

WHEREAS, the City of Los Angeles has **topographic conditions**, natural and man-made, such as the natural hills, mountains and the coastal region, as well as the man-made harbors and highly concentrated areas of high-rise buildings.

WHEREAS, the City of Los Angeles is situated in a coastal region of hills and mountains containing dry wild native brush and other native and non-native vegetation; and

WHEREAS, this region of flat land and hillside areas creates a natural basin, which has high strong winds alongside foothills and other areas of the City; and

WHEREAS, in 1982 fires in the flat areas of neighboring Orange County were spread from one wood shake and wood shingle roof covered building to the next wood shake and wood shingle roof covered building by the strong Santa Ana winds, and

WHEREAS, the dry brush areas of the local Santa Monica hillsides and the strong canyon winds or the dry Santa Ana winds contributed to past fires in the Los Angeles area, such as, the 1961 Bel Air and Brentwood Canyon, 1977 Topanga Canyon and 1993 Malibu Canyon fires, and

WHEREAS, widespread fires caused by either earthquakes or brush fires would impact the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, the highly concentrated area of high-rise buildings, traffic congestion and possible gridlock may jeopardize the quick response to fires by the Fire Department that could reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the mountainous terrain is now identified as the Very High Fire Hazard Severity Zone and the highly concentrated area of high-rise buildings is identified as Fire District 1; and

WHEREAS, the City of Los Angeles has **climatic conditions** that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the fire danger to all exposed combustible materials; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, widespread fires caused by either earthquakes or brush fires would limit the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, quick response to fires by the Fire Department will reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

NOW, THEREFORE, in order to provide adequate protection under the local climatic, geological and topographical conditions set forth above, the City of Los Angeles makes the following findings and determinations:

Section 91.5.101 is an **administrative amendment** necessary to clarify the adoption of the entire Article 1, Division 1 of Chapter IX of the Los Angeles Municipal Code (LAMC), as it appears in the Los Angeles Building Code.

Section 91.5.201.4 is an **administrative amendment** necessary to clarify that for terms not defined in the code, the definitions in Webster's Third New California Dictionary of the English Language, Unabridged, shall be considered as providing ordinary accepted meanings.

Section 91.5.202 is an **administrative amendment** necessary to eliminate terms not used and adopt terms found in the LAMC.

Section 91.5.301.1.3 is a **technical amendment** necessary due to Geological conditions – The greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, including but not limited to the recent 1994 Northridge Earthquake. The proposed modification to require construction documents for wood frame construction greater than one story in height to be approved and stamped by a California licensed architect or engineer is intended to assure that both the structural design and prescriptive requirement of the code are properly utilized and presented and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code.

Section 91.5.301.1.3.2 is a **technical amendment** necessary due to Geological conditions. After the 1994 Northridge Earthquake, the Wood Frame Construction Joint Task Force recommended that the quality of wood frame construction needed to be greatly improved. One such recommendation identified by the Task Force is to improve the quality and organization of structural plans prepared by the engineer or architect so that plan examiners, building inspectors, contractors and special inspectors may logically follow and construct the presentation of the seismic force-resisting systems in the construction documents. For buildings or structures located in Seismic Design Category D0, D1, D2 or E that are subject to a greater level of seismic forces, the requirement to have a California licensed architect or engineer prepare the construction documents is intended to minimize or reduce structural deficiencies that may cause excessive damage or injuries in wood frame buildings. Structural deficiencies such as plan and vertical irregularities, improper

shear transfer of the seismic force-resisting system, missed details or connections important to the structural system, and the improper application of the prescriptive requirements of the California Residential Code can be readily addressed by a registered design professional.

Section 91.5.301.1.4 is a **technical amendment** necessary for buildings constructed on hillsides, due to the local topographical and geological conditions of the sites within the Los Angeles/Long Beach region and their probabilities for earthquakes. This amendment is required to address and clarify special needs for buildings constructed on the hillside locations. A joint Structural Engineers Association of Southern California (SEAOSC), Los Angeles County and Los Angeles City Task Force investigated the performance of hillside building failures after the Northridge earthquake. Numerous hillside failures resulted in loss of life and millions of dollars in damage. This criteria, was developed to minimize the damage to structures which have been in use for several years. This amendment is required to address and clarify special needs for buildings constructed on the hillside locations. A joint Structural Engineers Association of Southern California (SEAOSC), Los Angeles County and Los Angeles City Task Force investigated the performance of hillside building failures after the Northridge earthquake. Numerous hillside failures resulted in loss of life and millions of dollars in damage. These criteria were developed to minimize the damage to these structures and have been in use by the City of LA for several years.

Table 91.5.R301.2(1) is an **administrative amendment** necessary to fill in and update as required by the State Code. The date filled in came from maps and information provided in the State Residential code and from local ordinances which address Climatic and Geographic conditions.

Section 91.5.301.2.2.2.5 is a **technical amendment** necessary due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures. This local amendment limits the type of irregular conditions as specified in the 2009 International Residential Code. Such limitations are recommended to reduce structural damages in the event of an earthquake. The proposed amendments are needed to be incorporated into the Code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Building Code and consistent with the recent requirements in ASCE 7-05.

Section 91.5.301.2.2.3.5.1 is an **administrative amendment** necessary to clarify that the steel sheets need to be thicker than 33 mils to qualify for the reduction factors, need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings

or structures are designed and constructed in accordance with the scope and objectives of the Code. The term "one" conflicts with Table B1-1, whereas in the table it states the "thinnest connected steel sheet". The term "one" in the code language can be misleadingly interpreted as though one of the sheets can be 33 mils and the other sheet thicker, but that you still qualify for a reduction factor; this is not the intent of the tables.

Section 91.5.311.2 is a **technical amendment** necessary to correct code references to the California Code of Regulations and to correct typing errors. Local Geological Conditions – The greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, including but not limited to the recent 1994 Northridge Earthquake, or soils conditions that may cause liquefaction. The proposed modification to limit the area of levels located more than story above or below an egress door to 500 square feet when provided with only one exit will ensure safety of occupants during an emergency and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code

Section 91.5.322.1.4.1 is an **administrative amendment** necessary to clarify who should perform studies and analyses for design flood elevations. Based on our vast experience with drainage and grading sites, we have concluded that registered civil engineers are highly equipped to perform such design and analyses.

Section 91.5.401.1 is a **technical amendment** necessary to limit the use of wood foundations. Wood foundations, even those that are preservative-treated, encounter a higher risk of deterioration when contacting the adjacent ground. The required seismic anchorage and transfer of lateral forces into the foundation system for 2-story structures and foundation walls could become compromised at varying states of wood decay. In addition, global structure overturning moment and sliding resistance is reduced when utilizing wood foundations as opposed to conventional concrete or masonry systems. However, non-occupied, single story storage structures pose significantly less risk to human safety and should be able to utilize wood foundation guidelines specified in this chapter. The proposed amendment is consistent with past local code limitations in the use of wood foundations in habitable structures

Section 91.5.403.1.2 is a **technical amendment** to necessary due to the geological conditions within our area. This proposed amendment requires minimum reinforcement in continuous footings and stepped footings to address the problem of poor performance of plain or under-reinforced

footings during a seismic event. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles.

Interior walls can easily be called upon to resist over half of the seismic loading imposed on simple buildings or structures. Without a continuous foundation to support the braced wall line, seismic loads would be transferred through other elements such as non-structural concrete slab floors, wood floors, etc. Requiring interior braced walls be supported by continuous foundations is intended to reduce or eliminate the poor performance of buildings or structures

Section 91.5.403.1.3 is a **technical amendment** due to geological conditions. This amendment requires minimum reinforcement in continuous footings and stepped footings to address the problem of poor performance of plain or under-reinforced footings during a seismic event. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles

Section 91.5.403.1.5 is a **technical amendment** necessary due to geological conditions. This proposed amendment requires minimum reinforcement in continuous footings and stepped footings to address the problem of poor performance of plain or under-reinforced footings during a seismic event. This amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation, of an amendment adopted during previous code adoption cycles

Section 91.5.404.2 is a **technical amendment** necessary due to geological conditions. No substantiating data has been provided to show that wood foundations are effective in supporting structures and buildings during a seismic event while being subject to deterioration caused by presence of water in the soil as well as other materials detrimental to wood foundations. Wood foundations, when they are not properly treated and protected against deterioration, have performed very poorly and have led to slope failures. Most contractors are typically accustomed to construction in dry weather in the Southern California region and are not generally familiar with the necessary precautions and treatment of wood that makes

it suitable for both seismic event and wet applications. With the higher seismic demand placed on buildings and structures in this region, coupled with the dryer weather conditions here as oppose to the northern and eastern part of the country, it is the intent of this proposal to take the necessary precautionary steps to reduce or eliminate potential problems that may result from the use of wood footings and foundations that does not take into consideration the conditions of this surrounding environment.

Section 91.5.501.1 is a **technical amendment** necessary to establish equipment weight limits not found in the CRC. However, requirements of ASCE 7-05 and CBC are necessary to limit equipment weight up to 400lb, mounted at 4 feet or less above the floor or attic level without engineering design.

Section 91.5.503.2.4 is a **technical amendment** necessary to establish the use of staples due to geological conditions. Limited cyclic testing of wood structural panels connected to wood stud walls using staples resulted in poor performance of the lateral force resisting system. Section R804.1 is proposed to limit the use of staples unless substantiated by cycle testing and approved by the building official. Section R804.2 is proposed to provide steel straps at corners of openings in the roof diaphragm. The steel straps help distribute the concentrated loads at the corners into the diaphragm

Tables 91.5.R602.3(1) and 91.5.R602.3(2) are an **administrative amendment** necessary to limit the use of Staples due to geological conditions. In September 2007, limited cyclic testing data was provided to the ICC Los Angeles Chapter Structural Code Committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. The test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results. Therefore, the use of staples as fasteners for shear walls sheathed with other materials shall not be permitted without being substantiated by cyclic testing. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles for the California Building Code

Table 91.5.602.10.1.2(2) is a **technical amendment** necessary due to the high geologic activities in the Southern California area and the expected higher level of performance on buildings and structures, this local amendment continues to reduce / eliminate the allowable shear values for shear walls sheathed with lath, plaster or gypsum board. The poor performance of such shear walls sheathed with other materials in the 1994 Northridge Earthquake was investigated by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force. The cities and county of the Los Angeles region have taken extra measures to maintain the structural integrity of the framing of the shear walls when

designed for high levels of seismic loads. In addition, this proposed amendment is consistent with the conventional framing provisions of the 2009 International Building Code

Table 91.5.602.10.1.2(2) is a **technical amendment** necessary due to the high geologic activities in the Southern California area and to limit the use of 3/8' ply-plywood. During the Northridge Earthquake, 3/8" thick 3 ply-plywood shear walls experienced many failures. This proposed amendment specifies minimum WSP sheathing thickness and nail size and spacing so as to provide a uniform standard of construction for designers and buildings to follow. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region. This proposed amendment reflects the recommendations by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Joint Task Force that investigated the poor performance observed in 1994 Northridge Earthquake. This proposed amendment is a continuation of an amendment adopted during previous code adoption cycles for the California Building Code. In September 2007, cyclic testing data was provided to the structural code committee showing that stapled wood structural shear panels do not exhibit the same behavior as the nailed wood structural shear panels. In addition, the test results of the stapled wood structural shear panels appeared much lower in strength and drift than the nailed wood structural shear panel test results.

Figures 91.5.602.10.3.2 and 91.5.602.10.3.3 are a technical amendment necessary to limit the use of 3/8" ply-plywood. During the Northridge Earthquake, 3/8" thick 3 ply-plywood shear walls experienced many failures. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region.

Section 91.5.602.10.33 is a **technical amendment** necessary due to geological conditions in this area. The proposal change to the minimum lap splice requirement is consistent with Section 12.16.1 of ACI 318-05 and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code.

Table 91.5.602.10.4.1 is a **technical amendment** necessary to limit the use of 3/8" ply-plywood. During the Northridge Earthquake, 3/8" thick 3 ply-plywood shear walls experienced many failures. This is intended to improve the performance level of buildings and structures that are subject to the higher seismic demands placed on buildings or structure in this region.

Figure 91.5.602.104.1.1 is a technical amendment necessary to limit the use of 3/8" ply-plywood. 3/8" thick 3 ply-plywood shear walls experienced many failures during the Northridge Earthquake. The poor performance of such shear walls sheathed in the 1994 Northridge Earthquake was investigated by the Structural Engineers Association of Southern California (SEAOSC) and the Los Angeles City Task Force. The cities and county of the Los Angeles region has taken extra measures to maintain the structural integrity of the framing of the shear walls when designed for high levels of seismic loads. This proposed amendment continues the previous amendment adopted during the 2007 code adoption cycle for the California Building Code.

The proposal in which "washers shall be a minimum of 0.229 inch by 3 inches by 3 inches in size" is consistent with Section R602.11.1 of the 2009 International Residential Code and Section 2308.12.8 of the 2009 International Building Code

Section 91.5.603.2.4 is a **technical amendment** necessary to correct the term "one", which conflicts with Table R603.2.4, whereas in the table it states the "thinnest connected steel sheet". The term "one" in the code language can misleadingly be interpreted as though one of the sheets can be 33 mils and the other sheet thicker, but that you still qualify for a reduction factor; this is not the intent of the tables.

Section 91.5.606.2.4 is a **technical amendment** necessary due to geologic conditions by adding the word "or" which will prevent the use of unreinforced parapets in Seismic Design Category D0, D1 or D2, or on townhouses in Seismic Design Category C.

Local Geological Conditions – The greater Los Angeles region is a densely populated area having buildings and structures constructed over and near a vast array of fault systems capable of producing major earthquakes, including but not limited to the recent 1994 Northridge Earthquake. The proposed modification to not allow the use of unreinforced masonry is prevent a nonductile failure and prevent sudden structural collapse, and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code.

Section 91.5.606.12.2.2.3 is a t**echnical amendment** necessary due to geological conditions. This amendment adds reinforcement using longitudinal wires is deficient in high seismic areas such as DO and D1. The proposed modification to increase the reinforcement is intended to

assure the ductility requirements for high seismic region is provided and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code.

Table 91.5.802.5.1(9) is a **technical amendment** necessary to prevent wood splitting. The number of nails required for the heel joint connection per this Table can be excessive depending on the rafter slope, spacing, and roof span. This footnote will help to prevent splitting of connecting wood members when large numbers of nail are required as stated in the National Design Specification for Wood Construction (NDS).

The proposed modification to require connecting members to be of sufficient size will help to prevent splitting and therefore need to be incorporated into the code to assure that new buildings and structures and additions or alterations to existing buildings or structures are designed and constructed in accordance with the scope and objectives of the International Residential Code

Section 91.5.802.8 is a **technical amendment** necessary to provide provisions to ensure that the ends of wood members and the points of bearing have adequate lateral support to prevent rotation and to help stabilized the members during construction. This proposed amendment is consistent with and similar to requirements contained in the NDS

Section 91.5.802.10.2 is a **technical amendment** necessary due to geological conditions to provide clarifications that all wood truss design drawings are to be prepared by a registered professional. Wood trusses are engineered structural elements that require engineering design and calculations.

Section 91.5.803.2.4 is a **technical amendment** necessary due to geological conditions in the region. Limited cyclic testing of wood structural panels connected to wood stud walls using staples resulted in poor performance of the lateral force resisting system. Section R804.1 is proposed to limit the use of staples unless substantiated by cycle testing and approved by the building official. Section 91.R804.2 is proposed to provide steel straps at corners of openings in the roof diaphragm. The steel straps help distribute the concentrated loads at the corners into the diaphragm.

Section 91.5.1001.3.1 is a **technical amendment** necessary to due to geological conditions in the region. The performance of fireplace/chimney without anchorage to the foundation has been observed to be inadequate during major earthquakes. The lack of anchorage to the foundation results in overturn or displacement

CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "BUD" OVROM
GENERAL MANAGER

RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

June 25, 2012 Council File No. 10-2335

Jim McGowan, Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

FILING OF EXPRESS FINDINGS AND DETERMINATION PERSUANT TO SECTION
17958.7 OF THE HEALTH AND SAFETY CODE

On February 9, 2011, the Los Angeles City Council adopted an ordinance to amend the Los Angeles Municipal Code (LAMC) by incorporating portions of the 2008 National Electrical Code and the 2010 California Electrical Code and adopt the findings that make the modifications to the California Electrical Code to be reasonably necessary because of local climatic, geological or topographical conditions.

Enclosed with this transmittal is a copy of the findings along with the modifications (the ordinance) to the California Electrical Code. The Department of Building and Safety, City of Los Angeles will consider this as complying with Section 17958.7 of the Health and Safety Code.

If you have any questions regarding this matter, please contact the Code Engineer, Mr. Victor Cuevas at (213) 482-0409.

Robert "Bud" Ovrom
General Manager

Attachments

City Hall East
200 N. Main Street
Room 800
Los Angeles, CA 90012

(213) 978-8100 Tel
(213) 978-8312 Fax
CTrutanich@lacity.org
www.lacity.org/atty

CARMEN A. TRUTANICH
City Attorney

REPORT NO. R10-0443

DEC 29 2010

REPORT RE:

DRAFT ORDINANCE AMENDING LOS ANGELES MUNICIPAL CODE SECTIONS 93.0202, 93.0301, 93.0302, 93.0303, 93.0311, 93.0600 and 93.0700 TO MAKE VARIOUS TECHNICAL CHANGES AND INCORPORATE PORTIONS FO THE 2011 CALIFORNIA ELECTRICAL CODE

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File 10-2335

Honorable Members:

We have prepared and transmit to you for your consideration, approved as to form and legality, a draft ordinance amending Los Angeles Municipal Code Sections 93.0202, 93.0301, 93.0302, 93.0303, 93.0311, 93.0600 and 93.0700 to make various technical changes and incorporate portions of the 2011 California Electrical Code.

Summary of Ordinance Provisions

On October 1, 2010, your Honorable Planning and Land Use Management (PLUM) Committee considered a Department of Building and Safety (DBS) report and proposed ordinance relative to amending Chapter IX of the Los Angeles Municipal Code in the adoption of the 2010 California Building Codes; including the Electrical Code. At that meeting, the PLUM Committee requested that the City Attorney prepare the final

ordinance based on the amended proposed ordinance submitted at the Committee meeting by DBS and attached to the Council file.

This draft ordinance makes various technical changes to the existing regulations. It also eliminates obsolete code sections, clarifies code sections, defines "Ambient Temperature" based on climatic conditions and updates code year references.

CEQA Determination

It appears that the ordinance is not a project subject to environmental review under the California Environmental Quality Act (CEQA). Under State CEQA Guidelines Section 15378(b) (2) and (b) (5), continuing administrative activities and organizational activities that will not result in direct or indirect physical changes in the environment are not CEQA projects. The ordinance is an administrative change to existing LAMC Sections 93.020, 93.0301, 93.0302, 93.0303, 93.0311, 93.0600 and 93.0700. These changes make various technical changes to the existing regulations, eliminate obsolete code sections, clarify code sections and define "Ambient Temperature." These changes will not result in any change to the physical environment.

Council Rule 38 Referral

The draft ordinance was sent, pursuant to Council Rule 38, to the Department of Building and Safety.

If you have any questions regarding this matter, please contact Deputy City Attorney Kim Rodgers Westhoff at (213) 978-8242. She or another member of this Office will be present to answer any questions you may have when you consider this matter.

Very truly yours,

CARMEN A. TRUTANICH, City Attorney

By 

PEDRO B. ECHEVERRIA
Chief Assistant City Attorney

PBE/KRW:pj
Transmittal

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\Report to Council-Electrical.doc

ORDINANCE NO. 181561

An ordinance amending various sections of Article 3, Chapter IX of the Los Angeles Municipal Code to reflect local administrative changes and incorporate by reference portions of the 2011 Edition of the California Electrical Code (C.E.C.).

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Subdivision 9 of Subsection (a) of Section 93.0202 of the Los Angeles Municipal Code is amended to read as follows:

9. Replacement of gas tube electrodes, transformers, tubes, drivers and power supplies with the same original manufactured parts having the same size, type, capacity and ratings for electric signs, or luminaries.

Sec. 2. Paragraphs (ii) and (iii) of Subdivision 13 of Subsection (a) of Section 93.0202 of the Los Angeles Municipal Code are amended to read as follows:

(ii) Non-required communication circuits which have the power limited in accordance with Section 725.121 of the C.E.C.; and

(iii) Non-required amplifier output circuits which are permitted by Section 640.9(C) of the C.E.C. to employ Class 2 or Class 3 wiring; and

Sec. 3. Section 93.0301 of the Los Angeles Municipal Code is amended to read as follows:

93.0301. POWERS OF DEPARTMENT AND BOARD.

The powers of the Department and the Board are those enumerated in Section 98.0403.1 of the Los Angeles Municipal Code.

Sec. 4. Section 93.0302 of the Los Angeles Municipal Code is amended to read as follows:

93.0302. APPEALS.

Appeals or requests for slight modifications in individual cases from the requirements of this Code shall be made in accordance with the procedure established in Section 98.0403.2 of the Los Angeles Municipal Code.

Sec. 5. Section 93.0303 of the Los Angeles Municipal Code is amended to read as follows:

93.0303. NEW MATERIALS AND METHODS OF CONSTRUCTION.

New or alternate materials and methods of construction may be approved by the Department in accordance with the provisions of Section 98.0502, Division 5 of Article 8, Chapter IX, of the Los Angeles Municipal Code.

Sec. 6. Paragraph 5 of Subsection (f) of Section 93.0311 of the Los Angeles Municipal Code is amended to read as follows:

5. Where changes are made to utility company transformers or distribution system of existing electrical installations that causes an increase of available short-circuit currents, provisions shall be made as required by Sections 110.9 and 110.10 of the C.E.C. to protect the equipment.

Sec. 7. Section 93.0600 of the Los Angeles Municipal Code is amended by adding the definition of the term "Ambient Temperature" in proper alphabetical sequence to read as follows:

AMBIENT TEMPERATURE. The air temperature of locations in the City of Los Angeles as described in the Table below:

LOCATION	TEMPERATURE
In normally heated building	30°C (86°F)
Poorly or unventilated rooms or spaces such as attics, transformer, machinery (refrigeration) or *elevator rooms, etc.	45°C (113°F)
Ventilated transformer rooms, machinery (refrigeration) rooms, elevator rooms* or spaces, etc	37°C (99°F)
In buildings with major heat sources such as power stations or industrial processes	45°C (113°F)
Furnace and boiler rooms	60°C (140°F) Within 2 ft. of a furnace or boiler 40°C (104°F)
In thermal insulation	45°C (113°F)
Outdoors un-shaded areas	39°C (102°F)

Outdoors in shaded areas	34°C (93°F)
Outdoors lowest expected temperature	-7°C (20°F)
Behind stand-off (i.e., parallel to the roof) or integral flat photovoltaic crystalline-silicon cell module, panel or array (up to 6 inches, add 4 °C to the ambient temperature, where channels (rails) are installed under the modules as part of the mounting system)	Within 1 inch = 60°C (140 °F) Over 1 to 3 inches = 56°C (133 °F) Over 3 to 6 inches = 55°C (131 °F) Over 6 inches = 39°C (102°F)
Behind rack mounted (i.e., at an angle to the roof) flat photovoltaic crystalline-silicon cell module, panel or array	Within 1 inch = 54°C (129 °F) Over 1 inch = 39°C (102°F)
Behind direct mounted flat photovoltaic crystalline-silicon cell module, panel or array	63°C (145 °F)

* Lower ambient temperature in elevator room is permitted when it is required to be maintained at a specified maximum ambient temperature per equipment manufacturer as permitted in the Los Angeles Elevator Code.

Sec. 8. Section 93.0700 of the Los Angeles Municipal Code is amended to read as follows:

93.0700. THE CALIFORNIA ELECTRICAL CODE.

Chapters 1 through 9, Annex C, F and G of the 2008 Edition of the National Electrical Code (N.E.C.), as published by the National Fire Protection Association (N.F.P.A. 70-2008), the 2010 California Electrical Code and the California Building Standards Code are adopted by reference as part of the Code. When there is a conflict between the 2008 National Electrical Code, the 2010 California Electrical Code and the Los Angeles Municipal Code, Section 93.0105 shall prevail. Except as specified in Divisions 1 through 6 of Article 3, Chapter IX of the Los Angeles Municipal Code, all electrical installations and materials shall be in conformity with the 2010 California Electrical Code, as adopted by reference to be part of this Code and Sections 93.515.17 and 93.515.18 are added as provided here.

Sec. 9. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, at its meeting of FEB 0 1 2011.

JUNE LAGMAY, City Clerk

By _____
Deputy

Approved FEB 09 2011

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By _____
KIM RODGERS-WESTHOFF
Deputy City Attorney

Date December 8, 2010

File No(s). CF 10-2335

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\Electrial Code 10-4-10.doc

DECLARATION OF POSTING ORDINANCE

I, MARIA VIZCARRA, state as follows: I am, and was at all times hereinafter mentioned, a resident of the State of California, over the age of eighteen years, and a Deputy City Clerk of the City of Los Angeles, California.

Ordinance No. 181561 – Amending various sections of Article 3, Chapter IX of the Los Angeles Municipal Code to reflect local administrative changes and incorporate by reference portions of the 2011 Edition of the California Electrical Code (C.E.C.) - a copy of which is hereto attached, was finally adopted by the Los Angeles City Council on **February 1, 2011**, and under the direction of said City Council and the City Clerk, pursuant to Section 251 of the Charter of the City of Los Angeles and Ordinance No. 172959, on **February 10, 2011** I posted a true copy of said ordinance at each of the three public places located in the City of Los Angeles, California, as follows: 1) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; 2) one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; 3) one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

Copies of said ordinance were posted conspicuously beginning on **February 10, 2011** and will be continuously posted for ten or more days.

I declare under penalty of perjury that the foregoing is true and correct.

Signed this **10th** day of **February 2011** at Los Angeles, California.

Maria Vizcarra, Deputy City Clerk

Ordinance Effective Date: March 22, 2011 **Council File No. 10-2335**

Rev. (2/21/06)

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 California Electrical Code (CEC).**

WHEREAS, the City of Los Angeles has **geological conditions**, such as earthquake faults. The City of Los Angeles is bounded on the east by the San Andreas Fault and interlaced with other earthquake faults, which run through, adjacent and under the City; and

WHEREAS, the City is located in Seismic Zone 4, which is considered by experts to be the most seismically active of the four seismic zones in the world; and

WHEREAS, seismic experts predict a massive earthquake on one of these faults within the next 30 years and several earthquakes similar in intensity to the Northridge Earthquake during the same period; and

WHEREAS, the 1994 Northridge Earthquake which was a moderate size (6.8 magnitude) earthquake caused extensive damage to buildings and structures, including damage to more than 115,000 buildings, moderate to major damage to more than 3,000 buildings and the vacating of about 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 people who lost their lives in the earthquake, but there could have been several thousand fatalities had the earthquake occurred at midday when most buildings were occupied instead of 4:31 in the morning; and

WHEREAS, massive earthquakes pose unusual and extraordinary stresses on buildings and structures requiring more stringent building regulations than would otherwise be required; and

WHEREAS, a major earthquake would break water lines making fire fighting more difficult and would break gas lines and electric lines, making a high risk of fires breaking out in all areas of the City; and

WHEREAS, there was a fire in the Fairfax Area of the City of Los Angeles in 1986, due to the high volume of methane gas seepage through cracks in the concrete floor of a building; and

WHEREAS, in 1999, large pockets of methane gas in the subsurface geological formation was discovered in various areas of Los Angeles; and

WHEREAS, the City of Los Angeles has **topographic conditions**, natural and man-made, such as the natural hills, mountains and the coastal region, as well as the man-made harbors and highly concentrated areas of high-rise buildings.

WHEREAS, the City of Los Angeles is situated in a coastal region of hills and mountains containing dry wild native brush and other native and non-native vegetation; and

WHEREAS, this region of flat land and hillside areas creates a natural basin, which has high strong winds alongside foothills and other areas of the City; and

WHEREAS, in 1982 fires in the flat areas of neighboring Orange County were spread from one wood shake and wood shingle roof covered building to the next wood shake and wood shingle roof covered building by the strong Santa Ana winds, and

WHEREAS, the dry brush areas of the local Santa Monica hillsides and the strong canyon winds or the dry Santa Ana winds contributed to past fires in the Los Angeles area, such as, the 1961 Bel Air and Brentwood Canyon, 1977 Topanga Canyon and 1993 Malibu Canyon fires, and

WHEREAS, widespread fires caused by either earthquakes or brush fires would impact the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, the highly concentrated area of high-rise buildings, traffic congestion and possible gridlock may jeopardize the quick response to fires by the Fire Department that could reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the mountainous terrain is now identified as the Very High Fire Hazard Severity Zone and the highly concentrated area of high-rise buildings is identified as Fire District 1; and

WHEREAS, the City of Los Angeles has **climatic conditions** that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the fire danger to all exposed combustible materials; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, widespread fires caused by either earthquakes or brush fires would limit the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, quick response to fires by the Fire Department will reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

NOW, THEREFORE, in order to provide adequate protection under the local climatic, geological and topographical conditions set forth above, the City of Los Angeles makes the following findings and determinations:

Section 93.0202 is an **administrative amendment** necessary to clarify the subsection and becomes in line with provisions of section 93.0403(a)(1) of the Los Angeles Electrical Code. This code section requires re-evaluation by the Department to determine if the used equipment has acceptable conditions, is suitable for intended purpose or use, and if modified, it can be approved by the Department.

Section 93.0202 is an **administrative amendment** necessary to eliminate obsolete code sections and refers to the new code sections.

Section 93.0301 is an **administrative amendment** necessary to correct the referenced code Section.

Section 93.0302 is an **administrative amendment** necessary to correct the referenced code Section.

Section 93.0303 is an **administrative amendment** necessary to correct the referenced code Section.

Section 93.0311 is an **administrative amendment** necessary to clarify theintend use of terms in this code section.

Section 93.0600 is a **technical amendment** due to climatic necessary to provide a definition for Ambient Temperature. The new code in numerous sections makes reference to Ambient Temperature application, limitation or restriction as related to installation of equipment and wiring; however, the code does not define it. Since the ambient temperature can vary for each particular location within every City, each particular location within the City needs to have a corresponding designated Ambient Temperature.

Section 93.0311 is an **administrative amendment** necessary to this section to updated the code year references with the 2010 edition of the CEC and to clarify the elimination of old LAEC section

CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "BUD" OVROM
GENERAL MANAGER

RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

June 25, 2012

Council File No. 10-2335

Jim McGowan, Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

FILING OF EXPRESS FINDINGS AND DETERMINATION PERSUANT TO SECTION
17958.7 OF THE HEALTH AND SAFETY CODE

On April 26, 2011, the Los Angeles City Council adopted an ordinance to amend the Los Angeles Municipal Code (LAMC) by incorporating portions of the 2009 Uniform Mechanical Code and the 2010 California Mechanical Code and adopt the findings that make the modifications to the California Mechanical Code to be reasonably necessary because of local climatic, geological or topographical conditions.

Enclosed with this transmittal is a copy of the findings along with the modifications (the ordinance) to the California Mechanical Code. The Department of Building and Safety, City of Los Angeles will consider this as complying with Section 17958.7 of the Health and Safety Code.

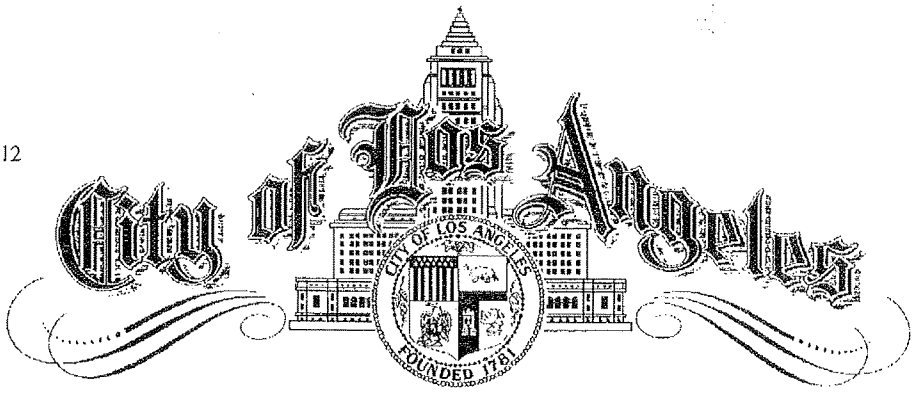
If you have any questions regarding this matter, please contact the Code Engineer, Mr. Victor Cuevas at (213) 482-0409.

Robert "Bud" Ovrom
General Manager

Attachments

City Hall East
200 N. Main Street
Room 800
Los Angeles, CA 90012

(213) 978-8100 Tel
(213) 978-8312 Fax
CTrutanich@lacity.org
www.lacity.org/atty



CARMEN A. TRUTANICH
City Attorney

REPORT NO. R11-0143

APR 07 2011

REPORT RE:

REVISED DRAFT ORDINANCE AMENDING ARTICLE 5, CHAPTER IX OF THE LOS ANGELES MUNICIPAL CODE PROVISIONS RELATING TO THE MECHANICAL CODE

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File 10-2335

Honorable Members:

We previously transmitted to you for your consideration, approved as to form and legality, a draft ordinance amending Los Angeles Municipal Code (LAMC) provisions relating to the Mechanical Code. (City Attorney Report No. R11-0057). Upon further review, we find that technical corrections to that draft ordinance are necessary. We transmit herewith a revised draft ordinance for your consideration and action instead of the draft previously transmitted.

Summary of Ordinance Provisions

When this matter was considered by the Planning and Land Use Management (PLUM) Committee, the Committee requested that the City Attorney prepare the final ordinance based on the amended proposed ordinance submitted at the Committee meeting by the Department of Building and Safety (DBS) and attached to the Council file. This draft ordinance would update the LAMC to be consistent with State law. In addition, the ordinance includes amendments that are more restrictive than State law and are justified by the City's local climatic, geological or topographical conditions.

CEQA Determination

Regarding a finding pursuant to the California Environmental Quality Act (CEQA), the Department of Building and Safety recommended that you find that adoption of these ordinances is exempt from the provisions of CEQA under Article II, Section 2(m) of the City's CEQA Guidelines because the ordinances establish design standards for the construction of buildings and structures for enforcement purposes only and it can be seen with certainty that adoption of the ordinances will not cause a physical change that would constitute a significant effect on the environment. If you concur, you should adopt this finding prior to or concurrent with your action on the ordinance.

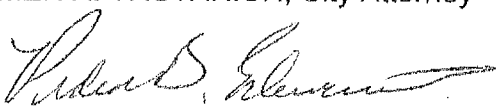
Council Rule 38 Referral

The draft ordinance was sent, pursuant to Council Rule 38, to the Department of Building and Safety with the request that they present their comments, if any, at the time this matter is considered.

If you have any questions regarding this matter, please contact Deputy City Attorney Kim Rodgers Westhoff at (213) 978-8242. She or another member of this Office will be present when you consider this matter to answer any questions you may have.

Very truly yours,

CARMEN A. TRUTANICH, City Attorney

By 
PEDRO B. ECHEVERRIA
Chief Assistant City Attorney

PBE/KRW:mrc
Transmittal

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\Report to Council-Mechanical Code.doc

ORDINANCE NO. 181685

An ordinance amending Article 5, Chapter IX of the Los Angeles Municipal Code to make local administrative changes and incorporate by reference portions of the 2010 Edition of the California Mechanical Code (C.M.C.)

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. The third unnumbered paragraph of Section 95.102 of the Los Angeles Municipal Code is amended to read as follows:

The provisions of Chapter 1, Division II, Appendices A and D, and Chapters 2 through 17 of the 2010 Edition of the California Mechanical Code prepared by the International Association of Plumbing and Mechanical Officials and amended by the California Building Standards Commission, are adopted by reference as part of the Los Angeles Municipal Code with amendments in the form of exceptions, modifications, deletions, supplements and additions, which have been added to Article 5, Chapter IX of the Los Angeles Municipal Code. Chapter references are to chapters of the California Mechanical Code. The abbreviation "C.M.C." shall mean and refer to the 2010 Edition of the California Mechanical Code. References to "LAMC" or "Code" shall mean the Los Angeles Municipal Code.

Sec. 2. Section 95.103 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.103. SCOPE.

Section 103.0 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 3. Section 95.104 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.104. APPLICATION TO EXISTING MECHANICAL SYSTEMS.

Sections 104.0 through 104.4 of Chapter 1, Division II of the C.M.C. are adopted by reference, Section 104.5 of Chapter 1, Division II of the C.M.C. is not adopted, and in lieu thereof, Section 95.104.5 of this Code shall apply.

Sec. 4. Section 95.107 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.107. TESTS.

Sections 107.0 through 107.2 of Chapter 1, Division II of the C.M.C. are adopted by reference.

Sec. 5. Section 95.108.3 of the Los Angeles Municipal Code is amended to read as follows:

95.108.3. RIGHT OF ENTRY.

Section 108.3 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 6. Section 95.108.4 of the Los Angeles Municipal Code is amended to read as follows:

95.108.4. STOP ORDERS.

Section 108.4 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 7. Section 95.108.5 of the Los Angeles Municipal Code is amended to read as follows:

95.108.5. AUTHORITY TO DISCONNECT UTILITIES IN EMERGENCIES.

Section 108.5 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 8. Section 95.108.6 of the Los Angeles Municipal Code is amended to read as follows:

95.108.6. AUTHORITY TO CONDEMN EQUIPMENT.

Section 108.6 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 9. Section 95.108.7 of the Los Angeles Municipal Code is amended to read as follows:

95.108.7. CONNECTION AFTER ORDER TO DISCONNECT.

Section 108.7 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 10. Section 95.108.8 of the Los Angeles Municipal Code is amended to read as follows:

95.108.8. LIABILITY.

Section 108.8 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 11. Section 95.108.9 of the Los Angeles Municipal Code is amended to read as follows:

95.108.9. COOPERATION OF OTHER OFFICIALS AND OFFICERS.

Section 108.9 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 12. Section 95.109 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.109. UNSAFE EQUIPMENT.

Section 109.0 of Chapter 1, Division II of the C.M.C. is adopted by reference.

Sec. 13. Paragraphs K and L of Subsection 3 of Section 95.112.1 of the Los Angeles Municipal Code are amended to read as follows:

K. The replacement of defective forced-air units with one of equivalent size, Btu/hr (W) rating and vent capacity when the vent does not require replacement or relocation in a detached single-family dwelling and the replacement is performed by a contractor with a valid Certificate of Registration pursuant to Section 91.1716 of the Building Code. A Certificate of Compliance pursuant to Section 91.108.12 of the Building Code must be filed with the City in lieu of a permit.

L. The replacement of defective air-conditioning units when they are replaced with one of equivalent size and Btu/hr (W) rating by a contractor with a valid Certificate of Registration pursuant to Section 91.1705 of the Building Code. A Certificate of Compliance pursuant to Section 91.108.12 of the Building Code must be filed with the City in lieu of a permit.

Sec. 14. Paragraph 1 of Subdivision A of Subsection 1 of Section 95.113.2 of the Los Angeles Municipal Code is amended to read as follows:

1. Installations where the aggregate Btu/h input capacity is 500,000 Btu/h (146,500 W) and over for comfort heating, or for comfort cooling, or for absorption units.

Sec. 15. Paragraph 2, including the Exceptions, of Subdivision A of Subsection 1 of Section 95.113.2 of the Los Angeles Municipal Code is repealed.

Sec. 16. Subdivision C of Subsection 1 of Section 95.113.2 of the Los Angeles Municipal Code is amended to read as follows:

C. Any comfort-cooling compressor or refrigeration compressor for any system which requires a machinery room.

Sec. 17. Subdivision L of Subsection 1 of Section 95.113.3 of the Los Angeles Municipal Code is amended to read as follows:

L. The weight of the equipment.

Sec. 18. Section 95.217.0. O. of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.217.0. O

Section 217.0 of Chapter 1, Division II of the C.M.C. is adopted by reference, except that the C.M.C. definition of the following term is not adopted:

OCCUPANCY CATEGORY

The following definition is also adopted:

OCCUPANCY CATEGORY. For definition of occupancy category, see the California Building Code, section 202.

Sec. 19. Section 95.300 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.300. BASIC PROVISIONS.

Chapter 3 of the C.M.C. is hereby adopted by reference.

Sec. 20. Section 95.312 of the Los Angeles Municipal Code is added to read as follows:

SEC. 95.312. WATER SUPPLY.

Water supplies and backflow protection shall be as required by the Los Angeles Plumbing Code.

Sec. 21. Section 95.500 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.500. BASIC PROVISIONS.

Chapter 5 of the C.M.C. is hereby adopted by reference.

Sec. 22. Section 95.507.1.1 of the Los Angeles Municipal Code is added to read as follows:

95.507.1.1. Electric cooking equipment that has been listed in accordance with UL 197 and provided with integral recirculation system (also referred to as ductless hoods) or non integral recalculating system listed in accordance with UL 710B shall not be required to be provided with an exhaust system. [NFPA 96:4.1.1.1*]

Sec. 23. Section 95.1500 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.1500. BASIC PROVISIONS.

Chapter 15 of the C.M.C. is adopted by reference.

Sec. 24. Section 95.1500.1 of the Los Angeles Municipal Code is repealed.

Sec. 25. Section 95.1800 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 95.1800. BASIC PROVISIONS.

Chapter 1, Division II and Appendices A and D of the C.M.C. are adopted by reference.

Sec. 26. **Urgency Clause**. The City Council finds and declares that this Ordinance is required for the immediate protection of the public peace, health and safety for the following reason: In order for the City of Los Angeles to facilitate a seamless transition with the State of California and its Mechanical Code and maintain predictability and streamlined case processing for the health and safety of the public and for the benefit of economic development during distressed times, it is necessary to immediately adopt the foregoing exceptions, modifications and additions to the California Mechanical Code. Additionally, the California Mechanical Code became effective on January 1, 2011 and the amendments to that code as reflected herein must be adopted by the City Council and become effective as soon as possible. This ordinance shall become effective upon publication pursuant to Los Angeles City Charter Section 253.

Sec. 27. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, **by a vote of not less than three-fourths** of all of its members, at its meeting of APR 2 0 2011.

JUNE LAGMAY, City Clerk

By _____
Deputy

Approved APR 26 2011

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By Kim R. Westhoff
KIM RODGERS WESTHOFF
Deputy City Attorney

Date April 7, 2011

File No. CF 10-2335

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\2011 Mechanical Code.docx

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 California Mechanical Code (CMC).**

WHEREAS, the City of Los Angeles has **geological conditions**, such as earthquake faults. The City of Los Angeles is bounded on the east by the San Andreas Fault and interlaced with other earthquake faults, which run through, adjacent and under the City; and

WHEREAS, the City is located in Seismic Zone 4, which is considered by experts to be the most seismically active of the four seismic zones in the world; and

WHEREAS, seismic experts predict a massive earthquake on one of these faults within the next 30 years and several earthquakes similar in intensity to the Northridge Earthquake during the same period; and

WHEREAS, the 1994 Northridge Earthquake which was a moderate size (6.8 magnitude) earthquake caused extensive damage to buildings and structures, including damage to more than 115,000 buildings, moderate to major damage to more than 3,000 buildings and the vacating of about 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 people who lost their lives in the earthquake, but there could have been several thousand fatalities had the earthquake occurred at midday when most buildings were occupied instead of 4:31 in the morning; and

WHEREAS, massive earthquakes pose unusual and extraordinary stresses on buildings and structures requiring more stringent building regulations than would otherwise be required; and

WHEREAS, a major earthquake would break water lines making fire fighting more difficult and would break gas lines and electric lines, making a high risk of fires breaking out in all areas of the City; and

WHEREAS, there was a fire in the Fairfax Area of the City of Los Angeles in 1986, due to the high volume of methane gas seepage through cracks in the concrete floor of a building; and

WHEREAS, in 1999, large pockets of methane gas in the subsurface geological formation was discovered in various areas of Los Angeles; and

WHEREAS, the City of Los Angeles has **topographic conditions**, natural and man-made, such as the natural hills, mountains and the coastal region, as well as the man-made harbors and highly concentrated areas of high-rise buildings.

WHEREAS, the City of Los Angeles is situated in a coastal region of hills and mountains containing dry wild native brush and other native and non-native vegetation; and

WHEREAS, this region of flat land and hillside areas creates a natural basin, which has high strong winds alongside foothills and other areas of the City; and

WHEREAS, in 1982 fires in the flat areas of neighboring Orange County were spread from one wood shake and wood shingle roof covered building to the next wood shake and wood shingle roof covered building by the strong Santa Ana winds, and

WHEREAS, the dry brush areas of the local Santa Monica hillsides and the strong canyon winds or the dry Santa Ana winds contributed to past fires in the Los Angeles area, such as, the 1961 Bel Air and Brentwood Canyon, 1977 Topanga Canyon and 1993 Malibu Canyon fires, and

WHEREAS, widespread fires caused by either earthquakes or brush fires would impact the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, the highly concentrated area of high-rise buildings, traffic congestion and possible gridlock may jeopardize the quick response to fires by the Fire Department that could reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the mountainous terrain is now identified as the Very High Fire Hazard Severity Zone and the highly concentrated area of high-rise buildings is identified as Fire District 1; and

WHEREAS, the City of Los Angeles has **climatic conditions** that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the fire danger to all exposed combustible materials; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, widespread fires caused by either earthquakes or brush fires would limit the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, quick response to fires by the Fire Department will reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

NOW, THEREFORE, in order to provide adequate protection under the local climatic, geological and topographical conditions set forth above, the City of Los Angeles makes the following findings and determinations:

Sections 95.112.1 through 95.112.4 are an **administrative amendment** necessary to correct grammatical errors.

Section 95.113.1 is an **administrative amendment** necessary to correct grammatical errors.

Section 95.113.2 is an **administrative amendment** necessary to eliminate terms specific to residential application. In the Mechanical code, there is no difference between commercial and residential applications. Therefore, the requirements will be enforced to both applications.

Section 95.113.3 is an **administrative amendment** necessary due to geologic conditions. This amendment will make it a requirement to always note the equipment weight on plans and hence, making it clear when structural considerations will be necessary.

Section 95.113.4 is an **administrative amendment** necessary to correct grammatical errors.

Section 95.217 is an **administrative amendment** necessary to make reference to the Los Angeles Building Code and not the California Building Code.

Section 95.312 is an **administrative amendment** necessary to make reference to the Los Angeles Plumbing Code and not the California Plumbing Code.

Section 95.507.1.1 is an **administrative amendment** necessary to update the most current UL standard.

[file: Findings and Determinations for the Mechanical Code - Final]

CITY OF LOS ANGELES
CALIFORNIA

DEPARTMENT OF
BUILDING AND SAFETY
201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

ROBERT R. "BUD" OVROM
GENERAL MANAGER

RAYMOND S. CHAN, C.E., S.E.
EXECUTIVE OFFICER

June 25, 2012

Council File No. 10-2335

Jim McGowan, Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

FILING OF EXPRESS FINDINGS AND DETERMINATION PERSUANT TO SECTION
17958.7 OF THE HEALTH AND SAFETY CODE

On June 21, 2011, the Los Angeles City Council adopted an ordinance to amend the Los Angeles Municipal Code (LAMC) by incorporating portions of the 2009 Uniform Plumbing Code and the 2010 California Plumbing Code and adopt the findings that make the modifications to the California Plumbing Code to be reasonably necessary because of local climatic, geological or topographical conditions.

Enclosed with this transmittal is a copy of the findings along with the modifications (the ordinance) to the California Plumbing Code. The Department of Building and Safety, City of Los Angeles will consider this as complying with Section 17958.7 of the Health and Safety Code.

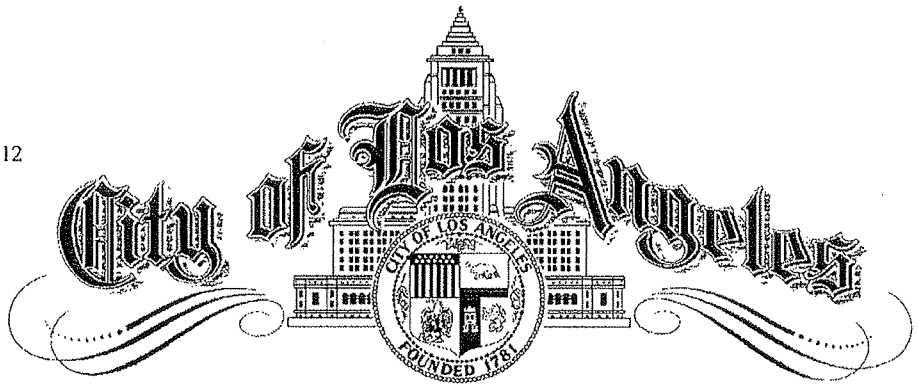
If you have any questions regarding this matter, please contact the Code Engineer, Mr. Victor Cuevas at (213) 482-0409.

Robert "Bud" Ovrom
General Manager

Attachments

City Hall East
200 N. Main Street
Room 800
Los Angeles, CA 90012

(213) 978-8100 Tel
(213) 978-8312 Fax
CTrutanich@lacity.org
www.lacity.org/atty



CARMEN A. TRUTANICH
City Attorney

REPORT NO. R 1 1 - 0 1 8 3

MAY 1 9 2011

REPORT RE:

DRAFT ORDINANCE AMENDING THE LOS ANGELES MUNICIPAL CODE PROVISIONS RELATING TO THE PLUMBING CODE

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File 10-2335

Honorable Members:

We are transmitting to you for your consideration, approved as to form and legality, a draft ordinance to amend the Los Angeles Municipal Code (LAMC) provisions relating to the Plumbing Code.

Summary of Ordinance Provisions

When this matter was considered by your Honorable Planning and Land Use Management (PLUM) Committee, the Committee requested that the City Attorney prepare the final ordinance based on the amended proposed ordinance submitted at the Committee meeting by the Department of Building and Safety (DBS) and attached to the Council file.

The enclosed draft ordinance would update the LAMC to be consistent with State law. In addition, the final ordinance includes amendments that are more restrictive than State law and are justified by the City's local climatic, geological or topographical conditions.

CEQA Determination

It appears that the ordinance is not a project subject to environmental review under the California Environmental Quality Act (CEQA). Under State CEQA Guidelines Section 15378(b)(2) and (b)(5), continuing administrative activities and organizational activities that will not result in direct or indirect physical changes in the environment are not CEQA projects. The ordinance makes administrative changes to existing portions of the Plumbing Code as contained within the LAMC. These changes make various technical changes to the existing regulations, eliminate obsolete code sections and clarify code sections. These changes will not result in any change to the physical environment.

Council Rule 38 Referral

The draft ordinance was sent, pursuant to Council Rule 38, to the Department of Building and Safety with a request that they provide any comments directly to the City Council or its Committees when the matter is considered.

If you have any questions regarding this matter, please contact Deputy City Attorney Kim Rodgers Westhoff at (213) 978-8242. She or another member of this Office will be present when you consider this matter to answer any questions you may have.

Very truly yours,

CARMEN A. TRUTANICH, City Attorney

By 
PEDRO B. ECHEVERRIA
Chief Assistant City Attorney

PBE/KRW:mrc
Transmittal

ORDINANCE NO. 181757

An ordinance amending Article 4 of Chapter IX of the Los Angeles Municipal Code and incorporating by reference the 2010 Edition of the California Plumbing Code (C.P.C.) with certain exceptions.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Section 94.100.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.100.0 BASIC PROVISIONS.

Chapter 1, Division II of the California Plumbing Code (C.P.C.) is adopted by reference with the following exceptions: Sections 101.0, 101.1, 101.2, 101.3, 103.0, 103.1, 103.4, 103.5, and Table 1-1 of the California Plumbing Code are not adopted and, in lieu, Sections 94.101.0, 94.101.1, 94.101.2, 94.101.3, 94.101.6, 94.101.7, 94.103.0, 94.103.1, 94.103.4, 94.103.5, 94.103.10 through 94.103.20 and Table 1-A are added as provided in this Article.

Sec. 2. Subsection 4 of Section 94.101.3.6 of the Los Angeles Municipal Code is amended to read as follows:

4. Potable water piping with any of the following:

a. Systems requiring a 2-inch or larger supply.

b. Systems designed from the procedure in Section 610.5 of the California Plumbing Code.

c. Systems utilizing cross-linked polyethylene tubing (PEX) requiring a 2-inch or larger supply or when required by the conditions of approval of the City of Los Angeles Mechanical Testing Laboratory Research Report.

d. Systems utilizing CPVC piping requiring a 2-inch or larger supply or when required by the conditions of approval of the City of Los Angeles Mechanical Testing Laboratory Research Report.

EXCEPTION: Plan check is not required for existing systems that are added to or altered, with branch lines that serve fewer than 20 fixture units and sized by Table 6-4.

Sec. 3. Subsection 8 of Section 94.101.3.6. of the Los Angeles Municipal Code is deleted in its entirety and the current Subsections 9 and 10 are renumbered and amended to read as follows:

8. Swimming pool circulating water systems.

EXCEPTION: Private swimming pools.

9. Fire Protection.

a. Class H. Standpipes.

b. Standpipes: Class I, II, III.

c. Fire pump systems.

d. Fire hydrant systems.

e. Hand hose systems connected to fire sprinkler piping.

f. Monitor nozzle systems.

g. Underground fire protection piping.

h. Fire sprinkler systems.

EXCEPTIONS:

1. Raising or lowering of sprinklers due to change in ceiling height.

2. Replacing of sprinklers of the same type, orifice size and temperature rating.

3. Relocation of sprinklers in previously occupied buildings or tenant spaces.

Sec. 4. Section 94.103.3.4 is added to the Los Angeles Municipal Code to read as follows:

94.103.3.4. Expiration of Permits. Permits shall expire as provided for in Section 98.0602 of the Los Angeles Municipal Code.

Sec. 5. Section 94.103.3.5 is added to the Los Angeles Municipal Code to read as follows:

94.103.3.5. Suspension or Revocation. Permits may be revoked as provided in Section 98.0601 of the Los Angeles Municipal Code.

Sec. 6. Section 94.205.0. C. of the Los Angeles Municipal Code is amended by adding a new definition in alphabetical order to read as follows:

Commercial Pre-rinse Spray Valves (PRSV). Assemblies consisting of a flexible hose and spray head for attachment to a faucet with a built-in diverter.

Sec. 7. Section 94.206.0. D. of the Los Angeles Municipal Code is amended by adding a new definition in alphabetical order to read as follows:

Dual Flush Toilet. A toilet that has two flush modes, one at 1.1 gallons per flush or less and one at 1.6 gallons per flush or less with an effective 1.28 gallons per flush.

Sec. 8. Section 94.207.0. E. of the Los Angeles Municipal Code is amended by adding a new definition in alphabetical order to read as follows:

Energy Star®. A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR is a voluntary program designed to identify and promote energy-efficient products and practices.

Sec. 9. Section 94.218.0. P. of the Los Angeles Municipal Code is amended to read as follows

SEC. 94.218.0. P.

Section 218 of the C.P.C. is hereby adopted by reference with the following additions:

Private or Private Use. Refers to plumbing fixtures in residences and apartments, private bathrooms in hotels and hospitals, and restrooms in commercial establishments where the fixtures are intended for the use of a family and their guests or an individual.

Public or Public Use. All uses of fixtures or structures that are not defined as private or private use.

Sec. 10. Section 94.221.0. S. of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.221.0. S.

Section 221 of the C.P.C. is hereby adopted by reference with the following addition:

Self-Closing Faucet. A faucet designed to close itself as the activating mechanism is released.

Sec. 11. Section 94.400.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.400.0. BASIC PROVISIONS.

Chapter 4 of the C.P.C. is hereby adopted by reference, except that Sections 402.1, 402.2 and 402.3 are not adopted and, in lieu, Sections 94.402.1.1, 94.402.3, 94.402.3.3, 94.402.3.4 and 94.402.4 and Table 4-0 are added.

Sec. 12. Section 94.402.1.1. is added to the Los Angeles Municipal Code to read as follows:

94.402.1.1. All plumbing fixtures shall meet the following flow rate requirements:

Fixture Type	Maximum Flow rate
Shower heads	2 gpm
Lavatory faucets for private use	1.5 gpm
Lavatory faucets for public use	0.5 gpm
Metered faucets	0.25 gallons per cycle
Kitchen faucets	2.2 gpm
Pre-rinse spray valves in commercial kitchen	1.6 gpm
All other faucets	2.2 gpm
Wash fountains	2.2 gpm
Water closets	1.28 gallons per flush
Urinals	0.125 gallons per flush
Domestic dishwasher	5.8 gallons per washing cycle
Commercial dishwashers	The maximum water use for high efficiency commercial dishwashers shall be in accordance with Table 4-0.

TABLE 4-0

WATER USE FOR COMMERCIAL DISHWASHER WATER USE[1,2]

Type	High-Temperature Maximum gallons per rack	Chemical Maximum gallons per rack
Conveyer	0.70	0.62
Door	0.95	1.16
Under-counter	0.90	0.98

1. The maximum water use per washing cycle for high efficiency domestic dishwashers shall be 5.8 gallons.

2. All installed dishwashers shall be Energy Star® rated.

Sec. 13. Section 94.402.3 is added to the Los Angeles Municipal Code to read as follows:

94.402.3. Urinals.

Sec. 14. Section 94.402.3.3 is added to the Los Angeles Municipal Code to read as follows:

94.402.3.3. Nonwater Supplied Urinals (Waterless Urinals). [HCD 1 & HCD 2] - Waterless urinals sold or installed in this state shall comply with all of the following requirements:

1. Meet performance, testing, and labeling requirements established by ASME A112.1919-2006, Standard for Vitreous China Nonwater Urinals, for vitreous china non-water supplied urinals;

2. Be listed by an ANSI accredited third-party certification agency to ASME A 112.19.19-2006, Standard for Vitreous China Nonwater Urinals;

3. Follow cleaning and maintenance procedures established by the manufacturer;

4. Conform to reference standards in Table 14-1 for non-vitreous ceramic or plastic urinal fixtures; and

5. Provide water distribution and fixture supply piping, sized as required elsewhere in this Code, roughed-in immediately adjacent to each waterless urinal fixture installed.

For additional information, see the California Health and Safety Code Section 17921.4.

Sec. 15. Section 94.402.3.4. is added to the Los Angeles Municipal Code to read as follows:

94.402.3.4. Nonwater Urinals. [Not adopted by OSHPD 1, 2, 3, and 4] Nonwater urinals shall be listed and comply with the applicable standards referenced in Table 14-1. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed they shall have a water distribution line rough-in to the urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit.

Sec. 16. Section 94.402.4. is added to the Los Angeles Municipal Code to read as follows:

94.402.4. Metered Faucets. All faucets in public restrooms shall be self-closing or self-closing metering faucets.

Sec. 17. Section 94.600.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.600.0. BASIC PROVISIONS.

Chapter 6 of the C.P.C. is hereby adopted by reference except Section 604.10 is not adopted and in lieu thereof Section 94.604.10 is added.

Sec. 18. Section 94.604.10 is added to the Los Angeles Municipal Code to read as follows:

94.604.10. Water pipes, plumbing fittings, fixtures, solder, and flux with lead content shall comply with the California Health and Safety Code Section 116875.

Sec. 19. Section 94.1100.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.1100.0. BASIC PROVISIONS.

Chapter 11 of the C.P.C. is adopted by reference, except Sections 1101.11.2.2.2, 1101.13 and 1104.3 are not adopted and in lieu Section 94.1101.13 is added.

Sec. 20. Section 94.1101.13. is added to the Los Angeles Municipal Code to read as follows:

94.1101.13. All rainwater shall drain by gravity to a place of disposal satisfactory to the Department. If the rainwater cannot be drained by gravity, discharge into a sump may be permitted. Roof drainage shall not have a direct connection to a sump having an air-tight cover. Rainwater sumps serving "public use" occupancy buildings shall be provided with dual pumps arranged to function alternately in case of overload or mechanical failure. The pumps shall have an audio and visual alarm, readily accessible, that signals pump failure or an overload condition. The lowest inlet shall have a minimum clearance of two (2) inches (51 mm) from the high-water or "starting" level of the sump.

Sec. 21. Section 94.1500.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.1500.0. GENERAL.

Chapter 15 of the C.P.C. is not adopted.

Sec. 22. Section 94.1600.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.1600.0. BASIC PROVISIONS.

Chapter 16A of the C.P.C. is hereby adopted. Chapter 16 of the C.P.C. is not adopted.

Sec. 23. Section 94.1600.1 of the Los Angeles Municipal Code is amended to read as follows:

94.1600.1. Appendices A, B, D, G, I and K of the C.P.C. are hereby adopted by reference.

Sec. 24. Section 94.1700.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.1700.0. BASIC PROVISIONS.

The 2009 Uniform Swimming Pool, Spa and Hot Tub Code is hereby adopted by reference.

Sec. 25. Article 4, Division 18 of the Los Angeles Municipal Code is amended to read as follows:

DIVISION 18
UNIFORM SOLAR ENERGY CODE

SEC. 94.1800.0. BASIC PROVISIONS.

The 2009 Uniform Solar Energy Code, Chapters 2 through 8, is hereby adopted by reference.

Sec. 26. Section 94.2002.0 of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2002.0. ADOPTED STANDARDS. All fire sprinkler and standpipe design, installation and materials shall be in conformity with the 2010 Edition of the California Building Code and to the applicable portions of standards as specified in Table 20-1 of this Chapter, except when specified in this Chapter as modified or not adopted.

3. Discharge through the curb-face at the street; and

4. In high-rise buildings all drains shall terminate to the fire water storage tank, when available. In the event drains are located below the water level of the tank, a sump pump shall be provided to pump the water back to the fire water storage tank.

Sec. 29. Section 94.2010.0 of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2010.0. NFPA-13.

NFPA 13-2010 is adopted by reference with the following exceptions and modifications.

94.2010.1. NFPA 13-2010 Section 1.4 is not adopted.

94.2010.2. NFPA 13-2010 Section 3.2 is adopted by reference except that the following sections are not adopted:

3.2.2. Authority Having Jurisdiction.

3.2.6. Standard.

94.2010.3. NFPA 13-2010 Section 5.1.3 is added and modified to read as follows:

5.1.3. Classification of Occupancies. For the purpose of determining the level of protection to be provided by required sprinkler system installations, Table No. 5-1 of this Chapter shall be used.

For hazard classification other than those indicated, see appropriate nationally recognized standards for design criteria.

When fire sprinkles systems are required in buildings of undetermined use, they shall be designed and installed to have a sprinkler density of not less than that required of an Ordinary Hazard Group 2 use with a minimum design area of 3,000 square feet. Use is considered undetermined if not specified at the time of permit issued.

Where a subsequent occupancy requires a system with a greater capability, it shall be the responsibility of the occupant and/or owner to upgrade the system to the required density for the new occupancy.

5.1.3.1. Group H, Division 5 Occupancies. Where the design area of the sprinklers system consists of a corridor protected by one row of sprinklers, the maximum number of sprinkler required to be calculated is 13.

5.1.3.2. Group L Occupancies. Research laboratories and similar areas of group L occupancy shall not be less than that required for Ordinary Hazard Group 2 with a design area of not less than 3,000 square feet (279 m^2)

TABLE NO. 5.1
HAZARD CLASSIFICATION

OCCUPANCY OF BUILDING OR PORTION THEREOF	HAZARD CLASSIFICATION
Group A Occupancies used as meeting rooms, library reading rooms, restaurant seating areas, clubs, theaters, museums, health clubs, educational classrooms and churches. Group B Occupancies used as offices, data processing areas, colleges and universities. Group E Occupancies other than shops and laboratories. Group I Occupancy living and sleeping areas Group R, Division I Occupancies[1]. Typically, one would expect that these uses are such that the quantity and combustibility of contents results in relatively low-rate-of-heat-release fires.	Light
Groups B, F, S and U Occupancies used for light manufacturing, commercial kitchens, laundries, automobile parking garages, bakeries, canneries, electronic plants, beverage manufacturing and glass products manufacturing plants not producing dust or fibers. In mixed occupancies housing group L occupancies, the portions of the building not classified as group L occupancy. Typically these uses are such that the quantity of combustibles is relatively low, the combustibility of contents is moderate, storage does not exceed 8 feet in height, and moderate-rate-of-heat-release fires would be expected.	Ordinary Group I

Groups B, F, M, and S Occupancies used for chemical plant laboratories, mercantile, machine shops, printing plants, library stack areas, metal working, wood product assembly, textile manufacturing, confectionery products, cold storage warehouses[2], cereal mills, service stations and repair garages. Typically these uses are such that the quantity of combustibles is moderate. The combustibility of contents is moderate, storage does not exceed 12 feet in height[2] and moderate-rate-of-heat-release fires would be expected. Also: Group A Occupancies such as exhibition halls. Groups B, F and S Occupancies used as tobacco products manufacturing, paper and pulp mills, piers and wharfs, and warehousing[2] of higher combustible contents (including packaging). Group H Occupancies used as feed mills, tire manufacturing, chemical plants, repair garages and woodworking. Group H, Division 5 Occupancies, except storage rooms with dispensing. Research laboratories and similar areas of group L occupancy. Typically these uses are such that high-rate-of-heat-release fires would be expected and the spread of fire would be rapid.	Ordinary Group 2
Group H Occupancies used for printing (using inks with flashpoints below 100 degrees F.) combustible hydraulic fluid-use areas such as die casting and metal extruding, upholstering with plastic foam, rubber reclaiming, compounding, drying, milling, vulcanizing, plywood and particle board manufacturing, saw mills, textile picking, opening, blending, garneting, carding and combining of cotton, synthetics, wool shoddy or burlap. Typically these uses are such that a significant fire hazard exists.	Extra Hazard Group I
Group H Occupancies used as asphalt saturating, flammable liquids spraying, flow coating, open oil quenching, varnish and paint dipping, solvent cleaning and manufactured home or modular building manufacturing (where the finished building enclosure is present and has combustible interiors). Storage rooms with dispensing located in Group H, Division 5 Occupancies. These uses are such that a severe fire hazard exits.	Extra Hazard Group 2[3]

1. See also Section 8.4.5 of NFPA 13- 2010.
2. For high-piled storage, see NFPA 13- 2010.
3. For additional and more stringent criteria, see California Fire Code Chapters 27, 28, 34 and the Los Angeles Fire Code.

94.2010.4. NFPA 13-2010 Section 6.1.1.2 is not adopted and NFPA 13-2010 Section 6.1.1.1 is modified to read as follows:

6.1.1.1. All materials and devices shall be listed and approved.

94.2010.5. NFPA 13-2010 Section 6.3.6.1 is added and modified to read as follows:

6.3.6.1. Other types of pipe or tube, such as plastic, may be used if it is investigated and found to be listed for this service.

94.2010.6. NFPA 13-2010 Section 6.7.1.3.3 is not adopted

94.2010.7. NFPA 13-2010 Section 6.9.1 is added and modified to read as follows:

6.9.1. Waterflow alarm apparatus shall be listed for the service and constructed and installed so that any flow of water from a sprinkler system equal to or greater than that from a single automatic sprinkler of the smallest orifice size installed on the system shall result in an audible alarm on the premises within two minutes after the flow begins.

94.2010.8. NFPA 13-2010 Section 6.9.4.1 is added and modified to read as follows:

6.9.4.1. Electrically operated alarm attachments forming part of an auxiliary, proprietary, remote station or local signaling system shall be installed in accordance with the Los Angeles Fire Code.

94.2010.9. NFPA 13-2010 Section 8.15.1.2.9 is added and modified to read as follows:

8.15.1.2.9. Concealed spaces with volumes not exceeding 160 cubic feet above a room or aggregate of rooms not exceeding 55 square feet in area, shall not require sprinkler protection.

94.2010.10 Reserved.

94.2010.11. Reserved.

94.2010. 12. Reserved.

94.2010.13. NFPA 13-2010 Section 8.15.1.2.15 is added and modified to read as follows:

8.15.1.2.15. Exterior columns under 10 ft^2 (0.93 m^2) in total area, formed by studs or wood joist, with no sources of ignition within the column, supporting exterior canopies that are fully protected with a sprinkler system, shall not require sprinkler protection.

94.2010.14. NFPA 13-2010 Sections 8.15.4.1 through 8.15.4.5 are not adopted and Section 8.15.4 is added and modified to read as follows:

8.15.4. Water curtains shall consist of closely spaced sprinklers in combination with draft stops. The draft stops shall be located immediately adjacent to the opening shall be at least 18 inches deep and shall be of noncombustible or limited-combustible material that will stay in place before and during sprinkler operation. Sprinklers shall be spaced not more than six feet apart and placed six to 12 inches from the draft stop on the side away from the opening. Where sprinklers are closer than six feet, cross baffles shall be provided in accordance with Section 8.6.3.4.2 of NFPA-13.

94.2010.15. NFPA 13-2010 Section 8.15.7.1 is added and modified to read as follows:

8.15.7.1. Unless the requirements of 8.15.7.2 and 8.15.7.3 are met sprinklers shall be installed under exterior roofs, canopies, porte-cocheres, balconies, decks or similar projections exceeding 4ft (1.2m) in width.

94.2010.16. NFPA 13-2010 Section 8.15.7.2 is added and modified to read as follows:

8.15.7.2. Sprinklers shall be permitted to be omitted where the canopies, roofs, balconies, decks, or similar projections are constructed with materials that are noncombustible, limited-combustible, or fire retardant treated wood as defined in NFPA 703, Standard for Fire Retardant-Treated Wood and Fire Retardant Coatings for Building Materials.

94.2010.17. NFPA 13-2010 Section 8.15.7.3 is added and modified to read as follows:

8.15.7.3. Sprinklers shall be permitted to be omitted from below the canopies, roofs, balconies, decks, or similar projections of combustible construction, provided the exposed finish material on the roof, or canopy, is noncombustible, limited-combustible, or fire retardant treated wood as defined in NFPA 703, Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials, and the roofs, or canopies, contains only sprinklered concealed spaces or any of the following unsprinklered combustible concealed spaces:

1. Combustible concealed spaces filled entirely with noncombustible insulation.

2. Light or ordinary hazard occupancies where noncombustible or limited-combustible ceilings are directly attached to the bottom of solid wood joists so as to create enclosed joist spaces 160 ft^3 (4.5 m^3) or less in volume, including space below insulation that is laid directly on top or within the ceiling joists in an otherwise sprinklered attic [See 11.2.3.1.4(4)(d)].

3. Concealed spaces over isolated small roofs, or canopies, not exceeding 55 ft^2.

94.2010.18. NFPA 13-2010 Section 8.15.7.4 is not adopted.

94.2010.19. Reserved.

94.2010.20. NFPA 13-2010 Section 8.16.1.1.1.4 is added and modified to read as follows:

8.16.1.1.1.4. Where a system includes floor control valves, a hydraulic design information sign containing information for the floor shall be provided at each floor control valve. A hydraulic design information sign shall be provided for each area calculated. The installing contractor shall identify a hydraulically designed sprinkler system with a permanently marked weatherproof metal or rigid plastic sign secured with corrosion resistant wire, chain, or other approved means. Such signs shall be placed at the alarm valve, dry pipe valve, pre-action valve, or deluge valve supplying the corresponding hydraulically designed area.

94.2010.21. NFPA 13-2010 Section 8.16.1.1.1.5 is added and modified to read as follows:

8.16.1.1.1.5. Control valves, check valves, drain valves, antifreeze valves shall be readily accessible for inspection, testing, and maintenance. Valves located more than 6'-6" above the finished floor shall be provided with a means of opening and closing the valve from the floor level.

94.2010.22. NFPA 13-2010 Section 8.16.1.1.2.5 is added and modified to read as follows:

8.16.1.1.2.5. All valves controlling the water supply for automatic sprinkler systems and water-flow switches on all sprinkler systems shall be electrically monitored where required by the Los Angeles Building Code Section 91.903.4 and 91.903.4.1.

EXCEPTION: Underground key or hub valves in roadway boxes provided by the municipality or public utility need not be monitored.

94.2010.23. NFPA 13-2010 Section 8.16.1.1.7 is added and modified to read as follows:

8.16.1.1.7. Valve Access. All valves controlling water supplies for sprinkler systems or portions of the system shall be accessible. These valves shall be within six feet six inches of the floor or shall be operable from fixed ladders or clamped tread ladders on risers, or use chains within six feet six inches of the floor connected to valve hand wheels or other suitable means. All valves shall be provided with adequate clearance for normal operation.

94.2010.24. NFPA 13-2010 Section 8.16.1.1.9 is added and modified to read as follows:

8.16.1.1.9. Floor (Level) Control Valves.

1. Where required. In buildings with over two levels or two floors, a supervised valve capable of independently controlling the fire sprinkler system on each level, penthouse, roof structure, mezzanine and basement shall be installed. The maximum area covered by a single floor control valve shall not exceed the areas specified in section 8.2 of NFPA 13-2010.

EXCEPTIONS:

1. Floor control valves need not be provided for levels, penthouses, roof structures, mezzanines and basement with 20 or fewer fire sprinklers.

2. In partially sprinklered buildings, sprinklers serving window openings along an exit way or property line, or stair shafts and adjacent doors may have a sectional control valve to control the system in each of these areas instead of a floor control valve.

3. Valves required for hazardous locations may be located downstream of floor control valves.

4. One- and two-family dwellings.

2. Locations. Floor control valves shall be within a stairway enclosure or within the vestibule or on the access balcony of a smoke proof enclosure.

EXCEPTIONS:

1. In buildings with three or fewer stories or where there is no stairway that serves a floor, control valves may be located elsewhere on the floor level.

2. Unenclosed stairways in parking garages.

94.2010.25. NFPA 13-2010 Section 8.16.1.1.10 is added and modified to read as follows:

8.16.1.1.10. Special Hazard Locations and Hazardous Occupancies. The piping serving each linen chute, each paint spray booth, each trash chute,

including trash room, and each separate trash room shall be controlled by valves that control no other sprinklers.

94.2010.26. NFPA 13-2010 Section 8.16.1.2.6 is added and modified to read as follows:

8.16.1.2.6. Identification Pressure Regulators. Signs shall be posted at pressure regulators for fire sprinklers stating the required setting of the pressure regulator.

94.2010.27. NFPA 13-2010 Section 8.16.1.5.1 is added and modified to read as follows:

8.16.1.5.1. Private fire service main systems shall have sectional fire control valves at appropriate points in order to permit sectionalizing the system in the event of break or for the making of repairs or extensions.

94.2010.28. NFPA 13-2010 Section 8.16.1.5.1.1 is added and modified to read as follows:

8.16.1.5.1.1. Sectional control valves are not required when the fire service main system serves less than six fire appurtenances.

94.2010.29. NFPA 13-2010 Section 8.16.1.5.1.2. is added and modified to read as follows:

8.16.1.5.1.2. Sectional control valves shall be indicating valves in accordance with Section 6.7.1.3. NFPA 13-2010.

94.2010.30. NFPA 13-2010 Section 8.16.1.5.1.3. is added and modified to read as follows:

8.16.1.5.1.3. Sectional control valves shall be located so that no more than five fire appurtenances are affected by shut-down of any single portion of the fire service main. Each fire hydrant, fire sprinkler system riser, and standpipe riser shall be considered a separate fire appurtenance. In-rack sprinkler systems shall not be considered as a separate appurtenance.

94.2010.31. NFPA 13-2010 Section 8.16.1.5.1.4 is added and modified to read as follows:

8.16.1.5.1.4. The number of fire appurtenances between sectional control valves is allowed to be modified by the authority having jurisdiction.

94.2010.32. NFPA 13-2010 Section 8.16.1.5.1.5 is added and modified to read as follows:

8.16.1.5.1.5. Looped underground systems shall be provided with sectional valves regardless of the number of appurtenances.

94.2010.33. NFPA 13-2010 Section 8.16.1.5.2 is added and modified to read as follows:

8.16.1.5.2. A valve shall be provided on each bank where a main crosses a body of water or outside the building foundation(s) where the main or section of main runs under a building.

94.2010.34. NFPA 13-2010 Section 8.16.4.2.4 is not adopted.

94.2010.35. NFPA 13-2010 Section 8.17.1.1 is added and modified to read as follows:

8.17.1.1. Local water-flow alarms shall be provided on each sprinkler system having more than five sprinklers and shall be located in an area approved by the Administrative Authority.

94.2010.36. NFPA 13-2010 Sections 9.1.1.2 and 9.1.1.3 are not adopted, and NFPA 13-2010 Section 9.1.1.1 is added and modified to read as follows:

9.1.1.1 General. Types of hangers shall be in accordance with the requirements of Section 9.1 of NFPA 13-2010.

EXCEPTION: Hangers designed by a registered structural or civil engineer for lateral loads in accordance with Section 1613 of the Building Code and the requirements of Section 9.3.7 of NFPA 13-2010 shall be acceptable.

94.2010.37. NFPA 13-2010 Section 9.1.1.4.3 is added and modified to read as follows:

9.1.1.4.3. Fasteners as specified in 9.1.4 and 9.1.5 shall be permitted to be not listed.

94.2010.38. NFPA 13-2010 Section 9.1.3.1 is added and modified to read as follows:

9.1.3.1. Unless prohibited by 9.1.3.2 or 9.1.3.3, the use of listed inserts set in concrete and listed post- installed anchors to support hangars shall be permitted for mains and branch lines provided they meet the requirements of the LABC Sections 91.1613 and 91.1912 and require special inspection as required by Section 91.1704 of the LABC and installed in conformance with all listing requirements.

94.2010.39. NFPA 13-2010 Section 9.1.3.9.1.1 is added and modified to read as follows:

9.1.3.9.1.1. Powder-driven studs used for attaching hangers to the building structure are prohibited in Seismic design Categories C, D, E and F.

94.2010.40. NFPA 13-2010 Section 9.3.5.6.1 is added and modified to read as follows:

9.3.5.6.1. Unless the requirements of section 9.3.5.6.2 are met, the horizontal loads for braces shall be determined by analysis based on horizontal force of Fp=0.76 Wp, where Fp is the horizontal force factor and Wp is 1.15 times the weight of the water filled piping

94.2010.41. NFPA 13-2010 Section 9.3.5.8.7 is added and modified to read as follows:

9.3.5.8.7. Where pipe is used for sway bracing, it shall have a wall thickness of not less than Schedule 40. The loads determined in 9.3.5.6 shall not exceed the lesser of the maximum allowable loads provided in Table 9.3.5.8.7(a), Table 9.3.5.8.7(b), and Table 9.3.5.8.7(c) or the manufacturer's certified maximum allowable horizontal loads for 30- to 44-degree, 45- to 59-degree, 60- to 89-degree, and 90-degree brace angles.

94.2010.42. NFPA 13-2010 Section 9.3.5.8.10 is not adopted.

94.2010.43. NFPA 13-2010 Section 9.3.5.9.4 is added and modified to read as follows:

9.3.5.9.4. Where lag screws or power-driven fasteners shall not be used to attach sway braces to the building structure.

94.2010.44. NFPA 13-2010 Section 9.3.5.9.6 is added and modified to read as follows:

9.3.5.9.6. Fastening methods other than those identified in 9.3.5.9 and 9.3.5.8.10 shall not apply to other fastening methods, which shall be acceptable for use if certified by a registered professional engineer to support the loads determined in accordance with the criteria in 9.3.5.6. Calculations shall be submitted to the authority having jurisdiction.

94.2010.45. NFPA 13-2010 Section 9.3.5.9.7.2 is added and modified to read as follows:

9.3.5.9.7.2. Concrete anchors other than those shown in Figure 9.3.5.9.1 and identified in 9.3.5.8.10 shall be acceptable for use where designed in accordance with the requirements of the building code and certified by a registered professional engineer.

94.2010.46. NFPA 13-2010 Section 9.3.6.1(3) is added and modified to read as follows:

9.3.6.1(3). No. 12, 440 lb (200Kg) wire installed at least 45 degrees from the vertical plane and anchored on both sides of the pipe. Powder-driven fasteners for attaching restraint are allowed to be used provided that the restraint component does not support the dead load.

94.2010.47. NFPA 13-2010 Section 9.3.7.7 is not adopted.

94.2010.48. NFPA 13-2010 Section 9.3.7.9 is amended and modified to read as follows:

9.3.7.9. The systems are required to be protected against earthquakes using a horizontal force factor exceeding 0.50 Wp, where Wp is the weight of the water-filled pipe.

94.2010.49. NFPA 13-2010 Section 10.6.5. is added and modified to read as follows:

10.6.5. Pipe joints shall not be located under foundation footings. The pipe under the building or building foundation shall not contain mechanical joints.

EXCEPTIONS:

1. Where allowed in accordance with 10.6.2;

2. Alternate designs may be utilized where designed by a registered professional engineer and approved by the enforcing agency.

94.2010.50. NFPA 13-2010 Section 10.9.1 is added and modified to read as follows:

10.9.1. Backfill shall be well tamped in layers or puddle under and around pipes to prevent settlement or lateral movement. Backfill shall consist of clean fill sand or pea gravel to a minimum of 6" below and to a minimum of 12" above the pipe and shall contain no ashes cinders, refuse, organic matter, or other corrosive materials. Other backfill materials and methods are permitted where designed by a registered professional engineer and approved by the enforcing agency.

94.2010.51. NFPA 13-2010 Section 11.1.6.6 is added and modified to read as follows:

11.1.6.6 When hose valves for Fire Department use are attached to wet pipe sprinkler system risers in accordance with Section 8.17.5.2 of NFPA 13-2010:

1. The water supply shall not be required to be added to the standpipe demand as determined from Section 94.2020 of this chapter.

2. Where the combined sprinkler system demand and hose stream allowance of Table 11.2.3.1.2 of NFPA 13-2010 exceeds the requirements of Section 94.2020 of this division, this higher demand shall be used.

3. For partially sprinklered buildings, the sprinkler demand, not including hose stream allowance, as indicated in Table 11.2.3.1.1 of NFPA 13-2010, shall be added to the requirements given in Section 94.2020 of this Division.

94.2010.52. NFPA 13-2010 Section 11.2.3.1.4(4)(i) is added and modified to read as follows:

11.2.3.1.4(4) (i). Exterior columns under 10 ft^2 (0.93m^2) in total area, formed by studs or wood joist, with no sources of ignition within the column, supporting exterior canopies that are fully protected with a sprinkler system.

94.2010.53. NFPA 13-2010 Section 11.2.3.2.3.1 is added and modified to read as follows:

11.2.3.2.3.1. Where listed quick-response sprinklers, excluding extended coverage quick-response sprinklers, are used throughout a system or portion of a system having the same hydraulic design basis, the system area of operation shall be permitted to be reduced without revising the density as indicated in Figure 11.2.3.2.3.1 when all of the following conditions are satisfied:

1. Wet pipe system;

2. Light hazard occupancy;

3. 20 ft (6.1 m) maximum ceiling height; and

4. There are no unprotected ceiling pockets as allowed by Sections 8.6.7 and 8.8.7 exceeding 32 ft^2 (3 m^2).

94.2010.54. NFPA 13-2010 Section 11.2.3.2.3.2 is added and modified to read as follows:

11.2.3.2.3.2. The number of sprinklers in the design area shall never be less than seven.

94.2010.55. NFPA 13-2010 Section 11.3.3.5 is added and modified to read as follows:

11.3.3.5. When the water curtain is located in an otherwise un-sprinklered area, the design shall include all the sprinklers in each fire separation area being protected.

94.2010.56. NFPA 13-2010 Section 12.2.1 is added and modified to read as follows:

12.2.1. Except as allowed by section 12.2.2, small hose connections 1 ½ (38mm) shall be provided where the system is not subject to freezing in accordance with 8.17.5 for first-aid-fire-fighting and overhaul operations.

94.2010.57. NFPA 13-2010 Section 23.1.7 is not adopted.

94.2010.58. NFPA 13-2010 Section 24.1 is added and modified to read as follows:

24.1. Approval of Sprinkler Systems and Private Fire Service Mains.

The installing contractor shall do the following:

1. Notify the authority having jurisdiction and the property owner or property owner's authorized representative of the time and date testing will be performed;

2. Perform all required testing (see Section 24.2);

3. Complete and sign the appropriate contractor's material and test certificate(s) (see Figure 24.1);

4. Remove all caps and straps prior to placing the sprinkler system in service; and

5. Upon system acceptance by the authority having jurisdiction a label prescribed by Title 19 California Code of Regulations, Chapter 5 shall be affixed to each system riser.

94.2010.59. NFPA 13-2010 Section 24.4 is added and modified to read as follows:

24.4. Instructions.

The installing contractor shall provide the property owner or the property owner's authorized representative with the following:

1. All literature and instructions provided by the manufacturer describing proper operation and maintenance of any equipment and devices installed;

2. NFPA 25, Standard for the inspection, testing, and maintenance of Water-Based Fire Protection Systems, 2006 California Edition; and

3. Title 19, California Code of Regulations, Chapter 5, "Fire Extinguishing Systems".

94.2010.60. NFPA 13-2010 Section 24.5.1 is added and modified to read as follows:

24.5.1. "Pipe schedule systems shall be provided with a sign indicating that the system was designed and installed as a pipe schedule system and the hazard classification(s) included in the design."

94.2010.61. NFPA 13-2010 Section 24.5.2 is added and modified to read as follows:

24.5.2. The sign shall include the following information:

1. Location of the design area or areas;

2. Discharge densities over the design area or areas;

3. Required flow and pressure of the system at the base of the riser;

4. Presence of high piled storage;

5. Maximum height of storage planned;

6. Aisle width planned;

7. Required flow and pressure of the system at the water supply source;

8. Required flow and pressure of the system at the discharge side of the fire pump where a fire pump is installed;

9. Type or types and number of sprinklers or nozzles installed including the orifice size, temperature rating, orientation, K-Factor, Sprinkler Identification Number (SIN) for sprinkler heads when applicable and response type;

10. The minimum discharge flow rate and pressure required from the hydraulically most demanding sprinkler;

11. The required pressure settings for pressure reducing valves;

12. For deluge sprinkler systems, the required flow and pressure at the hydraulically most demanding sprinkler or nozzle;

13. The protection area per sprinkler based on the hydraulic calculations; and

14. The edition of NFPA 13 to which the system was designed and installed.

Sec. 30. Section 94.2013.0. of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2013.0 NFPA-13-R.

NFPA 13R-2010 is adopted by reference with the following exceptions and modifications:

94.2013.1. NFPA 13R-2010 Section 3.2 is adopted by reference except that the following sections are not adopted:

3.2.2. Authority Having Jurisdiction.

3.2.7. Standard.

94.2013.2. NFPA 13R-2010 Section 4.1 is added and modified to read as follows:

4.1. Sprinklered Throughout. A building provided with a fire sprinkler system designed and installed in accordance with the requirements of section 94.2013 of this chapter, including its allowable omissions, shall be considered fully sprinklered throughout.

94.2013.3. NFPA 13R-2010 Section 4.3 is added and modified to read as follows:

4.3. Basic Requirements. The requirements for spacing, location, and position of sprinklers shall be based on the following principals:

1. Sprinklers shall be installed throughout the premises;

2. Sprinklers shall be located so as not to exceed maximum protection area per sprinkler;

3. Sprinklers shall be positioned and located so as to provide satisfactory performance with respect to activation time and distribution; and

4. Sprinklers shall be permitted to be omitted from areas specifically allowed by this standard. (see section 6.6).

94.2013.4. NFPA 13R-2010 Section 4.5 is not adopted.

94.2013.5. NFPA 13R-2010 Section 5.1.4.1 is not adopted.

94.2013.6. NFPA 13R-2010 Section 5.2.11 is added and modified to read as follows:

5.2.11 Welded pipe shall be permitted to be used in accordance with the rules of Section 94.2010 of this Division.

94.2013.7. NFPA 13R-2010 Section 5.2.12.1.3.3 is not adopted.

94.2013.8. NFPA 13R-2010 Section 5.3 is not adopted.

94.2013.9. NFPA 13R-2010 Section 5.4.3 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this division."

94.2013.10. NFPA 13R-2010 Section 6.4.4 is not adopted.

94.2013.11. NFPA 13R-2010 Section 6.6.3 is modified by changing the reference "NFPA 220" to the "Building Code."

94.2013.12. NFPA 13R-2010 Sections 6.6.5, 6.6.6 and 6.6.7 are not adopted.

94.2013.13. NFPA 13R-2010 Section 6.6.7.1 is added and modified to read as follows

6.6.7.1 Balconies and decks. Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units where the building is of type V construction provided there is a roof or deck above Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors area within the 1 inch (25mm) to 6 inches (152mm) below the structural members and a maximum distance of 14 inches (356mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.

94.2013.14. NFPA 13R-2010 Section 6.11.2 is added and modified to read as follows:

6.11.2 Fire Department Connection. See Section 94.2020 of this chapter for requirements.

94.2013.15. NFPA 13R-2010 Section 6.13 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.16. Reserved.

94.2013.17. NFPA 13R-2010 Section 6.14 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.18. NFPA 13R-2010 Section 6.16.3 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.19. NFPA 13R-2010 Section 7.1.2 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.20. NFPA 13R-2010 Section 7.2 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.21. NFPA 13R-2010 Section 7.3 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.22. NFPA 13R-2010 Section 7.4 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.23. NFPA 13R-2010 Section 9.3 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division" and "NFPA 22" to "Section 94.2050 of this Division."

94.2013.24. NFPA 13R-2010 Section 9.4 is added and modified by changing the reference "NFPA 20" to "Section 94.2030 of this Division."

94.2013.25. NFPA 13R-2010 Section 9.6 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

94.2013.26. NFPA 13R-2010 Section 10.1.5 is added and modified to read as follows:

10.1.5 Instructions.

The installing contractor shall provide the property owner or the property owner's authorized representative with the following:

1. All literature and instructions provided by the manufacturer describing proper operation and maintenance of any equipment and devices installed; and

2. NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems 2006 California Edition and Title 19, California Code of Regulations, Chapter 5. (3) Once the system is accepted by the authority having jurisdiction a label as prescribed by Title 19, California Code of Regulations, Chapter 5, shall be affixed to each system riser.

94.2013.27. NFPA 13R-2010 Section 10.2.2 is modified by changing the reference "NFPA 13" to "Section 94.2010 of this Division."

Sec. 31. Section 94.2014.0. of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2014.0. NFPA-13-D.

NFPA 13D-2010 is adopted by reference with the following exceptions, modifications and additions:

94.2014.1. NFPA 13D-2010 Section 3.2 is adopted by reference except that the following sections are not adopted:

3.2.2. Authority Having Jurisdiction.

3.2.7. Standard.

94.2014.2. NFPA 13D-2010 Section 3.3.9 is adopted by reference, except that the following section is not adopted.

3.3.9.7. Sprinkler System.

94.2014.3. Section 5.1.2 is not adopted.

94.2014.4. Section 5.1.3 is not adopted.

94.2014.5. Section 5.1.4 is added and modified to read as follows:

5.1.4. Fire Department Connections. Fire Department connections for one and two family dwellings shall meet the following requirements:

1. A Fire Department connection shall be provided for any system protecting over 10,000 square feet of habitable space;

2. A single Fire Department connection pipe may be as small as the sprinkler riser, provided the riser is three inches or smaller; and

3. The hose inlet fitting may be 1-1/2 inches with 1.5-9 N.H. thread of 2.5-7.5 N.H. standard threads.

94.2014.6. Section 6.2 is added and modified to read as follows:

6.2. Water Supply Sources. When the requirements of 6.2.2 are met, the following water supply sources shall be considered to be acceptable by this standard:

1. A connection to a reliable waterworks system with or without an automatically operated pump;

2. An elevated tank;

3. A pressure tank designed to American Society of Mechanical Engineers (ASME) standards for a pressure vessel with a reliable pressure source;

4. A stored water source with an automatically operated pump; and

5. A well with a pump of sufficient capacity and pressure to meet the sprinkler demand. The stored water requirement of 6.1.2 or 6.1.3 shall be permitted to be a combination of the water in the well (including the refill rate) plus the water in the holding tank if such tank can supply the sprinkler system.

94.2014.7. NFPA 13D-2010 Section 6.2.2 is added and modified to read as follows:

6.2.2 Where a well, pump, tank or combination thereof is the source of supply for a fire sprinkler system, the water supply shall serve both domestic and fire sprinkler systems, and the following shall be met:

1. A test connection shall be provided downstream of the pump that creates a flow of water equal to the smallest sprinkler on the system. The connection shall return water to the tank;

2. Any disconnecting means for the pump shall be approved;

3. A method for refilling the tank shall be piped to the tank;

4. A method of seeing the water level in the tank shall be provided without having to open the tank; and

5. The pump shall not be permitted to sit directly on the floor.

94.2014.8. NFPA 13D-2010 Section 6.2.2.1 is added and modified to read as follows:

6.2.2.1 Where a fire sprinkler system is supplied by a stored water source with an automatically operated means of pressurizing the system other than an electric pump, the water supply may serve the sprinkler system only.

94.2014.9. NFPA 13D-2010 Section 6.2.4 is added and modified to read as follows:

6.2.4 Where a water supply serves both domestic and fire sprinkler systems, 5 gpm (19 L/min) shall be added to the sprinkler system

demand at the point where the systems are connected, to determine the size of common piping and the size of the total water supply requirements where no provision is made to prevent flow into the domestic water system upon operation of a sprinkler.

94.2014.10. NFPA 13D-2010 Section 7.5.1 is added and modified to read as follows:

7.5.1. Listed residential sprinklers shall be used unless another type is permitted by Sections 7.5.3 or 7.5.4.

EXCEPTION: Listed quick response commercial sprinklers may be installed when construction features exist that are outside the scope of residential sprinkler listings and the hydraulic design is in accordance with Section 8.1.2 as set forth in Subsection 11 of Section 94.2014 of this Division.

94.2014.11. NFPA 13D-2010 Section 8.1.2 is added and modified to read as follows:

8.1.2. Number of Design Sprinklers. The number of design sprinklers shall include all sprinklers within a compartment, up to a maximum of two sprinklers, under a flat, smooth, horizontal ceiling. For compartments containing two or more sprinklers, calculations shall be provided to verify the single operating criteria and the two operating sprinkler criteria.

EXCEPTIONS:

1. Single family dwellings having more than 10,000 square feet of habitable space shall follow the design requirements of Section 94.2013 of this Division.

2. Attached private garages greater than 1500 square feet shall follow the design requirements of Section 94.2010 of this Division.

3. When listed quick response sprinklers are utilized within a dwelling, the hydraulic design shall follow the requirements of Section 94.2010 of this Division.

94.2014.12. NFPA 13D-2010 Section 8.1.3.1.2 is not adopted.

94.2014.13. NFPA 13D-2010 Section 8.6.4 of NFPA 13D is not adopted.

Sec. 32. Section 94.2020.0 of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2020.0. NFPA-14.

NFPA 14-2007 is adopted by reference with the following exceptions, modifications, and additions:

94.2020.1. NFPA 14-2007 Sections 1.3. through 1.3.3 are not adopted.

94.2020.2. NFPA 14-2007 Chapter 2 is not adopted.

94.2020.3. NFPA 14-2007 Sections 3.2. is adopted by reference, except that the following section is not adopted:

3.2.2. Authority Having Jurisdiction.

94.2020.4. NFPA 14-2007 Sections 3.3.3. through 3.3.3.2. are not adopted.

94.2020.5. NFPA 14-2007 Section 4.1.3. is not adopted.

94.2020.6. NFPA 14-2007 Section 4.5.1.3. is not adopted.

94.2020.7. NFPA 14-2007 Section 4.6.4. is added and modified to read as follows:

4.6.4. Nozzles. Nozzles provided for Class II standpipe outlets shall be listed variable fog nozzles.

94.2020.8. NFPA 14-2007 Section 4.8.2. is added and modified to read as follows:

4.8.2. Each Fire Department connection shall have at least two 2-1/2 inch internal threaded swivel fittings having NH standard threads as specified in NFPA 1963, Standard for Screw Threads and Gaskets for Fire Hose Connections.

The number of Fire Department hose inlets shall be at least as required in Table No. 4.8.2 of this chapter. Fire Department connections shall be equipped with caps to protect against entry of debris into the system.

TABLE 4.8.2
NUMBER OF FIRE DEPARTMENT CONNECTIONS

HEIGHT OF HIGHEST OUTLET ABOVE FIRE DEPARTMENT CONNECTION, FEET	NUMBER OF FIRE DEPARTMENT CONNECTIONS	
	1 or 2 Risers	3 or more Risers
Less than 50	2	2
50 and over	4	6

94.2020.9. NFPA 14-2007 Section 5.1.3. is added and modified to read as follows:

5.1.3. The spacing and location of standpipes and hose connections shall be in accordance with Section 905 of the Building Code.

94.2020.10. NFPA 14-2007 Section 5.1.4. is not adopted.

94.2020.11. NFPA 14-2007 Section 5.3.3. is added and modified to read as follows:

5.3.3. Class III Systems. Class III is a standpipe system directly connected to a water supply and equipped with 2-1/2 inch outlets or 2-1/2 inch and 1-1/2 inch outlets when a 1-1/2 inch hose is required. Hose connections for Class III systems may be made through 2-1/2 hose valves with easily removable 2-1/2 inch by 1-1/2 inch reducers.

94.2020.12. NFPA 14-2007 Section 5.5.2. is added and modified to read as follows

5.5.2. A valved outlet for a pressure gauge shall be installed on the upstream and downstream sides of every pressure regulating device.

EXCEPTION: Class I and Class III hose outlets.

94.2020.13. NFPA 14-2007 Section 6.1.2.5. is added and modified to read as follows:

6.1.2.5. To minimize or prevent pipe breakage where subject to earthquakes, standpipe systems shall be protected in accordance with Section 94.2010 of this Division.

94.2020.14. NFPA 14-2007 Section 6.3.4.1. is added and modified to read as follows:

6.3.4.1. Valves shall be within six feet six inches of the floor or shall be operable from fixed ladders or clamped tread ladders on risers, or use chains within six feet six inches of the floor connected to valve hand wheels or other suitable means.

94.2020.15. NFPA 14-2007Section 6.3.7.1 is added and modified to read as follows:

6.3.7.1. System water supply valves, isolation control valves, and other valves in fire mains shall be supervised in an approved manner in the open position by one of the following methods:

1. Where a building has a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by:

a. A central station, proprietary, or remote supervising station; or

b. A local signaling service that initiates an audible signal at a constantly attended location.

2. Where a building does not have a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by:

a. Locking the valves in the open position; or
b. Sealing of valves and a approved weekly recorded inspection where valves are located within fenced enclosures under the control of the owner.

94.2020.16. NFPA 14-2007Section 6.4.5.3 is added and modified to read as follows:

6.4.5.3. Fire Department inlets shall supply all Class I and Class III standpipes except for buildings with multiple zones.

In buildings which have multiple zones, each zone shall be provided with separate inlet connections.

Where the Fire Department inlet connection does not serve the entire building, the portions served shall be suitably identified.

The Fire Department connection shall be adequate to supply the required flow and pressure.

94.2020.17. NFPA 14-2007Section 7.2.2 is added and modified to read as follows:

7.2.2. When system pressure-regulating device(s) are used in lieu of providing separate pumps, multiple zones shall be permitted to be supplied by a single pumping system and pressure-regulating device(s) under the following conditions:

1. Pressure-regulating device(s) shall be permitted to control pressure in the lower division;

2. A method to isolate the pressure-regulating device(s) shall be provided for maintenance and repair;

3. Regulating devices shall be arranged so that the failure of any single device does not allow pressure in excess of 175 psi (12.1 bar) to more than two hose connections;

4. An equally sized bypass around the pressure-regulating device(s), with a normally closed control valve, shall be installed;

5. Pressure-regulating device(s) shall be installed not more than 7 ft 6 in (2.31 m) above the floor;

6. The pressure-regulating device shall be provided with inlet and outlet pressure gauges;

7. The fire department connection(s) shall be connected to the system side of the outlet isolation valve;

8. The pressure-regulating device shall be provided with a pressure relief valve in accordance with the manufacturers recommendations;

9. Remote monitoring and supervision for detecting high pressure failure of the pressure-regulating device shall be provided in accordance with NFPA 72, National Fire Alarm Code; and

10. The pumping system shall be adequate when three pumps are out of operation.

94.2020.18. NFPA 14-2007 Section 7.3.1.1 is added and modified to read as follows:

7.3.1.1. Fire Department Outlets. Fire Department outlets shall be installed so as to be easily accessible for use by the Fire Department. Hose connections and hose stations shall be located not less than three feet or more than five feet above the floor. A wrench clearance on all sides of the outlet shall be provided to insure that a 12-inch long wrench can be used to connect hose to outlet. There shall be at least one-inch clearance around the hose valve handle. Outlets shall be provided with a listed hose valve protected by a 2-1/2 inch by 1-1/2 inch reducer and 1-1/2 inch cap and attachment chain.

94.2020.19. NFPA 14-2007Section 7.3.2 is added and modified to read as follows:

7.3.2. Class I Systems. Class I systems shall be provided with 2 ½ in. (65mm) hose connections in the following locations:

1. At the main floor landing in exit stairways;

2. On each side of the wall adjacent to the exit openings of horizontal exits;

3. In other than covered mall buildings, in each exit passageway at the entrance from the building areas to the passageway;

4. In covered mall buildings, at the entrance to each exit passageway or exit corridor, and at the interior side of public entrances from the exterior to the mall; and

5. At the highest landing of stairways with stairway access to a roof, or on roofs with a slope of less than 4 in 12 where stairways do not access the roof.

94.2020.20. NFPA 14-2007Section 7.9 is added and modified to read as follows:

7.9. System Zoning Requirements.

7.9.2. Height Limit. Buildings shall be zoned so that standpipe system risers do not exceed 275 feet in height unless control of the nozzle pressure under both flow and static conditions is attained at each standpipe outlet by the installation of a listed pressure-regulating device and provided further that all of the following three limitations are met:

1. The pressure on the listed pressure-regulating device inlet side is not in excess of the rated working pressure of the listed pressure-regulating device and the remaining portions of the standpipe system are rated for not less than the maximum system pressure;

2. The hose valve outlet pressure is limited as required in Section 7.2.1.2 of NFPA-14; and

3. The zone height does not exceed 400 feet.

7.9.3. Zoned systems shall comply with Alternate 1 or 2, below:

1. **Alternate 1.** The pumping system shall be adequate when three pumps are out of operation.

2. **Alternate 2.** Design shall comply with the following: When fire pumps are required, separate fire pumps shall be required to serve each zone. Fire pumps that individually serve separate zones and which are located at the same level may be installed in series. Fire pumps installed in series shall serve each zone independently.

7.9.3.1. and **7.9.3.2.** are not adopted.

7.9.4. Direct supply piping from the higher-zone fire pump to the higher-zone system piping shall be provided when the fire pump for the higher zone is on the same level as the fire pump serving the lower zone. Two direct supply lines shall be provided to each zone with two or more standpipes. The size of the direct supply piping to each zone shall be not less than the size of the largest standpipe riser served.

Lower-zone standpipe piping may be used to supply the higher zone and shall not be less than the size of the largest standpipe riser of the higher-zone system

that is being supplied. The two zones shall be connected by a minimum of two supply pipes of which one shall be automatically providing water to the higher zone from the lower zone. A secondary method of supply is required when a residual pressure of 100 psi cannot be provided.

7.9.4.1 is not adopted.

94.2020.21. NFPA 14-2007 Section 7.10.1.3.1.1 is added and modified to read as follows:

7.10.1.3.1.1. Where the sprinkler system water supply requirement, including the water stream allowance as determined in accordance with Section 2010 of this Division, exceeds the system demand established by Sections 7.7 and 7.10.1 of NFPA-14, the larger of the two values shall be provided.

94.2020.22. NFPA 14-2007 Subsections (3) and (5) of Section 9.1.5 are not adopted.

94.2020.23. NFPA 14-2007 Section 9.2.1 is added and modified to read as follows:

9.2.1. Buildings Over 150 Feet High.

1. Redundancy. The system shall be adequate when either one pump, one pump driver, one riser or zone pressure regulator is out of operation.

2. Power. Pumps shall be either diesel engine or electric motor driven. Electric fire pump motors shall be supplied from normal and the emergency standby power system. At least 750 g.p.m. shall be supplied by an electric motor driven pump.

If water flow requirements call for more than one pump to start, the normal and emergency power shall be sized to run all pumps at the same time. The normal and emergency power system shall have adequate capacity and rating for all loads, including the redundant pump(s) to be operated simultaneously. The controller for each unit of multiple pumps shall incorporate a sequential timing device to prevent any one driver from starting simultaneously with any other. Failure of a leading driver to start shall not prevent subsequent drivers from starting. Locking out of motors is prohibited.

94.2020.24. NFPA 14-2007 Section 11.2.3 is added and modified to read as follows:

11.2.3. Flushing the System Risers. Water shall flow from the topmost outlet of each riser until the system is clear of all debris.

11.2.3.1. Roof Outlets. Standpipe systems shall be designed so that all risers can be flushed through outlets located on the roof.

11.2.3.2. Flow. All standpipe risers shall be flushed individually through the roof at residual pressure of at least 65 psi until the system is clear of debris. The flow for Class I and Class III standpipes shall be at least 500 g.p.m. through each riser.

94.2020.25. NFPA 14-2007 Section 11.5.6.3 is added and modified to read as follows:

11.5.6.3. Pressure Regulator Valve Test.

11.5.6.3.1. Test Required. When required by the Department, 2-1/2 inch pressure regulator valves installed on standpipe outlets shall be tested for proper operation at a flow of 300 g.p.m. with a residual pressure of 125 psi in the presence of a representative of the Department.

11.5.6.3.2. Safety. Test nozzles and other equipment shall be adequately secured so as to eliminate danger to personnel.

11.5.6.3.3. Opening. An accessible 2-1/2 inch capped or plugged test opening shall be installed adjacent to each pressure regulator valve.

11.5.6.3.4. Drain. The test openings shall drain to a minimum 3-inch drain line constructed and installed as required for fire sprinkler drains. The drains shall not discharge where they may cause damage. Where available, drains shall terminate to the fire water storage tank.

11.5.6.3.5. Interconnection. The test drain shall either be separate or connect to a fire sprinkler drain to a fire protection tank.

94.2020.26. NFPA 14-2007 Chapter 12 is added and modified to read as follows:

Buildings Under Construction.

12.1. General. During the construction of a building and until the permanent fire-extinguishing system has been installed and is in service, fire protection shall be provided in accordance with this section.

12.2. Where required. Every building four stories or more in height shall be provided with at least one standpipe for use during construction. The standpipes shall be installed when the progress of construction is not more than 40 feet (12.19 m) in height above the lowest level of Fire Department access. The standpipe shall be provided with Fire Department hose connections at accessible locations adjacent to usable stairs and the standpipe outlets shall be located adjacent to those usable stairs. The standpipe systems shall be

extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

In each floor there shall be provided a 2½ inch (63.5 mm) valve outlet for Fire Department use. Where construction height requires installation of a Class III standpipe, fire pumps and water main connections shall be provided to serve the standpipe.

12.3. Temporary Standpipes. Temporary Standpipes may be provided in place of permanent systems if they are designed to furnish a minimum of 500 gallons (1893 L) of water per minute at 50 pounds per square inch (345 kPa) pressure with a standpipe size of at least four inches (102 mm). All pumping equipment sufficient to provide this pressure and volume shall be available at all times when a Class III standpipe system is required.

12.4. Detailed Requirements. Standpipe Systems for buildings under construction shall be installed as required for permanent Standpipe Systems.

Sec. 33. Section 94.2030.0 of the Los Angeles Municipal Code is hereby amended to read as follows:

SEC. 94.2030.0. FIRE PUMP AND DRIVERS.

FIRE PUMPS AND DRIVERS. Fire pumps, their drivers and associated piping and equipment shall conform to the requirements set forth in NFPA 20-2007 with the following exceptions and modifications:

94.2030.1. NFPA 20-2007 Sections 1.4 through 1.4.3 are not adopted.

94.2030.2. NFPA 20-2007 Sections 5.7.1 is added and modified to read as follows:

5.7.1. Fire pumps, equipment used with fire pumping systems, devices and attachments shall be listed. A copy of the manufacturer's certified pump test characteristic curve shall be available for comparison of results of field acceptance tests. The fire pump as installed shall equal the performance as indicated on the manufacturer's certified shop test characteristic curve within the accuracy limits of the test equipment.

94.2030.3. NFPA 20-2007 Sections 5.11.1.4 is added and modified to read as follows:

5.11.1.4. The relief valve shall discharge to an approved location.

94.2030.4. NFPA 20-2007 Sections 5.14.2.1 is added and modified to read as follows:

5.14.2.1. General. Installation of above-ground suction piping shall conform to the requirements for fire sprinkler piping.

94.2030.5. NFPA 20-2007 Sections 5.14.4.1 is added and modified to read as follows:

5.14.4.1. Pump Bypass. A full-way pump bypass with check valve shall be connected downstream of the fire pump shutoff valve when available pressure will supply useful protection with the pump off. There shall be two control valves to isolate check valves in each bypass.

94.2030.6. NFPA 20-2007 Sections 5.14.11 is added and modified to read as follows:

5.14.11. Fire Department Connections. Fire Department connections shall not be connected on the suction side of the fire pump.

94.2030.7. NFPA 20-2007 Section 5.17 is added and modified to read as follows:

5.17. Protection of Piping Against Damage Due to Movement. Clearance for the piping shall conform to the requirements of Section 9.3.4 of NFPA 13- 2010.

94.2030.8. NFPA 20-2007 Sections 5.19.2 through 5.19.2.3.3 are not adopted.

94.2030.9. NFPA 20-2007 Section 5.19.3.1.4 is added and modified to read as follows:

5.19.3.1.4 The discharge from the test header shall terminate to the fire water storage tank where available.

94.2030.10. NFPA 20-2007 Sections 5.19.3.5 is added and modified to read as follows:

5.19.3.5 Label. Test headers hose valves shall be labeled "TEST CONNECTIONS."

EXCEPTION: Temporary Fire Pumps and Outlets.

94.2030.11. NFPA 20-2007 Sections 5.24.8 is added and modified to read as follows:

5.24.8. Pressure Maintenance (Jockey or Makeup) Pumps. A pressure maintenance pump shall be installed with each fire pump system.

EXCEPTION: Fire pump serving class II standpipes, temporary standpipes and fire pumps serving fire systems in one and two-dwelling family dwellings.

94.2030.12. NFPA 20-2007 Section 5.30.1 (1) is not adopted.

94.2030.13. Chapter 9 of NFPA 20-2007 is not adopted.

94.2030.14. NFPA 20-2007 Sections 10.1 through 10.4.8 are not adopted.

94.2030.15. NFPA 20-2007 Sections 10.6 through 10.10.11 are not adopted.

94.2030.16. NFPA 20-2007 Section 11.4 is added and modified to read as follows:

11.4. Fuel Supply and Arrangement. Fuel supply and arrangement shall be installed as required by the Los Angeles Fire Code.

94.2030.17. NFPA 20-2007 Sections 11.4.1 through 11.4.8 are not adopted.

Sec. 34. Section 94.2040.0 of the Los Angeles Municipal Code is amended to read as follows:

SEC. 94.2040.0. UNDERGROUND FIRE PROTECTION PIPING.

This section regulates underground fire protection piping between the City main or other sources of supply and fire hydrants, fire sprinkler risers, and monitor nozzles. Above ground standpipe piping and water spray systems shall conform to applicable code requirements for fire sprinkler piping and to the requirements set forth in NFPA 24-2010 with following exceptions, modifications and additions:

94.2040.1. NFPA 24-2010 Chapter 2 is not adopted.

94.2040.2. NFPA 24-2010 Section 4.2.1 is added and modified to read as follows:

4.2.1. Installation work shall be done by fully experienced and responsible contractors. Contractors shall be appropriately licensed in the State of California to install private fire service mains and their appurtenances.

94.2040.3. NFPA 24-2010 Section 4.2.2 is added and modified to read as follows:

4.2.2. Installation or modification of private fire service mains shall not begin until plans are approved and appropriate permits secured from the authority having jurisdiction.

94.2040.4. NFPA 24-2010 Section 4.2.2.1 is added and modified to read as follows:

4.2.2.1. As approved by the authority having jurisdiction, emergency repair of existing system may start immediately, with plans being submitted to the authority having jurisdiction within 96 hours from the start of the repair work.

94.2040.5. NFPA 24-2010 Section 5.6. is added and modified to read as follows:

5.6. Pumps. A single automatically controlled fire pump installed in accordance with Section 94.2030 of this Chapter shall be an acceptable water supply source.

94.2040.6. NFPA 24-2010 Section 5.7 is added and modified to read as follows:

5.7. Tanks shall be installed in accordance with "Section 94.2050 of this division."

94.2040.7. NFPA 24-2010 Section 5.9.1 is added and modified to read as follows:

5.9.1. General. Fire Department connections shall comply with the applicable requirements for fire sprinkler systems.

94.2040.8. NFPA 24-2010 Section 5.9.1.2. is added and modified to read as follows:

5.9.1.2. Fire Department connections shall be properly supported and protected from mechanical damage.

94.2040.9. NFPA 24-2010 Section 5.9.1.5 is added and modified to read as follows:

5.9.1.5. Control Valve. A control valve shall be installed between the City check valve and the point of connection to the fire department connection to the underground piping.

94.2040.10. NFPA 24-2010 Section 5.9.5.1 is added and modified to read as follows:

5.9.5.1. Fire Department connections shall be on the street side of buildings and as approved by the authority having jurisdiction.

94.2040.11. NFPA 24-2010 Section 6.1.5 is added and modified to read as follows:

6.1.5. A non indicating valve such as an underground gate valve with approved roadway, complete with T wrench, and accepted by the authority having jurisdiction shall be permitted to be used as sectional isolation valves in private service mains that do not supply fire sprinklers.

94.2040.12. NFPA 24-2010 Section 6.2.11 (5) is not adopted.

94.2040.13. NFPA 24-2010 Section 6.3.3.1 is not adopted.

94.2040.14. NFPA 24-2010 Section 6.4.1 is modified by changing the reference "NFPA 13" to "Section 94.2050 of this Division."

94.2040.15. NFPA 24-2010 Section 6.6.2.is added and modified to read as follows:

6.6.2. A sectional valve shall be provided at the following locations:

1. On each bank where a main crosses a body of water.

2. Outside the building foundation(s) where a main or a section of a main runs under a building.

94.2040.16. NFPA 24-2010 Section 6.6.2.1 through 6.6.2.4 are added and modified to read as follows:

6.6.2.1. Sectional control valves are not required when the fire service main system serves less than six fire appurtenances.

6.6.2.2. Sectional control valves shall be indicating valves in accordance with Section 94.2010 of this chapter.

6.6.2.3. Sectional control valves on looped systems shall be located so that no more than five fire appurtenances are affected by shut-down of any single portion of the fire service main. Each fire hydrant, fire sprinkler system riser, and standpipe riser shall be considered a separate fire appurtenance. In-rack sprinkler systems shall not be considered as a separate appurtenance.

6.6.2.4. The number of fire appurtenances between sectional control valves is allowed to be modified by the authority having jurisdiction.

94.2040.17. NFPA 24-2010 Section 6.6.2.5 is added and modified to read as follows:

6.6.2.5. Looped underground systems shall be provided with sectional valves regardless of the number of appurtenances.

94.2040.18. NFPA 24-2010 Section 7.1.1.1 is added and modified to read as follows:

7.1.1.1. Hydrant Valves. Each fire hydrant shall be isolated by a listed key-type gate valve located at least four feet and not more than ten feet from the fire hydrant. The valve shall not be located in a parking space. No fire sprinkler riser valve shall control any fire hydrant.

94.2040.19. NFPA 24-2010 Section 7.1.5 is added and modified to read as follows:

7.1.5. Water Supplies. Water supplies for fire hydrant, monitoring nozzle and water spray systems shall be approved by the Fire Department.

94.2040.20. NFPA 24-2010 Section 10.6.5 is added and modified to read as follows:

10.6.5. Pipe joints shall not be located under foundation footings. The pipe under the building or building foundation shall not contain mechanical joints.

EXCEPTIONS:

I. Where allowed in accordance with 10.6.2.

II. Alternate designs may be utilized where designed by a registered professional engineer and approved by the enforcing agency.

94.2040.21. NFPA 24-2010 Section 10.9.1 is added and modified to read as follows:

10.9.1. Backfill shall be well tamped in layers or puddled under and around pipes to prevent settlement or lateral movement. Backfill shall consist of clean fill sand or pea gravel to a minimum of 6" below and to a minimum of 12" above the pipe and shall contain no ashes cinders, refuse, organic matter, or other corrosive materials. Other backfill materials and methods are permitted where designed by a registered professional engineer and approved by the enforcing agency.

94.2040.22. NFPA 24-2010 Section 10.10.2.2.5 is added and modified to read as follows:

10.10.2.2.5. When permitted by the authority having jurisdiction and required for safety measures presented by the hazards of open trenches, the pipe and joints shall be permitted to be backfilled, provided the owner takes the responsibility for locating and correcting leakage.

94.2040.23. NFPA 24-2010 Section 12.1 is added and modified to read as follows:

12.1. General above ground pipe and fittings shall comply with the applicable Section 94.2010 of this chapter that address pipe, fittings, joining methods, hangers and installation.

94.2040.24. NFPA 24-2010 Section 12.2.5 is added and modified to read as follows:

12.2.5. To minimize or prevent breakage where subject to earthquakes, above ground pipe shall be protected in accordance with the seismic requirements of Section 94.2010 of this Division.

94.2040.25. NFPA 24-2010 Section 12.2.6 is added and modified to read as follows:

12.2.6. Mains that pass through walls, floors, and ceilings shall be provided with clearances in accordance with Section 94.2010 of this Division.

Sec. 35. Section 94.2060.1.3 of the Los Angeles Municipal Code is amended to read as follows:

94.2060.1.3. The tank shall be supplied from the City water main via a fill line. The fill line shall be sized to replenish the water in the tank at a rate equal to, or greater than, the required fire pump capacity. The fill line shall be a minimum of two inches in diameter and shall not exceed a maximum of four inlets into the tank. Each fill line inlet shall be provided with a manual shut off valve in the open position as well as an automatic valve. The fill line bypass shall be provided around all fill lines with a shut off valve that is normally closed. Means shall be provided to flow test the automatic fill lines.

An approved tank-fill line connected to the Fire Department connection shall also be installed. These fill lines shall have listed shutoff valves that are normally closed. The tank need not be on the roof.

For systems with multiple fill lines, the over flow system may be designed based on the failure of the largest fill valve serving the tank.

Sec. 36. **Urgency Clause**. The City Council finds and declares that this Ordinance is required for the immediate protection of the public peace, health and safety for the following reason: In order for the City of Los Angeles to facilitate a seamless transition with the State of California and its Plumbing Code and maintain predictability and streamlined case processing for the benefit of economic development during distressed times, it is necessary to immediately adopt the foregoing exceptions, modifications and additions to the California Plumbing Code. Additionally, the California Plumbing Code becomes effective on January 1, 2011 and the amendments to that code as reflected herein must be adopted by the City Council and become effective as soon as possible. The Council, therefore, with the Mayor's concurrence, adopts this ordinance to become effective upon publication pursuant to Los Angeles City Charter Section 253.

Sec. 37. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, **by a vote of not less than three-fourths** of all of its members, at its meeting of JUN 21 2011.

JUNE LAGMAY, City Clerk

By _____
Deputy

Approved JUN 28 2011

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By _____
KIM RODGERS WESTHOFF
Deputy City Attorney

Date 5/18/11

File No. 10-2335

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\DBS Ordinance\2011 Plumbing Code - Ordinance Final Draft 9-28-2010.docx

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 California Plumbing Code (CPC).**

WHEREAS, the City of Los Angeles has **geological conditions**, such as earthquake faults. The City of Los Angeles is bounded on the east by the San Andreas Fault and interlaced with other earthquake faults, which run through, adjacent and under the City; and

WHEREAS, the City is located in Seismic Zone 4, which is considered by experts to be the most seismically active of the four seismic zones in the world; and

WHEREAS, seismic experts predict a massive earthquake on one of these faults within the next 30 years and several earthquakes similar in intensity to the Northridge Earthquake during the same period; and

WHEREAS, the 1994 Northridge Earthquake which was a moderate size (6.8 magnitude) earthquake caused extensive damage to buildings and structures, including damage to more than 115,000 buildings, moderate to major damage to more than 3,000 buildings and the vacating of about 21,000 residential units including 2,000 homes; and

WHEREAS, there were 57 people who lost their lives in the earthquake, but there could have been several thousand fatalities had the earthquake occurred at midday when most buildings were occupied instead of 4:31 in the morning; and

WHEREAS, massive earthquakes pose unusual and extraordinary stresses on buildings and structures requiring more stringent building regulations than would otherwise be required; and

WHEREAS, a major earthquake would break water lines making fire fighting more difficult and would break gas lines and electric lines, making a high risk of fires breaking out in all areas of the City; and

WHEREAS, there was a fire in the Fairfax Area of the City of Los Angeles in 1986, due to the high volume of methane gas seepage through cracks in the concrete floor of a building; and

WHEREAS, in 1999, large pockets of methane gas in the subsurface geological formation was discovered in various areas of Los Angeles; and

WHEREAS, the City of Los Angeles has **topographic conditions**, natural and man-made, such as the natural hills, mountains and the coastal region, as well as the man-made harbors and highly concentrated areas of high-rise buildings.

WHEREAS, the City of Los Angeles is situated in a coastal region of hills and mountains containing dry wild native brush and other native and non-native vegetation; and

WHEREAS, this region of flat land and hillside areas creates a natural basin, which has high strong winds alongside foothills and other areas of the City; and

WHEREAS, in 1982 fires in the flat areas of neighboring Orange County were spread from one wood shake and wood shingle roof covered building to the next wood shake and wood shingle roof covered building by the strong Santa Ana winds, and

WHEREAS, the dry brush areas of the local Santa Monica hillsides and the strong canyon winds or the dry Santa Ana winds contributed to past fires in the Los Angeles area, such as, the 1961 Bel Air and Brentwood Canyon, 1977 Topanga Canyon and 1993 Malibu Canyon fires, and

WHEREAS, widespread fires caused by either earthquakes or brush fires would impact the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, the highly concentrated area of high-rise buildings, traffic congestion and possible gridlock may jeopardize the quick response to fires by the Fire Department that could reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the mountainous terrain is now identified as the Very High Fire Hazard Severity Zone and the highly concentrated area of high-rise buildings is identified as Fire District 1; and

WHEREAS, the City of Los Angeles has **climatic conditions** that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the fire danger to all exposed combustible materials; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, widespread fires caused by either earthquakes or brush fires would limit the capabilities of the Fire Department to effectively respond to all the fires; and

WHEREAS, quick response to fires by the Fire Department will reduce the amount of damage to buildings and increase the number of lives saved; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

NOW, THEREFORE, in order to provide adequate protection under the local climatic, geological and topographical conditions set forth above, the City of Los Angeles makes the following findings and determinations:

Section 94.101.3.6 is an **administrative amendment** necessary to not require plan check for private pools. Plumbing plan check for private pools has not been performed and was not intended to take place.

Section 94.103.3.4 is an **administrative amendment** necessary to refer the user to the Los Angeles Municipal Code for expiration of permits.

Sections 94.203 through 94.221 are an **administrative amendment** necessary to carry forward re-established definitions from previous code cycles.

Section 94.402.1.1 is an **administrative amendment** necessary to carry forward definitions from previous code cycles which deal with water flow limitations establish through a water conservation plan due to local climatic conditions.

Sections 94.402.3.3, 94.402.3.4 and 94.402.4 are a **technical amendment** necessary to carry forward water flow requirements on fixtures based on local ordinances due to local climatic conditions.

Section 94.604.10 is an **administrative amendment** necessary to reference compliance with established California Health and Safety regulations.

Section 94.1101.13 is an **administrative amendment** necessary for the maintenance of rainwater pumps, since in the region due to local climatic conditions, the pumps can go for a long period of time not in use.

Section 94.1700 is an **administrative amendment** necessary to adopt the 2009 Pool and Spa Code since there are no guidelines found in the California Plumbing Code.

Section 94.1800 is an **administrative amendment** necessary to adopt by reference the 2009 Uniform Solar Energy Code. Due to climatic conditions in the region, the use of solar energy units is very common. The document is very relevant to the plumbing application.

Section 94.2002 is an **administrative amendment** necessary to update the most current referenced standards.

Table 20-1 is an **administrative amendment** necessary to update the Table with the most current referenced standards

Section 94.2003 is an **administrative amendment** necessary to carry forward re-established definitions from previous code cycles.

Section 94.2007 is an **administrative amendment** necessary to re-establish drainage requirements for Fire Prevention system and to also promote the water conservation program due to climatic conditions in the region

Section 94.2010 is an **administrative amendment** necessary to update the most current version of the NFPA referenced.

Section 94.2010.2 is an **administrative amendment** necessary to update the most current version of the NFPA referenced and update terms to be consistent with the referenced standard.

Section 94.2010.3 is an **administrative amendment** necessary to update the most current information added by the State Fire Marshall (SFM).

Section 94.2010.3.1 is an **administrative amendment** necessary to update the most current information added to the CBC by the State Fire Marshall (SFM).

Section 94.2010.3.2 is an **administrative amendment** necessary to update the most current information added to the CBC by the State Fire Marshall (SFM).

Table 5.1 is an **administrative amendment necessary** to maintain consistency with the CBC and updated information from SFM.

Sections 94.2010.4 through 94.2010.9 are an **administrative amendment** necessary to renumber so that the Sections fit within the current format of the Los Angeles Plumbing Code and to carry forward current existing amendments due to local climatic conditions in the region.

Sections 94.2010.11 and 94.2010.12 are an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Section 94.2010.13 is an **administrative amendment** necessary to provide the most current SFM updates, renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Section 94.2010.14 is an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Sections 94.2010.15 and 94.2010.18 are an **administrative amendment** necessary to provide the most current SFM updates.

Sections 94.2010.19 through 94.2010.21 are an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Sections 94.2010.22 and 94.2010.23 are an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Section 94.2010.24 is an **administrative amendment** necessary to relocate this Section relocated from section 2010.0, Sub-section 14 and editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Sections 94.2010.25 and 94.2010.26 are an **administrative amendment** necessary for editorial changes and to maintain the proper sequence of numbers in accordance with Sections of the Los Angeles Plumbing Code and NFPA-13 Standards.

Sections 94.2010.27 through 94.2010.31 are an **administrative amendment** necessary to make update the State Fire Marshall (SFM) and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.32 is an **administrative amendment** necessary to clarify Section 8.16.1.5.1.4 due to geological conditions in the region which requires isolation of portions of system to provide fire protection to areas not affected, in addition, editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.33 is an **administrative amendment** necessary to make update the State Fire Marshall (SFM) and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.34 is an **administrative amendment** necessary to make editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.35 is an **administrative amendment** necessary to make minor Section relocated from section 2010.0, Sub-section 17 and to make editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards

Section 94.2010.36 is an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Section 94.2010.37 is an **administrative amendment** necessary due to geologic conditions for concrete anchors and editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Sections 94.2010.38 and 94.2010.39 are an **administrative amendment** necessary due to geologic conditions for concrete anchors and editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards

Section 94.2010.40 is an **administrative amendment** necessary to renumber the Sections to maintain the current Los Angeles Plumbing Code and the NFPA format.

Sections 94.2010.41 and 94.2010.42 are an **administrative amendment** necessary due to editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards

Sections 94.2010.43 through 94.2010.50 are an **administrative amendment** necessary to make State Fire Marshall (SFM) updates and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.48 is an **administrative amendment** necessary to make State Fire Marshall (SFM) updates and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.50 is an **administrative amendment** necessary to update language per the Office of the State Fire Marshall in NFPA 13 & 24, 2010 and make editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.51 is an **administrative amendment** necessary to make editorial change to keep the proper sequence of numbers and consistency with NFPA Code Sections.

Sections 94.2010.52 through 94.2010.55 are an **administrative amendment** necessary to make State Fire Marshall (SFM) updates and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2010.56 is an **administrative amendment** necessary to make editorial change to keep the proper sequence of numbers and consistency with NFPA Code Sections.

Sections 94.2010.57 through 94.2010.60 are an **administrative amendment** necessary to make State Fire Marshall (SFM) updates and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2013.0 is an **administrative amendment** necessary to update the most current referenced version of NFPA Design Standard.

Section 94.2013.1 is an **administrative amendment** necessary to make editorial change and to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards.

Section 94.2013.2 is an **administrative amendment** necessary to make editorial changes and move this referenced standard to "Section 94.2013 of this Chapter" to refer to the Los Angeles Municipal Code

Section 94.2013.3 is an **administrative amendment** necessary to relocate portions of Section 94.2004.0 to this section.

Section 94.2013.6 is an **administrative amendment** necessary to note referenced Section under Section 2010 and editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13.

Section 94.2013.9 is an **administrative amendment** necessary to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Sections 94.2013.9 and Section 94.2013.11 are an **administrative amendment** necessary to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.13 is an **administrative amendment** necessary to add updates as amended by SFM.

Section 94.2013.14 is an **administrative amendment** necessary to relocate Subsection 7 to Section 2010 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.15 is an **administrative amendment** necessary to relocate Subsection 8 to Section 2010 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Sections 94.2013.16 and Section 94.2013.17 are an **administrative amendment** necessary editorial change to maintain Code language consistency.

Section 94.2013.18 is an **administrative amendment** necessary editorial change to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13.

Sections 94.2013.19 and Section 94.2013.20 are an **administrative amendment** necessary editorial change to maintain Code language consistency.

Section 94.2013.21 is an **administrative amendment** necessary to relocate Subsection 9 to Section 2013 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.22 is an **administrative amendment** necessary to relocate Subsection 10 to Section 2013 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.23 is an **administrative amendment** necessary to relocate Subsection 5 to Section 2013 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.24 is an **administrative amendment** necessary editorial change to maintain Code language consistency.

Section 94.2013.25 is an **administrative amendment** necessary to relocate Subsection 6 to Section 2013 and editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2013.6 is an **administrative amendment** necessary to add updates as amended by SFM.

Section 94.2013.27 is an **administrative amendment** necessary to relocate Subsection 4 to Section 2013 and editorial changes to maintain the proper

sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2014.0 is an **administrative amendment** necessary to make editorial changes and to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Sections 94.2014.2 through Section 94.2014.5 are an **administrative amendment** necessary to make editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standards

Sections 94.2014.6 through Section 94.2014.9 are an **administrative amendment** necessary to add updates as amended by SFM.

Section 94.2014.10 is an **administrative amendment** necessary to clarify the previously adopted Code with the intent to enhanced life safety with the use of residential sprinklers in other portions of homes for wall wetting purposes.

Sections 94.2014.11 and 94.201.12 are an **administrative amendment** necessary to make editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-13 Standard.

Section 94.2014.3 is an **administrative amendment** necessary to add the most current updates which include SFM's adoption of NFPA 14.

Section 94.2020.0 is an **administrative amendment** necessary to add the most current updates which include SFM's adoption of NFPA 14.

Sections 94.2020.1 through Section 94.2020.4 are an **administrative amendment** necessary to make editorial changes and maintain proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-14 Standard.

Section 94.2020.5 is an **administrative amendment** necessary to update requirements that are now part of NFPA 14.

Sections 94.2020.7 through 94.2020.14 are an **administrative amendment** necessary to make editorial changes and to maintain the proper numbering sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA-14 Standard.

Section 94.2020.15 is an **administrative amendment** necessary to update the Los Angeles Plumbing Code to be in sync with the most current updates from the State Fire Marshall's (SFM) office.

Section 94.2020.16 is an **administrative amendment** necessary to make editorial changes and to maintain the proper numbering sequence in accordance with Sections of the Plumbing Code and NFPA-14 Standard. Superseded by Section 7.8.2 and Table 7.8.2.1 of NFPA 14 2007.

Section 94.2020.17 is an **administrative amendment** necessary to make a clarification of Section 94.2020.21, Sub-section 7.9.3 Alternate 1 of this Chapter.

Section 94.2020.18 is an **administrative amendment** necessary to make editorial changes to maintain the proper sequence of numbers in accordance with Sections of the Plumbing Code and NFPA-14 Standard.

Section 94.2020.19 is an **administrative amendment** necessary due to a mandate by the Los Angeles Fire Department (LAFD) to properly operate their fire hose apparatus. This Section is from the 2010 NFPA14. Item Number #1 listed above is the primary change to this Code as mandated by LAFD.

Sections 94.2020.20 through 94.2020.24 are an **administrative amendment** necessary to make editorial changes and to maintain the proper numbering sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA-14 Standard.

Section 94.2020.25 is a **technical amendment** necessary due to climatic conditions due to the regions dry climate and constant threat of fire danger. This is mandated by LAFD to properly operate their fire hose apparatus.

Section 94.2020.26 is a **technical amendment** necessary to maintain Standpipe requirements during construction of buildings due to the local climatic conditions in the region where the threat of fire is always present during construction.

Section 94.2030.0 is an **administrative amendment** necessary to make an editorial change which will reflect the latest Edition of NFPA 20, adopted by SFM.

Sections 94.2030.1 and 94.2030.2 are **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Sections 94.2030.3 through 94.2030.8 are an **administrative amendment** necessary to make an editorial change and to maintain the proper numbering sequence of in accordance with Sections of the Plumbing Code and NFPA Standards.

Section 94.2030.9 is a **technical amendment** necessary to make clarifications of an approved drainage location, and to enhance the State and the City Los Angeles's efforts to conserve water under the current "Water Conservation" ordinance due to climatic conditions in the region.

Sections 94.2030.10 and 94.2030.11 are an **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Section 94.2030.12 is a **technical amendment** necessary to add a requirement regarding backflow prevention is by DWP rule 16D for all fire water storage tanks due to topographic conditions.

Sections 94.2030.13 and 94.2030.14 are an **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Section 94.2030.15 is an **administrative amendment** necessary to make an editorial change for consistency with Code Sections numbering and to reflect the appropriate Section in NFPA 20.

Sections 94.2030.16 and 94.2030.17 are an **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Section 94.2040.0 is an **administrative amendment** necessary to maintain consistency with the most current version of NFPA adopted by SFM.

Section 94.2040.1 is an **administrative amendment** necessary due to editorial change to maintain the proper numbering sequence in accordance with Sections of the Plumbing Code and NFPA Standards

Sections 94.2040.2 through 94.2040.4 are an **administrative amendment** necessary to provide the most current updates amended by office of the State Fire Marshall (SFM).

Sections 94.2040.5 and 94.2040.6 are an **administrative amendment** necessary to make an editorial change to maintain the proper number

sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Section 94.2040.7 is an **administrative amendment** necessary to a a paragraph from Section 2040.0, Sub-Section 2

Section 94.2040.8 is an **administrative amendment** necessary to provide the most current updates amended by office of the State Fire Marshall (SFM).

Section 94.2040.9 is an **administrative amendment** necessary to a paragraph from Section 2040.0, Sub-Section 3.

Section 94.2040.10 is an **administrative amendment** necessary to provide the most current updates amended by office of the State Fire Marshall (SFM).

Sections 94.2040.11 and 94.2040.12 are an **administrative amendment** necessary to avoid conflict with Section 6.7.1.3 of NFPA 13 which requires all valves controlling sprinklers to be indicating valves.

Section 94.2040.14 is an **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Sections 94.2040.15 and 94.2040.16 are an **administrative amendment** necessary to provide the most current updates amended by office of the State Fire Marshall (SFM).

Section 94.2040.17 is a **technical amendment** necessary to provide clarification of 6.6.2.4 due to geological conditions with high seismic events, this enables isolation of portions of a system to provide fire protection to areas not affected.

Section 94.2040.18 is an **administrative amendment** necessary to a paragraph from Section 2040.0, Sub-Section 4.

Section 94.2040.19 is an **administrative amendment** necessary to a paragraph from Section 2040.0, Sub-Section 5.

Sections 94.2040.20 and 94.2040.21 are an **administrative amendment** necessary to provide the most current updates amended by office of the State Fire Marshall (SFM).

Section 94.2040.22 is a **technical amendment** necessary due to added language to ensure that only listed and approved products are installed due to the need for proper installation in this region due to geological conditions.

Sections 94.2040.23 through 94.2040.25 are an **administrative amendment** necessary to make an editorial change to maintain the proper number sequence in accordance with Sections of the Los Angeles Plumbing Code and NFPA Standards.

Section 94.2060.1.3 is a **technical amendment** necessary to minimize the number of devices where potential failure could occur due to geological conditions.

[file: Findings and Determinations for the Plumbing Code - Final]

BUILDING STANDARDS COMMISSION
2525 Natomas Park Drive, Suite 130
Sacramento, California 95833-2936
(916) 263-0916 FAX (916) 263-0959

June 9, 2011

Osama Younan
Department of Building and Safety
City of Los Angeles
201 N. Figueroa
8th Floor, Room 880
Los Angeles, CA 90012

Dear Mr. Younan:

This letter is to acknowledge receipt on December 28, 2010 of the City of Los Angeles electronic submittal pertaining to Ordinance No. 181480, with findings received on June 7, 2011, and is acceptable for filing. Your filing attests to your understanding that according to Health and Safety Code Section 17958.7 no modification or change to the California Building Standards Code shall become effective or operative for any purpose until the finding and the modification or change have been filed with the California Building Standards Commission (the Commission).

This letter attests only to the filing of these local modifications with the Commission, which is not authorized by law to determine the merit of the filing.

As a reminder, local modifications are specific to a particular edition of the Code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the Code is published. In addition, should you receive Fire Protection District ordinances for ratification, it is required to submit the ratified ordinances to the Department of Housing and Community Development [H&SC Section 13869.7(c)], attention State Housing Law Program Manager, rather than the Commission.

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,

Enrique M. Rodriguez
Associate Construction Analyst

cc: Chron
Local Filings

FINDINGS AND DETERMINATIONS

Findings and Determinations to support the proposed amendments regarding the adoption of the **2010 CALGREEN** (**California Green Building Standards Code**).

WHEREAS, green building is a key component to sustainability; and

WHEREAS, on December 14, 2010, the City of Los Angeles Council adopted Ordinance No. 181480 to amend Chapter IX of Los Angeles Municipal Code adding a new Article 9, "The Los Angeles Green Building Code"; and

WHEREAS, the "Green Building Code," is intended to raise the level of construction in the City of Los Angeles in order to encourage water and resource conservation, reduce waste generated by construction projects, increase energy efficiency in buildings, provide durable buildings that are efficient and economical to own and operate and promote the health and productivity of residents, workers, and visitors to the City; and

WHEREAS, green building benefits can be spread throughout the systems and features of a building. Green buildings can include the use of certified sustainable wood products and high-recycled-content products. Recycling of waste that occurs during demolition, deconstruction, and construction reduces the amount of waste deposited in landfills. The proper orientation and passive solar design of a building reduces demands on its heating and cooling systems. The use of advanced-design heating, ventilating, and air conditioning systems provide increased energy efficiency and improved indoor air quality. Enhancement of indoor air quality is also achieved by the selection and use of construction materials that do not emit chemicals which are toxic or irritating to building occupants. The use of water conserving methods and equipment reduce the per capita demand on resources and infrastructure. The installation of alternative and renewable energy systems can supplement conventional methods of energy production; and

WHEREAS, the City of Los Angeles has climatic conditions that is subject to a mild winter to an extremely hot summer desert-like climate that has hot, dry (Santa Ana) winds that make the temperature rise and the humidity drop, increasing the energy consumption and heighten the water demand; and

WHEREAS, the City of Los Angeles has a population of more than 3,700,000 people spread over more than 450 square miles; and

WHEREAS, the City of Los Angeles has high traffic volumes; and

WHEREAS, nothing in this ordinance is intended to duplicate, contradict, or enter a field which has been fully occupied by state law, including the California Building Standards Code; and

NOW, THEREFORE, the City of Los Angeles makes the following findings and determinations:

Section 99.01.101.1 is an **administrative amendment** necessary to clarify the adoption of the CALGreen Code and the location of the Los Angeles Green Building Code requirements in the Los Angeles Municipal Code (LAMC).

Section 99.01.101.3 is an **administrative amendment** necessary to define the applicability of this code.

Section 99.01.101.4 is an **administrative amendment** necessary to clarify that the requirements on the appendices are not mandatory requirements.

Sections 99.01.101.5 – 99.01.101.5.6 are **administrative amendments** necessary to reference the Los Angeles Building Standards Code.

Section 99.01.101.6.3 is an **administrative amendment** necessary to reference the Los Angeles Municipal Code.

Section 99.01.101.8 is an **administrative amendment** necessary to refer to the Department as defined in Chapter 2 and omit non-applicable information.

Section 99.01.101.10 is an **administrative amendment** necessary to provide the appropriate reference within the code.

Sections 99.01.102.1 – 99.01.108.5 are **administrative amendments** to clarify the permitting and inspection processes of the Department.

Division 2

Section 99.02.201.3 is an **administrative amendment** necessary to reference the Los Angeles Building Standards Code.

Section 99.02.201.4 is an **administrative amendment** necessary to be consistent with the Los Angeles Municipal Code.

Section 99.02.202 has **administrative amendments** necessary to be consistent with the Los Angeles Municipal Code and add definitions that are not in the CALGREEN Code.

Division 3

Section 99.03.301.1 is an **administrative amendment** necessary to distinguish between mandatory and voluntary requirements.

Section 99.03.303.1.1 is an **administrative amendment** necessary to provide clarification as to the applicability of the code.

Section 99.03.304.1.1 is an **administrative amendment** necessary to reference the Department.

Division 4

Section 99.04.106.2 is an **administrative amendment** necessary to reference the Department.

Section 99.04.106.6 is a **climatic amendment** necessary to improve air quality and reduce year round particle pollution, largely considered the result of tailpipe emissions.

Sections 99.04.201.1 – 99.04.211.4.1 are **climatic amendments** necessary to reduce CO2 emmitions and reduce urban heat island effect which exacerbates greenhouse gas emissions and regional impacts on climate change.

Sections 99.04.303.1 – 99.04.303.2 and Tables 4.303.1 – 4.303.2 are **administrative amendments** to be consistent with the Los Angeles Plumbing Code.

Sections 99.04.304.1 – 99.04.304.1.1 are **administrative amendments** necessary to clarify the requirements of these sections and be consistant with the State's Model Landscape Ordinance.

Section 99.04.406.1 is an **administrative amendment** necessary to reference the Department.

Sections 99.04.407 – 99.04.407.4 contain **administrative amendments** necessary to be consistent with the Los Angeles Building Code and standard practices.

Sections 99.04.408 – 99.04.408.1 contain **administrative amendments** necessary to reference the Los Angeles Municipal Code which covers these requirements.

Section 99.04.410.1 is an **administrative amendment** necessary to reference the Department.

Sections 99.04.504.1 – 99.04.504.5.1 contain **administrative amendments** necessary to reference the Department.

Sections 99.04.505.1 - 99.04.505.2.1 contain **administrative amendments** necessary to reference the Department.

Section 99.04.505.3 is an **administrative and climatic amendment** necessary due to local desert like dry climate and to eliminate redundancy with the Los Angeles Building Code.

Division 5

Section 99.05.106.1 is an **administrative amendment** necessary to clarify the applicability of SWPP is dependent on the soil area being disturbed.

Sections 99.05.106.4 – 99.05.106.4.2 contain **administrative amendments** necessary to delete reference to the University of California Policy on sustainable practices.

Section 99.05.106.5.2 contains **administrative amendments** necessary to clarify the acceptable means of permanent marking for designated parking.

Section 99.05.106.5.3.1 contains **climatic amendments** necessary to improve air quality and reduce year round particle pollution, largely considered the result of tailpipe emissions.

Section 99.05.106.8 -This section has been deleted from Chapter 5 of Cal Green by the Building Standards Commission.

Sections 99.05.201.1 – 99.05.211.4.1 are **climatic amendments** necessary to reduce CO2 emmitions and reduce urban heat island effect which exacerbates greenhouse gas emissions and regional impacts on climate change.

Section 99.05.302.1 is an **administrative amendment** necessary to be consistent with the Los Angeles Municipal Code and add definitions that are not in the CALGREEN Code.

Sections 99.05.303.1 – 99.05.303.4 contain **administrative amendments** necessary to be consistent with the City of Los Angeles Plumbing Code.

Sections 99.05.304.2 – 99.05.304.3 contain **administrative amendments** necessary to be consistent with the Water Code §535 and the State's Model Landscape Ordinance.

Section 99.05.407.1 is an **administrative amendment** necessary to reference the applicability of the Los Angeles Building Code.

Sections 99.05.408.1 – 99.05.408.4 contain **administrative amendments** necessary to reference the Los Angeles Municipal Code which covers these requirements and clarify requirements regarding contaminated soil.

Sections 99.05.410.1 – 99.05.410.4.5.1 contain **administrative amendments** necessary to reference the Department.

Sections 99.05.504.3 – 99.05.504.7 contain **administrative amendments** necessary to reference the Department and eliminate reference to projects that are not subject to the Los Angeles Municipal Code.

Section 99.05.505.1 is an **administrative amendment** necessary to reference the Los Angeles Building Code.

Section 99.05.507.4.1 is an **administrative amendment** necessary to reference the Department.

Division 6

Section 99.06.601.1 is an **administrative amendment** necessary to add references related to existing buildings.

Division 7

Section 99.07.702.1 is an **administrative amendment** necessary to reference the Department.

Section 99.07.702.2 is an **administrative amendment** necessary to reference the Department and clarify the applicability of the section.

Section 99.07.702.3 is an **administrative amendment** necessary to reference the Department and clarify the appllicability of the section.

Section 99.07.703.1 is an **administrative amendment** necessary to reference the Department.

Division 9

Sections 99.09.100 to 99.09.508 are **climatic amendments** necessary to help the City reduce its existing carbon footprint by requiring additions and major alterations to comply with provisions of this code.

Division 10

Sections 99.10.100 to 99.10.508.1.2 are **climatic amendments** necessary to help the City reduce its existing carbon footprint by requiring additions and major alterations to comply with provisions of this code.

Division 11

Sections 99.11.101 to 99.11.602 are **administrative amendments** necessary to clarify and quantify the code requirements so they can be enforceable.

Division 12

Sections 99.12.101 to 99.12.508 are **administrative amendments** necessary to clarify and quantify the code requirements so they can be enforceable.

ORDINANCE NO. 181480

An ordinance amending Chapter IX of the Los Angeles Municipal Code by adding a new Article 9 to incorporate various provisions of the 2010 California Green Building Standards Code (CALGreen Code).

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Chapter IX of the Los Angeles Municipal Code is amended by adding a new Article 9, Green Building Code, to read as follows:

ARTICLE 9, DIVISION 1 ADMINISTRATION

99.01.101. ADMINISTRATION.

99.01.101.1. Title. These regulations shall be known as the Los Angeles Green Building Code and may be cited as such and will be referred to herein as "this code". The Los Angeles Green Building Code is Article 9 of a total of 9 Articles of Chapter IX of the Los Angeles Municipal Code, and adopts by reference the CALGreen Code except as amended herein.

99.01.101.3. Scope The provisions of this code shall apply to the construction of every new building, every building alteration with a building permit valuation of over $200,000 and every building addition, unless otherwise indicated in this code, throughout the City of Los Angeles.

99.01.101.4. Appendices. Provisions contained in the appendices of this code are not mandatory.

99.01.101.5. Referenced Codes and Standards. The codes and standards referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

99.01.101.5.1. Building. The provisions of the Los Angeles Building Code and Los Angeles Residential Code, as applicable, shall apply to the construction, alteration, movement, enlargement, replacement, repair, use and occupancy, location, maintenance, removal and demolition of every structure or any appurtenances connected or attached to such buildings or structures.

99.01.101.5.2. Electrical. The provisions of the Los Angeles Electrical Code shall apply to the installation of electrical systems, including but not limited to, alterations, repair, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

99.01.101.5.3. Mechanical. The provisions of the Los Angeles Mechanical Code shall apply to the installation, alterations, repair and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

99.01.101.5.4. Plumbing. The provisions of the Los Angeles Plumbing Code shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances where connected to a water or sewage system.

99.01.101.5.5. Fire Prevention. The provisions of CCR, Title 19, Division 1 and CCR, Title 24, Part 2 and Part 9 relating to fire and panic safety as adopted by the Office of the State Fire Marshal shall apply to all structures, processes and premises for protection from the hazard of fire, panic and explosion.

99.01.101.5.6. Energy. The provisions of the California Energy Code shall apply to the minimum design and construction of buildings for energy efficiency.

99.01.101.6.3. Conflicts. When the requirements of this code conflict with the requirements of any other part of the Los Angeles Municipal Code, the most restrictive requirement shall prevail.

99.01.101.8. Alternate Materials, Designs and Methods Of Construction. The provisions of this code are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, method, design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternate shall be approved on a case-by-case basis where the Department finds that the proposed alternate is satisfactory and complies with the intent of the provisions of this code and is at least the equivalent of that prescribed in this code in planning and design, energy, water, material resource conservation and efficiency, environmental air quality, performance, safety and the protection of life and health.

99.01.101.10. Mandatory Requirements. This code contains both mandatory and voluntary green building measures. Mandatory and voluntary measures are identified in the appropriate divisions in this code.

99.01.102. CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION.

99.01.102.1. Submittal Documents. Construction documents and other data shall be submitted in one or more sets with each application for a permit. Where special conditions exist, the Department is authorized to require additional construction documents to be prepared by a licensed design professional and may be submitted separately.

Exception: The Department is authorized to waive the submission of construction documents and other data not required to be prepared by a licensed design professional.

99.01.102.2. Information on Construction Documents. Construction documents shall be of sufficient clarity to indicate the location, nature and scope of the proposed green building feature and show that it will conform to the provisions of this code, the Los Angeles Building Standards Code and other relevant laws, ordinances, rules and regulations as determined by the Department. The construction document and other data submitted to the Department for checking shall be drawn with ink or indelible pencil, or shall be made by a reproducible process approved by the Department.

99.01.102.3. Verification. Documentation of conformance for applicable green building measures shall be provided to the Department. Alternate methods of documentation shall be acceptable when the Department finds that the proposed alternate documentation is satisfactory to demonstrate substantial conformance with the intent of the proposed green building measure.

99.01.102.4. Official Stamp. When construction documents and other data fully comply with the provisions of this code, the Department shall place an official stamp of approval on all applicable sheets of each set.

99.01.102.5. Validity of Approval. The stamping or approval of any construction document or other data shall not be held to permit, or to be an approval of, the violation of any provision of this code.

99.01.102.6. Alterations to Stamped Construction Documents. No stamped or approved set of construction documents or data shall be altered in any manner, except when and as approved by the Department.

99.01.102.7. Stamped Plans on Job. The stamped set of construction documents and other data shall be kept at the site of the construction work and shall be available to the authorized representative of the Department. There shall be no deviation from the stamped or approved application, construction document, or other data without the Department's approval.

99.01.102.8. Validity of Permit. The issuance of a permit is not an approval or an authorization of the work specified therein. A permit is merely an application for inspection, the issuance of which entitles the permittee to inspection of the work which is described therein.

Permits issued under the requirements of this code shall not relieve the owner of responsibility for securing required permits for work to be done which is regulated by any other code, department or division of the City of Los Angeles.
All permits are issued subject to the following conditions:

If the work described by a valid permit is prohibited by a change in the Los Angeles Municipal Code, then such work may be completed only if the Department determined that both substantial liabilities have been incurred, and substantial work has been performed on site, in accordance with the terms of that permit. Work performed and liabilities incurred pursuant to a demolition or relocation permit shall not be considered in determining whether an owner may complete a building or structure for which a building permit has been issued.

99.01.102.9. Validity of Other Laws. Neither the issuance of a permit nor the approval by the Department of any document shall constitute an approval of any violation of any provision of this code or of any other law or ordinance, and a permit or other document purporting to give authority to violate any law shall not be valid with respect thereto.

99.01.102.10. Making False Statements to the Department. Any person who willfully or knowingly, with the intent to deceive, makes a false statement or representation, or knowingly fails to disclose a material fact in any documentation required by the Department, including any oral or written evidence presented, shall be guilty of a misdemeanor.

99.01.107. FEES.

99.01.107.1. Plan Check and Permit Fee. A fee equal to ten percent of the plan check and permit fee shall be assessed to verify compliance with the mandatory measures of the City of Los Angeles Green Building Code for projects subject to this code. This fee shall be assessed on all building, plumbing, mechanical, electrical, and grading applications.

> **Exceptions:** A fee shall not be assessed on grading plan check applications.

99.01.107.1.1. Tier 1 and Tier 2 Fee. When Tier 1 or Tier 2 measures (Tier 1 or Tier 2) per Subsections A4.601.4, A4.601.5 or Subsection A5.601 are requested to be verified, an additional fee equal to 5 percent of the plan check and permit fee shall be assessed.

99.01.108. POWERS OF THE DEPARTMENT.

99.01.108.1. General. The powers of the Department are enumerated in Section 98.0403.1 of the Los Angeles Municipal Code.

The Superintendent of Building shall have the duty to render interpretations of this code and to adopt and enforce rules and supplemental regulations to clarify the application of its provisions. These interpretations, rules and regulations shall be in conformance with the intent and purpose of this code.

99.01.108.2. Authority to Require Exposure of Work. Whenever any work required by this code is covered and concealed by additional work without first having been inspected, the work shall be exposed for examination upon written notice by the Department. The work of exposing and recovering shall not entail expense to the City of Los Angeles.

99.01.108.3. Right of Entry. The authority for right of entry is enumerated in Section 98.0105 of the Los Angeles Municipal Code.

99.01.108.4. Authority to Stop Work. Whenever any construction work is being done contrary to the provision of any law or ordinance enforced by the Department, the Department shall have the authority to issue a written notice to the responsible party to stop work on that portion of the work on which the violation has occurred. The notice shall state that the nature of the violation and no work shall be done on that portion until violation has been rectified and approval obtained by the Department.

99.01.108.5. Modifications. The Department shall have the power to hear and act upon requests for slight modification in individual cases to the green building ordinances of the City, and regulations under Article 9 of Chapter 9 of the Los Angeles Municipal Code.

In granting a request for a slight modification, the Department shall determine that the slight modification is reasonably equivalent to the code requirement involved, that a special individual reason makes the strict letter of the code impractical and the slight modification is in conformity with the spirit and purpose of the code or codes involved.

ARTICLE 9, DIVISION 2

DEFINITIONS

99.02.201. GENERAL.

99.02.201.1. Scope. This section is adopted by reference.

99.02.201.2. Interchangeability. This section is adopted by reference.

99.02.201.3. Terms Defined in Other Documents. Where terms are not defined in this code and are defined in the Los Angeles Building Standards Code or other referenced document, such terms shall have the meanings ascribed to them as in those publications.

99.02.201.4. Terms Not Defined. Where terms are not defined as prescribed in this section, such terms shall have ordinarily accepted meanings such as context applies. The definitions in Webster's Third New International Dictionary of the English

Language, Unabridged shall be considered as providing ordinarily accepted meanings.

Section 202 of CALGreen Code is adopted by reference, except that the following CALGreen Code definitions are not adopted:

CALIFORNIA BUILDING CODE

CALIFORNIA ELECTRICAL CODE

CALIFORNIA MECHANICAL CODE

CALIFORNIA PLUMBING CODE

CALIFORNIA RESIDENTIAL CODE

LOW-RISE RESIDENTIAL BUILDING

The following terms are added as follows:

ALTERATION. An alteration shall include any interior and exterior repair, change of use or occupancy, renovation or improvements made to an existing site or structure.

CALIFORNIA ENERGY CODE. The current version of the California Code of Regulations, Title 24, Part 6.

DEPARTMENT. The Department of Building and Safety.

HOME ENERGY RATING SYSTEM (HERS). The program adopted in 1999 to establish a procedure and implement an approach to achieve energy efficiency for residential dwelling units pursuant to the California Code of Regulations, Title 20, Chapter 4, Article 6, Sections 1670 – 1675.

HIGH-RISE RESIDENTIAL. A building that is of Occupancy Group R and more than six stories in height.

LOS ANGELES BUILDING CODE. The current version of the Los Angeles City Building Code, Article 1 of Chapter IX of the Los Angeles Municipal Code.

LOS ANGELES BUILDING STANDARDS CODE. Articles 1 thru 9 of Chapter IX of the Los Angeles Municipal Code.

LOS ANGELES ELECTRICAL CODE. The current version of the Los Angeles City Electrical Code, Article 3 of Chapter IX of the Los Angeles Municipal Code.

LOS ANGELES MECHANICAL CODE. The current version of the Los Angeles City Mechanical Code, Article 5 of Chapter IX of the Los Angeles Municipal Code.

LOS ANGELES PLUMBING CODE. The current version of the Los Angeles City Plumbing Code, Article 4, Chapter IX of the Los Angeles Municipal Code.

LOS ANGELES RESIDENTIAL CODE. The current version of the Los Angeles City Plumbing Code, Article 1R, Chapter IX of the Los Angeles Municipal Code.

LOW-RISE RESIDENTIAL BUILDING. A building that is of Occupancy Group R and is six stories or less, or that is a one- or two- family dwelling or townhouse.

SUSTAINABILITY. Consideration of present development and construction impacts on the community, the economy, and the environment without compromising the needs of the future.

ARTICLE 9, DIVISION 3

GREEN BUILDING

99.03.301. GENERAL.

99.03.301.1. Scope. Buildings shall be designed to include the green building measures specified as mandatory in this code. Voluntary green building measures are also included in this code and may be included in the design and construction of structures covered by this code, but are not required unless they are part of Tier 1 or Tier 2. The checklists in Appendix A4 (Section 99.11.101) and Appendix A5 (Section 99.12.101) are for reference.

99.03.303. PHASED PROJECTS.

99.03.303.1. Phased Projects. For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

99.03.303.1.1. Tenant Improvements. The provisions of this code shall apply to the initial tenant or occupant improvements to a project and to any future alteration that falls under the scope of 99.01.101.3.

99.03.304.1.1. Tiers. The provisions of Appendices A4 and A5 outline the means of achieving enhanced construction levels by incorporating additional green building measures. Buildings complying with tiers specified for each occupancy contain additional prerequisite and elective green building measures necessary to meet the threshold of each tier.

Where there are practical difficulties involved in complying with the threshold levels of a tier, the Department may grant modifications for individual cases. The Department shall first find that a special individual reason makes the strict letter of the tier impractical and that modification is in conformance with the intent and purpose of the measure. The details of any action granting modification shall be recorded and entered in the files of the Department.

ARTICLE 9, DIVISION 4

MANDATORY MEASURES FOR NEWLY CONSTRUCTED LOW-RISE RESIDENTIAL BUILDINGS

99.04.106.2. Storm Water Drainage and Retention During Construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site:

1. Retention basins of sufficient size shall be utilized to retain storm water on the site;
2. Where storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the Department; or
3. Compliance with City of Los Angeles' storm water management ordinance(s).

99.04.106.6. Electric Vehicle Supply Wiring.

1. For one- or two- family dwellings and townhouses, provide a minimum of:

    a. One 208/240 V 40 amp, grounded AC outlet, for each dwelling unit; or
    b. Panel capacity and conduit for the future installation of a 208/240 V 40 amp, grounded AC outlet, for each dwelling unit.

The electrical outlet or conduit termination shall be located adjacent to the parking area.

2. For other residential occupancies where there is a common parking area, provide one of the following:

    a. A minimum number of 208/240 V 40 amp, grounded AC outlets equal to 5 percent of the total number of parking spaces. The outlets shall be located within the parking area; or
    b. Panel capacity and conduit for future installation of electrical outlets. The panel capacity and conduit size shall be designed to accommodate the future installation, and allow the simultaneous charging, of a

minimum number of 208/240 V 40 amp, grounded AC outlets, that is equal to 5 percent of the total number of parking spaces. The conduit shall terminate within the parking area; or

c. Additional service capacity, space for future meters, and conduit for future installation of electrical outlets. The service capacity and conduit size shall be designed to accommodate the future installation, and allow the simultaneous charging, of a minimum number of 208/240 V 40 amp, grounded AC outlets, that is equal to 5 percent of the total number of parking spaces. The conduit shall terminate within the parking area.

When the application of the 5 percent results in a fractional space, round up to the next whole number.

ENERGY EFFICIENCY

99.04.201. GENERAL.

99.04.201.1. Scope. The provisions of this chapter shall establish means of conserving energy.

99.04.202. DEFINITIONS.

99.04.202.1. Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ENERGY STAR. A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR is a voluntary program designed to identify and promote energy-efficient products and practices.

99.04.203. PERFORMANCE APPROACH. (Reserved)

99.04.204. ENERGY REDUCTION.

99.04.204.1. Prescriptive Approach. Equipment and fixtures shall comply with the following where applicable:

1. Installed gas-fired space heating equipment shall have an Annual Fuel Utilization Ratio (AFUE) of .90 or higher.
2. Installed electric heat pumps shall have a Heating Seasonal Performance Factor (HSFP) of 8.0 or higher.
3. Installed cooling equipment shall have a Seasonal Energy Efficiency Ratio (SEER) higher than 13.0 and an Energy Efficiency Ratio (EER) of at least 11.5.
4. Installed tank type water heaters shall have an Energy Factor (EF) higher than .6.

5. Installed tankless water heater shall have an Energy Factor (EF) higher than .80.
6. Perform duct leakage testing to verify a total leakage rate of less than 6 percent of the total fan flow.
7. Building lighting in the kitchen and bathrooms within the dwelling units shall consist of at least 90 percent ENERGY STAR qualified hard-wired fixtures (luminaires).
8. Installed swimming pool circulating pump motors shall be multi-speed or variable-speed. The pump motor controls shall have the capability of operating the pump at a minimum of three speeds; low speed, medium speed, and high speed. The daily low speed shall not exceed 300 watts. The daily medium speed shall be adjustable.

Exception:

1. Projects exceeding the California Energy Code requirements by 15 percent using an Alternative Calculation Method (ACM) approved by the California Energy Commission.
2. Buildings for which building plans were submitted to the Department for plan check and the plan check fee was paid prior to July 1, 2011.

99.04.205. BUILDING ENVELOPE. (Reserved)

99.04.206. AIR SEALING PACKAGE. (Reserved)

99.04.207. HVAC DESIGN, EQUIPMENT AND INSTALLATION. (Reserved)

99.04.208. WATER HEATING DESIGN, EQUIPMENT AND INSTALLATION. (Reserved)

99.04.209. LIGHTING. (Reserved)

99.04.210. APPLIANCES.

99.04.210.1. Appliance Rating. Each appliance provided and installed shall meet ENERGY STAR if an ENERGY STAR designation is applicable for that appliance.

99.04.211. RENEWABLE ENERGY.

99.04.211.4. Future Access for Electrical Solar System. An electrical conduit shall be provided from the electrical service equipment to an accessible location in the attic or other location suitable for future connection to a solar system. The conduit shall be adequately sized by the designer but shall not be less than one inch. The conduit shall be labeled as per the Los Angeles Fire Department requirements. The electrical panel shall be sized to accommodate the installation of a future electrical solar system.

Exception: Buildings designed and constructed with a solar photovoltaic system or an alternate system with means of generating electricity at time of final inspection.

99.04.211.4.1. Space for Future Electrical Solar System Installation. A minimum of 250 square feet of contiguous unobstructed roof area shall be provided for the installation of future photovoltaic or other electrical solar panels. The location shall be suitable for installing future solar panels as determined by the designer.

Exceptions:

1. For roofs with an area of less than 1000 square feet, the unobstructed space maybe reduced to 25 percent of the roof area;
2. Buildings designed and constructed with a solar photovoltaic system or an alternate system with renewable means of generating electricity at the time of final inspection;
3. Where it is not feasible to provide one contiguous area due to the roof configuration, two unobstructed roof areas with a minimum combined area of 250 square feet maybe provided;
4. Buildings designed with a green roof making it unfeasible to provide this area.

99.04.303.1. Twenty Percent Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by at least 20 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 20 percent reduction in potable water use shall be demonstrated by one of the following methods:

1. Each plumbing fixture and fitting shall meet reduced flow rates specified in Table 4.303.2; or
2. A calculation demonstrating a 20 percent reduction in the building "water use" baseline as established in Table 4.303.1 shall be provided. For low-rise residential occupancies, the calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets, kitchen faucets and showerheads.

TABLE 4.303.1
WATER USE BASELINE[1]

Fixture Type	Flow-rate[2]	Duration	Daily uses	Occupants[3]
Showerheads Residential	2.5 gpm @ 80 psi	8 min.	1	
Lavatory Faucets Residential	2.2 gpm @ 60 psi	.25 min.	3	
Kitchen Faucets	2.2 gpm @ 60 psi	4 min.	1	
Replacement Aerators	2.2 gpm @ 60 psi			
Gravity tank type Water Closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Flushometer Tank Water Closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Flushometer Valve Water Closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Urinals	1.0 gallons/flush	1 flush	2 male	

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

[1]Use Worksheet WS-1 to calculate baseline water use.
[2]The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20, California Code of Regulations; where a conflict occurs, the CEC standards shall apply.
[3]For low rise residential occupancies, the number of occupants shall be based on two persons for the first bedroom, plus one additional person for each additional bedroom.
[4] The daily use number shall be increased to three if urinals are not installed in the room.

99.04.303.2. Multiple Showerheads Serving One Shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 4.303.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.

> **Exception:** The maximum flow rate for showerheads when using the calculation method specified in Section 99.04.303.1, Item 2, is 2.5 gpm @ 80 psi.

TABLE 4.303.2
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE	MAXIMUM FLOW RATE AT > 20 percent
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory faucets residential	2.2 gpm @ 60 psi	1.5 gpm @ 60 psi[2]
Kitchen faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Gravity tank type water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer tank water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer valve water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Urinals	1.0 gallons/flush	.5 gallons/flush

[1]Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.

Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.

Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

[2]Lavatory Faucets shall not have a flow rate less than 0.8 gpm at 20 psi.

99.04.304.1. Irrigation Controllers. When automatic irrigation system controllers for landscaping are provided and installed at the time of final inspection, the controllers shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change;
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.

99.04.304.1.1. Irrigation Design. Buildings on sites with over 2,500 square feet of cumulative irrigated landscaped areas shall have irrigation controllers which meet the criteria in Section 99.04.304.1.

99.04.406. ENHANCED DURABILITY AND REDUCED MAINTENANCE.

99.04.406.1. Joints and Openings. Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the California Energy Code.

> **Exception:** Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the Department.

99.04.407. WATER RESISTANCE AND MOISTURE MANAGEMENT.

99.04.407.3. Flashing Details. Provide flashing details on the building plans which comply with accepted industry standards or manufacturer's instructions at the following locations:

1. Around windows and doors;
2. Roof valleys;
3. Chimneys to roof intersections.

99.04.407.4. Material Protection. Protect building materials delivered to the construction site from rain and other sources of moisture.

99.04.408. CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING.

99.04.408.1. Construction Waste Reduction of at Least 50 Percent. Comply with Section 66.32 *et seq.* of the Los Angeles Municipal Code.

99.04.410.1. Operation and Maintenance Manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the Department which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building.
2. Operation and maintenance instructions for the following:

    a. Equipment and appliances, including water-saving devices and systems, HVAC systems, water-heating systems and other major appliances and equipment.
    b. Roof and yard drainage including gutters and downspouts.
    c. Space conditioning systems including condenser and air filters.
    d. Landscape irrigation systems.
    e. Water reuse systems.

3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.
7. Instructions for maintaining gutters and downspouts and importance of diverting water at least 5 feet away from foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around building, etc.
9. Information about state solar energy and incentive programs available.
10. A copy of all special inspection verifications required by the Department or this code.

99.04.504.1. Covering of Duct Openings and Protection of Mechanical Equipment During Construction. At the time of rough installation or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system.

99.04.504.2.4. Verification. Verification of compliance with this section shall be provided at the request of the Department. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification; or
2. Field verification of on-site product containers.

99.04.504.5.1. Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following:

1. Product certifications and specifications;
2. Chain of custody certifications; or
3. Other methods acceptable to the Department.

99.04.505. INTERIOR MOISTURE CONTROL.

99.04.505.1. General. Buildings shall meet or exceed the provisions of the Los Angeles Building Standards Code.

99.40.505.2. Concrete Slab Foundations. Concrete slab foundations required to have a vapor retarder by Los Angeles Building Code, Chapter 19, shall also comply with this section.

99.04.505.2.1. Capillary Break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of ½ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06;
2. Other equivalent methods approved by the Department; or
3. A slab design specified by a licensed design professional.

99.04.505.3. Moisture Content of Building Materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed until it is inspected and found to be satisfactory by the building inspector.

Insulation products which are visibly wet or have high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

ARTICLE 9, DIVISION 5

FOR NEWLY CONSTRUCTED NONRESIDENTIAL AND HIGH-RISE RESIDENTIAL BUILDINGS

99.05.106. SITE DEVELOPMENT.

99.05.106.1. Storm Water Pollution Prevention Plan. For newly constructed projects which disturb less than one acre of soil, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects one acre or more. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation, and/or of dust/particulate matter air pollution.

> **Note:** Assistance with the permit may be obtained from the California State Water Resources Control Board (SWRCB) at: http://www.swrcb.ca.gov/stormwtr/, from a Regional Water Quality Control Board, and at local public works departments.

99.05.106.4. Bicycle Parking. Comply with Sections 99.05.106.4.1 and 99.05.106.4.2; or meet local ordinance, whichever is stricter.

99.05.106.4.1. Short-Term Bicycle Parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.

99.05.106.4.2. Long-Term Bicycle Parking. For buildings with over 10 occupants, based on the Los Angeles Building Code, provide secure bicycle parking for 5 percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; or
3. Lockable, permanently anchored bicycle lockers.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Bicycle Advocates.

99.05.106.5.2. Designated Parking. Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel- efficient, and carpool/van pool vehicles as follows:

Table 5.106.5.2

Total Number of Parking Spaces	Number of Required Spaces
0-9	0
10-25	1
26-50	3
51-75	6
76-100	8
101-150	11
151-200	16
201 and over	At least 8 percent of total [1]

[1] When the application of this regulation results in the requirement of a fractional space, round up to the next whole number.

99.05.106.5.3.1. Electric Vehicle Supply Wiring. Provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), that is equal to 5 percent of the total number of parking spaces, rounded up to the next whole number. The outlet(s) shall be located in the parking area.

99.05.106.8. Light Pollution Reduction. Comply with lighting power requirements in the California Energy Code, California Code of Regulations (CCR), Title 24, Part 6, and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting

zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR, Title 24, Part 1, using the following strategies:

1. Shield all exterior luminaires or provide cutoff luminaires per Section 132 (b) of the California Energy Code;
2. Contain interior lighting within each source;
3. Allow no more than .01 horizontal lumen footcandles to escape 15 feet beyond the site boundary;
4. Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods.

Exceptions:

1. Los Angeles Building Code, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.
2. Emergency lighting and lighting required for nighttime security.

99.05.106.10. Grading and Paving. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.

ENERGY EFFICIENCY

99.05.201. GENERAL.

99.05.201.1. Scope. The provisions of this chapter shall establish means of conserving energy.

99.05.202. DEFINITIONS.

99.05.202.1. Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ENERGY STAR. A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR is a voluntary program designed to identify and promote energy-efficient products and practices.

99.05.203. PERFORMANCE APPROACH.

99.05.203.1. Energy Performance. Using an Alternative Calculation Method approved by the California Energy Commission, calculate each nonresidential building's TDV energy and CO_2 emissions, and compare it to the standard or "budget" building.

99.05.203.1.3. Energy Efficiency – Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent.

Exception: Buildings for which building plans were submitted to the Department for plan check and the plan check fee was paid prior to July 1, 2011.

99.05.204. PRESCRIPTIVE APPROACH. (Reserved)

99.05.210. ENERGY SYSTEMS.

99.05.210.1. ENERGY STAR Equipment and Appliances. Residential grade equipment and appliances provided and installed shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.

99.05.211. RENEWABLE ENERGY.

99.05.211.4. Prewiring for Future Electrical Solar System. Install conduit from the building roof, eave, or other locations approved by the Department to the electrical service equipment. The conduit shall be labeled as per the Los Angeles Fire Department requirements.

Exception: Buildings designed and constructed with a solar photovoltaic system or an alternate system with renewable means of generating electricity at time of final inspection.

99.05.211.4.1. Off-Grid Prewiring for Future Solar. If battery storage is anticipated, conduit shall run to a location within the building that is weather-proof and separated from occupied spaces.

99.05.302. DEFINITIONS.

99.05.302.1. Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

GRAYWATER. Untreated household waste which has not come into contact with toilet waste. Graywater includes used water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines and laundry tubs. It shall not include waste water from kitchen sinks, dishwashers, or laundry water from soiled diapers.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE. The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2,500 square feet meet an irrigation water budget developed based on landscaped area, and climatological parameters.

POTABLE WATER. Water that is drinkable and meets the U. S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the Los Angeles Plumbing Code.

RECYCLED WATER. Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur (Water Code Section 13050 (n)). Simply put, recycled water is water treated to remove waste matter attaining a quality that is suitable to use the water again.

SUBMETER. A meter installed subordinate to a site meter. Usually used to measure water intended for one purpose, such as landscape irrigation. For the purposes of this section, a dedicated meter may be considered a submeter.

WATER BUDGET. Estimated total landscape irrigation water use shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MLO).

99.05.303.1. Meters. Separate meters or metering devices shall be installed for uses described in Sections 5.303.1.1 and 5.303.1.2.

99.05.303.2. Twenty Percent Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code. The 20 percent reduction in potable water use shall be demonstrated by one of the following methods:

1. Each plumbing fixture and fitting shall meet the 20 percent reduced flow rate specified in Table 5.303.2.3, or
2. A calculation demonstrating a 20 percent reduction in the building "water use baseline" as established in Table 5.303.2.2 shall be provided.

99.05.303.2.1. Multiple Showerheads Serving One Shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.

> **Exception:** The maximum flow rate for shower heads when using the calculation method specified in Section 99.05.303.2, Item 2 is 2.5 gpm @ 80 psi.

TABLE 5.303.2.2
INDOOR WATER USE BASELINE[4]

FIXTURE TYPE	FLOW RATE[2]	DURATION	DAILY USES	OCCUPANTS[3]
Showerheads	2.5 gpm @ 80 psi	8 min.	1	X
Kitchen faucets	2.2 gpm @ 60 psi	4 min.	1	X
Replacement aerators	2.2 gpm @ 60 psi			X

Wash fountains	2.2 [rim space (in.)/20 gpm @ 60 psi]			
Metering faucets	0.25 gallons/cycle	.25 min.	3	
Metering faucets for wash fountains	.25 [rim space (in.)/20 gpm @ 60 psi]	.25 min.		
Gravity tank type water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer tank water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer valve water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Urinals	1.0 gallons/flush	1 flush	2 male	X

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

[1]The daily use number shall be increased to three if urinals are not installed in the room.
[2]The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20, California Code of Regulations; where a conflict occurs, the CEC standards shall apply.
[3]Refer to Table A, Chapter 4, Los Angeles Plumbing Code, for occupant load factors.
[4]Use Worksheet WS-1 to calculate base line water use.

TABLE 5.303.2.3
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE	MAXIMUM FLOW RATE AT 20 percent REDUCTION
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Kitchen faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Wash fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]	1.8 [rim space (in.) / 20 gpm @ 60 psi]
Metering faucets	0.25 gallons/cycle	0.2 gallons/cycle
Metering faucets for wash fountains	.25 [rim space (in.) / 20 gpm @ 60 psi]	.20 [rim space (in.) / 20 gpm @ 60 psi]
Gravity tank type water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer tank water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer valve water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Urinals	1.0 gallons/flush	.5 gallons/flush

[1]Includes single and dual flush water closets with an effective flush of 1.28 gallons or Single flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.

Dual flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

99.05.303.4. Wastewater Reduction. Each building shall reduce by 20 percent wastewater by one of the following methods:

1. The installation of water-conserving fixtures (water closets, urinals) meeting the criteria established in sections 5.303.2, or
2. Utilizing non-potable water systems [captured rainwater, graywater, and municipally treated wastewater (recycled water) complying with the current edition of the Los Angeles Plumbing Code or other methods described in Section A5.304].

99.05.304.2. Outdoor Potable Water Use. Building on sites with 1,000 square feet or more of cumulative landscaped areas shall have separate meters or submeters for indoor and outdoor potable water use.

99.05.304.3. Irrigation Design. Buildings on sites with 1,000 square feet or more of cumulative irrigated landscaped areas shall have irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.

99.05.407.1. Weather Protection. Provide a weather-resistant exterior wall and foundation envelope as required by Los Angeles Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices), manufacturer's installation instructions, or local ordinance, whichever is more stringent.

99.05.408. CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING.

99.05.408.1. Construction Waste Diversion. Comply with Section 66.32 *et seq.* of the Los Angeles Municipal Code.

99.05.408.4. Excavated Soil and Land Clearing Debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project and when approved by the Department, such material may be stockpiled on site until the storage site is developed.

Exception: Contaminated soil shall not be reused and shall be disposed of or remediated in accordance with relevant regulations.

99.05.410.1. Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.

99.05.410.2.5. Documentation and Training. A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.

99.05.410.2.5.1. Systems Manual. Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative and facilities operator. The Systems Manual shall include the following:

1. Site information, including facility description, history and current requirements;
2. Site contact information;
3. Basic operations & maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log;
4. Major systems;
5. Site Equipment inventory and maintenance notes;
6. A copy of all special inspection verifications required by the Department or this code;
7. Other resources & documentation.

99.05.410.4.5. Operation and Maintenance (O & M) Manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

99.05.410.4.5.1. Inspections and Reports. Include a copy of all inspection verifications and reports required by the Department.

99.05.504.3. Covering of Duct Openings and Protection of Mechanical Equipment During Construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system.

99.05.504.4.3.2. Verification. Verification of compliance with this section shall be provided at the request of the Department. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification;
2. Field verification of on-site product containers;
3. Other methods acceptable to the Department.

99.05.504.4.5.2. Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following:

1. Product certifications and specifications;
2. Chain of custody certifications; or
3. Other methods acceptable to the Department.

99.05.504.4.6. Resilient Flooring Systems. For 50 percent of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 Collaborative for High Performance Schools (CHPS) criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.

99.05.504.7. Environmental Tobacco Smoke (ETS) Control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings; or as enforced by ordinances, regulations, or policies of the city, whichever are more stringent. When ordinances, regulations, or policies are not in place, post signage to inform building occupants of the prohibitions.

99.05.505.1 Indoor Moisture Control. Buildings shall meet or exceed the provisions of Los Angeles Building Code Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not applicable to low-rise residential occupancies, see Section 5.407.2 of this code.

99.05.507.4.1. Exterior Noise Transmission. Wall and roof-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the following building locations:

1. Within 1000 ft. (300 m.) of right of ways of freeways.
2. Within 5 mi. (8 km.) of airports serving more than 10,000 commercial jets per year.
3. Where sound levels at the property line regularly exceed 65 decibels, other than occasional sound due to church bells, train horns, emergency vehicles and public warning systems.

   Exception: Buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, as determined by the Department, such as factories, stadiums, storage, enclosed parking structures, and utility buildings.

ARTICLE 9, DIVISION 6

REFERENCED ORGANIZATIONS AND STANDARDS

99.06.601. GENERAL.

99.06.601.1. General. This division lists the standards that are referenced in various sections of this article. The standards are listed herein by the promulgating agency of the standard.

Organization	Standard	Referenced Section
AABC Associated Air Balance Council		
1518 K St. NW Washington, DC 20005 www.aabc.org	National Standards, 1989	5.410.4.3.1 10.410.4.3.1 A5.410.5.3.1
ACCA Air Conditioning Contractors of America		
2800 Shirlington Road, Suite 300 Arlington, VA 22206 www.acca.org	ACCA Manual J ACCA 29-D Manual D ACCA 36-S Manual S	4.507.2, 9.507.2 4.507.2, 9.507.2 4.507.2, 9.507.2
ANSI American National Standards Institute		
Operations Office 25 West 43rd Street Fourth Floor New York, NY 10036 www.ansi.org	ANSI A190.1-2002 ANSI ZI24.9-2004 NSF/ANSI 140-2007	4.502 Table 4.303.3, 9.303.3 4.504.3, 5.504.4.4, 9.504.3, 10.504.4.4
ASHRAE American Society of Heating, Refrigerating and Air-		
1791 Tullie Circle, NE Atlanta, GA 30329 www.ashrae.org	52.1-92 52.2-99 62.2 90.1	A5.504.1 A4.502 A5.504.1 5.108.8, 10.108.8
ASME American Society of Mechanical Engineers		
Three Park Avenue New York, NY 10016-5990 www.asme.org	ASME A112.18.1 ASME A112.19 ASME A112.19.2 ASME A112.19.14 ASME A112.19.19	Table 4.303.3, 5.303.6, Table 9.303.3, 10.303.6 5.303.6, 10.303.6 Table 4.303.3, 5.303.2, Table 9.303.3, 10.303.2 Table 4.303.3, 5.303.6, Table 9.303.3, 10.303.6 Table4.303.3, 9.303.3
ASTM ASTM International		

100 Barr Harbor Drive West Conshohocken, PA 19428-2859 www.astm.org	ASTM C 33 ASTM C 1371-98 ASTM E 90 ASTM E 408-71(2002) ASTM E 413 ASTM E1333-96 (2002) ASTM E 1903-97 ASTM E 1980-01	A5.405.5.3.2 A4.205.1 5.507.5, 10.507.5 A4.205.1 5.507.5, 10.507.5 Table 4.504.5, 9.504.5 A5.103.4 A4.106.5.3
CSA Canadian Standards Association		
5060 Spectrum Way, Suite 100 Mississauga, Ontario, Canada L4W 5N6 www.csa.ca	CSA B45.1 CSA B125.1	Table 4.303.1, Table 4.303.3 Table 9.303.1, 9.403.3 Table 4.303.3, 5.303.6 Table 9.303.3, 10.303.6
IAPMO International Association of Plumbing and Mechanical Officials		
5001 E. Philadelphia St. Ontario, CA 91761 iapmo@iapmo.org	IAPMO Z124.9	Table 4.303.3, 5.303.6 Table 9.303.3, 10.303.6
NEBB National Environmental Balancing		
8575 Grovemont Cir Gaithersburg, MD 20877 http://nebb.org/index.php	Procedural Standards, 1983	5.410.4.3.1, 10.410.4.3.1 A5.410.5.3.1
NSF International		
789 Dixboro Rd. Ann Arbor, MI 48113-0140 http://www.nsf.org/	NSF/ANSI 140-2007	4.504.3, 5.504.4.4, 9.504.3, 10.504.4.4
TABB Testing, Adjusting and Balancing Bureau		
601 N Fairfax St, Ste 250 Alexandria, VA 22314 http://www.tabbcertified.org/contact.html	National Standards, 2003	5.410.3.3.1, 10.410.3.3.1 A5.410.5.3.1

ARTICLE 9, DIVISION 7

INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS

99.07.702.1. Installer Training. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs;
2. Public utility training programs;
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations;
4. Programs sponsored by manufacturing organizations; or
5. Other programs acceptable to the Department.

99.07.702.2. Special Inspection for Low-Rise Residential Buildings. When required by the Department, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the Department for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the Department, the following certifications or education may be considered by the Department when evaluating the qualifications of a special inspector:

1. Certification by a national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the Department.

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

99.07.702.3. Special Inspection for Non-Residential and High-Rise Buildings. When required by the Department, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the Department for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national, or international association, as determined by the Department. The area of certification shall be closely related to the primary job function, as determined by the Department..

Note: Special inspectors shall be independent entities with no financial

interest in the materials or the project they are inspecting for compliance with this code.

99.07.703. VERIFICATIONS.

99.07.703.1. Documentation. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the Department which demonstrate substantial conformance.

ARTICLE 9, DIVISION 8

COMPLIANCE FORMS AND WORKSHEETS

ARTICLE 9, DIVISION 9

MANDATORY MEASURES FOR ALTERATIONS AND ADDITIONS TO LOW-RISE RESIDENTIAL BUILDINGS

99.09.100. Scope. The provisions herein shall only apply to additions or alterations unless otherwise indicated. Legally existing portions of the building not affected by the addition or alteration may remain as previously permitted.

PLANNING AND DESIGN

99.09.101. GENERAL.

99.09.101.1. Purpose. The provisions of this division outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore, and enhance the environmental quality of the site and respect the integrity of adjacent properties.

99.09.102. DEFINITIONS.

99.09.102.1. Definitions. Refer to Section 4.102.1 of this code for definitions.

99.09.103. SITE SELECTION. (Reserved)

99.09.104. SITE PRESERVATION. (Reserved)

99.09.105. DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES. (Reserved)

99.09.106. SITE DEVELOPMENT.

99.09.106.1. General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects

on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

99.09.106.2. Storm Water Drainage and Retention During Construction. Additions which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site:

1. Retention basins of sufficient size shall be utilized to retain storm water on the site;
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the Department;
3. Compliance with City of Los Angeles' storm water management ordinance(s).

99.09.106.3. Surface Drainage. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how the site grading or drainage system will manage surface water flows. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales;
2. Water collection and disposal systems;
3. French drains;
4. Water retention gardens; or
5. Other water measures which keep surface water away from building and aid in groundwater recharge.

Exception: Alterations and additions not effecting site drainage.

ENERGY EFFICIENCY

99.09.201. GENERAL.

99.09.201.1. Scope. The provisions of this division shall establish means of conserving energy.

99.09.202. DEFINITIONS.

99.09.202.1. Definitions. Refer to Section 4.202 for definitions.

99.09.203. PERFORMANCE APPROACH. (Reserved)

99.09.204. ENERGY REDUCTION.

99.09.204.1. Prescriptive Approach. New equipment and fixtures shall comply with the following where applicable:

1. Installed gas-fired space heating equipment shall have an Annual Fuel Utilization Ratio (AFUE) of .90 or higher.
2. Installed electric heat pumps shall have a Heating Seasonal Performance Factor (HSFP) of 8.0 or higher.
3. Installed cooling equipment shall have a Seasonal Energy Efficiency Ratio (SEER) higher than 13.0 and an Energy Efficiency Ratio (EER) of at least 11.5.
4. Installed tank type water heaters shall have an Energy Factor (EF) higher than .6.
5. Installed tankless water heater shall have an Energy Factor (EF) higher than .80.
6. For new ducts, perform duct leakage testing to verify a total leakage rate of less than 6 percent of the total fan flow.
7. Building lighting in the kitchen and bathrooms within the dwelling units shall consist of at least 90 percent ENERGY STAR qualified hard-wired fixtures (luminaires).
8. Installed swimming pool circulating pump motors shall be multi-speed or variable-speed. The pump motor controls shall have the capability of operating the pump at a minimum of three speeds; low speed, medium speed, and high speed. The daily low speed shall not exceed 300 watts. The daily medium speed shall be adjustable.

Exception:

1. Projects exceeding the California Energy Code requirements by 15 percent using an Alternative Calculation Method (ACM) approved by the California Energy Commission.

2. Addition and alterations to buildings for which building plans were submitted for plan check and the plan check fee was paid prior to June 1, 2011.

99.09.205. BUILDING ENVELOPE. (Reserved)

99.09.206. AIR SEALING PACKAGE. (Reserved)

99.09.207. HVAC DESIGN, EQUIPMENT AND INSTALLATION. (Reserved)

99.09.208. LIGHTING. (Reserved)

99.09.209. APPLIANCES.

99.09.210.1. Appliance Rating. Each new residential grade appliance provided and installed shall meet ENERGY STAR, if an ENERGY STAR designation is applicable for that appliance.

99.09.211. RENEWABLE ENERGY.

99.09.211.1. (Reserved)

99.09.211.2. (Reserved)

99.09.211.4. Future Access for Electrical Solar System. For an addition resulting in more than 2,000 sq. ft. of new roof area, an electrical conduit shall be provided from the electrical service equipment to an accessible location in the attic or other location suitable for future connection to a solar system. The conduit shall be adequately sized by the designer but shall not be less than one inch. The conduit shall be labeled as per the Los Angeles Fire Department requirements. The electrical panel shall be sized to accommodate the installation of a future electrical solar system.

> **Exceptions:** Buildings designed and constructed with a solar photovoltaic system or an alternate system with means of generating electricity at time of final inspection.

99.09.211.4.1. Space for Future Electrical Solar System Installation. For additions resulting in more than 2,000 sq. ft. of new roof area, a minimum of 250 square feet of contiguous unobstructed roof area shall be provided for the installation of future photovoltaic or other electrical solar panels. The location shall be suitable for installing future solar panels as determined by the designer.

> **Exceptions:**
>
> 1. Buildings designed and constructed with a solar photovoltaic system or an alternate system with means of generating electricity at time of final inspection are exempt from this requirement.
> 2. Where it is not feasible to provide one contiguous area due to the roof configuration, two unobstructed roof areas with a minimum combined area of 250 square feet maybe provided.
> 3. Buildings designed with a green roof making it unfeasible to provide this area.

WATER EFFICIENCY AND CONSERVATION

99.09.301. GENERAL.

99.09.301.1. Scope. The provisions of this division shall establish means of conserving water used indoors, outdoors and in wastewater conveyance.

99.09.302. DEFINITIONS. (Reserved)

99.09.303. INDOOR WATER USE.

99.09.303.1. Water Use Reduction. New plumbing fixtures and fittings shall not exceed maximum allowable flow rate specified in Table 9.303.2.

99.09.303.2. Multiple Showerheads Serving One Shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the maximum allowable flow rate column contained in Table 9.303.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.

> **Exception:** When a calculation demonstrating a 20 percent reduction in the building "water use" baseline as established in Table 9.303.1 is provided, the maximum flow rate may be increased to 2.5 gpm @ 80 psi. The calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets, and showerheads.

TABLE 9.303.1
INDOOR WATER USE BASELINE[1]

Fixture Type	Flow-rate[2]	Duration	Daily uses	Occupants[3]
Showerheads, residential	2.5 gpm @ 80 psi	8 min.	1	
Lavatory faucets, residential	2.2 gpm @ 60 psi	.25 min.	3	
Replacement aerators	2.2 gpm @ 60 psi			
Gravity tank type water closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Flushometer tank water closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Flushometer valve water closets	1.6 gallons/flush	1 flush	1 male[4] 3 female	
Urinals	1.0 gallons/flush	1 flush	2 male	

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

[1]Use Worksheet WS-1 to calculate baseline water use.
[2]The flow-rate is from the CEC Appliance Efficiency Standards, Title 20, California Code of Regulations; where a conflict occurs, the CEC standards shall apply.
[3]For low-rise residential occupancies, the number of occupants shall be based on two people for the first bedroom, plus one additional person for each additional bedroom
[4]The daily use shall be increased to three if urinals are not installed in the room.

TABLE 9.303.2
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE	MAXIMUM ALLOWABLE FLOW RATE
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory faucets residential	2.2 gpm @ 60 psi	1.5 gpm @ 60 psi
Gravity tank type water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer tank water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer valve water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Urinals	1.0 gallons/flush	0.125 gallons/flush

[1]Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.
Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.
Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.
[2]Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi

99.09.303.3. Plumbing Fixtures and Fittings. New plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 9.303.3.

TABLE 9.303.3
STANDARDS FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

REQUIRED STANDARDS	
Water closets (toilets) – flushometer valve type single flush, maximum flush volume	ASME A112.19.2/CSA B45.1 – 1.28 gal (4.8 L)
Water closets (toilets) – flushometer valve type dual flush, maximum flush volume	ASME A112.19.14 and USEPA WaterSense Tank-Type High Efficiency Toilet Specification – 1.28 gal (4.8 L).
Water closets (toilets) – tank-type	U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification
Urinals, maximum flush volume	ASME A112.19.2/CSA B45.1 – 0.5 gal (1.9 L)
Urinals, non-water urinals	ASME A112.19.19 (vitreous china) ANSI Z124.9–2004 or IAPMO Z124.9 (plastic)
Public lavatory faucets: Maximum flow rate –0.5 gpm (1.9 L/min)	ASME A112.18.1/CSA B125.1

Public metering self-closing faucets: Maximum water use – 0.25 gal (1.0 L) per metering cycle	ASME A112.18.1/CSA B125.1
Residential bathroom lavatory sink faucets: Maximum flow rate – 1.5 gpm (5.7 L/min)	ASME A112.18.1/CSA B125.1

99.09.304. OUTDOOR WATER USE.

99.09.304.1. Irrigation Controllers. When automatic irrigation system controllers for landscaping are provided and installed at the time of final inspection, the controllers shall comply with the following:

1. Controllers shall be weather - or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association.

99.09.304.1.1. Irrigation Design. A building addition, on a site with 2,500 square feet or more of cumulative landscaped area being served by a potable water service, shall have irrigation controllers and sensors that meet 99.09.304.1 and the manufacturer's recommendations.

Exception: An addition that is less than 500 square feet.

99.09.305. WATER REUSE SYSTEMS. (Reserved)

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

99.09.401. GENERAL.

99.09.401.1. Scope. The provisions of this division shall outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture; construction waste diversion; employment of techniques to reduce pollution through recycling of materials; and building commissioning or testing, adjusting and balancing.

99.09.402. DEFINITIONS.

99.09.402.1. Definitions. Refer to Section 4.402 of this code for definitions.

99.09.403. FOUNDATION SYSTEMS. (Reserved)

99.09.404. EFFICIENT FRAMING TECHNIQUES. (Reserved)

99.09.405. MATERIAL SOURCES. (Reserved)

99.09.406. ENHANCED DURABILITY AND REDUCED MAINTENANCE.

99.09.406.1. Joints and Openings. New openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the California Energy Code.

> **Exception:** Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the Department.

99.09.402. WATER RESISTANCE AND MOISTURE MANAGEMENT.

99.09.407.1. (Reserved)

99.09.407.2. (Reserved)

99.09.407.3. Flashing Details. Provide flashing details on the building plans which comply with accepted industry standards or manufacturer's instructions at all of the following locations:

1. Around windows and doors;
2. Roof valleys;
3. Chimneys to roof intersections.

99.09.407.4. Material Protection. Protect building materials delivered to the construction site from rain and other sources of moisture.

99.09.408.1. CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING.

99.09.408.1 Construction Waste Reduction. Comply with Section 66.32 *et seq.* of the Los Angeles Municipal Code.

99.09.409. LIFE-CYCLE ASSESSMENT. (Reserved)

99.09.410. BUILDING MAINTENANCE AND OPERATION.

99.09.410.1. Operation and Maintenance Manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the Department which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building.
2. Operation and maintenance instructions for the following:

    a. New equipment and appliances, including water saving devices and systems, HVAC systems, water heating systems and other major appliances and equipment;
    b. New roof and yard drainage, including gutters and downspouts;
    c. New space conditioning systems including condenser and air filters;
    d. New landscape irrigation systems;
    e. New water reuse systems.

ENVIRONMENTAL QUALITY

99.09.501. GENERAL.

99.09.501.1. Scope. The provisions of this division shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.

99.09.502. DEFINITIONS.

99.09.502.1. Definitions. Refer to Section 4.502 of this code for definitions.

99.09.503.1. FIREPLACES.

99.09.503.1. General. Any newly installed gas fireplace shall be a direct-vent sealed-combustion type. Any newly installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.

99.09.504. POLLUTANT CONTROL.

99.09.504.1. Covering of Duct Openings and Protection of Mechanical Equipment During Construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system.

99.09.504.2. Finish Material Pollutant Control. Finish materials shall comply with this section.

99.09.504.2.1. Adhesives, Sealants and Caulks. Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 9.504.1 or 9.504.2 as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene), except for aerosol products as specified in subsection 2 below;
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

99.09.504.2.2. Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table I of the ARB Architectural Suggested Control Measure as shown in Table 9.504.3 unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 9.504.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 9.504.3 shall apply.

99.09.504.2.3. Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49.

TABLE 9.504.1
ADHESIVE VOC LIMIT[1,2]
Less Water And Less Exempt Compounds In Grams Per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50

Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesive not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

[1] If an adhesive is used to bong dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.

[2] For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 9.504.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-Ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural Non porous Porous	 250 775
Modified bituminous	500
Marine deck	760
Other	750

TABLE 9.504.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]
Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	EFFECTIVE 1/1/2010	EFFECTIVE 1/1/2012
Flat coatings	50	
Nonflat coatings	100	
Nonflat-high gloss coatings	150	
Specialty Coatings		
Aluminum roof coatings	400	
Basement specialty coatings	400	
Bituminous roof coatings	50	
Bituminous roof primers	350	
Bond breakers	350	
Concrete curing compounds	350	
Concrete/masonry sealers	100	
Driveway sealers	50	
Dry fog coatings	150	
Faux finishing coatings	350	

Fire resistive coatings	350	
Floor coatings	100	
Form-release compounds	250	
Graphic arts coatings (sign paints)	500	
High temperature coatings	420	
Industrial maintenance coatings	250	
Low solids coatings[1]	120	
Magnesite cement coatings	450	
Mastic texture coatings	100	
Metallic pigmented coatings	500	
Multicolor coatings	250	
Pre-treatment wash primers	420	
Primers, sealers, and undercoaters	100	
Reactive penetrating sealers	350	
Recycled coatings	250	
Roof coatings	50	
Rust preventative coatings	400	250
Shellacs Clear Opaque	 730 550	
Specialty primers, sealers, and undercoaters	350	100
Stains	250	
Stone consolidants	450	
Swimming pool coatings	340	
Traffic marking coatings	100	
Tub and tile refinish coatings	420	
Waterproofing membranes	250	
Wood coatings	275	
Wood preservatives	350	
Zinc-rich primers	340	

[1]Grams of VOC per liter of coating, including water and including exempt compounds.
[2]The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
[3]Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resource Board.

99.09.504.2.4. Verification. Verification of compliance with this section shall be provided at the request of the Department. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification;
2. Field verification of on-site product containers;
3. Other methods acceptable to the Department.

99.09.504.3. Carpet Systems. All new carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program;
2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350);
3. NSF/ANSI 140 at the Gold level; or
4. Scientific Certifications Systems Indoor Advantage™ Gold.

99.09.504.3.1. Carpet Cushion. All new carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

99.09.504.3.2. Carpet Adhesive. All carpet adhesive shall meet the requirements of Table 9.504.1.

99.09.504.4. Resilient Flooring Systems. Where new resilient flooring is installed, at least 50 percent of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RCFI) FloorScore program.

99.09.504.5. Composite Wood Products. New hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections as shown in Table 9.504.5.

99.09.504.5.1. Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following:

1. Product certifications and specifications;
2. Chain of custody certifications; or
3. Other methods acceptable to the Department.

TABLE 9.504.5
FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million.

PRODUCT	CURRENT LIMIT	JANUARY 1, 2012	JULY 1, 2012
Hardwood Plywood Veneer Core	0.05		
Hardwood Plywood Composite Core	0.08		0.05
Particle Board	0.09		
Medium Density Fiberboard	0.11		
Thin Medium Density Fiberboard[2]	0.21	0.13	

[1]Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333-96 (2002). For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.
[2]Thin medium density fiberboard has a maximum thickness of 8 millimeters.

99.09.505. INTERIOR MOISTURE CONTROL.

99.09.505.1. General. Buildings shall meet or exceed the provisions of the Los Angeles Building Standards Code.

99.09.505.2. Concrete Slab Foundations. Concrete slab foundations required to have a vapor retarder by Los Angeles Building Code, Chapter 19, shall also comply with this section.

99.09.505.2.1. Capillary Break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of ½ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06;
2. Other equivalent methods approved by the Department; or
3. A slab design specified by a licensed design professional.

99.09.505.3. Moisture Content of Building Materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed until it is inspected and found to be satisfactory by the building inspector.

Insulation products which are visibly wet or have high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet-applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

99.09.506. INDOOR AIR QUALITY AND EXHAUST.

99.09.506.1. Bathroom Exhaust Fans. New mechanical exhaust fans which exhaust directly from bathrooms shall comply with the following:

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building;
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible.

Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80 percent.

> **Note:** For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tub/shower combination.

99.09.507. ENVIRONMENTAL COMFORT.

99.09.507.1. Openings. New whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.

99.09.507.2. Heating and Air Conditioning System Design. New heating and air conditioning systems shall be sized, designed, and have their equipment selected using the following methods:

1. The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods;
2. Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods;
3. Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

> **Exception:** Use of alternate design temperatures necessary to ensure the systems function are acceptable.

99.09.508. OUTDOOR AIR QUALITY. (Reserved)

ARTICLE 9, DIVISION 10

MANDATORY MEASURES FOR ADDITIONS AND ALTERATIONS TO NONRESIDENTIAL AND HIGH-RISE RESIDENTIAL BUILDINGS

99.10.100. Scope. The provisions herein shall only apply to additions or alterations unless otherwise indicated. Legally existing portions of the building not affected by the addition or alteration may remain as previously permitted.

PLANNING AND DESIGN

99.10.101. GENERAL.

99.10.101.1. Purpose. The provisions of this division outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

99.10.102. DEFINITIONS.

99.10.102.1. Definitions. Refer to Section 5.102 of this code for definitions.

99.10.103. SITE SELECTION. (Reserved)

99.10.104. SITE PRESERVATION. (Reserved)

99.10.105. DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES. (Reserved)

99.10.106. SITE DEVELOPMENT.

99.10.106.1. Storm Water Drainage and Retention During Construction. Additions which disturb less than one acre of soil, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site:

1. Retention basins of sufficient size shall be utilized to retain storm water on the site;
2. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the Department; or
3. Compliance with City of Los Angeles' storm water management ordinance(s).

99.10.106.2. (Reserved)

99.10.106.3. (Reserved)

99.10.106.4. Bicycle Parking. Additions or alterations resulting in ten or more additional vehicular parking spaces shall be provided with permanently anchored bicycle racks within 200 feet of the building's entrance. The number of bicycle parking provided shall be equal to 5 percent of the new vehicular parking spaces being provided, rounded up to the next whole number.

99.10.106.5. Designated Parking. Additions or alterations resulting in additional vehicular parking shall designate a number of parking spaces for any combination of low-emitting, fuel- efficient, and carpool/van pool vehicles by means of a permanent marking or a sign as follows:

TABLE 10.106.5.2

NUMBER OF ADDITIONAL PARKING SPACES PROVIDED	NUMBER OF REQUIRED DESIGNATED SPACES
1-9	0
10-25	1
26-50	3
51-75	6
76-100	8
101-150	11
151-200	16
201 and over	At least 8 percent of total[1]

[1] When the application of this regulation results in the requirement of a fractional space, round up to the next whole number.

99.10.106.7. (Reserved)

99.10.106.8. Light Pollution Reduction. Comply with lighting power requirements in the California Energy Code, California Code of Regulations (CCR), Title 24, Part 6, and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR, Title 24, Part 1, using the following strategies:

1. Shield all exterior luminaires or provide cutoff luminaires per Section 132 (b) of the California Energy Code;
2. Contain interior lighting within each source;
3. Allow no more than .01 horizontal lumen footcandles to escape 15 feet beyond the site boundary; and
4. Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods.

Exceptions:

1. Los Angeles Building Code, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.
2. Emergency lighting and lighting required for nighttime security.

99.10.106.9. (Reserved)

99.10.106.10. Grading and Paving. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.

Exception: Additions and alterations not altering the drainage path.

ENERGY EFFICIENCY

99.10.201. GENERAL.

99.10.201.1. Scope. The provisions of this division shall establish means of conserving energy.

99.10.203. PERFORMANCE APPROACH.

99.10.203.1. Energy Performance. Using an Alternative Calculation Method approved by the California Energy Commission, calculate the building's TDV energy and CO_2 emissions, and compare it to the standard or "budget" building.

99.10.203.1.1. Energy Efficiency – Exceed California Energy Code, based on the 2008 Energy Efficiency Standards, by 15 percent.

Exception:

1. Buildings for which building plans were submitted for plan check to the Department and the plan check fee was paid prior to June 1, 2011.
2. Exceed the California Energy Code by ten percent, if using existing mechanical equipment.
3. Alterations.

99.10.204. PRESCRIPTIVE MEASURES. (Reserved)

99.10.210. ENERGY SYSTEMS.

99.10.210.1. ENERGY STAR Equipment and Appliances. New residential grade equipment and appliances provided and installed shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.

99.10.211. RENEWABLE ENERGY.

99.10.211.1. (Reserved)

99.10.211.2. (Reserved)

99.10.211.3. (Reserved)

99.10.211.4. Prewiring for Future Electrical Solar System. For additions resulting in more than 2,000 sq. ft. of new roof area, install conduit from the building roof, eave, or other location approved by the Department to the electrical service equipment. The conduit shall be labeled as per the Los Angeles Fire Department requirements.

> **Exception:** Buildings designed and constructed with a solar photovoltaic system or an alternate system with means of generating electricity at time of final inspection.

99.10.211.4.1. Off-Grid Prewiring for Future Solar. If battery storage is anticipated, conduit shall run to a location within the building that is weather-proof and separated from occupied spaces.

WATER EFFICIENCY AND CONSERVATION

99.10.301. GENERAL.

99.10.301.1. Scope. The provisions of this division shall establish means of conserving water used indoors, outdoors, and in wastewater conveyance.

99.10.302. DEFINITIONS.

99.10.302.1. Definitions. Refer to Section 5.302 of this code for definitions.

99.10.303. INDOOR WATER USE.

99.10.303.1. Meters. For every addition, separate meters or metering device shall be installed for the uses described in Sections 99.10.303.1.1 and 99.10.303.1.2.

99.10.303.1.1. Additions in Excess of 50,000 Square Feet. Separate submeters shall be installed for each tenant space within an addition when the tenant is projected to consume more than 100 gal/day.

99.10.303.1.2. Excess Consumption. Any addition or space within an addition that is projected to consume more than 1,000 gal/day.

99.10.303.2. Water Use Reduction. New plumbing fixtures and fittings shall not exceed the maximum allowable flow rate specified in Table 10.303.2.3.

99.10.303.3. Multiple Showerheads Serving One Shower. For newly installed showerheads, when single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the maximum allowable flow rate column contained in Table 10.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time.

Exception: When a calculation demonstrating a 20 percent reduction in the building "water use" baseline as established in Table 10.303.2.2 is provided, the maximum flow rate may be increased to 2.5 gpm @ 80 psi.

TABLE 10.303.2.2
INDOOR WATER USE BASELINE[4]

FIXTURE TYPE	FLOW RATE[2]	DURATION	DAILY USES	OCCUPANTS[3]
Showerheads	2.5 gpm @ 80 psi	8 min.	1	X
Kitchen faucets	2.2 gpm @ 60 psi	4 min.	1	X
Replacement aerators	2.2 gpm @ 60 psi			X
Wash fountains	2.2 [rim space (in.)/20 gpm @ 60 psi]			X
Metering faucets	0.25 gallons/cycle	.25 min.	3	X
Metering faucets for wash fountains	.25 [rim space (in.)/20 gpm @ 60 psi]	.25 min.		X
Gravity tank type water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer tank water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Flushometer valve water closets	1.6 gallons/flush	1 flush	1 male[1] 3 female	X
Urinals	1.0 gallons/flush	1 flush	2 male	X

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

[1]The daily use number shall be increased to three if urinals are not installed in the room.
[2]The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20, California Code of Regulations; where a conflict occurs, the CEC standards shall apply.
[3]Refer to Table A, Chapter 4, Los Angeles Plumbing Code, for occupant load factors.
[4]Use Worksheet WS-1 to calculate base line water use.

TABLE 10.303.2.3
FIXTURE FLOW RATES

FIXTURE TYPE	FLOW RATE	MAXIMUM ALLOWABLE FLOW RATE
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Kitchen faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Wash fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]	1.8 [rim space (in.) / 20 Gpm @ 60 psi]
Metering faucets	0.25 gallons/cycle	0.2 gallons/cycle
Metering faucets for wash fountains	.25 [rim space (in.) / 20 gpm @ 60 psi]	.20 [rim space (in.) / 20 Gpm @ 60 psi]
Gravity tank type water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer tank water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Flushometer valve water closets	1.6 gallons/flush	1.28 gallons/flush[1]
Urinals	1.0 gallons/flush	0.125 gallons/flush

[1]Includes single and dual flush water closets with an effective flush of 1.28 gallons or.

Single flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.

Dual flush toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

99.10.303.4. Wastewater Reduction. (Reserved)

99.10.303.6. Plumbing Fixtures and Fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 10.503.6.

TABLE 10.303.6
STANDARDS FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

REQUIRED STANDARDS	
Water closets (toilets) – flushometer valve type single flush, maximum flush volume	ASME A112.19.2/CSA B45.1 – 1.28 gal (4.8 L)
Water closets (toilets) – flushometer valve type dual flush, maximum flush volume	ASME A112.19.14 and USEPA WaterSense Tank-Type High Efficiency Toilet Specification – 1.28 gal (4.8 L).
Water closets (toilets) – tank-type	U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification

Urinals, maximum flush volume	ASME A112.19.2/CSA B45.1 – 0.5 gal (1.9 L)
Urinals, nonwater urinals	ASME A112.19.19 (vitreous china) ANSI Z124.9–2004 or IAPMO Z124.9 (plastic)
Public lavatory faucets: Maximum flow rate – 0.5 gpm (1.9 L/min)	ASME A112.18.1/CSA B125.1
Public metering self-closing faucets: Maximum water use – 0.25 gal (1.0 L) per metering cycle	ASME A112.18.1/CSA B125.1
Residential bathroom lavatory sink faucets: Maximum flow rate – 1.5 gpm (5.7 L/min)	ASME A112.18.1/CSA B125.1

99.10.304. OUTDOOR WATER USE.

99.10.304.1. Water Budget. (Reserved)

99.10.304.2. Outdoor Potable Water Use. Building additions or alterations resulting in a water service upgrade and are located on sites with 1,000 square feet or more of cumulative landscaped areas served by potable water service, shall have separate meters or submeters for indoor and outdoor potable water use.

99.10.304.3. Irrigation Design. Building addition and alteration projects, on sites with 1,000 square feet or more of cumulative landscaped areas being served by a potable water service, shall have irrigation controllers and sensors that meet 99.10.304.3.1 and the manufacturer's recommendations.

Exception:

1. Additions with a permit valuation of less than $50,000.

99.10.304.3.1. Irrigation Controllers. When new automatic irrigation system controllers are installed in conjunction with the addition or alteration, the controllers shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

99.10.305. WATER REUSE SYSTEMS. (Reserved)

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

99.10.401. GENERAL.

99.10.401.1. Scope. The provisions of this division shall outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, and building commissioning or testing, adjusting and balancing.

99.10.402. DEFINITIONS.

99.10.402.1. Definitions. Refer to Section 5.402 of this code for definitions.

99.10.403. FOUNDATION SYSTEMS. (Reserved)

99.10.404. EFFICIENT FRAMING TECHNIQUES. (Reserved)

99.10.405. MATERIAL SOURCES. (Reserved)

99.10.406. ENHANCED DURABILITY AND REDUCED MAINTENANCE. (Reserved)

99.10.407. WATER RESISTANCE AND MOISTURE MANAGEMENT.

99.10.407.1. Weather Protection. Provide a weather-resistant exterior wall and foundation envelope as required by Los Angeles Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices), manufacturer's installation instructions, or local ordinance, whichever is more stringent.

99.10.407.2. Moisture Control. Employ moisture control measures by the following methods.

99.10.407.2.1. Sprinklers. For new systems, design and maintain landscape irrigation systems to prevent spray on structures.

99.10.407.2.2. Entries and Openings. Design new exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings.

Notes:

1. Use features such as overhangs and recesses, and flashings integrated with a drainage plane.
2. Use nonabsorbent floor and wall finishes within at least two feet around and perpendicular to such openings.

99.10.408. CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING.

99.10.408.1. Construction Waste Diversion. Comply with Section 66.32 *et seq.* of the Los Angeles Municipal Code.

99.10.408.2. (Reserved)

99.10.408.3. (Reserved)

99.10.408.4. Excavated Soil and Land Clearing Debris. (Reserved)

99.10.409. LIFE CYCLE ASSESSMENT. (Reserved)

99.10.410. BUILDING MAINTENANCE AND OPERATION.

99.10.410.1. Recycling by Occupants. Additions exceeding 30 percent of existing floor area shall provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastic, and metals.

99.10.410.2. (Reserved)

99.10.410.3. (Reserved)

99.10.410.4. Testing and Adjusting. Testing and adjusting of systems shall be required for any new system.

99.10.410.4.1. (Reserved)

99.10.410.4.2. Systems. Develop a written plan of procedures for testing and adjusting new systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project:

1. HVAC systems and controls;
2. Indoor and outdoor lighting and controls;
3. Water heating systems;
4. Renewable energy systems;
5. Landscape irrigation systems;
6. Water reuse systems.

99.10.410.4.3. Procedures. Perform testing and adjusting procedures in accordance with industry best practices and applicable standards on each system as determined by the building official.

99.10.410.4.3.1. HVAC Balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; or Associated Air Balance Council National Standards or as approved by the building official.

99.10.410.4.4. Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

99.10.410.4.5. Operation and Maintenance (O & M) Manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each new system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

99.10.410.4.5.1. Inspections and Reports. Include a copy of all inspection verifications and reports required by the Department.

ENVIRONMENTAL QUALITY

99.10.501. GENERAL.

99.10.501.1. Scope. The provisions of this division shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants, and neighbors.

99.10.502. DEFINITIONS.

99.10.502.1. Definitions. Refer to Section 5.502 of this code for definitions.

99.10.503. FIREPLACES.

99.10.503.1. General. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

99.10.503.1.1. Woodstoves. Woodstoves and pellet stoves shall comply with US EPA Phase II emission limits.

99.10.504. POLLUTANT CONTROL.

99.10.504.1. (Reserved)

99.10.504.2. (Reserved)

99.10.504.3. Covering of Duct Openings and Protection of Mechanical Equipment During Construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system.

99.10.504.4. Finish Material Pollutant Control. Finish materials shall comply with Sections 10.504.4.1 through 10.504.4.4.

99.10.504.4.1. Adhesives, Sealants, and Caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 10.504.4.1 and 10.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene), except for aerosol products as specified in subsection 2, below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

TABLE 10.504.4.1
ADHESIVE AND SEALANT VOC LIMIT[1,2]
Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	Current VOC Limit
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65

VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesive not specifically listed	50
Specialty Applications	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
Substrate Specific Applications	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

[1] If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

[2] For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF.

TABLE 10.504.4.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
Architectural	250
Marine Deck	760
Nonmembrane roof	300
Roadway	250

Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural Non porous Porous	 250 775
Modified bituminous	500
Marine deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168: http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF.

99.10.504.4.3. Paints and Coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 10.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 10.504.4.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 10.504.4.3 shall apply.

99.10.504.4.3.1. Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the PWMIR Limits for ROC in section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

TABLE 10.504.4.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[2,3]
Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORIES	EFECTIVE 1/1/2010	EFFECTIVE 1/1/2012
Flat coatings	50	
Nonflat coatings	100	
Nonflat high gloss coatings	150	
Specialty Coatings		
Aluminum roof coatings	400	

Basement specialty coatings	400	
Bituminous roof coatings	50	
Bituminous roof primers	350	
Bond breakers	350	
Concrete curing compounds	350	
Concrete/masonry sealers	100	
Driveway sealers	50	
Dry fog coatings	150	
Faux finishing coatings	350	
Fire resistive coatings	350	
Floor coatings	100	
Form-release compounds	250	
Graphic arts coatings (sign paints)	500	
High temperature coatings	420	
Industrial maintenance coatings	250	
Low solids coatings[1]	120	
Magnesite cement coatings	450	
Mastic texture coatings	100	
Metallic pigmented coatings	500	
Multicolor coatings	250	
Pretreatment wash primers	420	
Primers, sealers and undercoaters	100	
Reactive penetrating sealers	350	
Recycled coatings	250	
Roof coatings	50	
Rust preventative coatings	400	250
Shellacs: Clear Opaque	 730 550	
Specialty primers, sealers and undercoaters	350	100
Stains	250	
Stone consolidants	450	
Swimming pool coatings	340	
Traffic marking coatings	100	
Tub and tile refinish coatings	420	
Waterproofing membranes	250	

Wood coatings	275	
Wood preservatives	350	
Zinc-rich primers	340	

[1]Grams of VOC per Liter of coating, including water and including exempt compounds
[2]The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
[3]Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

99.10.504.4.3.2. Verification. Verification of compliance with this section shall be provided at the request of the Department. Documentation may include, but is not limited to, the following:

1. Manufacturer's product specification;
2. Field verification of on-site product containers;
3. Other methods acceptable to the Department.

99.10.504.4.4. Carpet Systems. All new carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program;
2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350);
3. NSF/ANSI 140 at the Gold level; or
4. Scientific Certifications Systems Sustainable Choice.

99.10.504.4.4.1. Carpet Cushion. All new carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

99.10.504.4.4.2. Carpet Adhesive. All carpet adhesive shall meet the requirements of Table 10.504.4.1.

99.10.504.4.5. Composite Wood Products. New hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 10.504.4.5.

99.10.504.4.5.1. Early Compliance. (Reserved)

99.10.504.4.5.2. Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following:

1. Product certifications and specifications;
2. Chain of custody certifications; or

3. Other methods acceptable to the Department

TABLE 10.504.4.5
FORMALDEHYDE LIMITS[1]
Maximum Formaldehyde Emissions in Parts per Million.

PRODUCT	CURRENT LIMIT	JANUARY 1, 2012	JULY 1, 2012
Hardwood plywood veneer core	0.05		
Hardwood plywood composite core	0.08		0.05
Particle board	0.09		
Medium density fiberboard	0.11		
Thin medium density fiberboard [2]	0.21	0.13	

[1]Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333-96 (2002). For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.
[2]Thin medium density fiberboard has a maximum thickness of eight millimeters.

99.10.504.4.6. Resilient Flooring Systems. For 50 percent of floor area receiving new resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 Collaborative for High Performance Schools (CHPS) criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.

99.10.504.4.6.1. Verification of Compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

99.10.504.5. Filters. In new mechanical systems, provide air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.

99.10.504.6. (Reserved)

99.10.504.7. Environmental Tobacco Smoke (ETS) Control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of new building entries, new outdoor air intakes and new operable windows; or as enforced by any other ordinance, whichever is more stringent.

99.10.505. INDOOR MOISTURE CONTROL.

99.10.505.1. Indoor Moisture Control. Buildings shall meet or exceed the provisions of Los Angeles Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not applicable

to low-rise residential occupancies, see Section 99.10.407.2 of this code.

99.10.506. INDOOR AIR QUALITY.

99.10.506.1. Outside Air Delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 (Requirements For Ventilation) of the California Energy Code, CCR, Title 24, Part 6, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

99.10.506.2. Carbon Dioxide (CO_2) Monitoring. For additions equipped with demand control ventilation, CO_2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c).

99.10.507. ENVIRONMENTAL COMFORT.

99.10.507.1. (Reserved)

99.10.507.2. (Reserved)

99.10.507.3. (Reserved)

99.10.507.4. Acoustical Control. Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.

99.10.507.4.1. Exterior Noise Transmission. New wall and roof-ceiling assemblies making up the building envelope shall have an STC of at least 50, and new exterior windows shall have a minimum STC of 30 for any of the following building locations:

1. Within 1000 ft. (300 m.) of right of ways of freeways.
2. Within 5 mi. (8 km.) of airports serving more than 10,000 commercial jets per year.

Exception: Buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, as determined by the Department, such as factories, stadiums, storage, enclosed parking structures, and utility buildings.

99.10.507.4.2. Interior Sound. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Exception: Alterations.

99.10.508. OUTDOOR AIR QUALITY.

99.10.508.1. Ozone Depletion and Greenhouse Gas Reductions. Installations of HVAC, refrigeration, and fire suppression equipment shall comply with Sections 10.508.1.1 and 10.508.1.2.

99.10.508.1.1. Chlorofluorocarbons (CFCs.) Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

99.10.508.1.2. Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

ARTICLE 9, DIVISION 11

VOLUNTARY MEASURES FOR NEWLY CONSTRUCTED LOW-RISE RESIDENTIAL BUILDINGS

99.11.101. INTENT. This section shall set forth the Voluntary Measures for Newly Constructed Low-Rise Residential Buildings.

A4.105.2 Reuse of Materials. Use salvaged, refurbished or reused materials from the following categories, for a minimum of 2.5 percent of the total value, based on estimated cost of materials on the project:

1. Light fixtures
2. Plumbing fixtures
3. Doors and trim
4. Masonry (re-used masonry may only be used for flatwork)
5. Electrical devices
6. Appliances
7. Foundations or portions of foundations

Note: Reused material must be in compliance with the appropriate Title 24 and Los Angeles Building Standards Code requirements; and be in the original listed conditions.

A4.106.2.3. Topsoil Protection. Topsoil shall be protected or saved for reuse as specified in this section.

Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.

Note: Protection from erosion includes covering with tarps, straw, mulch, chipped wood, vegetative cover, or other means acceptable to the Department to protect the topsoil for later use.

Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area. Heavy equipment

or vehicle traffic and material storage outside the construction area shall be limited to areas that are planned to be paved.

A4.106.7. Bicycle Parking. For multi-family dwellings, provide secure bicycle parking for 15 percent, rounded up to the next whole number, of the total number of bedrooms, with a minimum of one space.

A4.205.2. Window Shading. Exterior shading at least 18 inches in depth is provided on south and west windows by at least one of the following methods:

1. Permanently attached exterior awnings or louvers;
2. Porch or patio covers;
3. Overhangs.

A4.208.3. Distribution Systems. Where the hot water source is more than ten feet from a fixture, the potable water distribution system shall convey hot water using one of the following methods:

1. A central manifold plumbing system with parallel piping configuration ("home-run system") is installed using the smallest diameter piping allowed by the Los Angeles Plumbing Code or an approved alternate;
2. The plumbing system design incorporates the use of a demand controlled circulation pump;
3. A gravity-based hot water recirculation system is used;
4. A timer-based hot water recirculation system is used;
5. Other methods approved by the Department.

A4.303.2. Nonwater Supplied Urinals. Non water supplied urinals are installed throughout.

A4.304.1. Low-water Consumption Irrigation System. Install a low-water consumption irrigation system which minimizes the use of spray type heads. Spray type irrigation may only be used at turf areas. The remaining irrigation systems shall use only the following types of low-volume irrigation systems:

1. Drip irrigation;
2. Bubblers;
3. Drip emitters;
4. Soaker hose;
5. Stream-rotator spray heads;
6. Other systems acceptable to the Department.

A4.403.2. Reduction in Cement Use. As allowed by the Los Angeles Building Code, cement used in foundation mix design shall be reduced as follows:

Tier 1. Not less than a 20% reduction in cement use.
Tier 2. Not less than a 25% reduction in cement use.

Note: Products commonly used to replace cement in concrete mix designs include, but are not limited to:

1. Fly ash;
2. Slag;
3. Silica fume;
4. Rice hull ash.

A4.404.2. Building dimensions and layouts are designed to minimize waste by one or more of the following measures in at least 80 percent of the structure:

1. Building design dimensions in 2 foot increments are used;
2. Windows and doors are located at regular 16" or 24" stud positions;
3. Other methods acceptable to the Department.

A4.404.3. Building Systems. Use pre-manufactured building systems to eliminate solid sawn lumber whenever possible. One or more of the following pre-manufactured building systems is used throughout:

1. Composite floor joist or pre-manufactured floor truss framing;
2. Composite roof rafters or pre-manufactured roof truss framing;
3. Panelized (SIPS, ICF or similar) wall framing system;
4. Other methods approved by the Department.

A4.405.1. Prefinished Building Materials. Utilize prefinished building materials which do not require additional painting or staining at all applicable locations throughout the building.

Use one or more of the following building materials that do not require additional resources for finishing:

1. Exterior trim not requiring paint or stain;
2. Windows not requiring paint or stain; or
3. Siding or exterior wall coverings which do not require paint or stain.

A4.405.2. Concrete Floors. 75 percent of all slab-on-grade and structural concrete slab floors use no additional coverings including but not limited to stained, natural, or stamped concrete floors.

Note: Uncovered floors must still remain durable and maintain any required acoustical insulation required elsewhere by the Los Angeles Building Standards.

A4.405.4. Use of Building Materials From Renewable Sources. One or more of the following materials manufactured from rapidly renewable sources or agricultural by-products is used for a minimum of 2.5 percent of the total value, based on estimated cost of materials on the project:

1. Insulation;
2. Bamboo or cork;
3. Engineered wood products;
4. Agricultural based products; or
5. Solid wood products.

Note: The intent of this section is to utilize building materials and products which are typically harvested within a 10-year or shorter cycle.

A4.407.1. Drainage Around Foundations. Install non-required foundation and landscape drains which discharge to a dry well, sump, bioswale or other approved on-site location.

A4.407.6. Door Protection. Exterior doors to the dwelling are covered to prevent water intrusion by one or more of the following:

1. A non-retractable awning at least 4 feet in depth is installed;
2. The door is protected by a roof overhang at least 4 feet in depth;
3. The door is recessed at least 4 feet; or
4. Other methods which provide equivalent protection.

A4.407.7. Roof Overhangs. When permitted by the Los Angeles Municipal Code, a permanent overhang or non-retractable awning at least 2 feet in depth is provided at all exterior walls.

A4.408.1. Enhanced Construction Waste Reduction. Non-hazardous construction and demolition debris generated at the site is diverted to recycle or salvage in compliance with one of the following:

Tier 1. At least a 65% reduction; or
Tier 2. At least a 75% reduction.

A4.601.2. Prerequisite Measures. Tier 1 and Tier 2 thresholds require compliance with the mandatory provisions of this code and incorporation of the required prerequisite measures listed in Subsection A4.601.4.2 for Tier 1 and A4.601.5.2 for Tier 2. Prerequisite measures are also identified in the City of Los Angeles Residential Checklist for Newly-Constructed Buildings in Subsection A4.602.

A4.601.5.2. Prerequisite and Elective Measures for Tier 2. In addition to the mandatory measures, compliance with the following prerequisites and elective measures from Appendix A4 is also required to achieve Tier 2 status.

1. From Subsection A4.1, Planning and Design.
   1.1. Comply with the topsoil protection requirements for Tier 1 and Tier 2 in Subsection A4.106.2.3.
   1.2. Comply with the 30 percent permeable paving requirements in Subsection A4.106.4.

1.3. Comply with the cool roof requirements in Subsection A4.106.5.
1.4. Comply with at least four elective measures selected from Subsection A4.1.

2. From Subsection A4.2, Energy Efficiency.
2.1. Exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards by 30 percent.
2.2. Comply with at least six elective measures selected from Division A4.2.

3. From Subsection A4.3, Water Efficiency and Conservation.
3.1. Comply with the Tier 1 reduced flow rate for kitchen sink faucets in Subsection A4.303.1.
3.2. Comply with the Tier 2 dishwasher requirements in Subsection A4.303.1.
3.3. Comply with the Tier 2 potable water use reduction for landscape irrigation design in Subsection A4.304.4.
3.4. Comply with at least two elective measures selected from Subsection A4.3.

4. From Subsection A4.4, Material Conservation and Resource Efficiency.
4.1. Comply with the 25 percent cement reduction requirements in Subsection A4.403.2.
4.2. Comply with the 15 percent recycled content requirements in Subsection A4.405.3.
4.3. Comply with the 75 percent reduction in construction waste in Subsection A4.408.1.
4.4. Comply with at least four elective measures selected from Subsection A4.4.

5. From Subsection A4.5, Environmental Quality.
5.1. Comply with the 90 percent resilient flooring systems requirements in Subsection A4.504.2.
5.2. Comply with the thermal insulation requirements for Tier 1 and Tier 2 in Subsection A4.504.3.
5.3. Comply with at least one elective measure selected from Subsection A4.5.

Note: The City of Los Angeles Low-Rise Residential Checklist for Newly-Constructed Buildings contained in Section 99.11.602 may be used to show which elective measures are selected.

99.11.602 CITY OF LOS ANGELES LOW-RISE RESIDENTIAL CHECKLIST FOR NEWLY-CONSTRUCTED BUILDINGS

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
PLANNING AND DESIGN			
Site Selection			
A4.103.1 A site which complies with at least one of the following characteristics is selected: 1. An infill site is selected. 2. A greyfield site is selected. 3. An EPA-recognized Brownfield site is selected.		☐ ☐ ☐	☐ ☐ ☐
Site Preservation			
A4.104.1 An individual with oversight responsibility for the project has participated in an educational program promoting environmentally friendly design or development and has provided training or instruction to appropriate entities.		☐	☐
Deconstruction and Reuse of Existing Materials			
A4.105.2 Existing buildings are disassembled for reuse or recycling of building materials. The proposed structure utilizes at least one of the following materials which can be easily reused: 1. Light fixtures 2. Plumbing fixtures 3. Doors and trim 4. Masonry (re-used for flatwork) 5. Electrical devices 6. Appliances 7. Foundations or portions of foundations		☐	☐
Site Development			

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.106.2 A plan is developed and implemented to manage storm water drainage during construction.	☒		
A4.106.3 The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.	☒		
A4.106.1 Orient buildings to optimize the use of solar energy with the long side of the house oriented within 30° of south.		☐	☐
A4.106.2.1 Soil analysis is performed by a licensed design professional and the findings utilized in the structural design of the building.		☐	☐
A4.106.2.2 Soil disturbance and erosion are minimized by at least one of the following: 1. Natural drainage patterns are evaluated and erosion controls are implemented to minimize erosion during construction and after occupancy. 2. Site access is accomplished by minimizing the amount of cut and fill needed to install access roads and driveways. 3. Underground construction activities are coordinated to utilize the same trench, minimize the amount of time the disturbed soil is exposed and the soil is replaced using accepted compaction methods.		☐ ☐ ☐	☐ ☐ ☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.106.2.3 Topsoil shall be protected or saved for reuse as specified in this section. Tier 1. Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion. Tier 2. The construction area shall be identified and delineated by fencing or flagging to limit construction activity to the construction area.		☒[2]	☒[2] ☒[2]
A4.106.3 Postconstruction landscape designs accomplish one or more of the following: 1. Areas disrupted during construction are restored to be consistent with native vegetation species and patterns. 2. Limit turf areas to the greatest extent possible. a. Not more than 50 percent for Tier 1. b. Not more than 25 percent for Tier 2. 3. Utilize at least 75 percent native Californian or drought tolerant plant and tree species appropriate for the climate zone region. 4. Hydrozoning irrigation techniques are incorporated into the landscape design.		☐ ☐ ☐ ☐	☐ ☐ ☐ ☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.106.4 Permeable paving is utilized for the parking, walking, or patio surfaces in compliance with the following. Tier 1. Not less than 20 percent of the total parking, walking, or patio surfaces shall be permeable. Tier 2. Not less than 30 percent of the total parking, walking, or patio surfaces shall be permeable.		☒[2]	☒[2]
A4.106.5 Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum aged Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5(1) and A4.106.5(2). Tier 1 roof covering shall meet or exceed the values contained in Table A4.106.5(1). Tier 2 roof covering shall meet or exceed the values contained in Table A4.106.5(2).		☒[2]	☒[2]
A4.106.6 For one- or two- family dwellings and townhouses, provide a minimum of: 1. A minimum number of 208/240 V 40 amp, grounded AC outlets equal to five percent of the total number of parking spaces, or 2. Panel capacity and conduit installed for future installation of electrical outlets, or 3. Additional service capacity, space for future meter, and conduit for future installation of electrical outlets.			

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.106.7 Bicycle parking. For multi-family dwellings, provide secure bicycle parking for 15 percent of the total number of bedrooms.		☐	☐
ENERGY EFFICIENCY			
General			
Performance Approach			
A4.203.1 Exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards requirements by 15 percent.		☒[2]	
A4.203.1 Exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards requirements by 30 percent.			☒[2]
Energy Reduction			
A4.204.1 Prescriptive Approach. Equipment and fixtures shall comply with the following: 1. Installed gas-fired space heating equipment shall have an Annual Fuel Utilization Ratio (AFUE) of .90 or higher. 2. Installed electric heat pumps shall have a Heating Seasonal Performance Factor (HSFP) of 8.0 or higher. 3. Installed cooling equipment shall have a Seasonal Energy Efficiency Ratio (SEER) higher than 13.0 and an Energy Efficiency Ratio (EER) of at least 11.5. 4. Installed tank type water heaters shall have an Energy Factor (EF) higher than .6. 5. Installed tankless water heater	As applicable ☒ 6/01/11 ☒ 6/01/11 ☒ 6/01/11 ☒ 6/01/11 ☒ 6/01/11		

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
shall have an Energy Factor (EF) higher than .80.	☒ 6/01/11		
6. Perform duct leakage testing to verify a total leakage rate of less than 6 percent of the total fan flow.	☒ 6/01/11		
7. Building lighting in the kitchen and bathrooms shall consist of at least 90 percent ENERGY STAR qualified hard-wired fixtures.	☒ 6/01/11		
8. Installed swimming pool circulating pump and motor combinations shall be multi-speed and variable-speed. The pump motor controls shall have the capability of operating the pump at a minimum of three speeds; low speed, medium speed, and high speed. The daily low speed shall not exceed 300 watts. The daily medium speed shall be adjustable.	☒ 6/01/11		
Exception: Projects exceeding the California Energy Code requirements by 15 percent using an Alternative Calculation Method (ACM) approved by the California Energy Commission.			
Building Envelope			
A4.205.1 Radiant roof barrier is installed in Climate Zones 2, 4, and 8 through 15.		☐	☐
A4.205.2 Exterior shading at least 18 inches in depth is provided on south and west windows.			
Air Sealing Package			

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A.4.206.1 Third party blower door test is conducted and passed to verify building envelope tightness.		☐	☐
HVAC Design, Equipment and Installation			
A4.207.1 Radiant, hydronic, ground source and other innovative space heating and cooling systems included in the proposed design shall be designed using generally accepted industry-approved guidelines and design criteria.		☐	☐
A4.207.2 An HVAC system commissioning plan is developed and the following items, as appropriate, pertaining to the heating and cooling systems are inspected and certified by an independent third party agency: 1. Verify compliance with the manufacturer's recommended start-up procedures. 2. Verify refrigerant charge by super-heat or other methods specified by the manufacturer. 3. Burner is set to fire at the nameplate input rating. 4. Temperature drop across the evaporator is within the manufacturers recommended range. 5. Test and verify air flow to be within ten percent of the initial design air flow. 6. Static pressure within the duct system is within the manufacturer's acceptable range. 7. Verify that the whole house and exhaust ventilation systems meet Title 24 requirements.		☐	☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
8. Verify that the recommended maintenance procedures and schedules are documented and provided to the home owner.			
A4.207.2.3 Results of the commissioning inspection shall be included in the Operation and Maintenance Manual required in Section 4.410.1.		☐	☐
A4.207.4 Install gas-fired (natural or propane) space heating equipment with an Annual Fuel Utilization Ratio (AFUE) of .90 or higher.		☐	☐
A4.207.5 If an electric heat pump must be used, select equipment with a Heating Seasonal Performance Factor (HSPF) of 8.0 or higher.		☐	☐
A4.207.6 When climatic conditions necessitate the installation of cooling equipment, select cooling equipment with a Seasonal Energy Efficiency Ratio (SEER) higher than 13.0 and an Energy Efficiency Ratio (EER) of at least 11.5.		☐	☐
A4.207.7 Install ductwork to comply with at least one of the following: 1. Install ducts within the conditioned envelope of the building. 2. Install ducts in an underfloor crawl space. 3. Use ducts with an R-6 insulation value or higher. 4. Install ductwork which is buried in the ceiling insulation.		☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
A4.207.8 Perform duct leakage testing to verify a total leakage rate of less than 6 percent of the total fan flow.		☐	☐
A4.207.9 In climate zones 2, 4, and			

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
8 through 15 install a whole-house fan with insulated louvers or an insulated cover.		☐	☐
A4.207.10 ENERGY STAR ceiling fans are installed in all bedrooms and living areas.		☐	☐
Water Heating Design, Equipment and Installation			
A4.208.1 The Energy Factor (EF) for a gas fired storage water heater is higher than .60.		☐	☐
A4.208.2 The Energy Factor (EF) for a gas fired tankless water heater is .80 or higher.		☐	☐
A4.208.3 Where the hot water source is more than ten feet from a fixture, the potable water distribution system shall convey hot water using a method designed to minimize wait time for hot water to arrive at the fixture.		☐	☐
Lighting			
A4.209.1 Building lighting consists of at least 90 percent ENERGY STAR. qualified hard-wired fixtures.		☐	☐
Appliances			
A4.210.1 Each appliance provided and installed meets ENERGY STAR if an ENERGY STAR designation is applicable for that appliance.	☒		
Renewable Energy			
A4.211.1 Install a solar photovoltaic (PV) system in compliance with the California Energy Commission New Solar Homes Partnership (NSHP).[1, 2] Install energy efficiency measures meeting either Tier I or Tier II below. Tier 1. Exceed the California Energy Code requirements, based on the 2008 Energy		☐	☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
Efficiency Standards requirements by 15 percent. Tier 2. Exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards requirements by 30 percent. Solar water heating may be used to assist in meeting the energy efficiency requirements of either Tier I or Tier II. [1] In addition, for either Tier I or II, each appliance provided by the builder must be ENERGY STAR if an ENERGY designation is applicable for that appliance. [2] Information on NSHP incentives available through the California Energy Commission may be obtained at the "Go Solar California" website: www.GoSolarCalifornia.ca.gov/nshp/index.html.			
A4.211.2 A solar water heating system is installed.		☐	☐
A4.211.3 Space on the roof surface and penetrations through the roof surface are provided for future solar installation.	☒		
A4.211.4 A minimum one inch conduit is provided from the electrical service equipment for the future installation of a photovoltaic (PV) or other electrical solar system.	☒		
A4.211.4.1 A minimum of 250 square feet of contiguous unobstructed roof area shall be provided for the installation of future photovoltaic or other electrical solar panels. The location shall be suitable for installing future solar panels as determined by the designer.	☒		

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
Elevators, Escalators and Other Equipment			
WATER EFFICIENCY AND CONSERVATION			
Indoor Water Use			
A4.303.1 Indoor water use shall be reduced by at least 20 percent using one of the follow methods. 1. Water saving fixtures or flow restrictors shall be used. 2. A 20 percent reduction in baseline water use shall be demonstrated.	☒ 7/01/11		
A4.403.2 When using the calculation method specified in Section 4.303.1, multiple showerheads shall not exceed maximum flow rates.	☒ 7/01/11		
A4.303.3 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements.	☒ 7/01/11		
A4.303.1 Kitchen faucets and dishwashers shall comply with this section. Tier 1. The maximum flow rate at a kitchen sink faucet shall not be greater than 1.5 gallons per minute at 60 psi. Tier 2. In addition to the kitchen faucet requirements for Tier 1, dishwashers in Tier 2 buildings shall be ENERGY STAR qualified and not use more than 5.8 gallons of water per cycle.		☒[2]	☒[2] ☒[2]
A4.303.2 Nonwater supplied urinals are installed.		☐	☐
Outdoor Water Use			
A4.304.1 Automatic irrigation systems installed at the time of final	☒		

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
inspection shall be weather-based.			
A4.304.1 Install a low-water consumption irrigation system which minimizes the use of spray type heads.		☐	☐
A4.304.2 A rainwater capture, storage and re-use system is designed and installed.		☐	☐
A4.304.3 A water budget shall be developed for landscape irrigation.		☐	☐
A4.304.4 Provide water efficient landscape irrigation design that reduces the use of potable water. Tier 1. Does not exceed 65 percent of ETo times the landscape area. Tier 2. Does not exceed 60 percent of ETo times the landscape area.		☒[2]	☒[2]
A4.304.5 A landscape design is installed which does not utilize potable water.		☐	☐
WATER REUSE SYTEMS			
A4.305.1 Piping is installed to permit future use of a graywater irrigation system served by the clothes washer or other fixtures.		☐	☐
A4.305.2 Recycled water piping is installed.		☐	☐
A4.305.3 Recycled water is used for landscape irrigation.		☐	☐
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY			
Foundation Systems			
A4.403.2 Cement use in foundation mix design is reduced. Tier 1. Not less than a 20 percent reduction in cement use. Tier 2. Not less than a 25 percent reduction in cement use.		☒[2]	☒[2]

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
Efficient Framing Techniques			
A4.404.2 Building dimensions and layouts are designed to minimize waste.		☐	☐
A4.404.3 Use pre-manufactured building systems to eliminate solid sawn lumber whenever possible.		☐	☐
A4.404.4 Material lists are included in the plans which specify material quantity and provide direction for on-site cuts.		☐	☐
Material Sources			
A4.405.1 One or more of the following building materials, that do not require additional resources for finishing are used at all applicable locations throughout the building: 1. Exterior trim not requiring paint or stain. 2. Windows not requiring paint or stain. 3. Siding or exterior wall coverings which do not require paint or stain.		☐	☐
A4.405.2 75 percent of all slab-on-grade and structural concrete slab floors use no additional coverings including but not limited to stained, natural, or stamped concrete floors.		☐	☐
A4.405.3 Post-consumer or pre-consumer recycled content value (RCV) materials are used on the project. Tier 1. Not less than a ten percent recycled content value. Tier 2. Not less than a 15 percent recycled content value.		☒[2]	☒[2]
A4.405.4 Renewable source building products are used for a minimum of 2.5 percent of the total		☐	☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
value, based on estimated cost of materials on the project.			
Enhanced Durability and Reduced Maintenance			
A4.406.1 Joints and openings. Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the Department.	☒		
Water Resistance and Moisture Management			
A4.407.1 Install foundation and landscape drains.		☐	☐
A4.407.2 Install gutter and downspout systems to route water at least five feet away from the foundation or connect to landscape drains which discharge to a dry well, sump, bioswale, rainwater capture system or other approved on-site location.		☐	☐
A4.407.3 Provide flashing details on the building plans and comply with accepted industry standards or manufacturer's instructions.	☒		
A4.407.4 Protect building materials delivered to the construction site from rain and other sources of moisture.	☒		
A4.407.6 Exterior doors to the dwelling are protected to prevent water intrusion.		☐	☐
A4.407.7 When permitted by the Los Angeles Municipal Code, a permanent overhang or non-retractable awning at least two feet		☐	☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
in depth is provided.			
Construction Waste Reduction, Disposal and Recycling			
A4.408.1 Comply with Section 66.32 of the Los Angeles Municipal Code.	☒		
A4.408.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with one of the following: Tier 1. at least a 65 percent reduction Tier 2. at least a 75 percent reduction		☒[2]	☒[2]
Building Maintenance and Operation			
A4.410.1 An operation and maintenance manual shall be provided to the building occupant or owner.	☒		
ENVIRONMENTAL QUALITY			
Fireplaces			
A4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstove, pellet stoves and fireplaces shall also comply with applicable local ordinances.	☒		
Pollutant Control			
A4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.	☒		

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.	☒		
A4.504.2.2 Paints, stains and other coatings shall be compliant with VOC limits.	☒		
A4.504.2.3 Aerosol paints and coatings shall be compliant with product weighted MIR limits for ROC and other toxic compounds.	☒		
A4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used.	☒		
A4.504.3 Carpet and carpet systems shall be compliant with VOC limits.	☒		
A4.504.4 50 percent of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or be certified under the Resilient Floor Covering Institute (RCFI) FloorScore program.	☒		
A4.504.5 Particleboard, medium density fiberboard (MDF), and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.	☒		
A4.504.1 Meet the formaldehyde limits contained in Table 4.504.6 before the mandatory compliance date, or use composite wood products made with either California Air Resources Board approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins.		☐	☐
A4.504.2 Install VOC compliant			

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
resilient flooring systems. Tier 1. At least 80 percent of the resilient flooring installed shall comply. Tier 2. At least 90 percent of the resilient flooring installed shall comply.		☒[2]	☒[2]
A4.504.3 Thermal insulation installed in the building shall meet the following requirements: Tier 1. Install thermal insulation in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List. Tier 2. Install insulation which contains No-Added Formaldehyde (NAF) and is in compliance with the VOC-emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List.		☒[2]	☒[2]
Interior Moisture Control			
A4.505.2 Vapor retarder and capillary break is installed at slab on grade foundations.	☒		
A4.505.3 Moisture content of building materials used in wall and floor framing is checked before enclosure.	☒		
Indoor Air Quality and Exhaust			
A4.506.1 Exhaust fans which terminate outside the building are provided in every bathroom.	☒		
A4.506.1 Higher than MERV 6 filters are installed on central air or ventilation systems.		☐	☐

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
A4.506.2 Direct vent appliances are used or equipment is isolated from the conditioned space.		☐	☐
Environmental Comfort			
A4.507.1 Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.	☒		
A4.507.2. Duct systems are sized, designed, and equipment is selected using the following methods: 1. Establish heat loss and heat gain values according to ACCA Manual J or equivalent. 2. Size duct systems according to ACCA 29-D (Manual D) or equivalent. 3. Select heating and cooling equipment according to ACCA 36-S (Manual S) or equivalent.	☒		
Outdoor Air Quality			
Innovative Concepts and Local Environmental Conditions			
INSTALLER AND THIRD PARTY QUALIFICATIONS			
Qualifications			
A702.1 HVAC system installers are trained and certified in the proper installation of HVAC systems.	☒		
A702.2 Special inspectors employed by the Department must be qualified and able to demonstrate competence in the discipline they are inspecting.	☒		
Verifications			
A703.1 Verification of compliance with this code may include construction documents, plans, specifications builder or installer	☒		

Feature or Measure	Levels Applicant to select elective measures		
	Mandatory	Prerequisites and electives[1]	
		Tier 1	Tier 2
certification, inspection reports, or other methods acceptable to the Department which show substantial conformance.			

1. Required prerequisite for this Tier.

ARTICLE 9, DIVISION 12

VOLUNTARY MEASURES FOR NEWLY CONSTRUCTED NONRESIDENTIAL AND HIGH-RISE RESIDENTIAL BUILDINGS

99.12.101. INTENT. This section shall set forth the Voluntary Measures for Newly Constructed Low-Rise Residential Buildings.

A5.105.1.1. Existing Building Structure. Maintain at least 75 percent of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing) based on surface area.

Exceptions:

1. Window assemblies and nonstructural roofing material.
2. Hazardous materials that are remediated as a part of the project.

A5.105.1.2. Existing Non-Structural Elements. Reuse existing interior non-structural elements (interior walls, doors, floor coverings and ceiling systems) in at least 50 percent of the area of the completed building

A5.106.2. Storm Water Design. Design storm water runoff rate and quantity in conformance with Subsection A5.106.2.1 and storm water runoff quality by Subsection A5.106.2.2, or by local requirements, whichever are stricter.

A5.106.2.1. Storm Water Runoff Rate and Quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.

Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity.

A5.106.2.2. Storm Water Runoff Quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter, or treat) storm

or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).

A5.106.4.3. Changing Room. Provide changing/shower facilities for tenant-occupants in accordance with Table A5.106.4.3 or document arrangements with nearby/shower facilities.

Table A5.106.4.3

NUMBER OF TENANT-OCCUPANTS	SHOWER/CHANGING FACILITIES REQUIRED[2]	2-TIER (12"X15"73") PERSONAL EFFECTS LOCKERS[1,2] REQUIRED
0-10	1 unisex shower	1
11-50	1 unisex shower	2
51-100	1 unisex shower	3
101-200	1 shower stall per gender	4
0ver 200	1 shower stall per gender for each 200 additional tenant-occupants	One 2-tier locker for each 50 additional tenant-occupants

1. One 2-tier locker serves two people. Lockers shall be lockable with either padlock or combination lock.

Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.

A5.106.5.1. Designated Parking for Fuel-Efficient Vehicles. Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as shown in Table A5.106.5.1.1 or A5.106.5.1.2.

Table A5.106.5.1.1
Tier 1

Total Number of Parking Spaces	Number of Required Spaces
0-9	1
10-25	2
26-50	4
51-75	6

76-100	9
101-150	11
151-200	18
201 and over	At least 10 percent of total[(1)]

[1] When the application of the ten percent results in a fraction of a space, round up to the next whole number

Table A5.106.5.1.2
Tier 2

Total Number of Parking Spaces	Number of Required Spaces
0-9	1
10-25	2
26-50	5
51-75	7
76-100	9
101-150	13
151-200	19
201 and over	At least 12 percent of total[(1)]

[1] When the application of the 12 percent results in a fraction of a space, round up to the next whole number

A5.106.5.3.2. Additional Electric Vehicle Supply Wiring. Provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), that is equal to ten percent, rounded up to the next whole number, of the total number of parking spaces.

A5.106.6. Parking Capacity. Design parking capacity to meet but not exceed minimum local zoning requirements.

A5.106.6.1. Reduce Parking Capacity. With the approval of the Department of City Planning, employ strategies to reduce on-site parking area or number of stalls by 20 percent.

A5.106.9. Building Orientation and Window Shading. Locate, orient and shade the building as follows:

1. When site and location permit orient the building with the long sides facing north and south;
2. Protect the building from thermal loss, drafts, and degradation of the building envelope caused by wind and wind-driven materials such as dust, sand, snow, and leaves with building orientation and landscape features;
3. Where permitted by the Los Angeles Municipal Code, provide exterior shade for south and west-facing windows during the peak cooling season.

Note: For information on sun angles and shading, visit: http://www2.aud.ucla.edu/energy-design-tools/. Calculations may be made using the Solar-2 tool.

A5.211.1. On-Site Renewable Energy. Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1kW, (whichever is greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project's electrical service overcurrent protection device rating shall be calculated in accordance with the Los Angeles Electrical Code. Natural gas or propane use is calculated in accordance with the Los Angeles Plumbing Code.

A5.303.2.3.1. Tier 1 – 30 % Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code. The 30 percent reduction in potable water use shall be demonstrated by one of the following methods:

1. Each plumbing fixture and fitting shall meet the 30 percent reduced flow rate specified in Table A5.303.2.3.1, or
2. A calculation demonstrating a 30 percent reduction in the building "water use baseline" as established in Table A5.303.2.2 shall be provided.

A5.304.2.1. Outdoor Potable Water Use. For new water service not subject to the provisions of Section 5.304.2, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas.

A5.304.4.2. Tier 2. Reduce the use of potable water to a quantity that does not exceed 55 percent of ETO times the landscape area.

Note: Methods used to accomplish the requirements of this section must be designed to the requirements of the Los Angeles Building Standards Code and shall include, but not be limited to, the following:

1. Plant coefficient;
2. Irrigation efficiency and distribution uniformity;

3. Use of captured rainwater;
4. Use of recycled water;
5. Water treated for irrigation purposes and conveyed by a water district or public entity;
6. Use of graywater.

A5.304.4.4. Potable Water Reduction. Provide water efficient landscape irrigation design that reduces the use of potable water beyond the initial requirements for plant installation and establishment by 50 percent. Calculations for the reduction shall be based on the water budget developed pursuant to Subsection A5.304.1.1.

Methods used to accomplish the requirements of this section must be designed to the requirements of the Los Angeles Building Standards Code and shall include, but not be limited to, the following:

1. Plant coefficient;
2. Irrigation efficiency and distribution uniformity;
3. Use of captured rainwater;
4. Use of recycled water; or
5. Water treated for irrigation purposes and conveyed by a water district or public entity.

A5.304.5. Potable Water Elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section must be designed to the requirements of the Los Angeles Building Standards Code and shall include, but not be limited to, the following:

1. Plant coefficient;
2. Irrigation efficiency and Distribution Uniformity;
3. Use of captured rainwater;
4. Use of recycled water;
5. Water treated for irrigation purposes and conveyed by a water district or public entity; or
6. Use of graywater.

A5.304.8. Graywater Irrigation System. Install a graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins, and laundry water. See Appendix G, Los Angeles Plumbing Code.

A5.404.1. Wood Framing. Employ advanced wood framing techniques, or OVE, as recommended by the US Department of Energy's Office of Building Technology, State and Community Programs and as permitted by the Department.

A5.404.1.1. Structural or Fire-Resistance Integrity. The OVE selected shall not conflict with structural framing methods or fire-rated assemblies required by the Los Angeles Building Code.

A5.405.3. Reused Materials. Use salvaged, refurbished, refinished, or reused materials for a minimum of 5% of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values. All materials shall fully comply with the Los Angeles Building Standards Code.

> **Note:** Sources of some reused materials can be found at CALRecycle. See also Subsection A5.105.1 for on-site materials reuse.

A5.405.4. Recycled Content, Tier 1. Use materials, equivalent in performance to virgin materials, with postconsumer or preconsumer recycled content value (RCV) for a minimum of 10 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.

A5.405.5.2. Concrete. Unless otherwise directed by the engineer, use concrete manufactured with cementitious materials in accordance with Subsections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the Department.

A5.405.5.2.1. Supplementary Cementitious Materials (SCMs). Use concrete made with one or more of the following supplementary cementitious materials (SCMs):

1. Fly ash meeting ASTM C 618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete;
2. Ultra fine fly ash (UFFA) meeting ASTM C 618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, and CalTrans Standard Specification, Section 90-2.01B;
3. Metakaolin meeting ASTM C 618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, and CalTrans Standard Specification, Section 90-2.01B;
4. Natural pozzolan meeting ASTM C 618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete;
5. Slag cement (GGBFS) meeting ASTM C 989, Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars;
6. Silica fume meeting ASTM C 1240, Specification for Silica Fume Used in Cementitious Mixtures;
7. Other materials with comparable or superior environmental benefits, as approved by the engineer and Department.

> **Note:** CalTrans specifications for UFFA and metakaolin may be found in the 2009-09 updates to the 2006 CalTrans specifications on pages 339 and 340.

A5.406.1. Choice of Materials. Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following for a minimum of 5% of the total value, based on estimated cost of materials on the project.

A5.406.1.1. Service Life. Select materials for longevity and minimal deterioration under conditions of use.

A5.406.1.2. Reduced Maintenance. Select materials that require little, if any, finishing. For those with surface protection, choose materials that do not require frequent applications of toxic or malodorous finishes.

A5.408.3.1. Enhanced Construction Waste Reduction. Divert to recycle or salvage nonhazardous construction and demolition debris generated at the site in compliance with one of the following:

Tier 1. At least a 65 percent reduction; or
Tier 2. At least an 80 percent reduction.

Exceptions:

1. Excavated soil and land-clearing debris.

A5.409.1. Materials and System Assemblies. Select materials assemblies based on life cycle assessment of their embodied energy and/or green house gas emission potentials for a minimum of 5% of the total value, based on estimated cost of materials on the project.

Notes:

1. Software for calculating life cycle costs for materials and assemblies may be found at:
   a. The Athena Institute website.
   b. The NIST BEES website.
   c. Life Cycle assessment may also be done in accordance with ISO Standard 14044.
2. More information on life cycle assessment may be found at the Sustainable Products Purchasers Coalition; at the American Center for Life Cycle Assessment; at U.S. EPA Life Cycle Assessment Research; and at U.S. EPA Environmentally Preferable Products.

A5.504.4.8. Thermal Insulation. Comply with Chapters 12 – 13 (Standards for Insulating Materials) in Title 24, Part 12, the California Referenced Standards Code, and with the VOC-emission limits defined in 2009 CHPS criteria and listed on its Low-emitting Materials List, (or Product Registry).

A5.504.4.9. Acoustical Ceilings and Wall Panels. Comply with Chapter 8 of the Los Angeles Building Code, and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry).

A5.504.4.9.1. Verification of Compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.

Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program also be used.

A5.507.2. Daylight. For other than high-rise residential dwelling units and hotel/motel guest rooms, provide daylit spaces as required for toplighting and sidelighting in the California Energy Code. In constructing a design, consider the following:

1. Use of light shelves and reflective room surfaces to maximize daylight penetrating the rooms;
2. Means to eliminate glare and direct sun light, including through skylights;
3. Use of photosensors to turn off electric lighting when daylight is sufficient;
4. Not using diffuse daylighting glazing where views are desired.

99.12.508. CITY OF LOS ANGELES CHECKLIST FOR NEWLY-CONSTRUCTED NONRESIDENTIAL AND HIGH-RISE RESIDENTIAL BUILDINGS

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
Requirements			
Project meets all of the requirements of Divisions 5.1 through 5.5.	☒	☐	☐
Planning and Design			
Site Selection			
A5.103.1 Community connectivity. Locate project on a previously developed site within a $^1/_2$ mile radius of at least ten basic services, listed in Section A5.103.1.		☐	☐
A5.103.2 Brownfield or greyfield site redevelopment or infill area development. Select for development a brownfield in accordance with Section A5.103.2.1 or on a greyfield or infill site as defined in Section A5.102. **A5.103.3.1 Brownfield redevelopment.** Develop a site documented as contaminated and fully remediated or on a site defined as a brownfield.		☐	☐
Site Preservation			
A5.104.1.1 Local zoning requirement in place. Exceed the zoning's open space requirement for vegetated open space on the site by 25 percent. **A5.104.1.2 No local zoning requirement in place.**		☐ ☐	☐ ☐

A5.504.4.9. Acoustical Ceilings and Wall Panels. Comply with Chapter 8 of the Los Angeles Building Code, and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry).

A5.504.4.9.1. Verification of Compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.

Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program also be used.

A5.507.2. Daylight. For other than high-rise residential dwelling units and hotel/motel guest rooms, provide daylit spaces as required for toplighting and sidelighting in the California Energy Code. In constructing a design, consider the following:

1. Use of light shelves and reflective room surfaces to maximize daylight penetrating the rooms;
2. Means to eliminate glare and direct sun light, including through skylights;
3. Use of photosensors to turn off electric lighting when daylight is sufficient;
4. Not using diffuse daylighting glazing where views are desired.

99.12.508. CITY OF LOS ANGELES CHECKLIST FOR NEWLY-CONSTRUCTED NONRESIDENTIAL AND HIGH-RISE RESIDENTIAL BUILDINGS

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
Requirements			
Project meets all of the requirements of Divisions 5.1 through 5.5.	☒	☐	☐
Planning and Design			
Site Selection			
A5.103.1 Community connectivity. Locate project on a previously developed site within a $^1/_2$ mile radius of at least ten basic services, listed in Section A5.103.1.		☐	☐
A5.103.2 Brownfield or greyfield site redevelopment or infill area development. Select for development a brownfield in accordance with Section A5.103.2.1 or on a greyfield or infill site as defined in Section A5.102. **A5.103.3.1 Brownfield redevelopment.** Develop a site documented as contaminated and fully remediated or on a site defined as a brownfield.		☐	☐
Site Preservation			
A5.104.1.1 Local zoning requirement in place. Exceed the zoning's open space requirement for vegetated open space on the site by 25 percent. **A5.104.1.2 No local zoning requirement in place.**		☐ ☐	☐ ☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
Provide vegetated open space area adjacent to the building equal to the building footprint area. **A5.104.1.3 No open space required in zoning ordinance.** Provide vegetated open space equal to 20 percent of the total project site area.		☐	☐
Deconstruction and Reuse of Existing Structures			
A5.105.1.1 Existing building structure. Maintain at least 75 percent of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing) based on surface area. **Exceptions:** 1. Window assemblies and non-structural roofing material. 2. Hazardous materials that are remediated as a part of the project. **A5.105.1.2 Existing non-structural elements.** Reuse existing interior non-structural elements (interior walls, doors, floor coverings and ceiling systems) in at least 50 percent of the area of the completed building **A5.105.1.3 Salvage.** Salvage additional items in good condition such as light fixtures, plumbing fixtures, and doors for reuse on this project in an onsite storage area or for salvage in dedicated collection bins. Document the weight or number of the items salvaged.		☐ ☐ ☐	☐ ☐ ☐
Site Development			
A5.106.1 Storm water pollution prevention plan. For projects which disturb less than one acre, develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed, specific to its site, conforming to the State Storm water NPDES Construction Permit or local ordinance, whichever is stricter, as is required for projects over one acre. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation, and/or of dust/particulate matter air pollution. **A5.106.2 Storm water design.** Design storm water runoff rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.2.2, or by local requirements, whichever are stricter. **A5.106.2.1 Storm water runoff rate and quantity.** Implement a storm water management plan resulting	☐	☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
in no net increase in rate and quantity of storm water runoff from existing to developed conditions. **Exception:** If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity. **A5.106.2.2 Storm water runoff quality.** Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter, or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).		☐	☐
A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.3.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air, or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in A5.106.4		☐	☐
A5.106.4 Bicycle parking and changing rooms. Comply with Sections 5.106.4.1 through 5.106.4.2; or meet local ordinance, whichever is stricter.	☒		
A5.106.4.1 Short-term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.	☒		
A5.106.4.2 Long-term bicycle parking. For buildings with over ten tenant-occupants, provide secure bicycle parking for 5% of motorized vehicle parking capacity, with a minimum of one space.	☒		
A5.106.4.3 Changing rooms. Provide changing/shower facilities in accordance with Table 5.106.4.3, or document arrangements with nearby changing/shower facilities.	☐	☐	☐
A5.106.5.1 Designated parking. Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as shown in: Table A5.106.5.1.1 for Tier 1 at ten percent of total		☒	

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
spaces Table A5.106.5.1.2 for Tier 2 at 12 percent of total spaces **A5.106.5.2 Designated parking.** Provide designated parking, by means of permanent marking or a sign, for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as shown in Table 5.106.6.2.	☒		☒
A5.106.5.3.1 Electric vehicle supply wiring. Provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), that is equal to 5% of the total number of parking spaces. **A5.106.5.3.2 Additional Electric vehicle supply wiring.** Provide a minimum number of 208/240 V 40 amp, grounded AC outlet(s), that is equal to ten percent of the total number of parking spaces.	☒	☒ ☐	☒ ☐
A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements. **A5.106.6.1 Reduce parking capacity.** With the approval of the enforcement authority, employ strategies to reduce on-site parking area or number of stalls by 20 percent:		☐	☐
A5.106.7 Exterior walls. Meet requirements in the current edition of the California Energy Code and select one of the following for wall surfaces: 1. Provide vegetative or man-made shading devices for east-, south-, and west-facing walls with windows. 2. Use wall surfacing with SRI 25 (aged), for 75 percent of opaque wall areas.	☐ ☐		
A5.106.8 Light pollution reduction. Comply with lighting power requirements in the California Energy Code and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, using the following strategies: 1. Shield all exterior luminaires or use cutoff luminaires. 2. Contain interior lighting within each source.	☒ ☒ ☒ ☒		

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
3. Allow no more than .01 horizontal foot candle 15 ft beyond the site. 4. Contain all exterior lighting within property boundaries. **Exception:** See Los Angeles Building Code Chapter 12, for campus lighting requirements for parking facilities and walkways.	☒		
A5.106.9 Building orientation and window shading. Locate and orient the building as follows: 1. Long sides facing north and south 2. Protect the building from thermal loss, drafts, and degradation of the building envelope caused by wind and wind-driven materials. 3. Where permitted by Los Angeles Municipal Code, provide exterior shade for south and west-facing windows during the peak cooling season		☐ ☐ ☐	☐ ☐ ☐
A5.106.10 Grading and Paving. The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.	☒		
A5.106.11 Heat island effect. Reduce nonroof heat islands, and roof heat islands as follows: **A5.106.11.1 Hardscape alternatives.** Use one or a combination of strategies 1 through 3 for 50 percent of site hardscape or put 50 percent of parking underground. 1. Provide shade (mature within five years of occupancy). 2. Use light colored/ high-albedo materials 3. Use open-grid pavement system. **A5.106.11.2 Cool Roof.** Use roofing materials having a solar reflectance, thermal emittance, or Solar Reflectance Index (SRI)[3] equal to or greater than the values shown in: Table A5.106.11.2.1 – Tier 1 or Table A5.106.11.2.2 – Tier 2		☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐
Energy Efficiency Performance Requirements			

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.203.1 Energy performance. Using an Alternative Calculation Method approved by the California Energy Commission, calculate each nonresidential building's TDV energy and CO_2 emissions, and compare it to the standard or "budget" building.			
A5.203.1.1 Tier 1. Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent.		☒	
A5.203.1.2 Tier 2. Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 30 percent.			☒
5.203.1.3 Energy efficiency Exceed California Energy Code requirements, based on the 2008 Energy Efficiency Standards, by 15 percent.	☒ 6/01/11		
Prescriptive Measures			
A5.204.1 ENERGY STAR equipment and appliances. All equipment and appliances provided by the builder shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance		☐	☐
A5.204.2 Energy monitoring. Provide sub-metering or equivalent combinations of sensor measurements and thermodynamic calculations, if appropriate, to record energy use data for each major energy system in the building.		☐	☐
A5.204.2.1 Data storage. The data management system must be capable of electronically storing energy data and creating user reports showing hourly, daily, monthly and annual energy consumption for each major energy system.		☐	☐
A5.204.2.2 Data access. Hourly energy use data shall be accessible through a central data management system and must be available daily.		☐	☐
A5.204.3 Demand response. HVAC systems with Direct Digital Control Systems and centralized lighting systems shall include pre-programmed demand response strategies that are automated with either a Demand Response Automation Internet Software Client or dry contact relays.		☐	☐
A5.204.3.1 HVAC. The pre-programmed demand response strategies should be capable of reducing the peak HVAC demand by cooling temperature set point adjustment.		☐	☐
A5.204.3.2 Lighting. The pre-programmed demand		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
response strategies should be capable of reducing the total lighting load by a minimum 30 percent through dimming control or bi-level switching. **A5.204.3.3 Software clients.** The software clients will be capable of communicating with a DR Automation Server.		☐	☐
Energy Systems			
A5.210.1 ENERGY STAR equipment and appliances. All residential grade equipment and appliances provided and installed shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.	☒		
Renewal Energy			
A5.211.1 On-site renewable energy. Use on-site renewable energy for at least 1 percent of the electrical service overcurrent protection device rating calculated in accordance with the Los Angeles Electrical Code, or 1KW, whichever is greater, in addition to the electrical demand required to meet one percent of natural gas and propane use calculated in accordance with the Los Angeles Plumbing Code. **A5.211.1.1 Documentation.** Using a calculation method approved by the California Energy Commission, calculate the renewable on-site energy system to meet the requirements of Section A5.211.1, expressed in kW. **A5.211.3 Green Power.** If offered by the local utility provider, participate in a renewable energy portfolio program that provides a minimum of 50 percent electrical power from renewable sources. Maintain documentation through utility billings. **A5.211.4 Prewiring for future solar.** Install conduit from the building roof or eave to a location within the building identified as suitable for future installation of a charge controller (regulator) and inverter. **A5.211.4.1 Off grid prewiring for future solar.** If battery storage is anticipated, conduit shall run to a location within the building that is stable, weather-proof, insulated against very hot and very cold weather, and isolated from occupied spaces.	☒ ☒		
Elevators, Escalators, and other Equipment			
A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide controls to reduce the energy demand of elevators and		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
reduce the speed of escalators. Document the controls in the project specifications and commissioning plan.			
Energy efficient steel framing			
A5.213.1 Steel framing. Design for and employ techniques to avoid thermal bridging.		☐	☐
Water Efficiency and Conservation			
Indoor Water Use			
A5.303.1 Meters. Separate meters shall be installed for the uses described in Sections 5.503.1.1 through 5.503.1.3.			
A5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:	☒		
1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day.	☒		
2. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory or beauty salon or barber shop projected to consume more than 100 gal/day.	☒	☐	☐
A5.303.1.2 Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000 gal/day.			
A5.303.2 20 Percent Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. (Calculate savings by Water Use Worksheets.)	☒		
A5.303.2.1 Multiple showerheads serving one shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20 percent reduction column contained in Table 5.303.2.3 or the shower shall be designed to only allow one showerhead to be in operation at a time.	☒		
A5.303.2.3.1 Tier 1 – 30 percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent shall be provided.		☒	
A5.303.2.3.2 Tier 2 – 35 percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 35 percent shall be provided.			☒

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.303.2.3.3 40 percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 40 percent shall be provided. (Calculate savings by Water Use Worksheets.)		☐	☐
A5.303.4 Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods: 1. The installation of water-conserving fixtures or 2. Utilizing non-potable water systems	As applicable ☒ ☒		
A5.303.3 Appliances. 1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water. 2. Dishwashers shall meet the criteria in A5.303.3 (2) (a) and (b). 3. Ice makers shall be air cooled. 4. Food steamers shall be connectionless or boilerless. 5. The use and installation of water softeners shall be limited or prohibited by local agencies.		☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐
A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems		☐	☐
A5.303.6 Plumbing Fixtures and Fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the requirements listed for each type in Items listed in Table 5.303.6. 1. Water closets (toilets) – flushometer type 2. Water closets (toilets) – tank type 3. Urinals 4. Public lavatory faucets 5. Public metering self-closing faucets 6. Residential bathroom lavatory sink faucets 7. Residential kitchen faucets 8. Residential shower heads 9. Single shower fixtures served by more than one showerhead	As applicable ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒		
Outdoor Water Use			
A5.304.1 Water budget. A water budget shall be developed for landscape irrigation use.[1]	☒		
A5.304.2 Outdoor potable water use. Building on sites with 1,000 square feet or more of cumulative landscaped area shall have separate meters or submeters for indoor and outdoor potable water use.	☒		

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.304.2.1 Outdoor potable water use. For new water service not subject to the provisions of Section 5.304.2, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas.		☐	☐
A5.304.3 Irrigation design. Buildings on sites with 1000 square feet or more of cumulative irrigated landscaped area shall have irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.			
A5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:	☒		
1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.	As applicable ☒		
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.			
A5.304.4 Potable water reduction. Provide water efficient landscape irrigation design that reduces by the use of potable water.			
A5.304.4.1 Tier 1 – Reduce the use of potable water to a quantity that does not exceed 60 percent of ETo times the landscape area.		☒	
A5.304.4.2 Tier 2 –Reduce the use of potable water to a quantity that does not exceed 55 percent of ETo times the landscape area.			☒
Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in A5.304.4.			
A5.304.4.3 Verification of compliance. A calculation demonstrating the applicable potable water use reduction required by this section shall be provided.		☒	☒
A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment.		☐	☐
Methods used to accomplish the requirements of this			

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
section shall include, but not be limited to, the items listed in A5.304.4.			
A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation		☐	☐
A5.104.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with native and/or noninvasive vegetation.		☐	☐
A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater.		☐	☐
Material Conservation and Resource Efficiency			
Efficient Framing Systems			
A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as permitted by the Department.		☐	☐
Material Sources			
A5.405.1 Regional materials. Select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site, meeting the criteria listed in A5.405.1.		☐	☐
A5.405.2 Bio-based materials. Select bio-based building materials per Section A5.405.2.1 or A5.405.2.2. **A5.405.2.1 Certified wood products.** Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle. **A5.405.2.2 Rapidly renewable materials.** Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost.		☐ ☐	☐ ☐
A5.405.3 Reused materials. Use salvaged, refurbished, refinished, or reused materials for at least 5 percent of the total value, based on estimated cost of materials on the project.		☐	☐
A5.405.4 Recycled content, Tier 1. Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV)		☒	

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
equaling at least 10 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values. **A5.405.4.1 Recycled content, Tier 2.** Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) for a minimum of 15 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.			☒
A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections: **A5.405.5.1 Cement.** Meet the following standards for cement: 1. Portland cement shall meet ASTM C 150. 2. Blended hydraulic cement shall meet ASTM C 595. **A5.405.5.2 Concrete.** Unless otherwise directed by the engineer, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.2, as approved by the Department. **A5.405.5.2.1 Supplementary cementitious materials (SCMs).** Use concrete made with one or more of the SCMs listed in Section A5.405.5.2.1. **A5.405.5.2.1.1 Mix design equation.** Use any combination of one or more SCMs, satisfying Equation A5.4-1. **Exception:** Minimums for concrete products requiring high early strength may be lower as directed by the engineer. **A5.405.5.3 Additional means of compliance.** Any of the following measures may be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2. **A5.405.5.3.1 Cement.** The following measures may be used in the manufacture of cement. **A5.405.5.3.1.1 Alternative fuels.** Where permitted by state or local air quality standards, use alternative fuels. **A5.405.5.3.1.2 Alternative power.** Use alternate electric power generated at the cement plant and/or green power purchased from the utility		☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
meeting the requirements of A5.211. **A5.405.5.3.1.3 Alternative ingredients.** Use inorganic processing additions and limestone meeting ASTM C 150. **A5.405.5.3.2 Concrete.** The following measures may be used in the manufacture of concrete, **A5.405.5.3.2.1 Alternative energy.** Use renewable or alternative energy meeting the requirements of Section A5.211. **A5.405.5.3.2.2 Recycled aggregates.** Use concrete made with one or more of the materials listed in Section A5.405.5.3.2.2. **A5.405.5.3.2.3 Mixing water**. Use water meeting ASTM C1602, either recycled water provided by the local water purveyor or water reclaimed from manufacturing processes.		☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
Enhanced Durability and Reduced Maintenance			
A5.406.1 Choice of materials. Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following for a minimum of 5% of the total value, based on estimated cost of materials on the project. **A5.406.1.1 Service life.** Select materials for longevity and minimal deterioration under conditions of use. **A5.406.1.2 Reduced maintenance.** Select materials that require little, if any, finishing.		☐ ☐	☐ ☐
Weather Resistance and Moisture Management			
A5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by Los Angeles Building Code Section 1403.2 and California Energy Code Section 150, manufacturer's installation instructions, or local ordinance, whichever is more stringent.[1]	☒		
A5.407.2 Moisture control. Employ moisture control measures by the following methods; **A5.407.2.1 Sprinklers.** Prevent irrigation spray on structures. **A5.407.2.2 Entries and openings.** Design exterior entries and openings to prevent water intrusion into buildings.	 ☒ ☒		
Construction Waste Reduction, Disposal and Recycling			

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.408.1 Construction waste diversion. Comply with Section 66.32 of the Los Angeles Municipal Code.	☒		
A5.408.3.1 Enhanced construction waste reduction. Divert to recycle or salvage nonhazardous construction and demolition debris generated at the site in compliance with one of the following: Tier 1. At least a 65 percent reduction. Tier 2. At least an 80 percent reduction.		☒	☒
A5.408.4 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.	☒		
Life Cycle Assessment			
A5.409.1 Materials and system assemblies. Select materials assemblies based on life cycle assessment of their embodied energy and/or green house gas emission potentials for a minimum of 5 percent of the total the value.		☐	☐
Building Maintenance and Operation			
A5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling.[1]	☒		
A5.410.2 Commissioning. For new buildings 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems, and renewable energy systems shall be included in the design and construction processes of the	☒		

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
building project. Commissioning requirements shall include as a minimum items listed in 5.410.2.			
A5.410.2.1 Owner's Project Requirements (OPR). Documented before the design phase of the project begins the OPR shall include items listed in 5.410.4.	☒		
A5.410.2.2 Basis of Design (BOD). A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project and updated periodically to cover the systems listed in 5.410.2.2.	☒		
A5.410.2.3 Commissioning plan. A commissioning plan describing how the project will be commissioned shall be started during the design phase of the building project and shall include as a minimum items listed in 5.410.2.3.	☒		
A5.410.2.4 Functional performance testing shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications.	☒		
A5.410.2.5 Post construction documentation and training. A systems manual and systems operations Training are required.	☒		
A5.410.2.5.1 Systems manual. The Systems manual shall be delivered to the building owner and facilities operator and shall include the items listed in 5.410.2.5.1.	☒		
A5.410.2.5.2 Systems operations training. The training of the appropriate maintenance staff for each equipment type and/or system shall include as a minimum items listed in 5.410.2.5.2.	☒		
A5.410.2.6 Commissioning report. A complete report of commissioning process activities undertaken through the design, construction and postconstruction phases of the building project shall be completed and provided to the owner or representative.	☒		
A5.410.4 Testing, adjusting and balancing. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.			
A5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project, the systems listed in 5.410.3.2.	☒		

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.410.4.3 Procedures. Perform testing and adjusting in accordance with industry best practices and applicable national standards on each system.	☒		
A5.410.4.3.1 HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, the system should be balanced in accordance with the procedures defined by national standards listed in 5.410.3.3.1.	☒		
A5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.	☒		
A5.410.4.5 Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection.	☒		
A5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the Department.	☒		
Environmental Quality			
Fireplaces			
A5.503.1. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150.	☒ As applicable ☒		
A5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits.			
Pollutant Control			
A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.			
A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6, and Chapter 4 of CCR, Title 8, and as listed in Items 1 through 4 in A5.504.1.2.		☐	☐
A5.504.1.2 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in A5.504.1.3.		☐	☐
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if the building		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
is occupied. **A5.504.2.1 IAQ Testing**. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United States Environmental Protection Agency (U.S. EPA) and in accordance with Section A5.504.2.1.2. Retest as required in Section A5.504.2.1.3		☐	☐
A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following:		As applicable	As applicable
1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million;		☐	☐
2. Formaldehyde: 27 parts per billion;		☐	☐
3. Particulates (PM10): 50 micrograms per cubic meter; and		☐	☐
4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and		☐	☐
5. Total Volatile Organic Compound (TVOC): 300 micrograms per cubic meter.		☐	☐
A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4.		☐	☐
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedure until testing demonstrates compliance.		☐	☐
A5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the Department to reduce the amount of dust or debris which may collect in the system.	☒		
A5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4.			
A5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards.			

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2.	☒		
2. Aerosol adhesives, and smaller unit sizes of adhesives and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.	☒		
A5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply.	☒		
A5.504.4.3.1 Aerosol Paints and Coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 24, Section 94520 *et seq*).	☒		
A5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the Department.	☒		
A5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in 5.504.4.4.	☒		
A5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.	☒		
A5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 804.4.1.	☒		
A5.504.4.5 Composite wood products. Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.	☒		
A5.504.4.5.1 Early compliance with		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
formaldehyde limits. Where complying composite wood product is readily available for nonresidential occupancies, meet Phase 2 requirements before the compliance dates indicated in Table 5.504.4.5 (Tier I) or use composite wood products made with either CARB-approved no-added formaldehyde (NAF) resins or CARB-approved ultra-low emitting formaldehyde (ULEF) resins (Tier II).			
A5.504.4.5.2 Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following.	☒	☐	
1. Product certifications and specifications	As applicable ☒		
2. Chain of custody certifications	☒		
3. Other methods acceptable to the Department	☒		
A5.504.4.6 Resilient flooring systems. Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the FloorScore program of the Resilient Floor Covering Institute.	☒		
A.504.4.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet pollutant emission limits.	☒		
A5.504.4.7 Resilient flooring systems, Tier 1. For 80 percent of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List, or certified under the FloorScore program of the Resilient Floor Covering Institute.		☒	
A5.504.4.7.1 Resilient flooring systems, Tier 2. For 100 percent of floor area scheduled to receive resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List or certified under the FloorScore program of the Resilient Floor Covering Institute.			☒
A.504.4.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet pollutant emission limits.		☒	☒
A5.504.4.8 Thermal Insulation, Tier 1. Comply with		☒	

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
Chapter 12-13 in Title 24, Part 12 and with the VOC-emission limits defined in 2009 CHPS criteria and listed on its Low-emitting Materials List.			
A5.504.4.8.1 Thermal insulation, Tier 2. Install No-Added Formaldehyde thermal insulation in addition to meeting A5.504.4.8.			☒
A.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet pollutant emission limits.		☒	☒
A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 of the Los Angeles Building Code and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its Low-emitting Materials List (or Product Registry).		☐	☐
A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.		☐	☐
A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.			
A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in A5.504.5.1.		☐	☐
A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in A5.504.5.2.		☐	☐
A5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 8.	☒		
A5.504.5.3.1 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 11.		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
A5.504.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows where outdoor areas are provided for smoking or as enforced by ordinances, regulations, or policies, whichever are more stringent.	☐		
Indoor Moisture and Radon Control			
A5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of Los Angeles Building Code, Sections 1203 and Chapter 14.[1]	☒		
Air Quality and Exhaust			
A5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8, or the applicable local code, and Division 1,whichever is more stringent.[1]	☒		
A5.506.2 Carbon dioxide (CO_2) monitoring. For buildings equipped with demand control ventilation, CO_2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the latest edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c).[1]	☒		
Environmental Comfort			
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2.			
A5.507. 1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the California Energy Code by Sections A5.507.1.1.1 and A5.507.1.1.2.		☐	☐
A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.		☐	☐
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in A5.507.1.1.2.		☐	☐
A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.		☐	☐
A5.507.2 Daylight. For other than high-rise residential dwelling units and hotel/motel guest rooms, provide daylit spaces as required for toplighting and sidelighting in the		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
California Energy Code. In constructing a design, consider Items 1 through 4 in A5.507.3.			
A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90 percent of all regularly occupied areas.		☐	☐
A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing.		☐	☐
A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing.		☐	☐
A5.507.4 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E 90 and ASTM E413.	☐		
A5.507.4.1 Exterior noise transmission. Wall and floor-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the building locations listed in Items 1 through 3 in 5.507.5.1.	☐		
A5.507.4.2 Interior sound. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.	☐		
Outdoor Air Quality			
A5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration, and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.	As applicable ☒		
A5.508.1.1 CFCs. Install HVAC and refrigeration equipment that does not contain CFCs.[1]	☒		
A5.508.1.2 Halons. Install fire suppression equipment that does not contain Halons.[1]			
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs.		☐	☐
A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following:			
1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater		☐	☐

CHECKLIST FOR THE CITY OF LOS ANGELES	MANDATORY	VOLUNTARY	
		CALGREEN Tier 1	CALGREEN Tier 2
than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1.		☐	☐

1. These measures are currently required elsewhere in statute or in regulation.

Sec. 2 **Urgency Clause**. The City Council finds and declares that this Ordinance is required for the immediate protection of the public peace, health and safety for the following reason: In order for the City of Los Angeles to facilitate a seamless transition of green building requirements and maintain predictability and streamlined case processing for the benefit of economic development during distressed times, it is necessary to immediately modify the existing green building requirements, incentives and related Green Team. The Council, therefore, with the Mayor's concurrence, adopts this ordinance to become effective upon publication pursuant to Los Angeles City Charter Section 253.

Sec. 3. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, at its meeting of DEC 14 2010.

JUNE LAGMAY, City Clerk

By _____
Deputy

Approved DEC 15 2010

_____
Mayor

Approved as to Form and Legality

CARMEN A. TRUTANICH, City Attorney

By _____
KIM RODGERS WESTHOFF
Deputy City Attorney

Date November 30, 2010

File No. CF 10-0735

M:\Real Prop_Env_Land Use\Land Use\Kim Westhoff\Green Code\Green Code Final.docx