

**INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION (CBSC)**

**REGARDING ADOPTION OF AMENDMENTS TO THE 2010 CALIFORNIA BUILDING STANDARDS
CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), PART 11, CALIFORNIA GREEN
BUILDING STANDARDS CODE**

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE AND BENEFITS:

This proposed action by CBSC adopts and amends mandatory and voluntary green building standards for occupancies within its authority. The proposed actions further build upon a framework of voluntary measures adopted by CBSC in 2008 and make minor modifications and clarifications to the 2010 code and its recently published supplement, which became effective on July 1, 2012. The intent of the code continues to be to (1) address the problem of greenhouse gas emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; and (3) respond to the directives by the Governor in 2008 to develop a green building code for 2010.

The proposed standards are amendments to Parts 2, 3, 4, 5, and 6 of Title 24 and are being placed into Title 24, Part 11, the California Green Building Standards Code, to provide clarity to users designing or constructing to the green building standards. It is the intent of CBSC to integrate these standards into their respective parts at a future date.

The proposed changes to the building standards with statewide application will lead to substantial environmental benefits through reduction in the use of energy, water, and raw materials; improved public and building occupant health due to improved indoor air quality; and overall reduced detrimental environmental impacts.

Specific Proposed Regulatory Actions: CBSC proposes to amend the 2010 California Green Building Standards (CALGreen) Code in a new triennial edition. The rationale for each adoption by chapter, division, and section is listed below. Significant proposals which cut across the entire nonresidential CALGreen are:

- To repeal Division 5.7, the division included in the intervening code cycle for sections applicable to nonresidential additions and alterations within CBSC authority;
- To propose Division 5.7 sections for relocation into the other divisions of Chapter 5 for clarity, aligning with Department of Housing and Community Development's (HCD) format for integrating residential additions into Chapter 4;
- To repeal Reference Standard Section A6.1 (Part 1 & Part 2), building commission referenced standard, which is gutted significantly by the Energy Commission's proposal to adopt commissioning standards for energy related building systems into the 2013 California Energy Code;
- To change format, coordinated with the Office of Statewide Planning and Development (OSHPD), to move all of OSHPD's voluntary measures for medical facilities into new Appendix A6.1.

It is further CBSC's intent to provide clarity to the code user in consistent reference nomenclature to other parts of Title 24, for example, the 2013 California Energy Code, which was requested by that agency. Not all such reference changes are shown in the express terms and none is justified below, because they are editorial in nature, having no regulatory effect, and will be coordinated in the codification of the new edition.

CHAPTER 1. ADMINISTRATION

CBSC is proposing to delete a reference to Matrix Adoption Tables to determine a state agency's authority to regulate certain buildings or applications. The problem has been that some code users cite the tables as regulatory indicators of authority, when the tables are meant to be road maps or aids to code use. In addition, the tables frequently contain errors and often are not modified to keep up with code changes. This change is being proposed by CBSC and other agencies in all parts of Title 24 with this Chapter 1 language.

CHAPTER 2. DEFINITIONS

CBSC is proposing to relocate from individual chapters definitions for terms used in more than one chapter to provide clarity for the code user. Some, such as COOL PAVEMENTS, are being coordinated with the Department of Housing and Community Development (HCD) as they expand the residential provisions to certain additions and high-rise buildings. Others, such as GRAYWATER and RAINWATER, are statutory definitions. There is no construction cost or regulatory effect from the adoption of these clarifying definitions.

CHAPTER 3. GREEN BUILDING, Section 301 GENERAL

Section 301.3 Nonresidential additions and alterations: This section is relocated from Division 5.7, the division included in the intervening code cycle for sections applicable to nonresidential additions and alterations. Division 5.7

sections are proposed for relocation into the other divisions of Chapter 5 for clarity to align with HCD's format for integrating residential additions into Chapter 4.

CHAPTER 5. NONRESIDENTIAL MANDATORY MEASURES

Sections altered by the relocation of Division 5.7 measures which are otherwise not changed materially are as follows:

5.106.1 Storm water pollution prevention, 5.106.4 Bicycle parking, 5.106.10 Grading and Paving, 5.303.1 Meters, 5.303.2 20% [Water] Savings, 5.303.2.1 Multiple showerheads serving one shower, 5.303.4

Wastewater reduction, 5.304.1 Water budget, 5.304.2 Outdoor potable water use, 5.304.3 Irrigation design, 5.504.1.3 Temporary ventilation, 5.506.2 Carbon dioxide (CO₂) monitoring and 5.507.4 Acoustical control.

Other sections with regulatory changes are explained individually below.

Division 5.1 PLANNING AND DESIGN

5.106.4 Bicycle parking. This section is modified as noted above for additions and alterations and is proposed for reformatting to accommodate alternate provisions to be proposed by the Division of the State Architect.

Section 5.106.8 Light pollution reduction [N]. Becoming mandatory on July 1, 2012, this section is being modified to indicate its applicability only to newly constructed projects, limiting the scope of this new standard as code users get used to it. It is also being updated to reflect the correct name of its referenced standard, IES TM-15-11, to provide clarity.

Division 5.2 ENERGY EFFICIENCY

Section 5.201.1 Scope. CBSC is proposing to repeal the Note concerning intent but retain the reference to the California Energy Commission's authority for mandatory building energy efficiency standards. During the 2012 Triennial Code Adoption Cycle, the California Energy Commission will adopt voluntary green building standards related to energy usage for Tier 1 and Tier 2. Therefore, language adopted by CBSC in Division 5.2 and Appendix Division A5.2 is being repealed since the California Energy Commission will provide language which incorporates their meaning and intent.

Division 5.3 WATER EFFICIENCY AND CONSERVATION

Section 5.303.2 20% savings – Table 5.303.2.3. CBSC is proposing modifying Table 5.303.2.3 to eliminate the mandatory 20% reduction for a nonresidential lavatory faucet. Set at 0.5 gpm, currently this is the lowest flow rate available without use of special aerators or other devices. A coordinated proposal omits the footnote concerning use of aerators to achieve 0.4 gpm or lower. These changes are intended to assist code users with compliance until lower-flow faucet technology is developed and readily available. The related footnote is moved to the voluntary table in Appendix A5 for 30% or greater water use reduction; a new footnote is added in coordination with HCD.

5.303.6 Plumbing fixtures and fittings and Table 5.303.6. CBSC, in coordination with HCD, proposes to eliminate the standards table here and make reference to the appropriate locations where standards are found for clarity for the code user.

Division 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Sections 5.407.2 Moisture control and 5.407.2.2 Entries and openings. These sections are proposed for coordination with HCD's residential provisions as recommended by Air Resources Board (ARB) staff. It clarifies for the code user what is required without the use of explanatory notes.

5.408.1 Construction waste management. This section and subsections are proposed for amendment to add demolition waste diversion of 50% for nonresidential projects for two reasons: Response to public comment and the incorporation of additions and alterations into CBSC standards.

- Interested parties such as CARB, which includes demolition waste in its estimate of greenhouse gas reduction from the mandatory code, and StopWaste.org have long requested that CBSC include demolition waste. And, in the early development of mandatory standards for the 2010 CALGreen Code, CBSC staff based its cost/benefit analysis on combined construction and demolition (C&D) waste. It found a relatively modest cost of on a small nonresidential project for a detailed C&D plan to be projected at less than 1% of construction cost, and the same for larger projects. However, because all mandatory provisions were applicable to newly constructed projects, CBSC did not include demolition waste in its 50% diversion requirements although HCD always has.
- As of July 1, 2012, many mandatory provisions apply to nonresidential additions and alterations. It would seem appropriate to align with HCD on the inclusion of demolition waste, at the same time satisfying public comments, contributing to market growth of recycled product and assisting in the reduction of greenhouse gas emissions. Additionally, CalRecycle has found that almost 200 jurisdictions have demolition waste ordinances, and if there is a local problem with recycling facilities or markets for goods, CBSC and HCD provide an exception to the 50% mandate. Because of this exemption, CBSC also proposes to repeal a more specific exception for isolated jobsites as redundant.

Sections 5.410.1 Recycling by occupants and 5.410.1.1 Additions or alterations [AA]. CBSC proposes to modify these sections to recognize that stricter local recycling ordinances may apply, and to clarify for the code user how this section would be triggered for a building alteration or addition, as required elsewhere in law.

Section 5.410.2 Commissioning [N]. This section and subsections are proposed for modification to coordinate with the California Energy Commission's (CEC) parallel rulemaking for the 2013 California Energy Code. The energy

commission, which originally proposed mandatory building commissioning for the CALGreen Code, is now proposing to move commissioning for energy-related systems in buildings 10,000 square feet or greater into the energy code. The energy commission recommends keeping mandatory commissioning of other systems in CALGreen in order to meet California's goals of water efficiency, use of renewable energy and any other systems not covered by the energy code.

Section 5.410.4 Testing and adjusting. This section and subsections are proposed by CBSC for modification to coordinate requirements for new buildings and additions and alterations. Since CEC is confining its commissioning for heating, ventilating and air conditioning (HVAC) systems to buildings 10,000 square feet or greater, CBSC proposes to maintain the requirement for HVAC balancing for buildings under 10,000 square feet in this section.

Division 5.5 ENVIRONMENTAL QUALITY

Most of the changes proposed for this division resulted from comments received from CARB. They are intended to provide clarity and accuracy for the code user, ratcheting up the compliance levels for resilient flooring now possible because of availability and economy of products, and adding a new section for mandatory refrigeration system leak reduction for large supermarkets.

Section 5.502 Definitions. New definitions are added that provide clarity to the code user in the interpretation of the new mandatory refrigeration system leak reduction measures.

Section 5.503 Fireplaces, woodstoves and fuel-burning appliances. This section has been repealed in favor of provisions developed by HCD and industry experts to recognize the multiplicity of appliances and the different standards that apply to each type. Not often specified for nonresidential applications, the fireplaces that are occasionally used in nonresidential settings meet the same standards as residential but are sometimes larger.

Sections 5.504.4.4 Composite wood products. CBSC is proposing updating the referenced standards as suggested by CARB to their current limits of compliance. On July 1, 2012, the last of the phased limits kicked in and now all subject materials must comply. This is primarily a formatting improvement for clarity for the code user.

Section 5.504.4.6 Resilient flooring systems. CBSC is proposing updating the compliance level suggested by CARB from 50 percent to 80 percent of floor area receiving resilient flooring. In its request to make this standard more stringent, CARB staff contacted several large flooring manufacturers for availability of product meeting one or more of the referenced standards. In follow-up, CBSC staff was able to corroborate the preliminary information that CARB staff had gathered.

- Most manufacturers canvassed indicated that at least 90 percent of their product is FloorScore certified and/or is tested to meet the CDPH Standard Method, Version 1.1, with one large manufacturer not reporting a percentage. That particular manufacturer has a reported product line of 10 categories that are FloorScore certified. Staff received assurance that more product is being tested and certified all the time, because manufacturers are finding that the public is demanding low VOC flooring.
- Staff looked at the issue of certified product cost and found a mixed bag that showed a tendency for thinner, lower quality flooring with no or very limited warranties not to be certified or to be cheaper than the tested/certified equivalent. Higher end, thicker, longer-warranted flooring is comparable in cost, with instances of the certified product's being less expensive. Since most commercial projects designers will opt for durable furnishings, it would appear that the cost should not be a factor in requiring 80 percent compliance for nonresidential.

Section 5.504.5.3 Filters and 5.504.5.3.1 Labeling. In response to comment, CBSC proposes rewording an exception for certain ductless HVAC equipment which is incompatible with the MERV 8 filter requirement, but which is highly efficient and provides other benefits to a building operator. The new language is intended to provide clarity to the code user in determining the class of equipment which qualifies for the exemption and what filter rating is permissible. The labeling requirement for MERV filter ratings is proposed in coordination with standards proposed by HCD.

Section 5.508.2 Supermarket refrigerant leak reduction. This is a new section and subsections proposed to CBSC by CARB intended to address the problem of greenhouse gas emissions from leaking refrigerants with the potential for global warming. They are a series of prescriptive standards, which, when added to the implementation of CARB's regulations on inspection and repair, aim to reduce leakage from a state average of 18 – 20% to an achievable 7%. CARB staff

- In its cost/benefit analysis for these proposals, projected savings in refrigerant and equipment repair of about \$40 per metric ton of carbon dioxide equivalent, with a payback period of 1 year for large stores and 3 years for small stores
- Projected the benefit to the environment to be a reduction of emissions of 440,000 metric tons of carbon dioxide equivalent from the atmosphere as supermarkets undergo remodels by 2030
- Met with stakeholders from supermarket chains across California and gained acceptance for these regulations, which many currently practice.

A report from CARB will be made available during CBSC's rulemaking as relied-on documentation, with cost data supplementary to the economic and fiscal impact statement.

Division 5.7 ADDITIONS AND ALTERATIONS TO EXISTING NONRESIDENTIAL BUILDINGS

As noted above, this division is proposed for repeal and redistribution among the applicable provisions of Chapter 5, with scoping language included in Chapter 3. The intent is to align the format with that proposed by HCD for

residential additions in Chapter 4, but to be mindful of sections, co-adopted with DSA-SS for public schools, not yet extended to school modernizations.

CHAPTER 6. REFERENCED STANDARDS

Section: 601.1 General. CBSC is proposing amendment of the table in this section to provide clarity to the code user regarding an IES standard which has been added as a reference elsewhere.

CHAPTER 8. Compliance Forms and Worksheets. Modification of the Water Use Worksheets provide clarity to the code user on proper flow rates, and conform Worksheets WS-2 and WS-3 to the omission of nonresidential lavatory faucets from the 20% reduction requirement. This action is proposed in coordination with those in Division A5.3 for 20% savings.

APPENDIX A5. NONRESIDENTIAL VOLUNTARY MEASURES

The voluntary provisions in the appendices are included to provide cities and counties with “reach” standards, including the tiers, that they can adopt for their communities. They are also intended for code users that they may want to incorporate into the design and construction of new nonresidential buildings or in additions or alterations. Appendix A5 for nonresidential construction is being proposed for amendment as follows.

Division A5.1 SITE PLANNING AND DESIGN

Section A5.102.1 Definitions. CBSC is proposing to relocate the definition of ALBEDO to Chapter 2 in recognition that it may appear in more than one chapter of the code.

Section A5.106.5.3.1 Electric vehicle supply wiring. In coordination with HCD, CBSC is proposing to repeal its current language and substitute provisions adopted by HCD. HCD has done considerable research into the issues of EV infrastructure and cost of construction and has included what it considers economical and practical performance standards for this rapidly-developing technology. CBSC, in coordination also with CARB, is proposing two voluntary tiers for compliance at 3% and 5% of total parking spaces, respectively, for nonresidential installations.

Section A5.106.11.2 Cool roof, and associated tables. CBSC is proposing to amend this voluntary section, a recognized method for reducing global warming, to coordinate with amendments being proposed by HCD and the update of energy standards for the 2013 California Energy Code. These minor changes are intended to provide clarity and consistency for the code user, especially those adopting a tier, of which the cool roof provisions are an element.

Division A5.2 ENERGY EFFICIENCY

Section A5.201.1 Scope. Minor amendments are proposed to provide clarity for the code user in recognition of the energy commission as the authoritative agency for mandatory energy standards for buildings.

Section A5.202.1 Definitions. Several definitions are proposed for repeal at the direction of the energy commission, in coordination of their major update for the 2013 California Energy Code. Two new ones are added to correlate with the rewritten tier (or “reach”) standards.

Section A5.203.1 Energy efficiency. CBSC proposes repealing this section and subsections. During the 2012 Triennial Code Adoption Cycle, the California Energy Commission will adopt voluntary green building standards related to energy usage for Tier 1 and Tier 2. Therefore, language adopted by CBSC in Division 5.2 and Appendix Division A5.2 is being repealed since the California Energy Commission will provide language which incorporates their meaning and intent. The adopted language is intended for publication in Part 11 after approval by CBSC.

A5.204.2 Energy monitoring, A5.204.3 Demand response and A5.211.4 Pre-wiring for future solar. CBSC proposes repeal of these sections as directed by the CEC. It is presumed that they are addressed in the revision of the California Energy Code.

Division A5.3 WATER EFFICIENCY AND CONSERVATION

SECTION A5.302, DEFINITIONS

Definitions for Compact Dishwasher and Standard Dishwasher are proposed to coordinate with definitions proposed by HCD in Appendix A4.

Section A5.303.2.3.4. CBSC is proposing this new section in coordination with HCD in reference to provisions of the plumbing code, being proposed simultaneously for nonpotable water systems, , to provide clarity to the code user.

Table A5.303.2.3.1. CBSC is proposing the modification of this table for a voluntary 30% reduction in water use to include the footnote to aid code users in how to comply. Since the most efficient nonresidential lavatory faucets available on the market flow at a rate of .5 gpm, it is hard to achieve a 30% reduction without the use of an aerator or other device designed for that purpose.

Section A5.503.3 Appliances. CBSC is proposing modifications to provide consistency to the code user regarding the nonresidential use of residential dishwashers, coordinating the specifications with those proposed by HCD for residential application.

Section A5.305.1 Nonpotable water systems. CBSC is proposing adding this reference to the plumbing code in coordination with HCD, with whom it is also coordinating provisions for graywater and rainwater, to provide a pointer to code users.

Section A5.305.2 Irrigation systems. CBSC is proposing adding this section in coordination with HCD. The purpose is to reinforce a provision in the California Department of Water Resources Model Water Efficient Landscape

Ordinance that requires use of recycled water when it is available. This reduces dependence on potable water for landscaping, a California goal for a drought-prone state.

Division A5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Section A5.408.3.1 Enhanced construction waste reduction. This section and subsections are coordinated here with the mandatory provisions in Chapter 5, to include demolition waste in the reach standards and provide consistency and clarity to the code user.

Division A5.5 ENVIRONMENTAL QUALITY

Section A5.504.4.5.1 Early compliance with formaldehyde limits, Tier 1 and **Section A5.504.4.5.2 Early compliance with formaldehyde limits, Tier 2.** CBSC is proposing to eliminate the tier structure in these sections, since the staggered compliance in the original CARB regulations all became mandatory on July 1, 2012, rendering early compliance moot. However, no-added formaldehyde as regulated by CARB is still a voluntary option for the code user.

Sections A5.504.4.7 Resilient flooring systems Tier 1 and **A.504.4.7.1 Resilient flooring systems, Tier 2.** At the request of CARB, both mandatory and voluntary resilient flooring standards have been stiffened, increasing Tier 1 to 90% and Tier 2 to 100%, with an exception for nonresidential buildings to allow a little specialty flooring for architectural design in a lobby, for example, or other nonresidential application.

A report from CARB will be made available during CBSC's rulemaking as relied-on documentation, with cost data supplementary to the economic and fiscal impact statement.

Sections A5.504.5.3.1 Filters, Tier 1 and **A5.504.5.3.1.1 Filters, Tier 2.** CBSC proposes these voluntary reach standards be included for two tiers of compliance, adding a second tier for MERV 13 filters. CARB had originally requested a MERV 16 for Tier 2, but applicability to most nonresidential buildings, availability, and the sizing of HVAC systems would appear to make a MERV 16 tier implausible without considerable research, stakeholder review and justification.

Division A5.6 VOLUNTARY TIERS

Sections A5.601.2 and A5.601.3, CALGreen TIER 1 and **TIER 2.** CBSC proposes repealing the energy components of the tiers. During the 2012 Triennial Code Adoption Cycle, the California Energy Commission will adopt voluntary green building standards related to energy usage for Tier 1 and Tier 2. Therefore, language adopted by CBSC for the energy tiers is being repealed since the California Energy Commission will provide language which incorporates their meaning and intent.

It also proposes minor changes recommended by CARB to clarify for the code user the criteria for the companion requirements to the energy tiers. CBSC additionally proposes updating Table A5.601 to illustrate the elements of each tier and provide additional clarity for code users, including cities and counties adopting tiers for their communities.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

As noted above, CARB proposed code enhancements for resilient flooring and to add a section on supermarket refrigerant leak reduction. CARB has developed reports on the feasibility of both measures, including cost/benefit data that may be made available upon request.

STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS:

California's building standards codes have historically been a mix of performance and prescriptive provisions and referenced standards. This code is no difference, and wherever possible, a performance option is included to provide flexibility to the code user.

CONSIDERATION OF REASONABLE ALTERNATIVES

The modifications that CBSC proposes during this rulemaking are intended to clarify and correct as necessary the provisions of the mandatory code being used in California since 2011. They are responsive to comments received in the previous and current code adoption cycles and to concerns raised at various training events held by CBSC across the state since 2010. No alternatives to this responsive action were considered.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS.

No alternatives were identified to lessen the adverse impact on small business, because most of the modifications to the code are proposed for facilitation of understanding and compliance by the code user. Those proposals that are new to the code or are made more stringent have been thoroughly vetted through stakeholder outreach and have been justified by proposing parties as to cost/benefit.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS.

There is no evidence of no significant adverse impact on business, but the most of the changes proposed are intended for clarity for the code user. Those proposals that are new to the code or are made more stringent have been vetted with impacted businesses and have been justified by proposing parties as to cost/benefit.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Federal regulations may be adopted for use in California by those state and local agencies with authority for clean air, clean water, water conservation, energy conservation, and waste management. Some of these agencies which

propose provisions for inclusion in this green building code are required to avoid duplication with federal regulations or to justify a differing state regulation, which is usually based on human health and the environment.