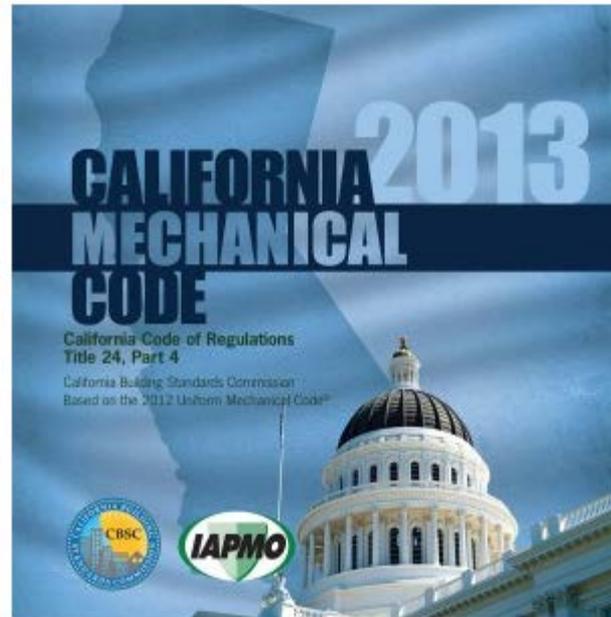
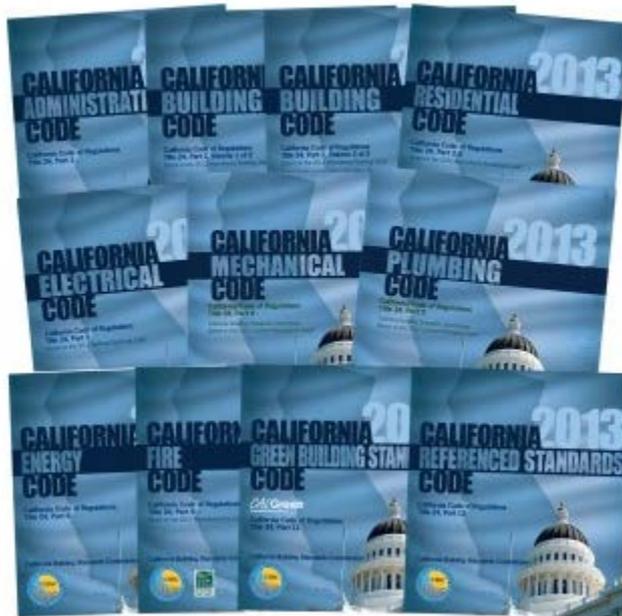




Office of Statewide Health Planning and Development Facilities Development Division

Brian Coppock,
Regional Compliance Officer





2013 California Mechanical Code

HOW TO DISTINGUISH MODEL CODE LANGUAGE FROM CALIFORNIA AMENDMENTS

To distinguish between model code language and incorporated California Amendments, including exclusive California standards, California amendments will appear in italics.

Symbols in the margins indicate the status of code changes as follows:

- [BSC]** This symbol identifies which State agency(s) by its “acronym” that has amended a section of the model code. For a complete listing of State agency acronyms, see the Application Section within Chapter 1, Division I.
- ||** This symbol indicates that a change has been made to a California amendment.
- |** This symbol indicates that a section, paragraph, or table has been revised or relocated within IAPMO model code language.
- >** This symbol indicates deletion of California language.
- This symbol indicates where an entire section, paragraph, or table has been deleted from IAPMO model code language.





2013 California Mechanical Code

CHAPTER 3 GENERAL REQUIREMENTS

303.0 Installation.

303.1 Installation Practices.

Mechanical systems shall be installed in a manner in accordance with **this code, applicable standards, and the manufacturer's installation instructions.**

Ask for the manufacturer's installation instructions and have them available on site/electronically.





2013 California Mechanical Code

CHAPTER 3 GENERAL REQUIREMENTS

303.5 Anchorage of Appliances. Appliances designed to be fixed in position **shall be securely fastened in place** in accordance with the manufacturer's installation instructions. Supports for appliances shall be designed and constructed to sustain vertical and horizontal loads within the stress limitations specified in the building code.

303.6 Movement. Movement of **appliances with casters shall be limited by a restraining device** installed in accordance with the connector and appliance manufacturer's installation instructions.

303.7 Identification of Equipment. Where more than one heating, cooling, ventilating, or refrigerating system is installed on the roof of a building or within a building, **it shall be permanently identified as to the area or space served by the equipment.**





2013 California Mechanical Code

CHAPTER 3 GENERAL REQUIREMENTS

304.0 Service and Access to and Appliances.

304.1 General. Equipment and appliances shall be accessible for inspection, service, repair, and **replacement without removing permanent construction**. Clearance shall be maintained to:

- (1) Clean heating surfaces.
- (2) Replace filters, blowers, motors, burners, controls, and vent connections.
- (3) Lubricate moving parts,
- (4) Adjust and clean burners, pilots, and the proper functioning of explosion vents, where provided. [NFPA54:9.2.]

Unless otherwise specified, not less than 30 inches (762 mm) in depth, width, and height of working space shall be provided.





2013 California Mechanical Code

CHAPTER 3 GENERAL REQUIREMENTS

310.0 Electrical Connections.

310.1 General. Equipment regulated by this code requiring electrical connections of more than 50 volts **shall have a positive means of disconnect adjacent to and in sight from the equipment served.**

A 120 volt receptacle shall be located within 25 feet (7620 mm) of the equipment for service and maintenance purposes. The receptacle need not be located on the same level as the equipment. Low-voltage wiring of 50 volts or less within a structure shall be installed in a manner to prevent physical damage.





2013 California Mechanical Code

CHAPTER 3 GENERAL REQUIREMENTS

311.0 Workmanship.

311.1 Engineering Practices. Design, construction, and **workmanship** shall comply with accepted engineering practices and **shall be of such character as to secure the results sought to be obtained by this code.**

311.2 Concealing Imperfections. It is unlawful to conceal cracks, holes, or other **imperfections in materials** by welding, brazing, or soldering, by using therein or thereon paint, wax, tar, solvent cement, other leak-sealing or repair agent.





2013 California Mechanical Code

CHAPTER 5 EXHAUST SYSTEMS

508.0 Hoods.

508.1 Where Required. **Hoods shall be installed at** or above commercial-type deep-fat fryers, broilers, fry grills, steam-jacketed kettles, hot-top ranges, ovens, barbecues, rotisseries, dishwashing machines, and similar equipment that produces comparable amounts of steam, smoke, grease, or heat in a food-processing establishment.

For the purpose of this section, a food-processing establishment shall include a building or portion thereof used for the processing of food, but shall not include a dwelling unit.





2013 California Mechanical Code

CHAPTER 5 EXHAUST SYSTEMS

508.2 Joints and Penetrations. Seams, joints and penetrations of the hood enclosure that direct and capture grease-laden vapors and exhaust **gases shall have a liquid tight continuous external weld** to the hood's lower outermost perimeter. [NFPA 96: 5.1.2]

508.2.1 Internal Welding. Seams, joints, and penetrations of the hood **shall be permitted to be internally welded**, provided that the weld is formed smooth or ground smooth, so as to not trap grease, and is cleanable. [NFPA 96: 5.1.3]

508.2.2 Sealed. Internal hood joints, seams, filter support frames, and appurtenances attached inside the hood shall be sealed or otherwise made grease-tight. [NFPA 96: 5.1.4]





2013 California Mechanical Code

CHAPTER 5 EXHAUST SYSTEMS

510.5.2.1 Welded Duct Connection. Duct-to-duct connection shall be as follows:

- (1) Telescoping joint, as shown in Figure 510.5.2.1(1).
- (2) Bell-type joint, as shown in Figure 510.5.2.1(2).
- (3) Flange with edge weld, as shown in Figure 510.5.2.1(3).
- (4) Flange with filled weld, as shown in Figure 510.5.2.1(4). [NFPA 96:7.5.5.1]

510.5.2.2 Butt Welded Connections. Butt welded connections shall not be permitted. [NFPA 96:7.5.5.2]

510.5.2.3 Inside Duct Section. For telescoping and bell-type connections, the inside duct section shall be uphill of the outside duct section. [NFPA 96:7.5.5.3]





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

603.0 Installation of Ducts.

603.2 Metal Ducts. **Ducts shall be securely fastened** in place at each change of direction in accordance with **SMACNA HVAC Duct Construction Standards - Metal and Flexible**.

Vertical rectangular ducts and vertical round ducts shall be supported in accordance with SMACNA HVAC Duct Construction Standards Metal and Flexible.

Riser ducts shall be held in place by means of metal straps or angles and channels to secure the riser to the structure.





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

603.5 Support of Ducts.

Installers shall provide the manufacturer's field fabrication and installation instructions.

In the absence of specific supporting materials and spacing, approved factory-made air ducts shall be permitted to be installed in accordance with SMACNA HVAC Duct Construction Standards Metal and Flexible.





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

604.0 Insulation of **Ducts**.

604.1 General. Supply-air ducts, return-air ducts, and plenums of a heating or cooling system **shall be insulated to achieve the minimum thermal (R) value** in accordance with SMACNA HVAC Duct Construction Standards Metal and *Flexible*. [OSHPD 1, 2, 3 & 4] *Cold air ducts shall be insulated wherever necessary to prevent condensation...*





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

604.0 Insulation of **Ducts**.

Approved materials shall be installed within ducts and plenums for insulating, sound deadening, or other purposes. Materials shall have a mold, humidity, and erosion-resistant surface that meets the requirements of the referenced standard for air ducts in Chapter 17. Duct liners in systems operating with air velocities exceeding 2000 feet per minute (10.16 *m/s*) shall be fastened with both adhesive and mechanical fasteners, and **exposed edges shall have approved treatment to withstand the operating velocity.**

However





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

604.2 [OSHPD 1, 2, 3 (surgical clinics) & 4]

Thermal acoustical lining materials shall not be installed within terminal boxes, sound traps, and other in-duct systems serving areas such as operating, cesarean operating rooms, delivery rooms, post anesthesia care units, cystoscopy, cardiac cath labs, nurseries, intensive care units, newborn intensive care units, and airborne infection isolation rooms unless terminal filters with 90 percent average efficiency based on ASHRAE Standard 52.2 or minimum efficiency value (MERV) of 14 are installed downstream of the duct lining.





2013 California Mechanical Code

CHAPTER 6 DUCT SYSTEMS

604.3 [OSHPD 1, 2 & 4] Thermal or acoustical lining materials

shall not be installed

*within ducts which are **downstream of the 99.97 percent high-efficiency particulate air (HEPA) filter** or with minimum efficiency rating value (MERV) of 17 required in Section 408.2.1 for protective environment rooms.*





2013 California Mechanical Code

CHAPTER 8 CHIMMNEYS AND VENTS

802.4.1 Plastic Piping.

Plastic piping used for venting appliances listed for use with such venting materials shall be approved. [NFPA 54: 12.5.2]

802.4.2 Plastic Vent Joints. Plastic pipe and fittings used to vent appliances shall be installed in accordance with the appliance manufacturer's installation instructions. Where primer is required, it shall be of a contrasting color. [NFPA 54: 12.5.3]





2013 California Mechanical Code

CHAPTER 8 CHIMMNEYS AND VENTS

802.5 Masonry, Metal, and Factory-Built Chimneys.

Chimneys shall be installed in accordance with Section 802.5.1 through Section 802.5.3.

802.5.1 Factory-Built Chimneys. Factory-built chimneys shall be installed in accordance with the manufacturer's installation instructions. Factory-built chimneys used to vent appliances that operate at positive vent pressure shall be listed for such application. [NFPA 54: 12.6.1.1]

802.5.2 Metal Chimneys. Metal chimneys shall be built and installed in accordance with NFPA 211. [NFPA 54: 12.6.1.2]





2013 California Mechanical Code

CHAPTER 8 CHIMMNEYS AND VENTS

802.5.6 Inspection of Chimneys or Vents.

This inspection **shall be** made after chimneys, vents, or parts thereof, authorized by the permit, have been installed and **before** such vent or part thereof has been **covered or concealed**.





2013 California Mechanical Code

CHAPTER 13 FUEL GAS PIPING

1311.0 Gas Piping Installation.

1311.1.3 Protection Against Corrosion. Gas piping in contact with earth or other material that is capable of corroding the piping shall be protected against corrosion in an approved manner.

1311.1.7 Plastic Piping. Plastic piping shall be installed outdoors, underground only.

There are two exceptions...





2013 California Mechanical Code

CHAPTER 13 FUEL GAS PIPING

1311.2.3 Aluminum Alloy Pipe.

Aluminum alloy pipe shall not be used in exterior locations or underground. [NFPA 54: 5.6.2.6]





2013 California Mechanical Code

CHAPTER 13 FUEL GAS PIPING

1311.2.5 Hangers, Supports, and Anchors.

Piping shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers, or building structural components; approved for the size of piping; of adequate strength and quality and located at intervals so as to prevent or damp out excessive vibration.

Piping shall be anchored to prevent undue strains on connected appliances and equipment and shall not be supported by other piping. Pipe hangers and supports shall comply with the requirements of MSS SP-58. [NFPA 54: 7.2.6.1]





Thank you

