

**EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
REGARDING AMENDMENTS TO THE 2010 CALIFORNIA GREEN BUILDING STANDARDS CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11
HCD 01/10**

The Department of Housing and Community Development (HCD) proposes to make necessary changes to the 2010 edition of the California Green Building Standards Code (CGBC), also known as CALGreen, as presented on the following pages:

LEGEND FOR EXPRESS TERMS:

1. **Existing California text or language being modified:** All language will appear in normal Arial 9 point; modified language is underlined or shown in ~~strikeout~~.
 2. **Repealed text:** All language appears in ~~strikeout~~.
 3. **Notation:** Authority and Reference citations are provided at the end of each section.
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1. HCD proposes to amend Section 202 as follows:

**SECTION 202
DEFINITIONS**

ARB (CARB). The California Air Resources Board.

...

TIME DEPENDENT VALUATION (TDV) ENERGY. The time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy cost used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.

...

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

2. HCD proposes to amend Section 304.1.1 as follows:

**SECTION 304
VOLUNTARY TIERS**

304.1 Purpose. Voluntary tiers are intended to further encourage building practices that improve public health, safety and general welfare by promoting the use of building concepts which minimize the building's impact on the environment and promote a more sustainable design.

304.1.1 Tiers. The provisions of ~~Appendices~~ Divisions A4.6 and A5.6 outline means, in the form of voluntary tiers, for achieving enhanced construction levels by incorporating additional measures for residential and nonresidential new construction. Voluntary tiers may be adopted by local governments and, when adopted, enforced by local enforcing agencies. Buildings complying with tiers specified for each occupancy contain additional prerequisite and elective green building measures necessary to meet the threshold of each tier. See Section 101.7 of this code for procedures and requirements related to local amendments, additions or deletions, including changes to energy standards.

[BSC] Where there are practical difficulties involved in complying with the threshold levels of a tier, the enforcing agency may grant modifications for individual cases. The enforcing agency 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 enforcing agency.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

3. HCD proposes to amend Section 4.106.3 as follows:

SECTION 4.106 SITE DEVELOPMENT

4.106.3. Surface drainage Grading and paving. ~~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 all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales.

...

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

4. HCD proposes to amend Section 4.303.1 as follows:

SECTION 4.303 INDOOR WATER USE

4.303.1 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. **Prescriptive Method.** Each plumbing fixture and fitting shall ~~meet reduced flow rates~~ not exceed the Maximum Flow Rate at \geq 20 Percent Reduction column specified in Table 4.303.2; or
2. **Performance Method.** 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: showerheads, lavatory faucets, water closets, and urinals, ~~lavatory faucets and showerheads.~~

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

5. HCD proposes to amend Section 4.303.2 as follows:

4.303.2 Multiple showerheads serving one shower. When ~~single shower fixtures are a shower is~~ served by more than one showerhead, the combined flow rate of all the showerheads controlled by a single valve shall not exceed the ~~maximum flow rates at ≥ 20 Percent Reduction column 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~~ performance method specified in Section 4.303.1, Item 2, is 2.5 gpm @ 80 psi.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

6. HCD proposes to amend Table 4.303.1 as follows:

**TABLE 4.303.1
WATER USE BASELINE¹**

FIXTURE TYPE	<u>BASELINE FLOW RATE</u>²	DURATION	DAILY USES	OCCUPANTS^{3,2}
Showerheads, residential	2.5 gpm @ 80 psi	8 min.	1	
Lavatory faucets, residential	2.2 gpm @ 60 psi	.25 min.	3	
<u>Lavatory faucets, nonresidential</u>	<u>0.5 gpm @ 60 psi</u>	<u>.25 min.</u>	<u>3</u>	
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} 3 female	
Flushometer tank water closets	1.6 gallons/flush	1 flush	1 male ^{4,3} 3 female	
Flushometer valve water closets	1.6 gallons/flush	1 flush	1 male ^{4,3} 3 female	
Electromechanical hydraulic water closets	1.6 gallons/flush	1 flush	1 male ^{4,3} 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 2. 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 3. The daily use number shall be increased to three if urinals are not installed in the room.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

7. HCD proposes to amend Table 4.303.2 as follows:

**TABLE 4.303.2
FIXTURE FLOW RATES**

FIXTURE TYPE	<u>BASELINE</u> FLOW RATE	MAXIMUM FLOW RATE AT ≥ 20 PERCENT REDUCTION
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory faucets, residential	2.2 gpm @ 60 psi	1.5 gpm @ 60 psi ^{2,1}
<u>Lavatory faucet, nonresidential</u>	<u>0.5 gpm @ 60 psi</u>	<u>0.4 gpm @ 60 psi²</u>
Kitchen faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi ³
Gravity tank type water closets	1.6 gallons/flush	1.28 gallons/flush ^{4,4}
Flushometer tank water closets	1.6 gallons/flush	1.28 gallons/flush ^{4,4}
Flushometer valve water closets	1.6 gallons/flush	1.28 gallons/flush ^{4,4}
Electromechanical hydraulic water closets	1.6 gallons/flush	1.28 gallons/flush ^{4,4}
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.~~

~~2.1. Lavatory faucets shall not have a flow rate less than 0.8 gpm at 20 psi.~~

~~3. 2. Where complying faucets are unavailable, aerators rated at .35 gpm or other means may be used to achieve reduction.~~

~~3. Kitchen faucets may temporarily increase flow above the maximum rate, but not above 2.2 gpm @ 60 psi and must default to a maximum flow rate of 1.8 gpm @ 60 psi.~~

~~4. 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.~~

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

8. HCD proposes to amend Table 4.303.3 as follows:

**TABLE 4.303.3
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
Showerheads: Maximum flow rate – 2.5 gal (9.5 L/min)	<u>ASME A112.18.1/CSA B125.1</u>

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

9. HCD proposes to amend Section 4.406.1 as follows:

**SECTION 4.406
ENHANCED DURABILITY AND REDUCED MAINTENANCE**

4.406.1 Joints and openings Rodent proofing. ~~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 enforcing agency.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

10. HCD proposes to amend Sections 4.408.1, 4.408.2 and 4.408.2.1, adopt Sections 4.408.3 and 4.408.4, and repeal Section 4.408.2.2 as follows:

**SECTION 4.408
CONSTRUCTION WASTE REDUCTION,
DISPOSAL AND RECYCLING**

4.408.1 Construction waste reduction of at least 50 percent management. Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition debris, waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance, whichever is more stringent.

Exceptions:

1. Excavated soil and land-clearing debris.
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.

4.408.2 Construction waste management plan. ~~Where a local jurisdiction does not have a construction and demolition waste management ordinance a construction waste management plan shall be submitted for approval to the enforcing agency that:~~ Submit a construction waste management plan in conformance with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

1. ~~Identifies~~ Identify the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project or salvage for future use or sale.
2. ~~Specifies~~ Specify if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream) for transportation to a diversion facility.
3. ~~Identifies the~~ Identify approved diversion facility facilities where the construction and demolition waste material collected will be taken.
4. ~~Identifies~~ Identify construction methods employed to reduce the amount of construction and demolition waste generated.
5. ~~Specifies~~ Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.

4.408.3 Waste management company. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.

Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.

4.408.4 Waste stream reduction alternative. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed four (4) lbs./sq. ft. of the building area shall meet the minimum 50 percent construction waste reduction requirement in Section 4.408.1.

4.408.2.15 Documentation. ~~Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.~~

Notes:

1. Sample forms found in "A Guide to the California Green Building Standards Code (Low-Rise Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section.
2. Mixed construction and demolition debris (C&D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).

4.408.2.2 Isolated jobsites. ~~The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.~~

Notes:

- ~~1. Sample forms found in Chapter 8 may be used to assist in documenting compliance with the waste management plan.~~
- ~~2. Mixed construction and demolition debris (C&D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).~~

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

11. HCD proposes to amend Section 4.502.1 as follows:

SECTION 4.502 DEFINITIONS

4.502.1 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.

~~**COMPOSITE WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. Composite wood products does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber as specified in "Structural Glue Laminated Timber" (ANSI A190.1-2002) or prefabricated wood I-joists.~~

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-jointed lumber, all as specified in CCR, Title 17, Section 93120.1(a).

VOC. A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR, Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies such as the South Coast Air Quality Management District (SCAQMD), California Air Resources Board (ARB or CARB), etc., the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

12. HCD proposes to amend Section 4.504.1 as follows:

SECTION 4.504 POLLUTANT CONTROL

4.504.1 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 ~~and~~ ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust ~~or~~ and debris, ~~which may collect in~~ enter the system.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

13. HCD proposes to amend Section 4.504.3 as follows:

4.504.3 Carpet systems. All 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~~ Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as Specification 01350.)
3. NSF/ANSI 140 at the Gold level.
4. Scientific Certifications Systems Indoor Advantage™ Gold.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

14. HCD proposes to amend Section 4.504.3.1 as follows:

4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

15. HCD proposes to amend Section 4.504.4 as follows:

4.504.4 Resilient flooring systems. Where resilient flooring is installed, at least 50 percent of floor area receiving resilient flooring shall comply with one or more of the following:

1. ~~the~~ VOC emission limits defined in the Collaborative for High Performance Schools (CHPS) ~~Low-emitting Materials List~~ High Performance Products Database.
2. Products compliant with CHPS criteria certified under the Greenguard Children & Schools program.
3. ~~or certified~~ Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
4. Meet the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350.)

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

16. HCD proposes to amend Section 4.504.5.1 as follows:

4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. ~~Other methods acceptable to the enforcing agency.~~
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.)
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards.
5. Other methods acceptable to the enforcing agency.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

17. HCD proposes to amend Section 4.505.2 as follows:

**SECTION 4.505
INTERIOR MOISURE CONTROL**

4.505.2 Concrete slab foundations. Concrete slab foundations required to have a vapor retarder by the California Building Code, GCR, Title 24, Part 2, Chapter 19 or concrete slab-on-ground floors required to have a vapor retarder by the California Residential Code, Chapter 5, shall also comply with this section.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

18. HCD proposes to amend Section 4.505.3 as follows:

4.505.3 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 when the framing members exceed 19 percent moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or a contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements found in Section 101.8 of this code.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece to be verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a 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.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

19. HCD proposes to amend Section 4.506.1 as follows:

**SECTION 4.506
INDOOR AIR QUALITY AND EXHAUST**

4.506.1 Bathroom exhaust fans. ~~Mechanical exhaust fans which exhaust directly from bathrooms shall comply with the following:~~ Each bathroom shall be mechanically ventilated and 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 humidity control ~~which shall be readily accessible.~~
 - a. Humidistat Humidity controls shall be capable of adjustment between a relative humidity range of equal to or less than 50 to percent, but shall not exceed 80 percent. A humidity control may be a separate component to the exhaust fan and is not required to be integral (i.e., built-in).

Notes:

1. For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tub/shower combination.
2. Lighting integral to bathroom exhaust fans shall comply with the California Energy Code.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

20. HCD proposes to amend Section 4.507 as follows:

**SECTION 4.507
ENVIRONMENTAL COMFORT**

4.507.2 Heating and air-conditioning system design. 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 ANSI/ACCA ~~2~~ Manual J (*Residential Load Calculation*), ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ANSI/ACCA ~~1 29-D~~ Manual D (*Residential Duct Systems*), ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ANSI/ACCA ~~3 36-S~~ Manual S (*Residential Equipment Selection*) or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

21. HCD proposes to amend “ACCA” and “ANSI” in Chapter 6 as follows:

Organization	Standard	Referenced Section
...		
ACCA Air Conditioning Contractors of America		
2800 Shirlington Road, Suite 300	ANSI/ACCA 2 Manual J	4.507.2
Arlington, VA 22206	ANSI/ACCA 1 29-D Manual D	4.507.2
www.acca.org	ANSI/ACCA 3 36-S Manual S	4.507.2
ANSI American National Standards Institute		
Operations Office	ANSI A190.1-2002	4.502.1
25 West 43rd Street, Fourth Floor	ANSI Z124.9-2004	Table 4.303.3
New York, NY 10036	NSF/ANSI 140-2007	
www.ansi.org	ANSI/ACCA 2 Manual J	4.507.2
	ANSI/ACCA 1 Manual D	4.507.2
	ANSI/ACCA 3 Manual S	4.507.2

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

22. HCD proposes to add explanatory text and amend Worksheet (WS-1) “BASELINE WATER USE” and Worksheet (WS-2) “20 PERCENT REDUCTION WATER USE” in Chapter 8 as follows:

**CHAPTER 8
COMPLIANCE FORMS AND WORKSHEETS**

[HCD 1] Sample forms found in “A Guide to the California Green Building Standards Code (Low-Rise Residential)” located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with the waste management plan.

**WORKSHEET (WS-1)
BASELINE WATER USE**

BASELINE WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE (gpm) ²		DURATION		DAILY USES		OCCUPANTS ^{3,4,2}		GALLONS PER DAY
Showerheads	2.5	X	5 min.	X	1	X		=	
Showerheads Residential	2.5	X	8 min.	X	1	X		=	
Lavatory Faucets Residential	2.2	X	.25 min.	X	3	X		=	
Lavatory Faucets Nonresidential	0.5	X	.25 min.	X	3			=	
Kitchen Faucets	2.2	X	4 min.	X	1	X		=	
Replacement Aerators	2.2	X		X		X		=	
Wash Fountains	2.2	X		X		X		=	
Metering Faucets	0.25	X	.25 min.	X	3	X		=	
Metering Faucets for Wash Fountains	2.2	X	.25 min.	X		X		=	
Gravity tank type Water Closets	1.6	X	1 flush	X	1 male ^{4,3} 3 female	X		=	
Flushometer Tank Water Closets	1.6	X	1 flush	X	1 male ^{4,3} 3 female	X		=	
Flushometer Valve Water Closets	1.6	X	1 flush	X	1 male ^{4,3} 3 female	X		=	
Electromechanical Hydraulic Water Closets	1.6	X	1 flush	X	1 male ^{4,3} 3 female	X		=	
Urinals	1.0	X	1 flush	X	2 male	X		=	
Total Daily baseline water use (BWU)								=	
_____ (BWU) X .80 = _____ Allowable water use									

- ~~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~~ 1. 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~~ 2. For nonresidential occupancies, refer to Table A, Chapter 4, 2010 California Plumbing Code, for occupant load factors.
3. The daily use number shall be increased to three if urinals are not installed in the room.

**WORKSHEET (WS-2)
20 PERCENT REDUCTION WATER USE**

20 PERCENT REDUCTION WATER USE CALCULATION TABLE								
FIXTURE TYPE	FLOW RATE (gpm) ²¹		DURATION		DAILY USES		OCCUPANTS ^{3,42,3}	GALLONS PER DAY
Showerheads		X	5 min.	X	1	X		=
Showerheads Residential		X	8 min.	X	1	X		=
Lavatory Faucets Residential		X	.25 min.	X	3	X		=
Lavatory Faucets Nonresidential		X	.25 min.	X	3	X		=
Kitchen Faucets		X	4 min.	X	1	X		=
Replacement Aerators		X		X		X		=
Wash Fountains		X		X		X		=
Metering Faucets		X	.25 min.	X	3	X		=
Metering Faucets for Wash Fountains		X	.25 min.	X		X		=
Gravity tank type Water Closets		X	1 flush	X	1 male ⁴³ 3 female	X		=
HET ⁵⁴ High Efficiency Toilet	1.28	X	1 flush	X	1 male ⁴³ 3 female	X		=
Flushometer Tank Water Closets		X	1 flush	X	1 male ⁴³ 3 female	X		=
Flushometer Valve Water Closets		X	1 flush	X	1 male ⁴³ 3 female	X		=
Electromechanical Hydraulic Water Closets		X	1 flush	X	1 male ⁴³ 3 female	X		=
Urinals		X	1 flush	X	2 male	X		=
Urinals Non-Water Supplied	0.0	X	1 flush	X	2 male	X		=
Proposed water use								=
_____ (BWU from WS-1) X .80 = _____ Allowable water use								

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. The flow rate values shall not exceed the baseline flow rates from the California Code of Regulations, Title 20, 2010 Appliance Efficiency Regulations.
32. 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.
43. For nonresidential occupancies, refer to Table A, Chapter 4, 2010 California Plumbing Code, for occupant load factors.
54. 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.
5. The daily use number shall be increased to three if urinals are not installed in the room.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

23. HCD proposes to repeal “Construction Waste Management (CWM) Plan”, “Construction Waste Management (CWM) Worksheet”, and “Construction Waste Management (CWM) Acknowledgment” in Chapter 8 as follows:

Construction Waste Management (CWM) Plan

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name: _____
Job #: _____
Project Manager: _____
Waste Hauling Company: _____
Contact Name: _____

All Subcontractors shall comply with the project's Construction Waste Management Plan.

All Subcontractor foremen shall sign the CWM Plan Acknowledgement Sheet.

Subcontractors who fail to comply with the Waste Management Plan will be subject to backcharges or withholding of payment, as deemed appropriate. For instance, Subcontractors who contaminate debris boxes that have been designated for a single material type will be subject to backcharge or withheld payment, as deemed appropriate.

1. The project's overall rate of waste diversion will be _____%.
2. This project shall generate the least amount of waste possible by planning and ordering carefully, following all proper storage and handling procedures to reduce broken and damaged materials and reusing materials whenever possible. The majority of the waste that is generated on this jobsite will be diverted from the landfill and recycled for other use.
3. Spreadsheet 1, enclosed, identifies the waste materials that will be generated on this project, the diversion strategy for each waste type and the anticipated diversion rate.
4. Waste prevention and recycling activities will be discussed at the beginning of weekly subcontractor meetings. As each new subcontractor comes on-site, the WMP Coordinator will present him/her with a copy of the CWM Plan and provide a tour of the jobsite to identify materials to be salvaged and the procedures for handling jobsite debris. Each Subcontractor foremen will acknowledge in writing that they have read and will abide by the CWM Plan. Subcontractor Acknowledgement Sheet enclosed. The CWM Plan will be posted at the jobsite trailer.
5. Salvage: Excess materials that cannot be used in the project, nor returned to the vendor, will be offered to site workers, the owner, or donated to charity if feasible.
6. [HAULING COMPANY] will provide a commingled drop box at the jobsite for most of the construction waste. These commingled drop boxes will be taken to [Sorting Facility Name and Location]. The average diversion rate for commingled waste will be _____%. As site conditions permit, additional drop boxes will be used for particular phases of construction (e.g., concrete and wood waste) to ensure the highest waste diversion rate possible.
7. In the event that the waste diversion rate achievable via the strategy described in (6) above, is projected to be lower than what is required, then a strategy of source separated waste diversion and/or waste stream reduction will be implemented. Source separated waste refers to jobsite waste that is not commingled but is instead allocated to a debris box designated for a single material type, such as clean wood or metal

Notes:

1. Waste stream reduction refers to efforts taken by the builder to reduce the amount of waste generated by the project to below four (4) pounds per square foot of building area.
2. When using waste stream reduction measures, the gross weight of the product is subtracted from a base weight of four (4) pounds per square foot of building area. This reduction is considered additional diversion and can be used in the waste reduction percentage calculations.
8. [HAULING COMPANY] will track and calculate the quantity (in tons) of all waste leaving the project and calculate the waste diversion rate for the project. [HAULING COMPANY] will provide Project Manager with an updated monthly report on gross weight hauled and the waste diversion rate being achieved on the project. [HAULING COMPANY's] monthly report will track separately the gross weights and diversion rates for commingled debris and for each source separated waste stream leaving the project. In the event that [HAULING COMPANY] does not service any or all of the debris boxes on the project, the [HAULING COMPANY] will work with the responsible parties to track the material type and weight (in tons) in such debris boxes in order to determine waste diversion rates for these materials.
9. In the event that Subcontractors furnish their own debris boxes as part of their scope of work, such Subcontractors shall not be excluded from complying with the CWM Plan and will provide [HAULING COMPANY] weight and waste diversion data for their debris boxes.
10. In the event that site use constraints (such as limited space) restrict the number of debris boxes that can be used for collection of designated waste the project Superintendent will, as deemed appropriate, allocate specific areas onsite where individual material types are to be consolidated. These collection points are not to be contaminated with non-designated waste types.
11. Debris from jobsite office and meeting rooms will be collected by [DISPOSAL SERVICE COMPANY]. [DISPOSAL SERVICE COMPANY] will, at a minimum, recycle office paper, plastic, metal and cardboard.

CONSTRUCTION WASTE MANAGEMENT (CWM) WORKSHEET

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

Project Name:	_____
Job Number:	_____
Project Manager:	_____
Waste Hauling Company:	_____

Construction Waste Management (CWM) Plan

Waste Material Type	Diversion Method:		Projected Diversion Rate
	Commingled and Sorted Off-site	Source Separated Onsite	
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid Insulation			
Fiberglass Insulation			
Acoustic Ceiling Tile			
Gypsum Drywall			
Carpet/Carpet Pad			
Plastic Pipe			
Plastic Buckets			
Plastic			
Hardiplank Siding and Boards			
Glass			
Cardboard			
Pallets			
Job office trash, paper, glass & plastic bottles, cans, plastic			
Alkaline and rechargeable batteries, toner cartridges, and electronic devices			
Other:			
Other:			

24. HCD proposes to amend Section A4.106.5 of Appendix A4 as follows:

SECTION A4.106 SITE DEVELOPMENT

A4.106.5 Cool roof. Roofing materials for Tier 1 and Tier 2 buildings shall comply with this section:

Exception: ~~Install~~ Roof constructions that have a thermal mass over the roof membrane with a weight of at least 25 lb/sf.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

25. HCD proposes to amend Section A4.106.5.3 of Appendix A4 as follows:

A4.106.5.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A4.106.5(1) for Tier 1 and Table A4.106.5(2) for Tier 2 may be used as an alternative to compliance with the 3-year aged solar reflectance values and thermal emittance.

SRI values used to comply with this section shall be calculated using the Solar ~~Reflective~~ Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E1980-01 as specified in ~~Title 24, Part 6, the California Energy Code~~, Section 118(i)3. Solar reflectance values used in the SRI-WS shall be based on the 3-year aged reflectance value of the roofing product or the equation in Section A4.106.5.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the three year aged value listed by the CRRC.

Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, Section 10-113.

Note: The Solar ~~Reflective~~ Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

26. HCD proposes to amend Section A4.203 of Appendix A4 as follows:

SECTION A4.203 PERFORMANCE APPROACH

A4.203.1 Energy performance. Using an Alternative Calculation Method (ACM) approved by the California Energy Commission, calculate the annual Time Dependent Valuation (TDV) energy for each proposed building's energy and CO₂ emissions, and compare it to the TDV energy budget (standard or "budget" building) to achieve the following:

Tier 1. Exceed the 2010 California Energy Code ~~based on the 2008 energy standards~~ requirements by 15 percent.

Tier 2. Exceed the 2010 California Energy Code ~~based on the 2008 energy standards~~ requirements by 30 percent.

Field verify and document the measures and calculations used to reach the desired level of efficiency following the requirements specified in the Title 24 Reference Appendices.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

27. HCD proposes to amend Section A4.211.1 of Appendix A4 as follows:

**SECTION A4.211
RENEWABLE ENERGY**

A4.211.1 New solar homes partnership. Install a solar photovoltaic (PV) system in compliance with the California Energy Commission New Solar Homes Partnership (NSHP).^{1,2,3} Install energy efficiency measures meeting either Tier I or Tier II below.

Tier I. Exceed the 2010 California Energy Code requirements, ~~based on the 2008 Energy Efficiency Standards~~ by 15 percent.

Tier II. Exceed the 2010 California Energy Code requirements, ~~based on the 2008 Energy Efficiency Standards~~ 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 STAR designation is applicable for that appliance.
2. Tier II requires an additional 30 percent reduction in the building's space cooling (air conditioning) energy compared to the 2010 California Energy Code.
- 2.3. Information on NSHP incentives available through the California Energy Commission may be obtained at the "Go Solar California" website.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

28. HCD proposes to amend Section A4.211.2 of Appendix A4 as follows:

A4.211.2 Solar water heating system. A Solar Rating and Certification Corporation (SRCC) OG 100 solar collector or OG 300 solar water heating system is installed. The SRCC Solar Energy Factor (SE) shall be used to determine the Solar Fraction (SF), which shall be at least 0.5 as determined using the California F-Chart available at the "gosolarcalifornia" website or through the California Energy Commission. ~~The SF shall be at least 0.5.~~

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

28-A. HCD proposes to amend Section A4.402 of Appendix A4 as follows:

**SECTION A4.402
DEFINITIONS
(Reserved)**

POSTCONSUMER CONTENT. Waste material generated by consumers after it is used and which would otherwise be discarded.

PRECONSUMER (OR POSTINDUSTRIAL) CONTENT. Material diverted from the waste stream during one manufacturing process, including scraps, damaged goods, and excess production that is used in another manufacturing process.

RECYCLED CONTENT. Refer to International Organization of Standards ISO 14021 – Environmental labels and declarations – Self-declared environmental claims (Type II environmental labeling).

RECYCLED CONTENT VALUE (RCV_M). Material cost multiplied by postconsumer content plus ½ the preconsumer content, or RCV_M = \$ X (postconsumer report + ½ preconsumer content).

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

29. HCD proposes to amend Section A4.404.3 of Appendix A4 as follows:

**SECTION A4.404
EFFICIENT FRAMING TECHNIQUES**

A4.404.3 Building systems. Use premanufactured building systems to eliminate solid sawn lumber whenever possible. One or more of the following premanufactured building systems is used:

1. Composite floor joist or premanufactured floor ~~truss~~ framing system.
2. Composite roof rafters or premanufactured roof ~~truss~~ framing system.
3. Panelized (SIPS, ICF or similar) ~~wall~~ framing systems.
4. Other methods approved by the enforcing agency.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

29-A. HCD proposes to amend Sections A4.405.3 and A4.405.3.1, and adopts Sections A4.405.3.1.2, A4.405.3.2 and A4.405.3.3 of Appendix A4 as follows:

**SECTION A4.405
MATERIAL SOURCES**

A4.405.3 Recycled content. 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.

Tier 1. Not less than a 10 percent recycled content value.

Tier 2. Not less than a 15 percent recycled content value.

Note: Sources and recycled content of some recycled materials can be obtained from CalRecycle.

Total Recycled Content = $[\sum RCV_{M1+2...} + RCV_{A1+2...}] \div \text{Total Material Cost}^1$ (Equation A4.4-1)

A4.405.3.1 Determination of recycled content value (RCV). The following equation shall be used to calculate recycled content value. $RCV = (\text{percent PC} \times \text{material cost}) + 0.5 (\text{percent PI} \times \text{material cost})$

Notes:

1. ~~PC~~ means post consumer waste
2. ~~PI~~ means post industrial waste

A4.405.3.1 Determination of recycled content value (RCV_M). The recycled content of a material shall be determined by weight or percentage of recycled content in the product. The percentage of recycled content or the fractional value of the weight is then multiplied by the total estimated cost of the material excluding fees, labor costs, and overhead.

$RCV_M = \text{Material cost}^2 \times (\text{percent postconsumer content} + \frac{1}{2} \text{ percent preconsumer content})$ (Equation A4.4-2)

A4.405.3.1.2 Assemblies. An assembly product that has been formulated using multiple materials shall consider each material separately to calculate the RCV_A. Use Equation A4.4-3 to determine RCV_A.

$RCV_A = \sum RCV_M \times \text{Assembly cost}$ (Equation A4.4-3)

A4.405.3.2 Concrete. When Supplementary Cementitious Materials (SCM) are used in concrete, the RCV shall be based on the weight or percentage of cement replaced rather than the entire concrete mix. Material cost shall be based on the cost of the cement plus the SCM.

A4.405.3.3 Steel products. Steel products may use a default recycled content of 25 percent when recycled content information is not available.

Note: Sources and recycled content of some recycled materials can be found at CalRecycle.

¹Total Material Cost is the estimated or actual material cost of the project excluding appliances, equipment, furniture and furnishings.

²Material Cost is the estimated or actual cost of the material including taxes, but shall not include fees, labor, and installation costs or overhead.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

30. HCD proposes to amend Section A4.408.1.1 of Appendix A4 as follows:

**SECTION A4.408
CONSTRUCTION WASTE DISPOSAL REDUCTION,
DISPOSAL AND RECYCLING**

A4.408.1.1 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with this section. Documentation shall be in compliance with Section 4.408.2 4.408.5.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

31. HCD proposes to amend Section A4.502 of Appendix A4 as follows:

**SECTION A4.502
DEFINITIONS**

NO ADDED FORMALDEHYDE (NAF) BASED RESINS (NAF). Resins formulated with no added formaldehyde as part of the resin cross linking structure for making hardwood plywood, particle board or medium density fiberboard. "No added formaldehyde based resins" include, but are not limited to, resins made from soy, polyvinyl acetate, or methylene diisocyanate.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

32. HCD proposes to amend Section A4.504.2 of Appendix A4 as follows:

SECTION A4.504 POLLUTANT CONTROL

A4.504.2 Resilient flooring systems. Resilient flooring systems installed in the building shall meet the percentages specified in this section and 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 (RFCI) FloorScore program, at least one of the following:

1. VOC emission limits defined in the Collaborative for High Performance Schools (CHPS) High Performance Products Database.
2. Products compliant with CHPS criteria certified under the Greenguard Children & Schools program.
3. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program.
4. Meet the California Department of Public Health, "Standard Method for Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350.)

Tier 1. At least 80 percent of the total area of resilient flooring installed shall comply.

Tier 2. At least 90 percent of the total area of resilient flooring installed shall comply.

Notes:

1. Information regarding CHPS Low-emitting Materials List High Performance may be found at www.chpsregistry.com/live or <http://www.chps.net/dev/Drupal/node/381>.
2. Information regarding RFCI certified products may be found at http://www.rfci.com/int_FSProdCert.htm.
3. Documentation must be provided that verifies that finish materials are certified to meet the pollutant emission limits in this section.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

33. HCD proposes to amend Section A4.504.3 of Appendix A4 as follows:

A4.504.3 Thermal insulation. 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 High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; or meet California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as Specification 01350).

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. complies with Tier 1 plus does not contain any added formaldehyde.

Note: Documentation must be provided that verifies the materials are certified to meet the pollutant emission limits in this section.

NOTE: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

34. HCD proposes to amend Section A4.601.4.2 of Appendix A4 as follows:

SECTION A4.601 GENERAL

A4.601.4.2 Prerequisite and elective measures for Tier 1. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 1 status:

1. From Division A4.1, Planning and Design.
 - 1.1 Comply with the topsoil protection requirements in Section A4.106.2.3.
 - 1.2 Comply with the 20 percent permeable paving requirements in Section A4.106.4.
 - 1.3 Comply with the cool roof requirements in Section A4.106.5.
 - 1.4 Comply with at least two elective measures selected from Division A4.1.
2. From Division A4.2, Energy Efficiency.
 - 2.1 Exceed the 2010 California Energy Code requirements, ~~based on the 2008 Energy Efficiency Standards~~ by 15 percent.
 - 2.2 Comply with at least four elective measures selected from Division A4.2.
3. From Division A4.3, Water Efficiency and Conservation.
 - 3.1 Comply with the reduced flow rate for kitchen sink faucets in Section A4.303.1.
 - ~~3.2 Comply with the Tier 1 potable water use reduction for landscape irrigation design in Section A4.304.4.~~
 - ~~3.3 Comply with at least one elective measure selected from Division A4.3.~~
 - 3.2 Comply with the landscape irrigation water budget requirement in Section A4.304.3.
 - 3.3 Comply with the Tier 1 potable water use reduction for landscape irrigation design in Section A4.304.4.
 - 3.4 Comply with at least one elective measure selected from Division A4.3.
4. From Division A4.4, Material Conservation and Resource Efficiency.
 - 4.1 Comply with the 20 percent cement reduction requirements in Section A4.403.2.
 - 4.2 Comply with the 10 percent recycled content requirements in Section A4.405.3.
 - 4.3 Comply with the 65 percent reduction in construction waste in Section A4.408.1.
 - 4.4 Comply with at least two elective measures selected from Division A4.4.
5. From Division A4.5, Environmental Quality.
 - 5.1 Comply with the 80 percent resilient flooring systems requirements in Section A4.504.2.
 - 5.2 Comply with the thermal insulation requirements for Tier 1 in Section A4.504.3.
 - 5.3 Comply with at least one elective measure selected from Division A4.5.

Note: The Residential Occupancies Application Checklist contained in Section A4.602 may be used to show which elective measures are selected.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

35. HCD proposes to amend Section A4.601.5.2 of Appendix A4 as follows:

A4.601.5.2 Prerequisite and elective measures for Tier 2. In addition to the mandatory measures, compliance with the following prerequisite and elective measures from Appendix A4 is also required to achieve Tier 2 status.

1. From Division A4.1, Planning and Design.
 - 1.1 Comply with the topsoil protection requirements for Tier 1 and Tier 2 in Section A4.106.2.3.
 - 1.2 Comply with the 30 percent permeable paving requirements in Section A4.106.4.
 - 1.3 Comply with the cool roof requirements in Section A4.106.5.
 - 1.4 Comply with at least four elective measures selected from Division A4.1.
2. From Division A4.2, Energy Efficiency.
 - 2.1 Exceed the 2010 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 Division A4.3, Water Efficiency and Conservation.
 - 3.1 Comply with the Tier 1 reduced flow rate for kitchen sink faucets in Section A4.303.1.
 - 3.2 Comply with the Tier 2 dishwasher requirements in Section A4.303.1.
 - ~~3.3 Comply with the Tier 2 potable water use reduction for landscape irrigation design in Section A4.304.4.~~
 - ~~3.4 Comply with at least two elective measures selected from Division A4.3.~~
 - 3.3 Comply with the landscape irrigation water budget requirement in Section A4.304.3.
 - 3.4 Comply with the Tier 2 potable water use reduction for landscape irrigation design in Section A4.304.4.
 - 3.5 Comply with at least two elective measures selected from Division A4.3.

4. From Division A4.4, Material Conservation and Resource Efficiency.
 - 4.1 Comply with the 25 percent cement reduction requirements in Section A4.403.2.
 - 4.2 Comply with the 15 percent recycled content requirements in Section A4.405.3.
 - 4.3 Comply with the 75 percent reduction in construction waste in Section A4.408.1.
 - 4.4 Comply with at least four elective measures selected from Division A4.4.

5. From Division A4.5, Environmental Quality.
 - 5.1 Comply with the 90 percent resilient flooring systems requirements in Section A4.504.2.
 - 5.2 Comply with the thermal insulation requirements for Tier 1 and Tier 2 in Section A4.504.3.
 - 5.3 Comply with at least one elective measure selected from Division A4.5.

Note: The Residential Occupancies Application Checklist contained in Section A4.602 may be used to show which elective measures are selected.

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

36. HCD proposes to amend Section A4.602 of Appendix A4 as follows:

**SECTION A4.602
RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST**

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
4.106.3 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 <u>to keep water from entering buildings.</u>	<input checked="" type="checkbox"/>					
...						
A4.211.1 Install a solar photovoltaic (PV) system in compliance with the California Energy Commission New Solar Homes Partnership (NSHP). ^{1,2,3} Install energy efficiency measures meeting either Tier I or Tier II below. Tier 1. Exceed the <u>2010 California Energy Code</u> requirements, based on the 2008 Energy Efficiency Standards requirements by 15 percent.		<input type="checkbox"/>			<input checked="" type="checkbox"/> —	<input checked="" type="checkbox"/>

<p>Tier 2. Exceed the 2010 <i>California Energy Code</i> requirements, based on the 2008 Energy Efficiency Standards requirements by 30 percent.</p> <p>Solar water heating may be used to assist in meeting the energy efficiency requirements of either Tier I or Tier II.</p> <p>1. In addition, for either Tier I or II, each appliance provided by the builder must be ENERGY STAR if an ENERGY STAR designation is applicable for that appliance. 2. <u>Tier II requires an additional 30 percent reduction in the building's space cooling (air conditioning) energy compared to the 2010 California Energy Code.</u> 3. 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.</p>			<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
...						
<p>4.303.2 When using the calculation method specified in Section 4.303.1, multiple showerheads <u>controlled by a single valve</u> shall not exceed maximum flow rates.</p>	<input checked="" type="checkbox"/>	7/01/2011				
...						
<p>A4.304.3 A water budget shall be developed for landscape irrigation.</p>			<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ²	<input type="checkbox"/>	
...						
<p>4.406.1 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 enforcing agency.</p>	<input checked="" type="checkbox"/>					
...						
<p>4.408.1 A minimum of 50 percent of the construction waste generated at the site is diverted to recycle or salvage.</p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>4.408.1 <u>Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with one of the following:</u></p> <p>1. <u>Comply with a more stringent local construction and demolition waste management ordinance; or</u></p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<p>2. A construction waste management plan per <u>Section 4.408.2</u>; or</p> <p>3. A waste management company per <u>Section 4.408.3</u>; or</p> <p>4. The waste stream reduction alternative per <u>Section 4.408.4</u>.</p>						
<p>4.408.2 Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency.</p> <p>...</p>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>4.504.4 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 (RFCI) FloorScore program; or meet CA Dept. of Public Health, <u>"Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers", Version 1.1, February 2010 (also known as Specification 01350.)</u></p> <p>...</p>	<input checked="" type="checkbox"/>					
<p>...</p>						
<p>4.507.2 Duct systems are sized, designed, and equipment is selected using the following methods:</p> <p>1. Establish heat loss and heat gain values according to <u>ANSI/ACCA 2 Manual J</u> or equivalent.</p> <p>2. Size duct systems according to <u>ANSI/ACCA 1 29-D (Manual D)</u> or equivalent.</p> <p>3. Select heating and cooling equipment according to <u>ANSI/ACCA 3 36-S (Manual S)</u> or equivalent.</p>	<input checked="" type="checkbox"/>					

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.