

*California Building  
Standards Commission  
presents*

# *CAL* Green



March 2011

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# Introduction

Michael Nearman

Architectural Associate

California Building Standards Commission

*CAL*Green

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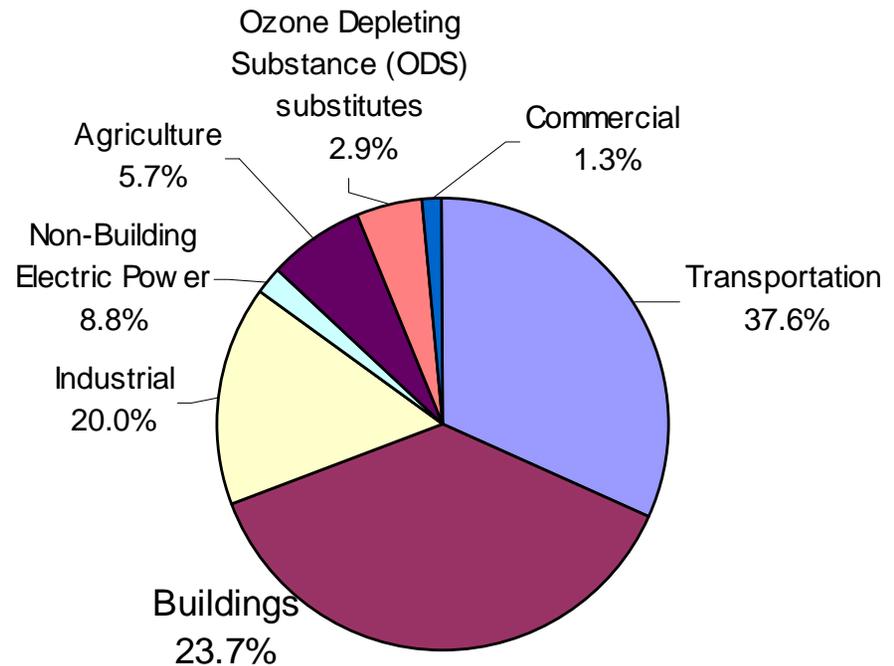
# Today's Objectives

- **Why a CALGreen Code**
- **How the CALGreen Code was developed**
  - Rulemaking process
  - Transparency of process
  - Support for CALGreen

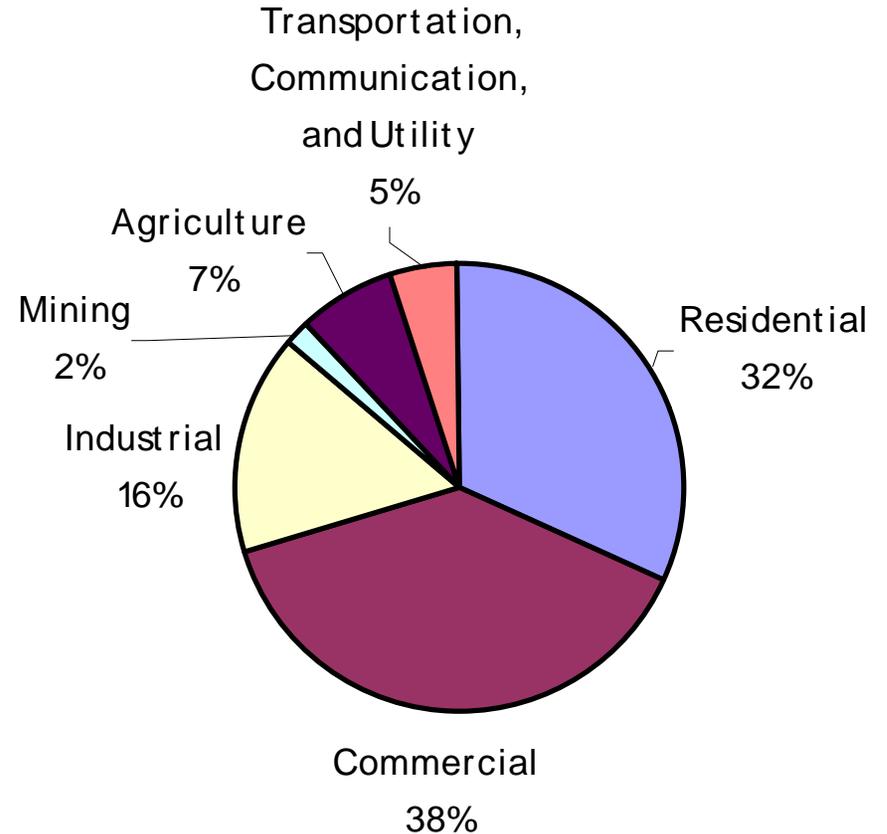
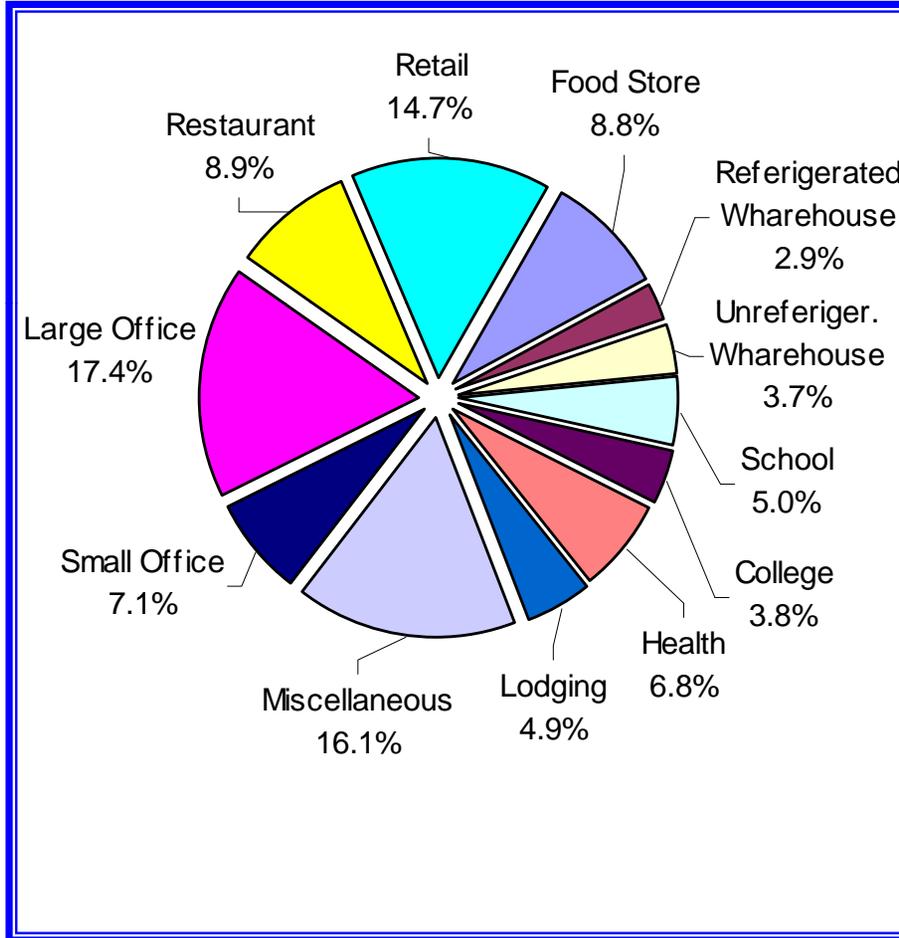
# California Green Building Initiative & Global Warming Solutions Act of 2006 (EO S-20-04 & AB32)

- Buildings are 2nd largest contributor (23.7%) to GHG emissions
- EO S-20-04: Reduce grid-based electricity by 20% in state-owned buildings by 2015; reduce associated greenhouse gas emissions
- AB 32: Reduce GHG emissions to 1990 levels by 2020

California GHG Emissions



# Energy Use in California



# Water Use in California

## Executive Order S-06-08

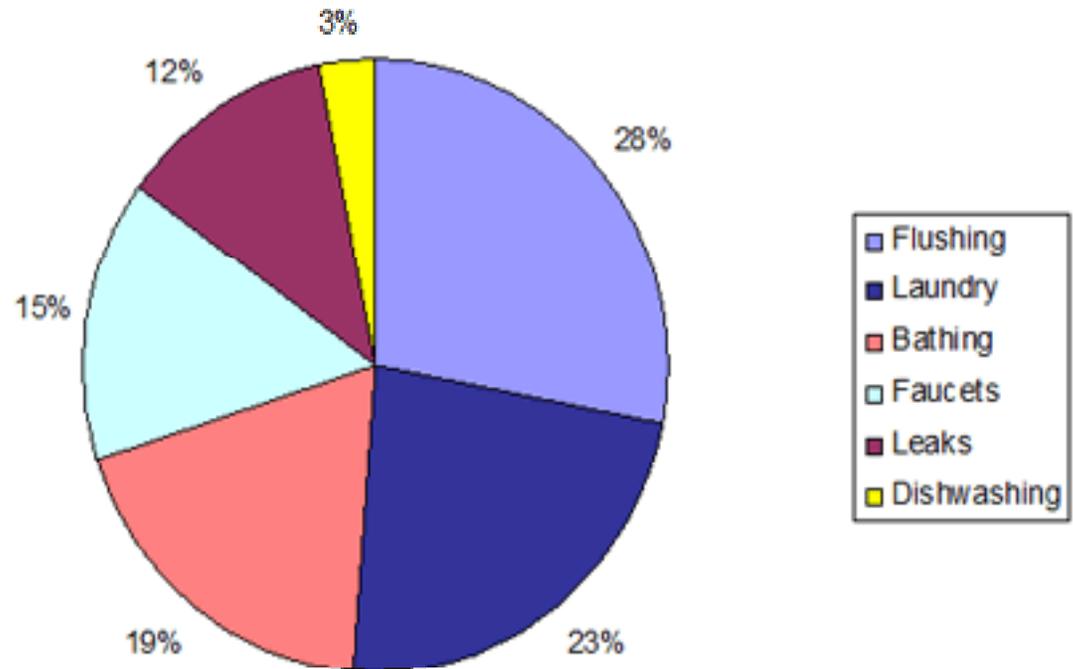
### Governor's 2009 Proclamation

Water-related uses account for **19%** of California's electricity, **30%** of its natural gas and **88 billion gallons** of diesel fuel every year.

Water-efficiency measures can reduce water and sewer costs by up to **30 percent**.

Significant savings in energy, chemical and maintenance expenses typically follow.

SOURCE - USGS



## Typical Residential Water Use

**50 to 300 gpcd** – landscape **50%**

Source - Water Education Foundation

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# Why CALGreen

## Uniformity and Consistency

- Jurisdictions adopting many different programs
- Works with other California codes

## ■ Governor's Directive

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# Adopting State Agencies

- ❑ The Department of Housing and Community Development (HCD)
- ❑ Division of the State Architect (DSA)
- ❑ Office of Statewide Health Planning and Development (OSHPD)
- ❑ California Building Standards Commission (CBSC)

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# California Building Standards Commission



- Independent Commission
- State and Consumer Services Agency

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# California Building Standards Commission

- **Chair**

- Secretary of the State and Consumer Services Agency

- **Commissioners (10)**

- Appointees specified by law
  - One architect
  - One mechanical, electrical or fire protection engineer
  - One structural engineer
  - One licensed contractor
  - Three public members, at least one must be a person with disabilities
  - One member from organized labor in the building trades
  - One local building official
  - One local fire official
- At least one member knowledgeable in barrier-free architecture
- At least one member knowledgeable in energy efficiency standards

The logo for CALGreen, featuring the text "CALGreen" in a bold, green, sans-serif font. The "CAL" is in a slightly larger font size than "Green". A thin green horizontal line is positioned below the text.

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## CBSC Responsibilities

- Review building standards proposed by state agencies
- Develop building standards for occupancies where no other state agency has the authority - non-residential
- Adopt and approve building standards for publication
- File approved building standards with the Secretary of State

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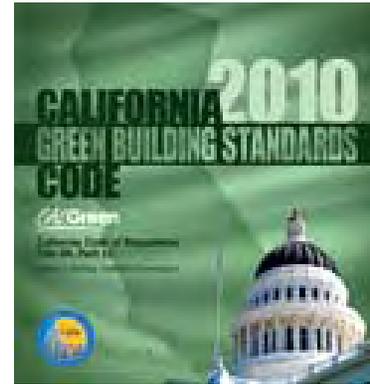
# CBSC Responsibilities

- Codify approved building standards
- Contract to publish the California Building Standards Code
- Act as the state depository for local government modifications

# 2010 California Building Standards Code – Title 24

(effective January 1, 2011)

- ❑ Part 1 - California Administrative Code
- ❑ Part 2 - California Building Code
- ❑ Part 2.5 California Residential Code
- ❑ Part 3 - California Electrical Code
- ❑ Part 4 - California Mechanical Code
- ❑ Part 5 - California Plumbing Code
- ❑ Part 6 - California Energy Code
- ❑ *Part 7 - Vacant*
- ❑ Part 8 - California Historical Building Code
- ❑ Part 9 - California Fire Code
- ❑ Part 10 - California Existing Building Code
- ❑ **Part 11 - California Green Building Standards Code**
- ❑ Part 12 - California Referenced Standards Code



**CALGreen**

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## • **Development Process of CALGreen**

- ❑ CBSC and HCD Stakeholder Green Building Focus Group
  - ❑ Building officials
  - ❑ Representatives from the construction industry
  - ❑ Representatives from model code writing bodies
  - ❑ Representatives from the environmental community
  - ❑ Representatives from point rating programs
  - ❑ State agency representatives
  - ❑ Public members

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## Contributing State Agencies

- ❑ Air Resources Board
- ❑ California Integrated Waste Management Board (CalRecycle)
- ❑ Department of General Services
- ❑ Department of Water Resources
- ❑ Energy Resources Conservation and Development Commission (Energy Commission)
- ❑ Department of Public Health

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## **Additional resources utilized in developing California Green Building Standards Code**

- ❑ Collaborative for High Performance Schools (CHPS)
- ❑ California Green Builder
- ❑ Leadership in Energy and Environmental Design (LEED)
- ❑ Green Globes
- ❑ Scottsdale Arizona Checklist
- ❑ Build It Green
- ❑ UC Berkeley Green Building Baseline
- ❑ Draft ASHRAE Standard 189P

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# **Building Standards Formal Adoption Process Administration Procedure Act**

- **Code Advisory Committees**
- **Public Comment Period**
  - 45 day and 15 Day
- **Public Hearings**
  - If requested
- **Commission Meeting**
  - Public comments

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# California Green Building Standards Code

- **Initial Voluntary Standards**
  - Effective August 1, 2009
- **City and County Adoption**
- **2010 Mandatory Standards**
  - Effective January 1, 2011
- **Next Adoption Cycle**

# Support for CALGreen

- Laborers International

**LiUNA!**

*Feel the Power*



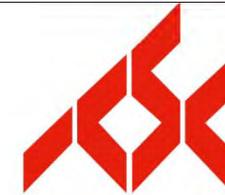
- AIACC

- NRDC

- CAL Chamber

- EDF

- CBPA



International Council of Shopping Centers



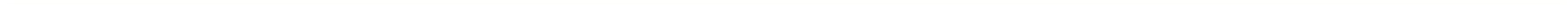
**CALGreen**

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# California Green Building Standards Code



## Overview



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## Code Format

- Chapter 1 Administration
- Chapter 2 Definitions
- Chapter 3 Green Building
- Chapter 4 Residential Mandatory Measures
- Chapter 5 Nonresidential Mandatory Measures
- Chapter 6 Reference Organizations and Standards
- Chapter 7 Installer and Special Inspector Qualifications
- Chapter 8 Compliance Forms and Worksheets
- Appendix A4
- Appendix A5

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# California Green Building Standards Code

- **Chapter 1 Administration**
  - Purpose
    - Minimize impact of construction and improve construction practices
  - Scope
    - New construction
    - Low-rise residential
  - Local amendments based on findings
    - Climate
    - Topography
    - Geology
  - Alternate Materials and Methods
  - Construction Documents
  - Application and State Agency Authorities

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# California Green Building Standards Code

## ■ Chapter 2 Definitions

- If used in more than one location in the code a defined term will be located in Chapter 2
- If only used in one chapter the defined term will be located in the definition section at the beginning of that chapter
- Banners will tell which agency adopts
  - **CONDITIONED FLOOR AREA. [BSC, HCD]**

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# California Green Building Standards Code

## ■ Chapter 3 Green Building

### □ Scope

#### ■ Newly constructed buildings

### □ Mixed Occupancy Buildings

- Shall comply with appropriate requirements for each separate occupancy type

### □ Phased Projects

### □ Voluntary Tiers

- Tier 1 and Tier 2

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# California Building Standards Commission

## Chapter 5

### Nonresidential Mandatory Measures

- Planning and Design – Division 5.1
- Energy Efficiency – Division 5.2
- Water Efficiency and Conservation – Division 5.3
- Material Conservation and Resource Efficiency – Division 5.4
- Environmental Quality – Division 5.5

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# **MATERIAL CONSERVATION AND RESOURCE EFFICIENCY** - Chapter 5-Division 5.4

## **Construction Waste Reduction, Disposal and Recycling (DSA)**

- Construction waste diversion – establish a waste management plan
- Construction waste management plan (WMP)
- Construction waste reduction of at least 50%
- 100% of excavated soil and land clearing debris

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# MATERIAL CONSERVATION AND RESOURCE EFFICIENCY - Chapter 5-Division 5.4

## Building Maintenance and Operation

- Recycling by occupants
  - Provide readily accessible that serve the entire building and are identified for the depositing of recyclable materials
  - Required by law since 1991
  - Sample ordinance at  
CAL Recycle's website



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# California Building Standards Commission

## Appendix A5

- ❑ **Nonresidential Voluntary Measures**
- ❑ Grid Neutral (DSA)
- ❑ Energy Electives (OSHPPD)

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# 2010 California Green Building Standards Code

## NONRESIDENTIAL VOLUNTARY MEASURES

### Appendix A5

The measures contained in the appendix are not mandatory unless adopted by a city, county, or city and county. CALGreen Tier 1 and Tier 2 are intended for adoption by cities, counties, and cities and counties to help California meet its goals for greenhouse gas emission reduction. Appendix provisions may also be used voluntarily by designers, builders, and property owners.

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# NONRESIDENTIAL VOLUNTARY MEASURES

**To achieve CALGreen Tier 1 or Tier 2, one must comply with the following:**

- **Comply with additional elective measures as follows:**
  - 5 electives for Tier 1
  - 15 electives for Tier 2
- **Application Checklist**
  - Mandatory provisions
  - Provisions required for compliance with Tiers

Category	Tier 1	Tier 2
All	Meet all of the provisions of Chapter 5	Meet all of the provisions of Chapter 5
Planning and Design	10% of total spaces	12% of total spaces
	Roof Slope < 2:12 SRI 64 Roof Slope > 2:12 SRI 16	Roof Slope < 2:12 SRI 78 Roof Slope > 2:12 SRI 20
	1 additional Elective from Division A5.1	3 additional Electives from Division A5.1
Energy Efficiency	Exceed 2008 CA Energy Code by 15%	Exceed 2008 CA Energy Code by 30%
Water Efficiency and Conservation	30% Savings	35% Savings
	60% of ETo times the landscape area	55% of ETo times the landscape area
	1 additional Elective from Division A5.3	3 additional Electives from Division A5.3
Material Conservation and Resource Efficiency	At least 65% reduction	At least 80% reduction
	Utilize recycled content materials for 10% of total material cost	Utilize recycled content materials for 15% of total material cost
	1 additional Elective from Division A5.4	3 additional Electives from Division A5.4
Environmental Quality	80% of flooring meets CHPS VOC limits	90% of flooring meets CHPS VOC limits
	Comply with CHPS VOC limits	Install no-added formaldehyde insulation & comply CHPS VOC limits
	1 additional Elective from Division A5.5	3 additional Electives from Division A5.5
Additional Measures	1 Additional Elective from any category	3 Additional Electives from any category

# Section 5.408 and A5.408

→ **5.408.3 Construction waste reduction of at least 50%.** [BSC, DSA-SS] Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction and demolition debris, or meet a local construction and demolition waste management ordinance, whichever is more stringent. Calculate the amount of materials diverted by weight or volume, but not by both.

**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.

**5.408.4 Excavated soil and land clearing debris.** [BSC, DSA-SS] 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

## SECTION A5.408

### CONSTRUCTION WASTE REDUCTION, DISPOSAL, AND RECYCLING

→ **A5.408.3.1 Enhanced construction waste reduction** [BSC]. Divert to recycle or salvage non-hazardous construction and demolition debris generated at the site in compliance with one of the following:

- Tier 1 At least a 65% reduction.
- Tier 2. At least an 80% reduction.

**A5.408.3.1.1 Verification of compliance.** [BSC] A copy of the completed waste management report shall be provided.

# Application Checklist

DRAFT

APPLICATION CHECKLIST FOR BSC	Mandatory	Voluntary CALGreen CALGreen Tier 1 Tier 2		
<b>CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</b>				
<b>5.408.1 Construction waste diversion.</b> Establish a construction waste management plan or meet local ordinance, whichever is more stringent.	☒			
<b>5.408.2 Construction waste management plan.</b> Submit plan per this section to enforcement authority. <b>5.408.2.1 Documentation.</b> Provide documentation of the waste management plan that meets the requirements listed in section 5.408.2 items 1 thru 4, and the plan is accessible to the enforcement authority. <b>5.408.2.2 Isolated jobsites.</b> 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.	☒  ☒	☐	☐	
<b>5.408.3 Construction waste.</b> Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris or meet local ordinance, whichever is more stringent. <b>Exceptions:</b> 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working <b>A5.408.3.1 Enhanced construction waste reduction.</b> Divert to recycle or salvage non-hazardous construction and demolition debris generated at the site in compliance with one of the following: <div style="border: 1px dashed black; padding: 2px; margin: 5px 0;">             Tier 1. At least a 65% reduction.              Tier 2. At least an 80% reduction.           </div> <b>A5.408.3.1.1 Verification of compliance.</b> A copy of the completed waste management report shall be provided. <b>Exceptions:</b> 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.	☒         ☒	         ☒	         ☒	



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REPORTING TRANSPARENCY IN GOVERNMENT

**CBSC**  
CALIFORNIA BUILDING STANDARDS COMMISSION

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California This Site

## Welcome to the California Building Standards Commission Website

Welcome to the California Building Standards Commission website. CBSC is responsible for administering California's building codes, including adopting, approving, publishing, and implementing codes and standards. This site provides information on:

- Read the **CALGreen** story ([PDF](#))
- **2010 California Green Building Standards (CALGreen) Code** ([PDF](#)), Mandatory provisions effective **January 1, 2011**.
- California Building Standards Commission Meetings are now webcast - <http://www.dca.ca.gov/stream/audiocast.aspx>  
→ Link is active five minutes prior to meeting start times.
- **Guide to Title 24 - First Edition**, January 2011
- **California Building Standards Glossary of Terms**
- **2010 Annual Code Adoption Cycle**
- **Final Commission Approval of PEX**
- Errata items identified by the BSC for the 2010 code standards ([PDF](#))
- California Green Building Standards Code serves as key source for new [International Code](#).
- For the latest news regarding the **H1N1 Flu Virus**. See The California Department of Public Health web site. ["http://www.cdph.ca.gov/HealthInfo/discond/Pages/SwineInfluenza.aspx"](http://www.cdph.ca.gov/HealthInfo/discond/Pages/SwineInfluenza.aspx)
- For a description of the effective dates for annual supplements and emergency rulemaking to the 2007 California Building Standards Codes see [Bulletins](#).
- **CODES ON LINE!** - The 2007 California Building Code, Part 2 and the California Fire Code, Part 9 of Title 24, are available for viewing on line via the following International Code Councils web site link: California Codes, Title 24, Part 1, 6, 8, 10, 11 & 12 are also available for viewing and download in PDF form on this web site. See 'Title 24' below for the location of these codes.
  - [2007 Edition](#)
  - [2010 Edition](#) (Effective Jan. 1, 2011)
- **CODES ON LINE!** - The 2007 & 2010 California Plumbing Code and the California Mechanical Code, are available for viewing on line via the following International Association of Plumbing and Mechanical Officials web site link. The entirety of both documents are available for download and viewing in PDF form on these web sites.
  - **2007 Edition - Mechanical & Plumbing Code**  
<http://www.iapmo.org/Pages/californiaplumbingcode.aspx>, <http://www.iapmo.org/Pages/californiamechanicalcode.aspx>

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[www.bsc.ca.gov](http://www.bsc.ca.gov)

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# Questions?



Send any questions to  
[CBSCTraining@dgs.ca.gov](mailto:CBSCTraining@dgs.ca.gov)