

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CALIFORNIA CODE OF REGULATIONS
TITLE 25, DIVISION 1. HOUSING AND COMMUNITY DEVELOPMENT

Legend:

*Text in single underline reflects proposed new text.

*Text in ~~single strikeout~~ reflects proposed deleted text.

1. Amend Chapter 3 Heading.

**Chapter 3. FACTORY-BUILT HOUSING, AND MOBILEHOMES, AND
MANUFACTURED HOMES**

2. Amend Subchapter 2 Heading.

**Subchapter 2. MANUFACTURED HOMES, MOBILEHOMES, MULTIFAMILY
MANUFACTURED HOMES, COMMERCIAL MODULARS, AND SPECIAL PURPOSE
COMMERCIAL MODULARS**

Article 1. Administration

3. Amend Section 4000.

§ 4000. Authority for Chapter

(a) This chapter is adopted pursuant to the provisions of Sections 18015 and 18020 of the Health and Safety Code in order to implement, interpret, and make specific and otherwise carry out the provisions of Division 13, Part 2 (commencing with 18000) of the Health and Safety Code relating to the manufacture, sale, offering for sale, rent or lease of manufactured homes, mobilehomes, multifamily manufactured homes, and commercial modulars and special purpose commercial modulars.

(b) Pursuant to the National Mobile Home Manufactured Housing Construction and Safety Standards Act of 1974 (Title VI of Public Law 93-383, 88 Statute 700, 42 U.S.C. 5401, et seq.) the department is authorized responsibility for administration and enforcement of Mobile Home Manufactured Home Procedural and Enforcement Regulations and Construction and Safety Standards relating to any issue with respect to which a Federal standard (Title VI (24 C.F.R.) requirement) has been established.

~~The provisions of the Mobile Home Construction and Safety Standards Act, Title VI of the Housing and Community Development Act of 1974 (Public Law 93-383) are reproduced in Appendix B of this subchapter for reference.~~

~~(c) The Federal mobile home procedural and Enforcement Regulations and Mobile Home Construction and Safety Standards (Title VI, 24 C.F.R.) are reproduced in Article 2, division 2 and 3 of this subchapter for reference.~~

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18000 et seq., Health and Safety Code.

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4. Amend Section 4004.

§ 4004. Definitions

Definitions contained in the California Health and Safety Code, Division 13, Part 2, Chapter 1 (commencing with Section 18000) and the following shall govern this subchapter.

(a) Alteration. The conversion, replacement, addition, reconstruction, modification or removal of any equipment or installations which may affect the construction, fire safety, occupancy, plumbing, heat-producing or electrical system or the functioning thereof, of units subject to this subchapter.

(b) Ceiling Height. The clear vertical distance from the finished floor to the finished ceiling.

(c) Certification or Certified. The approval by the department or a Quality Assurance Agency, of a manufacturer to receive a supply of insignia and a reduced frequency of inspection, subsequent to the manufacturer demonstrating its quality control program which results in the production of units in compliance with applicable provisions of this Chapter.

(d) Construction. The same as "Manufacture."

(e) Design Approval Agency. A third-party entity approved by the department ~~to~~ perform one or both of the following:

(1) ~~to~~ Review and approve plans and quality control manuals relating to the manufacture or remanufacture of mobilehomes, multifamily manufactured homes, commercial coaches-modulars and special purpose commercial coaches-modulars , and.

(2) ~~to~~ Review and approve plans for the design and installation of fire sprinkler systems and ignition resistant construction systems during the manufacture of either manufactured homes or multifamily manufactured homes with two dwelling units.

(f) Dormitory. A room occupied or intended to be occupied by more than two (2) guests.

(g) Equipment. All materials, appliances, devices, fixtures, fittings or accessories used in the construction, fire safety, plumbing, heat-producing and electrical systems of units subject to this subchapter.

(h) Exit. A continuous and unobstructed means of egress to the exterior of the unit.

(i) Expandable Units. An enclosed room, semi-enclosed room, or roofed porch which expands outward from the basic unit by means of rollers, hinges, or other devices or arrangements, but is designed as a structural portion of the unit and is carried within the unit while traveling on the highway.

(j) Fire-life Safety. The conditions relating to the prevention of fire or for the protection of life and property against fire.

(k) Fire Sprinkler System. An integrated system of piping, connected to a water supply, with listed sprinklers that automatically initiate water discharge over a fire area.

(l) Flame Spread. The propagation of flame over a surface.

(m) Floor Area. The area included within the surrounding exterior walls of a unit or portion thereof, subject to these regulations.

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(n) Guest Room. Any room or rooms used, or intended to be used by a guest for sleeping purposes. Every 100 square feet of superficial floor area in a dormitory shall be considered to be a guest room.

(o) Habitable Room. A room or enclosed floor space arranged for living, eating, food preparation, or sleeping purposes (not including bathrooms, toilet compartments, laundries, pantries, foyers, hallways, and other accessory floor spaces).

(p) HUD Label. A label issued to manufactured homes manufactured on or after June 15, 1976, indicating compliance with Federal Standards and Regulations of the U.S. Department of Housing and Urban Development, pursuant to ~~Public Law 93-383~~ 42 U.S.C. 5401, et seq. and 24 CFR.

(q) Insignia. A tab or tag issued by the department to indicate compliance, on the date of issue, with the requirements of this subchapter.

(r) Insignia Administrator. A person on the staff of a Quality Assurance Agency designated as responsible for the procurement and administration of insignia and the maintenance of insignia security.

(s) Insignia Security. A system designed for the safekeeping of insignia which accounts for the disposition of each insignia, which ensures the proper entry of information on the insignia in the case of a commercial ~~each~~ modular, and which maintains restricted access to the insignia as necessary to eliminate the potential for loss, damage and misappropriation of the insignia.

(t) Installations. All arrangements and methods of construction, fire safety, plumbing, heat-producing and electrical systems used in units subject to this chapter.

(u) Interior Finish. The surface material of walls, fixed or movable partitions, ceilings and other exposed interior surfaces affixed to the unit's structure including any material such as paint or wallpaper and the substrate to which they are applied. Interior finish does not include windows and doors or their frames, skylight, trim, moldings, decorations or furnishings which are not affixed to the unit's structure.

(v) Labeled. Materials, products, or equipment bearing the inspection label of an approved listing agency.

(w) Length. The distance measured from the exterior of the front wall to the exterior of the rear wall of a unit where such walls enclose the living or other interior space, including expandable rooms, but not bay windows, porches, drawbars, couplings, hitches, wall and roof extensions, or other attachments.

(x) Listed. Equipment, materials, products, or installations included in a list published by an approved listing agency. The listing agency conducts periodic inspections of the production of the listed equipment, materials, or products, and conducts periodic evaluations of the listed installations. The list means that the listed equipment, material, product or installation fulfills one of the following:

(1) ~~that the listed equipment, material, product, or installation c~~ Complies with the corresponding appropriate nationally recognized standard and is suitable for the specified purpose, or,

(2) ~~that the listed equipment, material, product, or installation h~~ Has been tested, and found suitable for use in a specified manner.

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(y) Listing Agency. An independent agency approved by the department, that is in the business of listing and labeling equipment, materials, products, or installations and that maintains a periodic inspection program on current production of listed equipment, materials, or products or periodic evaluations of listed installations. A listing agency makes available at least annually a published report of listings that includes specific information about the nationally recognized standard with which each item complies and the manner in which the item is safe for use, or information about a listed equipment, material, product, or installation that has been tested and found suitable for use in a specified manner.

(z) Loads.

(1) Dead Load is the vertical load due to the weight of all permanent structural and nonstructural components of a unit such as walls, floors, and fixed service equipment.

(2) Live Load. The load superimposed by the use and occupancy of the unit not including the wind load, ~~earthquake seismic load~~ or dead load.

(3) Wind Load. The lateral or vertical pressure or uplift on the unit due to wind blowing in any direction.

(aa) Manufacture. The manufacture, fabrication, erection or building up of elements of a unit subject to this subchapter including, but not limited to, structural, fire and life safety, mechanical, plumbing and electrical materials and installations.

(bb) Manufactured Home. A structure as defined by section 18007 of the Health and Safety Code.

(cc) Mobile Food Preparation Unit. A special purpose commercial ~~each~~ modular upon which food is cooked, wrapped, packaged, processed, ~~or~~ portioned, or any combination thereof, for service, sale or distribution.

(dd) Mobilehome. A structure as defined by section 18008 of the Health and Safety Code.

(ee) Model. A manufactured home, mobilehome, commercial ~~each~~ modular, special purpose commercial ~~each~~ modular or multifamily manufactured home of a specific design designated by the manufacturer based on width, type of construction, or room configuration.

(ff) Multifamily Manufactured Home. A structure as defined by section 18008.7 of the Health and Safety Code. "Multi-unit manufactured housing" has the same meaning as "multifamily manufactured home", as that term is defined by section 18008.7 of the Health and Safety Code.

(gg) Occupancy. The designated purpose for which a unit or part thereof, is used or intended to be used.

(hh) Plan. A drawing or set of drawings pertaining to one design for a unit distinguished by size, room configuration or type of construction, or pertaining to one typical system to be used in production models.

(ii) Plan Approval. Relates to plans approved by the department or a Design Approval Agency as meeting the requirements of law and this subchapter ~~for one or both of the following:~~

(1) ~~for the m~~ Manufacture or remanufacture of mobilehomes, multifamily manufactured homes, commercial ~~eaches~~ modulars or special purpose commercial ~~eaches~~ modulars, and .

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(2) ~~for the d~~Design and installation of fire sprinkler systems in manufactured homes and in multifamily manufactured homes with two dwelling units.

(jj) "Professional Engineer." A person engaged in professional practice as defined in Business and Professions Code Section 6701.

(kk) Prohibited Sales Notice. A printed notification issued by the department that the unit may not be offered for sale because of violations of the provisions of law or this subchapter.

(ll) Quality Assurance Agency. A third-party entity approved by the department to conduct inspections and monitor in-plant quality assurance programs to determine compliance with approved plans, quality control manuals and/or this subchapter ~~—during one or any of the following:~~

(1) ~~during the m~~Manufacture or remanufacture of mobilehomes, multifamily manufactured homes, commercial ~~coaches and~~ modulars or special purpose commercial ~~coaches modulars~~ subject to this subchapter, ~~and,~~

(2) ~~during the i~~Installation of a fire sprinkler system or ignition resistant construction system in a manufactured home or in multifamily manufactured home with two (2) dwelling units.

(mm) Quality Assurance and Quality Control. When used in Health and Safety Code Sections 18013.2 and 18020 and this subchapter, shall mean the same.

(nn) Quality Assurance Inspector. A person approved by the department and employed by an approved Quality Assurance Agency to conduct inspections and monitor quality assurance programs pursuant to this subchapter.

(oo) Quality Control Manual. A manual developed by a manufacturer and approved by the department or a Design Approval Agency, which describes in detail a program of procedures, tests, and inspections to be performed by the manufacturer during the manufacturing process to assure that all materials, systems, equipment and assemblies of a mobilehome, multifamily manufactured home, commercial ~~coach~~ modular or special purpose commercial ~~coach~~ modular, comply with approved plans, the Health and Safety Code, Division 13, Part 2, and this subchapter.

(pp) Serial Number. ~~An identification number assigned by the manufacturer for the purpose of distinguishing each individual unit.~~ Remanufacture. The alteration, conversion, replacement, addition, reconstruction, modification or removal by a mobilehome, multifamily manufactured home, commercial modular, or special purpose commercial modular manufacturer within the manufacturer's facility, of any equipment or installations comprising the structural, fire-life safety, electrical, heat-producing and plumbing systems of an existing structure.

(qq) Smoke Detector. ~~An approved device which senses visible or invisible particles of combustion.~~ Running Gear. An assembly subsystem consisting of suspension springs, axles, bearings, wheels, hubs, tires, brakes and related hardware for the purposes of transportation and support.

(rr) Supplier. ~~A person or firm which manufactures or sells equipment, materials and goods used in the manufacture of mobilehomes, multifamily manufactured homes, commercial coaches and special purpose commercial coaches.~~ Section. A transportable portion of an entire manufactured home, multifamily manufactured home or commercial modular unit.

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(ss) Serial Number. An identification number assigned by the manufacturer for the purpose of distinguishing each individual section.

(tt) Smoke Detector. An approved device which senses visible or invisible particles of combustion.

(uu) Supplier. A person or firm which manufactures or sells equipment, materials and goods used in the manufacture of mobilehomes, multifamily manufactured homes, commercial modulars and special purpose commercial modulars.

~~(ss)~~(vv) Technical Service. Interpretation and clarification by the department of technical data relating to the application of this subchapter.

~~(tt)~~(ww) Testing Agency. An organization that is all of the following:

(1) ~~is in~~ the business of testing materials, products, equipment or installations;_

(2) ~~is a~~ Qualified and equipped for such experimental testing;_

(3) ~~is not~~ Not under the jurisdiction or control of any manufacturer or supplier for any affected industry; and_

(4) ~~is a~~ Approved by the department pursuant to Section 4006 of this subchapter.

~~(uu)~~(xx) Typical Systems. A design for either a structural, fire-life safety, electrical, mechanical or plumbing system which is designed for use in more than one model.

~~(vv) Uniform Building Code (UBC). A building code published by the International Conference of Building Officials.~~

~~(ww)~~(yy) Unit. A manufactured home, mobilehome, multifamily manufactured home, commercial ~~each~~ modular or special purpose commercial ~~each~~ modular.

~~(xx)~~(zz) Vehicle Identification Number (VIN). A serial number.

~~(yy)~~(aaa) Wall-Bearing Wall—Load Bearing. A wall which supports any superimposed load in excess of 100 pounds per lineal foot.

~~(zz)~~(bbb) Wall—Exterior. A wall or element of a wall which defines the exterior boundaries of a unit.

~~(aaa)~~(ccc) Wall-Nonbearing Wall—Non-load Bearing. ~~A~~Any wall which supports no load other than its own weight is not a load-bearing wall.

Note: Authority cited: Sections 18015, 18015.5, 18020, 18025, 18028, 18029 and 18029.5, Health and Safety Code. Reference: Sections 18007, 18007.7, 18008, 18015, 18015.5, 18020, 18025, 18025.5, 18026, 18028, 18029, 18029.3, 18029.5, 18030 and 18031.5, Health and Safety Code.

5. Amend Section 4005.

§ 4005. Enforcement

~~The department shall administer and enforce all the provisions of this chapter and the Federal Mobilehome Construction and Safety Standards, Title VI (24 C.F.R.). Any officer, agent or employee of the department is authorized to enter any premises where vehicles are manufactured, sold, offered for sale, rent or lease. He may examine any records and may inspect any vehicles, equipment or installations to ensure compliance with the provisions of this chapter and the Federal Mobilehome Construction and Safety Standards, Title VI (24 C.F.R.). When it becomes necessary to determine compliance he may require that a portion or portions of such vehicles be removed or exposed in order that an inspection or required tests be made to determine compliance.~~

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(a) The department shall administer and enforce as applicable, all provisions of this subchapter for the manufacture, remanufacture or alteration of multifamily manufactured homes, commercial modulars and special purpose commercial modulars.

(b) The department shall administer and enforce all provisions of the National Manufactured Housing Construction and Safety Standards Act of 1974 (Title VI of Public Law 93-383, 88 Statute 700, 42 U.S.C. 5401, et seq.) for the alteration of manufactured homes.

(c) Any representative of the department may examine records and inspect any units, equipment or installations to ensure compliance with this subchapter.

(d) Any representative of the department may require that a portion or portions of units be removed or exposed in order that an inspection or required tests be made, if deemed necessary by the representative to determine compliance.

(e) Any representative of the department has the right at any reasonable time to enter and inspect all manufactured home factories or establishments in the state in which manufactured homes are manufactured (Health and Safety Code Section 18025.5 (d)), when the action is taken on behalf of the United States Department of Housing and Urban Development (HUD).

Note: Authority cited: Sections 18015, 18025 and 18028, Health and Safety Code. Reference: Sections 18015, 18025, 18025.5, 18028, 18029 and 18029.5, Health and Safety Code.

6. Amend Section 4010.5.

§ 4010.5. Monitoring Inspection Fees

(a) When the department conducts inspections of the production of manufactured homes, ~~mobilehomes~~ multifamily manufactured homes, ~~commercial coaches-modulars~~, or special purpose commercial ~~coaches-modulars~~ subject to this subchapter, the manufacturer shall submit in-plant monitoring fees to the department pursuant to Section 4044 of this subchapter. In-plant monitoring fees are payable to the department, at the option of either the manufacturer ~~and/or~~ the department, in either of the following manners:

(1) Monthly, after billing by the department for in-plant monitoring hours during the billing period, ~~or,~~

(2) Advance deposit with the department by manufacturers for in-plant monitoring hours during a monthly period.

(b) The department may for cause:

(1) Require that payments be made in the form of cashiers check drawn upon a recognized bank.

(2) Discontinue in-plant monitoring for failure to pay in-plant monitoring fees or for failure to pay such fees with good and sufficient funds.

(3) Discontinue the issuance of labels or insignia for failure to pay in-plant monitoring fees or for failure to pay such fees with good and sufficient funds.

(4) Reappropriate labels or insignia previously issued for failure to pay in-plant monitoring fees or for failure to pay such fees with good and sufficient funds.

(5) Take any other administrative and judicial action authorized by law.

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(c) Where manufacturers are subject to monthly billing for in-plant monitoring fees, the department or monitoring entity shall mail a statement ~~shall be mailed~~ to the manufacturer on either the 1st, 10th, or 20th day of the month. The statement shall set forth the amount due the department for in-plant monitoring services during the billing period. The amount set forth in the statement shall be due and payable upon receipt and shall be past due if not received by the department on the 10th day after the statement date.

(d) The department, upon written notice from the manufacturer indicating that in-plant monitoring will no longer be necessary and explaining the reasons therefore, shall within 60 days from receipt of such notice refund any credits due the manufacturer from advance deposits made in accordance with ~~s~~Subsection (a)(2) of this section.

(e) The department shall charge manufacturers Technical Service Fees in accordance with Section 4044 of this subchapter for the actual time spent in processing checks or drafts which can not readily be converted to good and sufficient funds.

(f) When the enforcement of this subchapter has been delegated to third-party entities, monitoring fees shall not be charged a manufacturer for department inspections conducted to evaluate the performance of a third-party entity.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18020 and 18031, Health and Safety Code.

7. Amend Section 4019.

§ 4019. Calculations and Test Procedures

(a) The load bearing capacity of elements or assemblies may be established either by specifications or calculations in accordance with generally established principles of engineering design, or by tests acceptable to the department. When the composition or configuration of elements, assemblies or details of structural members are such that calculations of their safe load-carrying capacity and basic structural integrity cannot be accurately determined in accordance with generally established principles of engineering design, structural properties of such members or assemblies ~~may~~ shall be established by the results of tests acceptable to the department.

(b) When any structural design or method of construction is substantiated by calculations and supporting data, such calculations and supporting data shall be signed by a California licensed architect, or professional engineer and shall be submitted to the department. Such calculations or data supporting the design shall bear the architect's or professional engineer's seal, which may be a wet seal, or a secured electronic seal.

(c) When any structural design or method of construction is substantiated by tests, all such tests shall be performed by an approved testing agency acceptable to the department or shall be directed, witnessed and evaluated by an independent California licensed architect or professional engineer. All test procedures and results shall be reviewed and evaluated by a California licensed architect or professional engineer. The approved testing agency, architect or professional engineer shall submit the evaluation of test results, calculations and recommendations, accompanied by test reports from the laboratory, to the ~~Southern California office of the Division of Codes and Standards~~

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~~department.~~ The department may require that a representative of the ~~division~~
~~department~~ witness the test.

(d) Notwithstanding the provisions of ~~s~~Subsections (b) and (c) of this section the department, in the capacity of a Title VI (24 C.F.R.) approved Design Primary Inspection Agency (DAPIA) may accept calculations and test results submitted by other than a California licensed architect or professional engineer providing such calculations or test results are found acceptable to the department upon review.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

8. Amend Article 3 Heading.

Article 3. Commercial ~~Coaches~~ Modulars

9. Amend Subarticle 1 Heading.

Subarticle 1. ~~Construction and Fire Safety~~ Application and Scope

10. Amend Section 4350.

§ 4350. Application and Scope

(a) Except as provided for by Section 18026.1 of the California Health and Safety Code ~~the provisions of this article relating to design, construction and fire-life safety~~ apply to all commercial ~~coaches modulars~~ manufactured ~~after September 15, 1971,~~ and, ~~sold or,~~ offered for sale, rented or leased within this state. The provisions of this article are also applicable to the alteration, remanufacture, or conversion of any construction or fire-life safety equipment or installations ~~and or~~ change of occupancy in any commercial ~~coach modular~~ bearing or required to bear a department insignia of approval.

(b) ~~Standards for Equipment and Installations. Standards for equipment and installations are listed in Appendix CC, Table CC-1. Equipment and installations conforming to these standards in this article or to other nationally recognized and approved standards shall be considered acceptable by the department when listed or labeled and installed in accordance with the requirements of this chapter article and the conditions of their approval, except where otherwise provided in this chapter article. All equipment shall be clearly labeled to indicate compliance with applicable standards.~~

(c) The requirements of this article shall apply as follows:

(1) Special purpose commercial modulars designed for use as a module of a permanently constructed building or commercial modular, shall comply with the construction standards for commercial modulars.

(2) Commercial modular units or portions of existing units undergoing alteration, remanufacturing, repair, conversion or change in occupancy type shall be in compliance with the applicable regulations and standards no later than March 31, 2012. Thereafter, commercial modular units or portions of existing units undergoing alteration, remanufacturing, repair, conversion or change in occupancy type shall be designed and constructed in accordance with this article.

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(3) With the exception of the conditions of Section 17292(a)(1) and (3) of the Education Code, a kindergarten through grade 12 or any junior college relocatable classroom purchased or leased with public funds and used as an educational facility by a publicly funded educational institution is not subject to the requirements of this article as long as it continues in use as an educational facility by a publicly funded educational institution.

(4) Any relocatable, portable or factory-built hospital building that houses patients who have less than the capacity of normally healthy persons to protect themselves are not subject to the requirements of this article.

Note: Authority cited: Section ~~48020~~-18015, 18025, 18028, 18029 and 18029.5, Health and Safety Code. Reference: Section 17280, Education Code; Sections ~~18000-et seq.~~, 18025, 18028, 18029, 18029.3, 18029.4, 18029.5 and 129680, Health and Safety Code.

11. Adopt Subarticle 2 Heading.

Subarticle 2. Construction and Fire-life Safety

12. Amend Section 4353.

§ 4353. Minimum Requirements

(a) The construction and fire safety requirements of a commercial coach shall conform to the provisions of this article. Materials, products, applications, specifications, equipment and installations comprising the structural system fire-life safety aspects of a commercial modular shall conform with the standards incorporated in the California Code of Regulations, Title 24, Part 2, California Building Code (CBC), Chapter 35 and to the provisions of this article, including standards for listing and labeling, and compliance with manufacturer's installation instructions.

(b) All construction methods and installations shall be in conformance with this subchapter and accepted engineering practices and shall provide minimum health, safety, and fire protection to the occupants of commercial coaches and the public. The structural system, fire-life safety aspects and CALGreen standards of a commercial modular shall be designed, constructed and maintained in compliance with accepted engineering practices, with the provisions of this subarticle and with the California Code of Regulations, Title 24, Part 2, California Building Code (CBC), Chapters 2 through 10, 11B, 12, 14 through 26, 30, 31C and 35, and Title 24, Part 11.

(c) Commercial modular manufacturing facilities are exempt from mandatory requirements of the California Code of Regulations, Title 24, Part 11, Chapter 5, Sections 5.105, 5.106, 5.401, 5.403, 5.404, 5.405, 5.406, 5.407, 5.408, 5.409, 5.410, 5.501, 5.502, 5.503, 5.504, 5.505 and 5.508.

Note: Authority cited: Section ~~48020~~-18015 and 18029.5, Health and Safety Code. Reference: Sections ~~48056.5~~ 18028 and ~~48058~~-18029.5, Health and Safety Code.

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13. Repeal Section 4354.

§ 4354. Structural Analysis

~~The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests pursuant to Section 4360.7. Unit stresses may be increased in accordance with the applicable Accepted Engineering Practice Standards listed in Appendix CC-1, Table CC-1.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

14. Amend Section 4356.

§ 4356. Structural Requirements

~~(a) Commercial coaches/modulars shall be designed and constructed as a completely integrated structure capable of sustaining the design load requirements of this subarticle and those found in the California Code of Regulations, Title 24, Part 2, California Building Code (CBC) and shall be capable of transmitting these loads to running gear or, stabilizing devices, or a foundation system without causing an unsafe deformation or abnormal internal movement of the structure or its structural parts.~~

(b) Commercial modulars intended for installation on a foundation at a specific location may be designed and constructed for placement on a slab or site-installed floor which meets the requirements of Section 4353 of this subarticle.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

15. Adopt Section 4356.1.

§ 4356.1. Light Modular Steel Moment Frames

Commercial modulars may be constructed with Light Modular Steel Moment Frames, which shall be designed and constructed in compliance with Section 2211A of the California Code of Regulations, Title 24, Part 2, California Building Code (CBC), Chapter 22.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18028, Health and Safety Code.

16. Repeal Section 4357.

§ 4357. Design Dead Loads

~~Design dead loads shall be actual dead load supported by the structural assembly under consideration.~~

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17. Repeal Section 4357.5.

§ 4357.5. Design Live Loads

~~The design live loads shall be as specified in this section and Sections 4358, through 4360.4 and shall be considered to be uniformly distributed. The roof live load shall not be considered as acting simultaneously with the wind load or earthquake load, and the roof and floor live loads shall not be considered as resisting the overturning moment due to wind. Wind and earthquake loads need not be assumed to act simultaneously.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

18. Amend Section 4358.

§ 4358. Wind Loads

~~(a) Commercial coaches shall be designed to withstand minimum horizontal and uplift pressures from any direction as follows:~~

~~Horizontal... 15 lb/ft~~

~~(b) Where it is known that the commercial coach will be subject to wind loads in excess of those listed above, the commercial coach shall be designed for the appropriate loads.~~

~~(c) Roofs of all enclosed vehicles shall be designed to withstand pressures acting upward normal to the surface equal to 3/4 of the horizontal wind loads.~~

~~(d) Eaves and cornices shall be designed for a net uplift pressure of one and one-fourth times the horizontal wind load.~~

(a) Commercial modulares intended for installation on a foundation system at a specific location shall be designed in accordance with the wind load requirements of the California Code of Regulations, Title 24, Part 2, California Building Code (CBC), Chapter 16.

(b) The structural system of commercial modulares, not intended for site-specific locations, shall be designed and constructed to resist the effects of a minimum basic three-second wind speed gust of not less than eighty-five (85) miles per hour (38 m/s) in an Exposure C location.

(c) Commercial modulares intended for installation in areas subject to basic wind speed gusts in excess of an eighty-five (85) miles per hour (38 m/s) in an Exposure C location, shall have the structural system designed and constructed to comply with those higher requirements.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

19. Amend Section 4358.3.

§ 4358.3. Earthquake Regulations Seismic Loads

~~Every commercial coach and every portion thereof shall be designed to resist stresses produced by lateral forces in accordance with Section 2312 of the Uniform Building Code, 1976 edition.~~

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(a) Commercial modulares intended for installation on a foundation system at a specific location shall be designed to comply with the seismic design requirements in the California Code of Regulations, Title 24, Part 2, California Building Code (CBC) and shall be designed for actual site conditions and seismic loads applicable to the location.

(b) All other commercial modulares shall be designed using the requirements of the California Code of Regulations, Title 24, Part 2, California Building Code (CBC) with the following assumptions:

(1) S_s (Spectral response acceleration at short periods (0.2 seconds)) not less than 150 percent.

(2) S_1 (Spectral response acceleration at 1-second period) not less than 60 percent.

(3) All other factors shall be in accordance with strength design, load and resistance factor design, allowable stress design, empirical design or conventional construction and construction methods as prescribed by applicable material chapters of the CBC and by this article.

(c) Commercial modulares intended for installation or reinstallation on other than foundation systems in areas subject to seismic loads in excess to those in Subsection (b) of this section shall have the structural system designed and constructed to comply with the greater requirements.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

20. Repeal Section 4359.

§ 4359. Roof Loads

~~Flat, curved, and pitched roof members shall be designed to sustain all dead loads plus unit live loads as set forth in Table No. 23-C of the Uniform Building Code, 1976 edition. All roofs shall be designed with sufficient slope or camber to assure adequate drainage, or shall be designed to support maximum loads including possible pounding of water due to deflection.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

21. Repeal Section 4360.

§ 4360. Snow Loads

~~Where it is known that the commercial coach will be subjected to snow loads, the commercial coach shall be designed for the appropriate loads~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

22. Repeal Section 4360.2.

§ 4360.2. Floors

~~(a) Floor assemblies shall be designed to sustain all uniform dead loads plus uniform live loads as set forth in Table 23-A of the Uniform Building Code, 1976 edition.~~

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~~(b) Floors in units where partitions are installed shall be designed to support in addition to all other loads, a uniformly distributed dead load equal to 10 pounds per square foot.~~

~~(c) Structural floor sheathing shall meet the requirements of Section 2517(h) of the Uniform Building Code, 1976 edition.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

23. Repeal Section 4360.4.

§ 4360.4. Interior Walls

~~Interior walls, permanent partitions and temporary partitions which exceed 6 feet in height shall be designed to resist all loads to which they are subject but not less than a force of five pounds per square foot applied to perpendicular to the walls. The deflection of such walls under a load of five pounds per square foot shall not exceed 1/240 of the span for walls with brittle finishes and 1/120 of the span for walls with flexible finishes.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

24. Repeal Section 4360.6.

§ 4360.6. Design Load Deflections

~~When a structural assembly is subjected to total design load, the deflection shall not exceed the following:~~

~~Floor _____ L/240
Roof and Ceiling Members _____ L/180
Walls and Partitions _____ L/180~~

~~Where L = the clear span between supports or two times the length of a cantilever.~~

~~When a structural assembly is subjected to total design live load, the deflection shall not exceed the following: Floor L/360.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

25. Repeal Section 4360.7.

§ 4360.7. Structural Load Tests

~~Every structural assembly tested shall be capable of meeting the Proof Load Test or the Ultimate Load Test as follows:~~

~~(a) Proof Load Tests. Every structural assembly tested shall be capable of sustaining its dead load plus superimposed live load equal to 1.75 times the required live loads for a period of 12 hours without failure. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional load shall then be applied continuously until 1.75 times design live load plus dead load has been reached. Assembly failure shall be considered as design live load deflection (or residual~~

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~~deflection measured 12 hours after live load removal) which is greater than the limits set in Section 4360.6, rupture, fracture, or excessive yielding. An assembly to be tested shall be of the minimum quality of materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this section shall be subject to continuing qualification testing program acceptable to the department.~~

~~(b) Ultimate Load Tests. Ultimate load tests shall be performed on a minimum of three assemblies to generally evaluate the structural design. Every structural assembly tested shall be capable of sustaining its total dead load plus live loads increased by a factor of safety consistent with the material being tested. Factors of safety shall be based on nationally recognized standards and approved by the department. Tests shall be conducted with loads applied and deflections recorded in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached. Additional loading shall then be applied continuously until failure occurs or a load equal to dead load plus 1.5 factor of safety times the design live load is reached. Assembly failure shall be considered as design live load deflection greater than the limits set in Section 4360.6, rupture, fracture, or excessive yielding. Assemblies to be tested shall be representative of minimum quality of materials and workmanship of the production. Each test assembly, component, or subassembly shall be identified as to type and quality or grade of material. All assemblies, components, or subassemblies qualifying under this section shall be subject to a periodic qualification testing program acceptable to the department.~~

Note: Authority cited: Section 48020-18015, Health and Safety Code. Reference: Section 48056.5 18028, Health and Safety Code.

26. Repeal Section 4360.8.

§ 4360.8. Test Procedure for Roof Trusses

~~(a) Roof Load Tests. The following is an acceptable test procedure for roof trusses that are supported at the ends and support design loads. Where roof trusses act as support for other members, act as cantilevers, or support concentrated loads, they shall be tested accordingly.~~

~~(b) General. Trusses may be tested in pairs or singly in a suitable test facility. When tested singly, simulated lateral support of the test assembly may be provided, but in no case shall this lateral support exceed that which is specified for the completed commercial coach. When tested in pairs, the trusses shall be spaced at the design spacing and shall be mounted on solid support accurately positioned to give the required clear span distance (L) as specified in the design. The top and bottom chords shall be braced and covered with the material with connections or method of attachment as specified by the completed commercial coach.~~

~~(1) As an alternate test procedure, the top chord may be sheathed with 1/4 inch by 12 inch plywood strips. The plywood strips shall be at least long enough to cover the top chords of the trusses at the designated design truss spacing. Adjacent plywood strips must be separated by at least 1/8 inch. The plywood strip shall be nailed with 4d nails or~~

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~~equivalent staples not closer than 8 inches on center along the top chord of one truss only. The bottom chords of the adjacent trusses may be either: (A) unbraced, (B) laterally braced together (not cross braced) with 1" x 2" stripping not closer than 24 inches on center nailed with only one 6d nail at each truss, or (C) covered with the material with connections or methods of attachment as specified for the completed commercial coach.~~

~~(2) Truss deflections will be measured relative to a taut wire running over the support and weighted at the end to insure constant tension or other approved methods. Deflections will be measured at the two quarter points and at midspan. Loading shall be applied to the top chord through a suitable hydraulic, pneumatic, or mechanical system, masonry units, or weights to simulate design loads. Load units for uniformly distributed loads shall be separated so that arch action does not occur, and shall be spaced not greater than 12 inches on center so as to simulate uniform loading.~~

~~(c) Nondestructive Test Procedure.~~

~~(1) Dead Load Plus Live Load.~~

~~(A) Noting Figure A, measure and record initial elevation of the truss in test position at no load.~~

~~(B) Apply load units to the top chord of the truss equal to the full dead load of roof and ceiling. Measure and record deflections.~~

~~(C) Maintaining the dead load, add live load in approximately 1/4 design live load increments. Measure the deflections after each loading increment. Apply incremental loads at a uniform rate such that approximately one half hour is required to establish the total design load condition. Measure and record the deflections five minutes after loads have been applied. The maximum deflection due to design dead load plus live load (deflection measured in Step (C) minus Step (B) shall not exceed $L/180$, where L is a clear span measured in the same units.~~

~~(D) Continue to load truss to dead load plus 1.75 times the design live load. Maintain this loading for 12 hours and inspect truss for failure.~~

~~(E) Remove the total superimposed live load. Trusses not recovering to at least $L/180$ position within 12 hours shall be considered as failing.~~

~~(2) Uplift Loads. This test shall only be required for truss designs which may be critical under uplift load conditions.~~

~~(A) Measure and record initial elevation of the truss in an inverted test position at no load. Bottom chord of the truss shall be mounted in the horizontal position.~~

~~(B) Apply the uplift load as stated in 4360.6 to the bottom of the chord of the truss. Measure and record the deflections 5 minutes after the load has been applied.~~

~~(C) Continue to load the truss to 1.75 times the design uplift load. Maintain this load for 3 hours and inspect the truss for failure.~~

~~(D) Remove applied loads and within three hours, the truss must recover to at least $L/240$ position, where L is a clear span measured in the same units.~~

~~(d) Destructive Test Procedure.~~

~~(1) Destructive tests shall be performed on three trusses to generally evaluate the truss design.~~

~~(2) Noting Figure A-1, apply the load units to top chord of the truss assembly equal to full dead load of roof and ceiling. Measure and record deflections. Then apply load and~~

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~~record deflections in 1/4 design live load increments at 10-minute intervals until 1.25 times design live load plus dead load has been reached.~~

~~(3) Additional loading shall then be applied continuously until failure occurs or a load equal to dead load plus 1.5 to the factor of safety times the design live load is reached.~~

~~(4) Assembly failure shall be considered as design live load deflections greater than $L/180$ rupture, fracture, or excessive yielding.~~

~~(5) The assembly shall be capable of sustaining the dead load plus the applicable factor of safety times the design live load (the applicable factor of safety for wood trusses shall be taken as 2.50).~~

~~(e) Trusses qualifying under the nondestructive test procedure (Tests C-1) and C-2) shall be subject to a continuing qualification testing program acceptable to the department. Trusses qualifying under the nondestructive and destructive test procedures (Tests C-1 and C-2, and D) shall be subject to retesting when required by the department.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

27. Repeal Section 4361.

§ 4361. Walls

~~The walls shall be of sufficient strength to withstand the load requirements as defined in Sections 4358, 4358.3, 4359, and 4360, without exceeding the deflections specified in Section 4360.6. The connections between the bearing walls, floor, and roof framework members shall be fabricated in such a manner as to provide support for the material used to enclose the commercial coach and to provide for transfer of all lateral and vertical loads to the floor and chassis.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

28. Repeal Section 4361.3.

§ 4361.3. Drilling or Notching of Wood Wall Structural Members

~~Except where substantiated by engineering designs, studs shall not be notched or drilled in the middle one-third of their length.~~

29. Repeal Section 4362.5.

§ 4362.5. Firestopping

~~(a) Firestopping of 2-inch minimum thickness nominal lumber or the equivalent, shall be provided to effectively close concealed draft openings in all walls including furred spaces, so placed that the maximum vertical dimension of any concealed space is not over eight feet.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

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30. Amend Section 4363.

§ 4363. Floor Construction

~~(a) Floor members shall be capable of withstanding the design loads and shall meet the deflection requirements of Section 4350.6.~~

~~(b) Perimeter joints of more than six inches (6") depth shall be stabilized against overturning from superimposed loads as follows: at ends by solid blocking not less than two-inch (2") thickness by full depth of joist, or by connecting to a continuous header not less than two-inch (2") thickness and not less than the depth of the joist, with approved connecting device; at eight feet (8") maximum intermediate spacing by solid blocking or by wood cross bridging of not less than one inch by three inches (1" x 3"), metal cross bridging of equal strength or other methods approved by the department.~~

~~(c)(a) Wood floors or subfloors in kitchens, laundry rooms, water heater compartments and any other interior areas subject to excessive moisture shall be made impervious to moisture by sealing with an approved a listed and tested water resistant material, or by applying an overlay of approved nonabsorbent material applied with a listed and tested water resistant adhesive.~~

~~(d)(b) Floors under heating appliances shall not be covered with flammable materials such as flammable carpeting.~~

~~(e)(c) Carpet. Carpet and carpet pads shall not be installed in concealed spaces subject to excessive moisture such as under plumbing fixtures. Carpet and/or carpet pads shall not be installed beneath the bottom plate of shear or bearing walls.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5 18028~~, Health and Safety Code.

31. Repeal Section 4363.3.

§ 4363.3. Drilling or Notching of Wood Joist Structural Members

~~Except where substantiated by engineering design, notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joist shall not be within 2 inches of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of the joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span.~~

32. Repeal Section 4363.4.

§ 4363.4. Roof Members

~~(a) Roof members shall be capable of withstanding the loads and meet the deflection requirements of Section 4359 and 4360. Drilling or notching shall be substantiated by engineering design.~~

~~(b) The connections between roof framework members and bearing walls shall be fabricated in such a manner to provide for the transfer of design vertical and horizontal loads to the bearing walls and to resist uplift forces. All roof members shall be laterally braced.~~

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Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

33. Repeal Section 4363.6.

§ 4363.6. Roof Coverings

~~Roof coverings shall be as specified in Chapter 32, Uniform Building Code, 1976 edition.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

34. Repeal Section 4364.

§ 4364. Weather Resistance

~~(a) Exterior coverings shall be of approved moisture and weather resistive materials attached with corrosion resistant fasteners in accordance with the manufacturer's instructions to resist wind, snow, and rain. Metal coverings and exposed metal structural members shall be of corrosion resistant materials or shall be protected to resist corrosion. All joints between portions of the exterior covering shall be designed and assembled to protect against the infiltration of air and water, except for any designed ventilation of wall or roof cavity.~~

~~(b) Joints between dissimilar materials and joints between exterior coverings and frames of openings shall be protected with a compatible sealant suitable to resist infiltration of air or water.~~

~~(c) Where adjoining materials or assemblies of materials are of such nature that separation can occur due to expansion, contraction, wind loads or other loads induced by erection or transportation, sealants shall be of a type that maintains protection against infiltration or penetration by air, moisture or vermin.~~

~~(d) Exterior surfaces shall be sealed to resist the entrance of rodents.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48056.5 ~~18028~~, Health and Safety Code.

35. Amend Section 4365.

§ 4365. Undervehicle Underfloor Closure Material

~~Undervehicle Underfloor closure material and its method of construction and installation shall be such as to resist transportation damage which would permit and shall be of a water resistant material that maintains protection against infiltration or penetration of to the underside of the commercial ~~each~~ modular by water, ~~or rodents vermin and vectors~~. The closure material shall be listed and tested material as noted in Subsection (a) of this section and installed as follows:~~

~~(a) Fibrous material Underfloor material (with or without patches) shall be tight-fitted against any floor penetrations and prevent the entrance of insects or rodents. The material shall be suitable for patches and repair, and the repair life shall be equivalent to the material life. The material shall meet or exceed the level of 48-inch pounds of puncture resistance as tested by the Beach Puncture Test in accordance with ASTM~~

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designation D 781-68 Standard Test Methods for Puncture and Stiffness of Paperboard, and Corrugated and Solid Fiberboard (1973).

(1) Exemption: Non-insulated moisture-resistant under floor construction shall not require underfloor closure material protection.

(2) Commercial modular and special purpose commercial modular units not designed for placement on a continuous foundation shall be protected in accordance with California Code of Regulations, Title 24, Part 2, California Building Code, Appendix F.

(b) The Underfloor material shall be installed in accordance with installation instructions furnished by the supplier-manufacturer of the material.

(c) The material shall be suitable for patches and the patch life shall be equivalent to the material life. Patch installation instructions shall be included in the commercial each modular manufacturer's instructions (See Section 4368 of this subchapter).

Note: Authority cited: Section ~~48020~~-18015, Health and Safety Code. Reference: Section ~~48056.5~~ 18028, Health and Safety Code.

36. Amend Section 4368.

§ 4368. Installation Instructions

~~(a) The manufacturer shall provide printed instructions with each commercial coach specifying the following:~~

~~(1) The location and required capacity of stabilizing devices (tiedowns, piers, blocking, etc.) on which the design is based.~~

~~(2) Devices and methods to be used in connecting all components and systems including, but not limited to, roofs, walls, floors and utilities.~~

~~(3) Leveling, including releveling.~~

(a) Commercial modular manufacturers shall provide printed instructions regarding at least one method of on-site assembly and installation of each commercial modular unit.

(b) Installation instructions and the plan approval number of the typical installation system shall be submitted with model plan approvals for review by the manufacturer's design approval agency.

(c) Installation instructions shall include at least the following information:

(1) Required structural connections between sections.

(2) Required non-structural connections between sections, including those required for weatherization.

(3) Required plumbing, mechanical, and electrical system connections between sections. Instructions shall indicate the method used in the manufacturing facility to identify each type of connection. The marking method clearly shall differentiate the type of connection required at each location (e.g., plumbing, mechanical or electrical).

(4) All electrical connections between sections shall be labeled clearly and permanently in the factory. The method of identification clearly shall indicate each circuit's electrical panel of origin and the corresponding circuit number.

(5) Basic support requirements and restrictions, including detailed support system attachment locations and load paths diagrams for at least one method of support. The methodology used for determining vertical and lateral support system design loads shall be provided.

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(6) Any additional items (e.g., lags, nails, flashing, etc.) for which a manufacturer's explanation would be required in order to adequately and properly install the unit.

(7) When installation instructions are included as part of the model plan approvals, any details, notes or instructions relating to the installation shall be identified clearly and noted as part of the on-site installation assembly of the sections.

(d) The location, installation, permanent foundation or temporary support system and utility connections of commercial modulars are subject to the authority having inspection jurisdiction.

(e) The approved instructions used for at least one method of support system type; pier type and locations; tie-downs; and load-path information for installation shall be posted permanently inside each unit in an accessible area or location.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056.5-18028~~, Health and Safety Code.

37. Repeal Section 4369.

§ 4369. Heat Loss

~~(a) That portion of a commercial coach containing a hotel, motel, apartment house, lodging house, dwelling unit, dormitory, or guest room shall be constructed to comply with this section.~~

~~(b) The minimum total resistance value (R), excluding framing of the wall (less windows and doors), ceiling, and floor shall not be less than:~~

~~Wall..... 11.0~~

~~Ceiling... 19.0~~

~~Floor.... 11.0~~

~~(c) Compliance. Upon completion of the installation of insulation, a label certifying that the insulation has been installed in conformance with the requirements of these regulations shall be completed and executed by the manufacturer.~~

~~This insulation compliance label shall be posted at a conspicuous location within the commercial coach.~~

~~(d) Doors, windows and exhaust fans shall meet the air infiltration requirements of T20-1403d, Title 24, C.A.C.~~

~~(e) Climate control equipment shall comply with Sections T20-1404 and T20-1405, Title 24, C.A.C.~~

~~(f) Service hot water heating shall comply with Section T20-1406(a), (b), (d), & (f), Title 24, Part 6, Article 2, Division 1, California Administrative Code.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055-18025~~ and ~~48056.5-18028~~, Health and Safety Code.

38. Amend Section 4369.5.

§ 4369.5. Energy Requirements

~~All commercial coaches except those occupancies listed in Section 4369 shall comply with Sections T20-1452, T20-1454, and T20-1455, Title 24, Part 6, Article 2, Division 1, California Administrative Code, and the following requirements.~~

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~~(a) Vehicle Envelope.~~

~~(1) The U value of the opaque surfaces between conditioned and unconditioned in spaces shall not exceed the values shown in Table A-1. Or 2. The envelope shall comply with Sections T20-1492 thru T20-1494, Title 24, Part 6, Article 2, division 1, California Administrative Code.~~

TABLE A-1

Vehicle Component	Maximum	U Value
1		2
Wall	0.0095	0.080
Ceilings	0.060	0.050
Floors	0.090	0.080

~~¹ When the effects of all elements of construction, including framing members such as joist and studs, are considered or when all the thermal insulation is installed so that it is not penetrated by framing members.~~

~~² When the effects of framing members such as studs and joist are not considered.~~

~~(b) Air Leakage.~~

~~(1) General. The requirements for air leakage are limited to those locations separating exterior vehicle ambient conditions from interior building conditioned air space and are not applicable to the separation of interior conditioned spaces from each other.~~

~~(2) Compliance. Compliance with the requirements for air leakage shall be determined by ASTM E283-73, Standard Method of Test for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors, at a pressure differential of 1.567 lb/ft², which is equivalent to the effect of a 25 mph wind.~~

~~(3) Air Leakage Requirements-Window. Air leakage requirements for windows shall be as follows:~~

~~(A) The air infiltration rate for manufactured openable exterior windows shall not exceed 0.5 fpm per foot of operable sash crack. All manufactured windows shall be certified and labeled and shall comply with the above standards for air infiltration.~~

~~Note: Required steel fire rated windows are exempted from these requirements.~~

~~(B) The air exfiltration rate for manufactured openable exterior windows shall meet the requirements of Section T20-1495 (c)(1) Title 24, Part 6, Article 2, Division 1, California Administrative Code by January 1, 1980.~~

~~(C) Fixed windows constructed on-site shall be sealed to limit air infiltration.~~

~~(4) Air Leakage Requirements, Doors. Air leakage requirements for doors shall be as follows:~~

~~(A) The air infiltration rate for manufactured exterior sliding glass doors shall not exceed 0.75 cfm per linear foot or crack. All manufactured sliding glass doors shall be certified and labeled and shall comply with the above standards for air infiltration.~~

~~Note: Required steel fire rated doors are exempted from these requirements.~~

~~(B) The air exfiltration rate for manufactured exterior sliding glass doors shall meet the requirements of Section T20-1495 (d)(1) Title 24, Part 6, Article 2, Division 1, California Administrative Code by January 1, 1980.~~

~~(C) All exterior doors, other than fire-rated doors, shall be so designed to limit air leakage around their perimeter when in a closed position.~~

~~(1) All doors shall be provided with a seal, astragal, or baffle at the head and sill.~~

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~~(2) Door frames mounted on either the inside or outside of an exterior wall shall have a minimum one-inch lap at each jamb.~~

~~(3) Doors requiring vertical track or guides shall use a continuous mounting angle, sealed in accordance with Section T20-1495 (e) Title 24, Part 6, Article 2, Division 1, California Administrative Code at each Jamb.~~

~~(4) Doors mounted between the jambs shall have a continuous seal or baffle at each jamb.~~

~~(5) Meeting rails of sectional doors and meeting stiles or rails of bi-parting doors shall be provided with a seal, astragal or baffle.~~

~~(6) Swinging and revolving doors shall be weather-stripped at the head, sill, and jambs.~~

~~(7) Double doors shall be provided with a weather tight astragal or closure at the center crack.~~

~~(c) Caulking and Sealants. Open exterior joints around window and door frames, between wall and floor, between wall and roof, at penetrations of utility services through walls, floors and roofs and all other openings in the exterior envelope shall be sealed, caulked gasketed, or weather stripped to limit air leakage.~~

~~(d) Gravity Ventilators. Gravity ventilators shall comply with the provisions of Section T20-1505, Title 24, Part 6, Article 2, Division 5, California Administrative Code. EXCEPTION: Commercial Coaches with 1,000 square feet or less of gross floor area do not need to comply with this subsection.~~

~~(f) Heating, Ventilating, and Air Conditioning (HVAC) Equipment. HVAC equipment performance shall comply with Sections T20-1510 through T20-1518, Title 24, Part 6, Article 2, Division 6, California Administrative Code.~~

~~EXCEPTION: Commercial Coached with 1,000 square feet or less of gross floor area do not need to comply with this subsection.~~

~~(g) Service Water Heating. Service water heating shall comply with Sections T20-1520 Through T20-1525, Title 24, Part 6, Article 2, division 7, California Administrative Code.~~

~~(h) Lighting. Lighting shall comply with Sections T20-1540 through T20-1542, Title 24, Part 6, Article 2, Division 9, California Administrative Code.~~

~~EXCEPTION: Commercial coaches with 1,000 square feet of gross floor area or less having 2.7 watts per square foot lighting load or less need only comply with Section T20-1541 (b), Title 24, Part 6, Article 2, Division 9, California Administrative Code.~~

(a) Commercial modular units designed for installation on a foundation system shall comply with the applicable requirements of the Energy Efficiency Standards for Residential and Nonresidential Buildings of the California Code of Regulations, Title 24, Part 6, California Energy Code (CEC).

(b) Commercial modular units not designed for installation on a foundation system shall be designed to comply with the energy requirements for building envelopes in the California Code of Regulations, Title 24, Part 6, Subchapter 5, Section 141(d) (Performance Approach) or Section 143(a)(8) (Prescriptive Approach) for relocatable public school buildings.

(c) Except as required in Section 18029.4 of the California Health and Safety Code and Section 4350(c)(1) of this subarticle, the energy requirements found in this section shall not apply to special purpose commercial modular units.

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Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48056-3 10827~~ and ~~48056-5-18028~~, Health and Safety Code.

39. Repeal Section 4370.

§ 4370. Noise Insulation Standards

~~Noise insulation installations shall be in accordance with applicable requirements of California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28. The provisions of this section apply to new hotels, motels, apartment houses and dwelling occupancies other than detached single family dwellings.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056-6 18028~~, Health and Safety Code.

40. Repeal Section 4371.

§ 4371. Glass and Glazed Openings

~~All glass and glazing shall comply with Chapter 54, Uniform Building Code, 1976 edition.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48056-5 18028~~, Health and Safety Code.

41. Repeal Section 4372.

§ 4372. Fire Safety and Occupancy

~~Commercial coaches shall comply with requirements for fire safety and occupancy, as required for a building of like occupancy pursuant to the Uniform Building Code, 1976 edition, applicable requirements of Section B1316, Part 2, Title 24, California Administrative Code, and applicable requirements of Title 19, California Administrative Code, relating to fire alarm and automatic sprinkler systems, unless specifically exempted or required by this article.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48056-5 18028~~ and ~~48058-18029.5~~, Health and Safety Code.

42. Repeal Section 4374

§ 4374. Interior Walls, Partitions, and Ceilings

~~The interior finish of all commercial coaches shall comply with Chapter 42, Uniform Building Code, 1976 edition.~~

Note: Authority cited Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48058 18029.5~~, Health and Safety Code.

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43. Repeal Section 4376.

§ 4376. Exits

~~Commercial coaches shall be provided with exits, as required for the type of occupancy for which the coach is designed, in accordance with Chapter 33 of the Uniform Building Code, 1976 edition.~~

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Sections ~~18056-5 18028~~ and ~~18058-18029.5~~, Health and Safety Code.

44. Repeal Section 4379.

§ 4379. Physically Handicapped Requirements

~~Sanitary facilities shall comply with the requirements of of the Uniform Building Code, 1976 edition, Section 1711.~~

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Section ~~18056-5 18028~~, Health and Safety Code-1711.

45. Repeal Appendix CC-1.

Appendix CC-1
Table CC-1
Accepted Engineering Practice Standards

Aluminum

~~Aluminum Construction Manual, Specifications for Aluminum Structure AA-1971~~

Steel

~~Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings..... AISC 1973*
Specification for the Design of Cold-Formed Steel Structural Members AISI 1968**
Specification for the Design of Light Gage Cold-Form Stainless Steel Structural Members... ISI 1968
Standard Specifications for Open-Web Steel Joist, J & H Series..... AISC & SJI 1970
Structural Welding Code..... AWS D1.0-72~~

Wood and Wood Products

~~Hardboard..... AHA PS 58-73, 59-73, 60-73
Hardwood and Decorative Plywood..... USDC PS 51-71
Structural Design Guide for Hardwood Plywood HPMA Design Guide..... HP-SG-71
Plywood Construction Guide..... APA C-300-1978
Timber, Structural Glued Laminated Inspection Manual
for Timber, Structural Glued Laminated..... AITC 200-1973; USD PS 56-73
Softwood Plywood Construction and Industria..... PS 1-74
Design and Fabrication Specifications for Plywood Lumber Components D860-1978
National Design Specifications for Wood Construction NFPA 1977***
Wood Structural Design Data NFPA 1978
Span Tables for Joist and Rafter (PS 20-70) NFPA 1978
Working Stresses for Joist and Rafters NFPA 1977
Timber Construction Standards AITC 100-1972~~

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Design Specifications for Metal Plate Connected Wood Trusses	TPI 1978
Span Tables for Metal Plate Connected Wooden Trusses	TPI 1978
Mat-Formed Wood Particleboard.....	CS 236-66

Fire Safety

Method of Test for Surface Burning Characteristics of Building Materials	ASTM E84 1970
NFPA No. 255-1972	
ANSI A2.5-1970 UL 723-1971	
Safety to Life from Fire in Building and Structures.....	NFPA No.
101-1973	
ANSI A9.1-1974	
Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment.....	NFPA No 74-1974

Windows and Glazing

Transparent Safety Glazing Material Used In Buildings.....	ANSI Z97.1-1974
Window Specifications for Utilization in Mobile and Factory Built Homes	MHMA Spec. No 1-71 (Rev. 1973)
Metal Windows.....	ANSI A 134.1-1972 or equivalent
Wood Windows.....	NWMA IS 2 or equivalent
Metal Sliding Glass Doors.....	ANSI A 143.2-1972 or equivalent
Wood Sliding Glass Doors.....	NWMA IS 3 or equivalent

Unclassified

ASHRAE Handbook of Fundamentals 1977.....	1977
Building Code Requirements for Minimum Design Loads in Buildings and other Structures.....	ANSI A58.1-1972
Manufacture, Selection and Application of Asphalt Roofing and Siding Products Asphalt Roofing Industry Bureau	

- AA The Aluminum Association, 750 Third Ave., New York, N.Y. 10017
- AHA American Hardboard Association, 20 North Wacker Drive, Chicago Illinois 60060
- AISC American Institute of Steel Construction, 101 Park Ave., New York, N.Y. 10017
- AISI American Iron and Steel Institute, 150 East 42nd St., New York, N.Y. 10017
- AITC American Institute of Timber Construction, 333 W. Hampden Ave., Englewood, Colorado 80110
- ANSI American National Standards Institute, 1430 Broadway, New York, N.Y. 10017
- APA American Plywood Association, P.O. BOX 11,700, Tacoma, Washington 98411
- ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers, 345 East 47th
Street New York, N.Y. 10017
- ASTM American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103
- AWS American Welding Society, 2501 NW 7th Street, Miami, Florida 33125
- MHMA Mobilehomes Manufacturers Association, 14650 Lee Road, Chantilly, VA 22024
- HPMA Hardwood Plywood Manufacturer's Association, 2310 S. Walter Reed Dr., P.O. Box 6246,
Arlington, VA 22206
- CS Commercial Standards, available from Supt. of Documents, U.S. Government Printing Office,
Washington, D.C. 20402
- NFPA National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210
- FPA National Forest Products Association, 1619 Massachusetts Ave., N.W., Washington, D.C. 20036
- NPA National Particleboard Association, 2306 Perkins Place, Silver Spring, MD 20910
- PFS PFS Corporation, Route 5, 2402 Daniels St., Madison, WI 53704

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PS-Product Standard-available from Supt. of Documents, U.S. Government Printing Office, Washington, D.C. 20420

SJI-Steel Joist Institute, 2001 Jefferson Davis Highway, Arlington, VA 22202

TPI-Truss Plate Institute, 919 Eighteenth St., N.W. Washington, D.C. 20036

UL-Underwriters' Laboratories, Inc., 333 Pfingste Rd., Northbrook, Ill. 60062

USDC-United States Department of Commerce, Washington, D.C. 20234

Note: Authority cited: Section ~~48020~~-18015, Health and Safety Code. Reference: Section ~~48056.5~~ 18028, Health and Safety Code.

46. Repeal Appendix CC-2.

Appendix CC-2 Roof Coverings

~~Roof coverings shall be as specified in this Appendix.~~

~~Definitions. For the purpose of this Appendix, certain terms are designated as follows:~~

~~Base Sheets are one or more layers of felt or combination sheet over which is applied a cap sheet, organic or inorganic fiber shingles, smooth coating, or mineral aggregate.~~

~~Built up Roof Covering is two or more layers of roofing consisting of base sheets, and cap sheet, mineral aggregate, smooth coating, or similar surfacing material.~~

~~Cap Sheet is roofing made of organic or inorganic fibers, saturated and coated on both sides with bituminous compound surfaced with miner granules, mica, talc, ilminite, asbestos or other inorganic fibers, or similar materials.~~

~~Combination Sheet is ply sheet integrally attached to kraft paper.~~

~~Composition roofing is any asphaltic roofing.~~

~~Corrosion-Resistant is any nonferrous metal, or any metal having an unbroken surfacing or nonferrous metal or steel not less than 10 percent chromium or with not less than 0.2 percent copper.~~

~~Felt is matted organic or inorganic fibers, saturated with bituminous compound.~~

~~Interlayment is a layer of felt not less than 18 inches wide shingled between each course of roof covering so that no felt is exposed to the weather.~~

~~Ply Sheet is glass fiber felt sheet coated on both sides with asphalt.~~

~~Prepared Roof Covering Material is any manufactured or processed roofing material as distinguished from built up roof coverings.~~

~~Roofing Square is 100 square feet of roofing surface.~~

~~Spot-Cementing is discontinuous application of hot asphalt, cold liquid asphalt compound, hot coal tar pitch or their approved cementing material.~~

~~Underlayment is one or more layers of felt applied as required for a base sheet, over which finish roofing is applied.~~

~~Wood Shakes are tapered or nontapered pieces of Western red cedar or redwood of random widths ranging from 4 inches to 14 inches, and of the following types:~~

~~1. Hand split and resawn; tapered and having one sawed and one split face, 15 inches, 18 inches or 24 inches in length.~~

~~2. Taper split; tapered and having both split faces, 24 inches in length.~~

~~3. Straight split; nontapered and with both split faces either 18 inches or 24 inches in length.~~

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~~4. Taper sawn redwood shakes sawn both sides edges sawn or split with edge variation not to exceed 1/8 inch permitted in the specified thickness. Lengths 24 inches and longer.~~

~~Wood Shingles are tapered pieces of Western red cedar or redwood, sawed both sides of random widths ranging from 3 inches to 14 inches and 16 inches, 18 inches or 24 inches in length.~~

~~Roofing material shall conform to the following:~~

~~1. Identification. All material shall be delivered in the original packages bearing the manufacturer's label.~~

~~Each package of prepared roofing and built-up roof covering materials shall bear the label of an approved testing laboratory having a service for the inspection of material and finished products during manufacture for such roofing material.~~

~~Each bundle of wood shakes, wood shingles and slate shingles shall bear the label of an approved inspection bureau or agency showing the grade and compliance with the applicable standard.~~

~~Asphalt or pitch shall be delivered in cartons indicating the name of the manufacturer and the softening point of the product. Bulk shipments shall be accompanied by a certification from the manufacturer.~~

~~2. Metal roofing. Metal roofing exposed to the weather shall be corrosion resistant.~~

~~Corrugated or ribbed steel shall be not less than No. 30 galvanized sheet gauge.~~

~~Flat steel sheets shall be not less than No. 30 galvanized sheet gauge.~~

~~Flat nonferrous sheets and shingles shall not be less than No. 28 B & S gauge.~~

~~Application. Shingles and Shake Roofs. General Roofing shingles shall be applied to roofs with solid or spaced sheathing in accordance with the manufacturer's installation instructions, and as approved by the department. Where underlayment is specified, it shall be installed in one or more layers starting in the low spots toward the high spots with felts layed so that edges will shed water. Underlayments shall be applied as for base sheets.~~

~~1. Asphalt Shingles. Asphalt shingles shall be applied only to solidly sheathed roofs in accordance with manufacturer's installation instructions. The minimum slope for asphalt shingle installation shall be in accordance with manufacturer's instructions and as approved by the department.~~

~~2. Wood Shingles. Wood shingles shall not be installed on slopes less than 4 inches to 12 inches unless they are installed over an underlay of not less than 15 pound felt, applied as required for a base sheet, and unless approved by the department.~~

~~3. Wood Shakes. Shakes shall not be installed on a roof having a slope less than 4 inches to 12 inches unless they are installed over an underlay of not less than 30 pound felt, applied as required for a base sheet, and unless approved by the department.~~

~~4. Asbestos Cement Shingles. Asbestos cement shingles may be installed on slopes as low as 3 inches to 12 inches where undelayment consists of two layers of 15 pound felt applied in shingle fashion. Asbestos cement shingles shall not be installed on a roof having a slope less than 3 inches to 12 inches unless installed per manufacturer's instructions and as approved by the department.~~

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~~5. Metal shingles. Metal shingles shall be installed according to manufacturer's installation instructions. The minimum slope for metal shingles shall be in accordance with the manufacturer's instructions and as approved by the department.~~

~~6. Slate Shingles and Tiles. Slate shingles and tile shall be installed according to manufacturer's installation instructions. The minimum slope for slate shingles and tile shall be in accordance with the manufacturer's instructions, and as approved the department.~~

~~Other Roof Coverings. General. The following roof coverings shall be applied in accordance with the manufacturer's installation instructions.~~

~~1. Metal Roofing. Metal roofing shall be installed according to the manufacturer's installation instructions and as approved by the department.~~

~~2. Corrugated Asbestos Cement Roofing. Corrugated asbestos cement roofing shall be applied only to solidly sheathed roofs. Corrugated asbestos cement roofing shall be installed according to the manufacturer's installation instructions and as approved by the department.~~

~~Built Up Roofs. General. Built up roofing shall be applied only to solidly sheathed roofs. Built up roofing shall be applied by starting at the low spots and working toward the ridges with felts and cap sheets applied in shingle fashion to drain water. Felt and cap sheets shall be applied in solid, uniform moppings of bitumen. Built up roofing shall be applied in accordance with the manufacturer's instructions only clean, dry decks and as approved by the department.~~

Note: Authority cited: Section ~~18020-18025~~, Health and Safety Code. Reference: Section ~~18056.5 18028~~, Health and Safety Code.

47. Amend Subarticle 2 Number.

Subarticle 2-3. Electrical

48. Amend Section 4380.

§ 4380. Application and Scope Minimum Requirements

~~(a) The provisions of this subarticle relating to electrical equipment and installations apply to all commercial coaches modulars manufactured, ~~After November 23, 1970, and sold, or~~ offered for sale, rented, or leased within this State. The provisions of this subarticle are also are applicable to the alteration or conversion of electrical equipment and installations in any commercial ~~coach~~ modular bearing or required to bear a department insignia of approval.~~

~~(a) Standards for Equipment and Installations. Standards for equipment and installations are listed in Appendix CC-E-1. Equipment and installations conforming to these standards or to other approved standards shall be considered acceptable by the department when listed or labeled and installed in accordance with the requirements of this article and the conditions of their approval, except where otherwise provided in this article.~~

~~(b) Electrical Standards. Electrical equipment and installations in or on a commercial coach shall be installed in accordance with the requirements of the National Electrical Code, 1978 edition, unless otherwise specifically exempted or required by this division~~

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Electrical materials, equipment, products and systems, and their installations in a commercial modular shall conform to those standards provided in the California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC) and to the provisions of this subarticle, including standards for listing and labeling, and compliance with manufacturers installation instructions.

Note: Authority cited: Sections ~~18015 and 18028 and 18055~~, Health and Safety Code Reference: Sections ~~18055~~18025 and 18028, Health and Safety Code.

49. Amend Section 4381.

§ 4381. Definitions

~~(a) Definitions contained in the Health and Safety Code, Division 13, Part 2, in the National Electrical Code, 1978 edition California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC) and the following definitions shall apply to this subarticle.~~

~~Converter. A device which changes electrical energy from one form to another, as from alternating current to direct current.~~

~~Distribution Panelboard means a single panel or group of panel units designed for assembly in the form a single panel; including buses, and with or without switches and/or automatic overcurrent protective devices for the control of light, heat or power circuits of small individual as well as aggregate capacity; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front.~~

~~Dwelling Unit. One or more habitable room which are designed to be occupied by one family with facilities for living, sleeping cooking, eating and sanitation.~~

~~(b) Feeder Assembly. The overhead or under-chassis ~~feeder~~ conductors, including the grounding conductor, raceway, together with the necessary fittings and equipment or a power-supply cord approved for mobilehome use, designed for the purpose of delivering energy from the source of electrical supply to the commercial ~~each~~modular distribution panelboard.~~

~~Low Voltage. An electromotive force rated at 24 volts or less, supplied from a transformer, converter or battery.~~

~~N.E.C. When used in this article shall mean the National Electrical Code, 1978 edition.~~

Note: Authority cited: Section ~~18020~~18015, Health and Safety Code. Reference: Sections ~~18055 18025 and 18028~~, Health and Safety Code.

50. Amend Section 4383.

§ 4383. Low-Voltage Systems

~~(a) Low-voltage circuits furnished and installed by the commercial ~~each~~modular manufacturer are subject to ~~these regulations~~ this subarticle and the requirements of the California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC), Articles 720 and 725.~~

~~EXCEPTION: Vehicles containing only battery circuits of 24 volts or less supplying energy exclusively for the following are not subject to this subchapter:~~

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~~(1) Illuminating lights when the vehicle contains no other systems such as plumbing, heating or electrical over 24 volts.~~

~~(2) Circuits supplying running lights, taillights, stop lights, electrical braking, or vehicle ignition systems.~~

~~(b) Wiring Materials~~

~~(1) Conductors. Copper conductors shall be used for low voltage circuits.~~

~~(2) Insulation. Conductors shall conform to the requirements for Type HDT, SGT, or SGR, or Type SXL, or shall have insulation rated at least 60 degrees C and a minimum wall thickness of 30 mils of thermoplastic insulation or equal.~~

~~Note: See SAE Standard J1128 for Types HDT and SXL, and SAE Standard J1127 for Types SGT and SGR, in the 1977 SAE Handbook.~~

~~(3) Single Wire. Single wire, low voltage conductors shall be of the stranded type.~~

~~(c) Marking of Insulated Low Voltage Conductors. All insulated low voltage conductors shall surface marked at intervals no greater than four feet as follows:~~

~~(1) Listed conductors shall be marked as required by the listing agency.~~

~~(2) SAE conductors shall be marked with the name or logo of the manufacturer, specification designated and wire gauge.~~

~~(3) Other conductors shall be marked with the name or logo of the manufacturer temperature rating, wire gauge, conductor material, and insulation thickness.~~

~~(d) Low Voltage Wiring Methods.~~

~~(1) Securing conductors. Conductors shall be protected against physical damage and shall be secured. Where insulated conductors are clamped to the structure, the conductor insulation shall be supplemented by an additional wrap or layer of equivalent material, except that jacketed cables need not be so protected. Wiring shall be routed away from sharp edges, moving parts or sources.~~

~~(2) Splicing or Joining Conductors. Conductors shall be spliced or joined with approved splicing devices or by brazing, welding, or soldering with a fusible metal or alloy. Coldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices, joints, and free ends of conductors shall be covered with an insulation equivalent to that on the conductors.~~

~~(3) Separation of Circuits. Battery and direct current circuits shall be physically separated by at least 1/2 inch gap or other approved means, from circuits of a different power source. Acceptable methods shall be by clamping, routing, or equivalent means which insure permanent total separation. Where circuits of different power sources cross, the external jacket of the nonmetallic sheathed cables shall be deemed adequate separation.~~

~~(4) Ground Terminals. Ground terminals shall be accessible for service. The surface on which ground terminals make contact shall be cleaned and free from oxide or paint, or shall be electrically connected through use of a cadmium, tin or zinc plated external to other lockwasher or lock-ring terminals. Ground terminal attaching screws, rivets or bolts, nuts and lockwashers shall be cadmium, tin or zinc plated, except rivets shall be permitted to be unanodized aluminum when attaching to aluminum structures.~~

~~(e)(b) Battery Installations. Storage batteries subject to the provisions of this Article subarticle shall be securely attached to the vehicle unit and installed in an area vapor-tight to the interior and ventilated directly to the exterior of the vehicle unit. When~~

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batteries are installed in a compartment, the compartment shall be ventilated with openings having a minimum area of 1.7 square inches (11 cm²) at both the top and at the bottom. Batteries shall not be installed in a compartment containing spark or flame producing equipment, except that they shall be permitted to be installed in the engine generator compartment if they only charging source is from the engine generator.

~~(f) Exterior Lighting Circuits. Metal chassis or frame may be used as the return pat for exterior lighting circuits. Terminals for connection to the chassis or frame shall be of the solderless type and approved for the size and type of wire used. Mechanical connections to the frame or chassis shall be made secure.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 18028~~, Health and Safety Code.

51. Repeal Section 4384.

§ 4384. Overcurrent Protection, Low-Voltage Circuit Wiring

~~Rating of Overcurrent Protective Devices. Low-voltage circuit wiring shall be protected by overcurrent protective devices rated not in excess of the ampacity of copper conductors, as follows:~~

Wire Size	Ampacity	Wire Type
18	6	Stranded only
16	8	Stranded only
14	15	Stranded or solid
12	20	Stranded or solid
10	30	Stranded or solid

Note: ~~For other allowable conductor ampacities, refer to the National Electrical Code (NFPA 70-1978 (ANSI), Table 310-16.~~

~~(b) Circuit Breakers or Fuses. Circuit Breakers or fuses shall be of the approved type, including automotive types. Fuseholders shall be clearly marked with maximum fuse size.~~

Note: ~~For further information see Society of Automotive Engineers (SAE) Standard for Electric Fuses (SAE J554a-1973; ANSI C118.1-1973) and Underwriters Laboratories Inc., Standard for Automotive Glass Tube Fuses (UL 275B-1973).~~

~~(c) Higher Current Consuming Direct Current Appliances. Higher current-consuming direct current appliances such as pumps, compressors, heater blowers and similar motor-driven appliances shall be installed in accordance with the manufacturer's instructions. Motors which are controlled by automatic switching or by latching-type manual switches shall be protected in accordance with Section 430-32 (c) of the National Electrical Code (NFPA 70-1978 (ANSI)).~~

~~(d) Location of Overcurrent Protective Device. The overcurrent protective device shall be installed in an accessible location on the vehicle within 18 inches (457 mm) of the point where the power supply connects to the vehicle circuits. If located outside the vehicle, the device shall be protected against weather and physical damage.~~

~~EXCEPTION: External low-voltage supply shall be permitted to be fused within 18 inches (457 mm) after entering the vehicle or after leaving a raceway.~~

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~~(e) Switches, Low Voltage Circuits. Switches shall have a direct current rating not less than the connected load.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

52. Repeal Section 4385.

§ 4385. Equipment and Fixtures, Low-Voltage

~~(a) Incandescent Lighting Fixtures. All incandescent low-voltage interior lighting fixtures shall be listed.~~

~~(b) Cigarette Lighter Receptacles. Twelve (12)-volt receptacles that will accept and energize cigarette lighters shall be installed in a noncombustible outlet box.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

53. Amend Section 4387.

§ 4387. Combination Electrical Systems

~~(a) General. Vehicle w~~Wiring suitable for connection to a battery or direct-current supply source shall be permitted to be connected to a ~~115-volt~~ 120-volt source, provided that the entire wiring system and equipment are rated and installed in full conformity to the requirements of this ~~Article covering governing 115-volt 120-volt~~ subarticle covering governing 115-volt 120-volt electrical systems. Circuits fed from alternating current transformers shall not supply direct-current appliances.

~~(b) Voltage Converters (115-volt Alternating Current to Low Voltage Direct Current). The 115-volt 120-volt alternating current side of the voltage converter shall be wired in full conformity with requirements for 115-volt 120-volt electrical systems except for converters supplied as an integral part of an approved appliance.~~

~~EXCEPTION: Converters supplied as an integral part of an approved appliance shall not be subject to the above.~~

~~(c) All converters and transformers shall be listed for use in recreational vehicles and designed or equipped to provide over-temperature protection. To determine the converter rating, the following formula shall be applied to the total connected load, including average battery charging rate, of all 12-volt equipment:~~

~~(1) The first 20 amperes of load at 100 percent, plus,~~

~~(2) Plus, the second 20 amperes of load at 50 percent, plus,~~

~~(3) Plus, all load above 40 amperes at 25 percent.~~

~~(e)(d) Dual Voltage Fixtures or Appliances. Fixtures or appliances having both 115-volt 120-volt and low-voltage connections shall be listed or approved for dual voltage.~~

~~(d)(e) Autotransformers. Autotransformers shall not be used.~~

~~(e)(f) Receptacles and Plug Caps. When a vehicle unit is equipped with a 120-volt or 120/240-volt alternating-current system and/or a low-voltage system, receptacles and plug caps of the low-voltage systems shall differ in configuration from those of the 120- or 120/240-volt system. When a vehicle unit equipped with a battery or direct-current~~

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system has an external connection for low-voltage power, the receptacle shall have a configuration that will not accept 120-volt power.

Note: Authority cited: Section ~~48020~~-18015, Health and Safety Code. Reference: Section ~~48055~~ 18025, Health and Safety Code.

54. Amend Section 4389.

§ 4389. Fuel-Fired Engine Driven Generator Units

(a) ~~Certification~~. All fuel-fired engine driven generators shall be ~~investigated and listed tested, listed and labeled~~ in accordance with nationally recognized standards by an approved testing agency. (~~See Appendix CC-E, Table CC-E 1~~)

(b) ~~Installation~~. Fuel-fired engine driven generators shall be installed in accordance with the equipment manufacturer's installation instructions and ~~these regulations this subarticle~~. A copy of the installation instructions shall be provided in the ~~vehicle commercial modular~~.

(c) ~~Mounting~~. Generator units shall be mounted in a manner so that adequate structural support from the ~~vehicle commercial modular~~ frame, is provided for the equipment. The equipment shall be secured in place by a method that will preclude displacement from vibration and road shock.

(d) ~~Compartment Separation~~. Generator unit compartments shall be designed and installed to provide a vapor-tight separation between the compartment and the interior ~~living areas of the vehicle commercial modular~~.

(e) ~~Compartment Construction~~. Generator unit compartments shall be constructed of galvanized steel, not less than 0.0299 inch (0.759 mm) thick. Seams and joints shall be lapped, mechanically secured and made airtight to the interior of the ~~vehicle commercial modular~~. Alternate materials and methods of construction may be used if they provide equivalent quality, strength, effectiveness, fire resistance, durability and safety and are approved pursuant to this section.

(f) ~~Compartment Penetration~~. Fuel-fired engine exhaust systems, fuel-supplies, electrical conduit, cables, conductors and equipment shall not penetrate any area of the compartment that separates the compartment from the interior of the ~~vehicle commercial modular~~. Electrical conduit, cables and conductors penetrating the compartment in areas other than those that separate the compartment from the interior of the ~~vehicle commercial modular~~, shall be protected by the use of tight fitting grommets.

(g) ~~Compartment Ventilation~~. Compartments shall be provided with ventilation. The type, amount and location of compartment ventilation shall be provided in accordance with the equipment manufacturer's installation instructions.

(h) ~~Exhaust Systems~~. Except as provided by the equipment manufacturer's installation instructions, fuel-fired engine exhaust systems shall be separated by a minimum of 1 1/2 inches from any combustible material or shall be insulated or shielded so that ~~if the exhaust system~~ does not raise the temperature of any combustible material to more than 194° degrees F (90° degrees C). ~~Each Exhaust systems~~ shall be provided with an effective spark arrester and shall not terminate adjacent to the ~~vehicle commercial~~

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modular gasoline filler spout. Exhausts shall terminate beyond the periphery of the ~~vehicle-commercial modular~~.

(i) ~~Generator Protection.~~ Any Ggenerators shall be mounted in a manner to provide an effective bond to the ~~vehicle-commercial modular~~ chassis. Listed equipment shall be installed to ensure that the current-carrying conductors from the generator and from an outside source are not connected to the ~~vehicle-commercial modular~~ circuits at the same time.

(j) ~~Supply Conductors.~~ Supply conductors from a generator to a junction box or distribution panelboard shall be of the stranded type installed in flexible metal conduit or equivalent mechanical protection.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025, 18028 and 48058-18029.5~~, Health and Safety Code.

55. Amend Section 4391.

§ 4391. Distribution Panelboard

~~(a) Each vehicle shall have an appropriately rated branch circuit panelboard, and when required, a main disconnect shall be installed.~~

~~(b) Panelboards shall be of the dead front type and shall have one or more circuit breakers or Type S plug fuses. A main disconnecting means shall be provided where fuses are used, or when required by Article 230 of the N.E.C.~~

~~(c) The panelboard shall be installed in a readily accessible location with at least 30 inches clear horizontal working space directly in front of the panelboard. The bottom of the panelboard shall be not less than 24 inches above the floor of the coach unless the equipment is specifically approved for the purpose.~~

~~(d) The main circuit breakers or fuses, when installed, shall be plainly marked "Main." Branch and feeder circuits at the point of origin shall be legibly marked to indicate their purpose.~~

~~(e) If a fused branch circuit panelboard is used, the maximum fuse size for the mains shall be plainly indicated in a visible location with lettering at least one-fourth inch high.~~

Each commercial modular unit shall have an appropriately rated branch circuit panelboard, and a main disconnect shall be installed when required by Article 230 of the California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC).

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 18028~~, Health and Safety Code.

56. Amend Section 4394.

§ 4394. Identification of Electrical System

Each commercial ~~coach-modular~~ shall have a label permanently affixed on or adjacent to the distribution panelboard indicating the voltage and calculated load of the electrical system in the ~~vehicle-unit~~. The information on the label shall remain legible for the life of the commercial modular and shall conform to the requirements of Subsections (a) through (c) of Section 4031 of this subchapter.

~~Note: See Article 1, Section 4031 for label size and type of material.~~

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Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

57. Amend Section 4396.

§ 4396. Wiring of Expandable or Multiple Units

Expandable or multiple units commercial modular sections shall have permanent type wiring methods and materials used for connecting such ~~units~~ sections to each other.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

58. Amend Section 4397.

§ 4397. Outdoor or Underchassis Wiring, 115-120-Volts or Over

Where ~~outdoor exterior~~ or underchassis wiring is ~~115-volt 120-volt~~ (nominal) or ~~over more~~ and is exposed to moisture or possible mechanical damage, the wiring shall be protected by rigid metal conduit, intermediate metal conduit, or ~~by~~ electrical metallic tubing that is closely routed against frames and equipment enclosures.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

59. Amend Section 4402.

§ 4402. Grounding

~~(a) Grounding of both electrical and nonelectrical metal parts in a commercial coach shall be through connection to a grounding bus in the vehicle distribution panelboard. The grounding bus shall be grounded to the service ground in the service entrance equipment located adjacent to the vehicle location. Neither the frame of the vehicle nor the frame of any appliance shall be connected to the neutral conductor in the commercial coach.~~

~~(b) The grounded (neutral) circuit terminals in the distribution panels and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the distribution panelboard or in appliances shall be removed and discarded.~~

~~Connections of ranges and clothes dryers with 115/230 v, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire grounding-type plugs, or by Type AC metal clad cable or conductors enclosed in flexible metal conduit.~~

~~For 115-v rated devices, a 3-conductor cord and 2-pole, 3-wire grounding-type plug may be used.~~

~~(c) Equipment Grounding Means.~~

~~(1) In the electrical system, all exposed metal parts, enclosures, frames, lamp fixture canopies, etc., shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard.~~

~~(2) Cord-connected appliances shall be grounded by means of an approved cord with grounding conductor and grounding-type attachment plug.~~

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~~(d) Bonding of Noncurrent-carrying Metal Parts.~~

~~(1) All exposed noncurrent-carrying metal parts that may become energized shall be effectively bonded to the grounding terminal or enclosure of the distribution panelboard. A bonding conductor shall be connected between each distribution panelboard and an accessible terminal on the chassis.~~

~~(2) Grounding terminals shall be of the solderless type and approved as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be No. 8 copper minimum or equal. The bonding conductor shall be routed so as not to be exposed to physical damage.~~

~~(3) Metallic gas, water, and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis by clamps, solderless connectors, or by suitable grounding-type straps.~~

~~(4) Any metallic roof and exterior covering shall be considered bonded if the metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners and if the lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per vehicle unit at opposite ends. The bonding strap material shall be a minimum of 4 inches in width, of material equivalent to the metal siding or material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws and star washers or equivalent approved for the purpose.~~

Each commercial modular and its grounding and bonding system shall comply with the requirements found in the California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC), Article 250 and shall comply with the requirements for mobilehomes found in the CEC, Article 550.16.

Note: Authority cited: Section ~~48022-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 18028~~, Health and Safety Code.

60. Amend Section 4404.

§ 4404. Receptacle Outlets Requiring Ground-Fault Circuit Protection

~~Where provided, each 120-volt, single-phase, 15- or 20-ampere receptacle outlet shall have ground-fault circuit protection for personnel in the following locations:~~

~~(a) Adjacent to a bathroom lavatory. (The receptacle outlet shall be a minimum of 30 inches, (762 MM) from the compartment floor).~~

~~(b) Adjacent to any lavatory.~~

~~(c) In an area occupied by a toilet, toilet and/or shower, or toilet and tub-shower enclosure. (A receptacle shall not be installed in a bathtub, shower or combination bathtub-shower compartment).~~

~~(d) On the exterior of the vehicle.~~

Each commercial modular shall comply with Ground-Fault Circuit-Interrupter Protection requirements found in the California Code of Regulations, Title 24, Part 3, California Electrical Code (CEC), Article 210.8.

Note: Authority cited: Section ~~48022-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 18028~~, Health and Safety Code.

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61. Repeal Section 4407.

§ 4407. Lighting Standards for Energy Conservation

~~(1) Each area enclosed by ceiling-height partitions shall have independent control of the lighting within that area.~~

~~(2) All switching devices used to control lighting within an area shall be readily accessible to personnel occupying that area.~~

~~(3) For all areas larger than 100 square feet, the connected lighting load shall be so controlled that the overall illumination may be reduced by at least one half in a uniform pattern. The maximum area that may be controlled by any two switching devices shall be limited to that area which can be served by two (2) 20 ampere single pole circuits, loaded to no more than 80 percent.~~

Note: Authority cited: Section ~~48022-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

62. Repeal Section 4409.

§ 4409. Testing. Dielectric Strength Test

~~(a) The wiring of each commercial coach shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral) and the commercial coach ground. Alternatively, the test may be performed at 1,080 volts for 1 second. This test shall be performed after branch circuits are complete and after fixtures or appliances are installed.~~

~~EXCEPTION: Fixtures or appliances which are approved shall not be required to withstand the dielectric strength test. The test transformer shall be adjustable to permit testing at 900 and 1,080 volts and shall have a rating of at least 50 volt amperes. The test should be performed starting at 0, and the applied potential shall be increased gradually (in at least four steps) until either the test value is reached or breakdown occurs.~~

~~(b) 480 Volts. Each commercial coach designed with a 480-volt electrical system shall be subjected to a one-minute 1,275-volt dielectric strength test between current-carrying conductors and the coach ground. Alternatively, the test may be performed at 1,500 volts for one second.~~

~~(c) Low-Voltage Circuits. Low-voltage circuit conductors in each commercial coach shall withstand the applied potential without electrical breakdown of a one-minute, 500-volt or a one-second, 600-volt dielectric strength test. The potential shall be applied between live and grounded conductors.~~

~~Note: The test may be performed on running light circuits before the lights are installed provided the vehicles' outer covering and interior cabinetry has been secured. The braking circuit may be tested before being connected to the brakes provided the wiring has been completely secured.~~

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63. Repeal Appendix CC-E-1.

Appendix CC-E-1

Table CC E-1
Standards for Electrical Equipment and Appliances

Equipment and Appliances	UL Standards*	Other Equipment
Air Conditioners, Central Cooling		465-1978
Armored Cable		4-1974
Attachment Plugs & Receptacles		498-1974
Ballasts, Fluorescent Lamp	935-1978	
Battery Chargers		1236-1972
Cabinets and Boxes		50-1975
Circuit Breakers, Branch Circuit & Service		489-1972
Cleats, Knobs & Tubes, Porcelain		511-1975
Clothes Washing Equipment, Electric		1206-1974
Compactors, Trash, Household	1086-1976	
Conduit, Flexible Metal		1-1973
Conduit, Liquid-tight, Flex. Steel		360-1976
Conduit, Rigid Metallic		6-1976
Conduit, Rigid Nonmetallic	651-1972	
Cooking Appliances, Commercial Electric		197-1978
Cord Reels		355-1973
Cord Sets & Power Supply Cords	817-1977	
Dishwashers, Commercial		921-1973
Disposers, Waste		430-1970
Dry-Cleaning Machines, Commercial		664-1974
Electrical Metallic Tubing		797-1977
Emergency Lighting and Power Equipment		924-1977
Engine-Generator Assemblies	1248-1978	ANSI A198.1-1976
Fans, Electric		507-1972
Fixtures, Electric Lighting		57-1972 CSA-C22.2, #9.1-1954
Fixtures, Electric, Hazardous Locations		844-1972
Flexible Cord & Fixture Wire	62-1978	
Fuseholders		512-1975
Ground-Fault Circuit Interrupters		943-1972
Grounding & Bonding Equipment		467-1972
Heaters, Electric		1025-1973
Heaters, Hazardous Location	823-1977	
Heating Appliances		499-1972
Heating Equipment, Baseboard	1042-1972	
Heating Equipment, Central Air	1096-1973	
Heating Equipment, Commercial		795-1973
Home Laundry		560-1972
Ice Cream Makers		621-1977
Ice Makers		563-1975
Industrial Control Equipment	508-1971	
Lampholders, Edison Base	496-1975	
Lampholders, Starters & Starter Holders for Fluorescent Lamps		542-1974
Microwave Cooking Appliances	923-1977	
Motor-Operated Appliances	73-1972	
Motors and Generators		674-1973

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Motor	1004-1977
Nonmetallic Sheathed Cables	719-1974
Office Appliances and Equipment	114-1976
Panelboards	67-1974
Power Converters and Systems	458-1977
Power Supplies	1012-1976
Pumps, Heat	559-1975
Raceways & Fittings, Surface Metal	5-1978
Ranges	858-1974
Refrigeration Units	427-1976
Refrigerators & Freezers, Commercial	471-1978
Service Entrance Cables	854-1975
Service Equipment	869-1977
Smoke Detectors, Photoelectric	168-1976
Smoke Detectors, Single & Multiple Station	217-1976
Switchboard	
Switches Enclosed	98-1974
Switches, Snap	20-1974
Switches, Special Use	1054-1977
Tape, Insulating	510-1976
Transformers, Specialty	506-1977
Tubing, Flexible Nonmetallic	3-1975
Vacuum Cleaning Machines	1017-1973
Vending & Amusement Machines	751-1978
Vending Machines, Refrigerated	541-1974
Ventilators, Power	705-1977
Water Coolers	399-1972
Water Heaters	174-1977
Wire Connectors & Soldering Lugs	486-1976
Wires & Cables, Rubber Insulated	44-1977
Wires & Cables, Varnished Cloth	133-1976
Wires, Asbestos & Asbestos Varnished Cloth Insulated	115-1976
Wires, Thermoplastic Insulated	83-1975
Wireways, Auxiliary Gutters & Associated Fittings	870-1977
X-Ray Equipment	187-1974

Notes to Table

ANSI: American National Standards Institute, 1430 Broadway, New York, New York 10017.

Canadian Standards Association Building & Vehicular Products Division, 178 Rexdale Blvd., Rexdale, Ontario, Canada M9W 1R3

Note: Authority Cited: Section 48022-18015, Health and Safety Code. Reference: Section 48055-18025, Health and Safety Code.

64. Amend Subarticle 3 Number.

Subarticle ~~3~~4. Mechanical

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65. Amend Section 4414.

§ 4414. Application and Scope Minimum Requirements

(a) The provisions of this subarticle relating to mechanical equipment and installations apply to all commercial coaches manufactured, ~~after November 23, 1970, and sold,~~ offered for sale, rented or leased within this State. The provisions of this subarticle are also applicable to the alteration or conversion of mechanical equipment and installations in any commercial coach bearing or required to bear a department insignia of approval.

~~(a) Standards for Equipment and Installations. Standards for equipment and installations are listed in Appendix CC-M-1, Table CC-M-1 of this division. Equipment and installations conforming to these standards or to other approved standards shall be considered acceptable by the department when listed or labeled and installed in accordance with the requirements of this article and the conditions of their approval except where otherwise provided in this article.~~

~~(b) Mechanical Standards. Heat-producing appliances and comfort-cooling equipment shall be installed in accordance with the requirements of this article. Mechanical equipment, products, systems and installations in a commercial modular shall conform with the California Code of Regulations, Title 24, Part 4, California Mechanical Code (CMC), to the provisions of this subarticle, including standards for listing and labeling, and compliance with manufacturer's installation instructions.~~

Note: Authority cited: Section ~~48055-18025~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 18028~~, Health and Safety Code.

66. Amend Section 4415.

§ 4415. Definitions

~~(a) Definitions contained in the Health and Safety Division 13, Part 2 California Code of Regulations, Title 24, Part 4, California Mechanical Code (CMC) and the following definitions shall apply to this subarticle. Absorption Unit. A factory-built assembly of component parts designed to produce refrigeration for comfort cooling or comfort heating by the application of heat.~~

~~(a) Direct absorption unit is a unit in which the refrigerant evaporator is in direct contact with the air to be conditioned.~~

~~(b) Indirect absorption unit is a unit in which the refrigerant evaporator is not in direct contact with the air to be conditioned. Accessible. When applied to a fixture, connection, appliance or equipment, shall mean having access thereto, but which may require the removal of an access panel, door or similar obstruction.~~

~~Air Conditioning or Comfort Cooling Equipment. All of that equipment intended or installed for the purpose of processing the treatment of air so as to control its temperature, humidity, and distribution to meet the requirements of the conditioned space.~~

~~Air Handling Unit. A blower or fan used for the purpose of distributing conditioned air to a room or space.~~

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~~Anti-Flooding Device. A primary safety control which causes the liquid fuel flow to be shut off upon a rise in fuel level or upon receiving excess fuel, and which operates before a hazardous discharge of fuel can occur.~~

~~Appliance is a device which utilizes fuel or other forms of energy to produce light, heat, power, refrigeration or air conditioning. This definition also shall include a vented decorative appliance.~~

~~(b) Automatic Pilot Device. A device employed with gas-burning equipment that will either automatically shut off the gas supply to the burner(s) being served or automatically actuate, electrically or otherwise, a gas shutoff device when the pilot flame is extinguished.~~

~~Automatic Pump (Oil Lifter). A pump, not an integral part of the oil burning appliance, that automatically pumps oil from the supply tank and delivers the oil by gravity under a constant head to an oil burning appliance.~~

~~BTU. British thermal unit. The quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.~~

~~BTUH. British thermal units per hour.~~

~~Chimney, Factory Built. A chimney consisting entirely of factory made parts, each designed to be assembled with the others without requiring field construction.~~

~~Commercial Food and Heat Processing Equipment. Equipment and appliances used for food preparation and processing in retail and manufacturing establishments.~~

~~Combustible Material. Materials made of or surfaced with wood, compressed paper, plant fibers or other materials that will ignite and burn, even though flameproofed, fire-retardant treated or plastered.~~

~~Compressor. A specific machine, with or without accessories, for compressing a given refrigerant vapor.~~

~~Condenser. A vessel or arrangement of pipe or tubing in which vaporized refrigerant is liquefied by the removal of heat.~~

~~Condensing Unit. A specific refrigerating machine combination for a given refrigerant, consisting of one or more power-driven compressors, condensers, liquid receivers (when required) and the regularly furnished accessories.~~

~~Connector Gas Appliance. A flexible or semi-rigid connector listed as conforming to ANSI Standard Z21.24, Metal Connectors for Gas Appliances, used to convey fuel gas, three feet or less in length (six feet or less for gas ranges), between a gas outlet and a gas appliance in the same room with the outlet.~~

~~Dampers include:~~

~~Fire Damper is a damper arranged to seal off air flow automatically through part of an air duct system, so as to restrict the passage of heat.~~

~~Smoke Damper is a damper arranged to seal off air flow automatically through a part of an air duct system, so as to restrict the passage of smoke.~~

~~Volume Damper is any device which when installed will restrict, retard or direct the flow of air in any duct, or the products of combustion in any heat producing equipment, its vent connector, vent or chimney therefrom.~~

~~Direct Gas-Fired Make-Up Air Heater is a heater in which all the products of combustion generated by the gas-burning device are released into the outside air stream being heated.~~

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~~(c) Direct System. is one A system in which the evaporator is in direct contact with the material or space refrigerated, or is located in air-circulating passages communicating with such spaces.~~

~~Direct Vent appliances are appliances which are constructed and installed so that all air for combustion is derived from the outside atmosphere and all flue gases are discharged to the outside atmosphere.~~

~~Draft Hood is a device built into an appliance, or made a part of the vent connector from an appliance, which is designed to:~~

~~1. Assure the ready escape of the flue gases in the event of no draft, back draft, or stoppage beyond the draft hood.~~

~~2. Prevent a back draft from entering the appliance.~~

~~3. Neutralize the effect of stack action of the chimney or gas vent upon the operation of the appliance. Duct. Tube or conduit for conveying air to or from air conditioning or comfort-cooling equipment.~~

~~Class 0 Air Ducts. Air duct materials and connectors having a fire-hazard classification of zero.~~

~~Class 1 Air Ducts. Ducts of materials and connectors having a flame-spread rating of not over 25 without evidence of continued progressive combustion and a smoke-developed rating of not over 50.~~

~~Class 2 Air Ducts. Ducts of materials and connectors having a flame-spread rating of not over 50 without evidence of continued progressive combustion and a smoke-developed rating of not over 50 for the inside surface and not over 100 for the outside surface.~~

~~Evaporative Cooler is a device used for reducing the sensible heat of air for cooling, by the process of evaporation of water into an air stream.~~

~~Evaporator. That part of the system in which liquid refrigerant is vaporized to produce refrigeration.~~

~~(d) Expansion Coil. An evaporator constructed of pipe or tubing.~~

~~Fuel Gas Piping System. The arrangement of piping, tubing, fittings, connectors, valves and devices designed and intended to supply or control the flow of fuel gas to the appliance(s).~~

~~Fuel Oil Piping System. The arrangement of piping, tubing, fittings, connectors, valves and devices designed and intended to supply or control the flow of fuel oil to the appliance(s).~~

~~Furnace—Central Furnace. A self-contained appliance for heating air by transfer of heat to the air, and designed to supply heated air through ducts to spaces remote from or adjacent to the appliance location.~~

~~a. Gravity Type Central Furnace. A central furnace depending primarily on circulation of air by gravity.~~

~~b. Gravity Type Central Furnace with Integral Fan. A central furnace equipped with a fan or blower as an integral part of its construction and operable on gravity systems only. The fan or blower is used only to overcome the internal furnace resistance to air flow.~~

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~~e. Gravity Type Central Furnace with Booster Fan. A central furnace equipped with a booster fan which does not materially restrict free circulation of air by gravity flow when the fan is not in operation.~~

~~d. Forced Air Type Central Furnace. A central furnace equipped with a fan or blower which provides the primary means for circulation of air.~~

~~1. Horizontal Type Central Furnace. A furnace designed for low headroom installation with air flow through the appliance essentially in a horizontal path.~~

~~2. Upflow Type Central Furnace. A furnace designed with air flow essentially in a vertical path, discharging air at or near the top of the furnace.~~

~~3. Downflow Type Central Furnace. A furnace designed with air flow essentially in a vertical path, discharging air at or near the bottom of the furnace.~~

~~(e) Gas. Fuel gas, such as natural gas, manufactured gas, undiluted liquefied petroleum gas (vapor phase only), liquefied petroleum air-gas mixtures or mixtures of these gases which would ignite in the presence of oxygen.~~

~~(f) Gas-Supply Connection. The terminal end of the gas-piping system to which a gas-supply connector is attached.~~

~~Heating System. A warm-air heating plant consisting of a heat exchanger enclosed in a casing, from which the heated air is distributed through ducts to rooms and areas. A heating system includes the circulating air and conditioned air supply and all accessory equipment installed in connection therewith.~~

~~Heat Producing Appliance. A heating or cooking appliance utilizing fuel or energy.~~

~~High Side. The parts of a refrigerating system under condenser pressure.~~

~~Hood. Is any air intake device connected to a mechanical exhaust system for collecting vapors, fumes, smoke, dust, steam, heat or odors from, at or near the equipment, place or area where generated, produced or released.~~

~~Industrial Heating Equipment is any appliance, device or equipment used, or intended to be used, in an industrial, manufacturing, or commercial occupancy for applying heat to any material being processed, but shall not include water heaters, boilers or portable equipment used by artisans in pursuit of a trade.~~

~~(g) Input Rating. The maximum fuel-burning capacity of any warm-air furnace, heater or burner expressed in British thermal units per hour.~~

~~Liquefied Petroleum Gases. "Liquefied petroleum gases," "LPG" and "LP Gas" is any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them: Propane, propylene, butanes (normal butane or isobutane) and butylenes.~~

~~Low Side. The parts of a refrigerating system under evaporator pressure.~~

~~Plenum. An air compartment which is part of an air distributing system to which one or more ducts are connected.~~

~~a. Furnace supply plenum is a plenum attached directly to, or an integral part of, the air supply outlet of the furnace.~~

~~b. Furnace return plenum is a plenum attached directly to or an integral part of, the return inlet of the furnace.~~

~~(h) Quick-Disconnect Device. A hand-operated device which provides a means for connecting and disconnecting an appliance or an appliance connector to a gas supply~~

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and which is equipped with an automatic means to shut off the gas supply when the device is disconnected.

~~Readily Accessible means capable of being reached safely and quickly for operation, repair, or inspection without requiring those to whom ready access is requisite to climb over, or remove obstacles, or to resort to the use of portable access equipment.~~

~~(i) Refrigerant. A substance used to produce refrigeration by its expansion or vaporization.~~

~~Refrigerating System. A combination of interconnected refrigerant containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting heat.~~

~~(j) Roof Jack. That portion of a heater flue or vent assembly, including the cap, insulating means, flashing and ceiling plate, located in and above the roof.~~

~~Vent is a listed factory made vent pipe and vent fittings for conveying products of combustion from a fuel-burning appliance to the outside atmosphere.~~

~~Vent Connector. Any pipe for conveying products of combustion from a fuel-burning appliance to a vent.~~

~~Ventilation System is all of that equipment intended or installed for the purpose of supplying air to, or removing air from, any room or space by mechanical means, other than equipment which is a portion of any environmental heating, cooling, absorption or evaporative cooling system.~~

~~Water Heater. An appliance designed primarily to supply hot water and is equipped with automatic controls limiting water temperature to a maximum of 210 degrees F.~~

Note: Authority cited: Section 48022-18015, Health and Safety Code. Reference: Sections 48055 18025 and 18028, Health and Safety Code.

67. Repeal Section 4420.

§ 4420. LPG, Construction and Marking of Containers.

~~Containers shall be constructed and marked in accordance with the specifications for LP-Gas containers of the U.S. Department of Transportation (DOT) or the Rules for Construction of Unfired Pressure Vessels, Section VIII, Division 1, ASME Boiler and Pressure Vessel Code. ASME containers shall have a design pressure of not less than 312.5 psig.~~

68. Repeal Section 4421.

§ 4421. Location and Installation of Containers and Systems

~~(a) No LP-gas container shall be installed, or provision made for installing or storing, even temporarily, inside any commercial coach, except for listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more than two and one half pounds (approximately one pound LPG capacity).~~

~~(b) Where provided, containers, control valves and regulating equipment shall be mounted on the hitch, installed in a single compartment that is vapor-tight to the inside of the commercial coach and accessible only from the outside or mounted on the frame. Compartments shall be constructed of galvanized steel, not less than 0.0299 inch~~

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~~(0.759 mm) thick. Seams and joints shall be lapped, mechanically secured and made airtight to the interior of the vehicle. Alternate materials and methods of construction may be used if they provide equivalent quality, strength, effectiveness, fire resistance, durability and safety. Fuel gas tubing from the gas supply connection may pass through the wall, floor or ceiling of the compartment. Where such tubing passes through any wall, floor or ceiling, such tubing shall be protected by the use of bulkhead fittings or equivalent devices which shall snugly fit both the tubing and the hole in the compartment through which the tubing passes.~~

~~(c) Containers and container carriers shall be securely mounted on the vehicle, or within the compartment and located and installed so as to minimize the possibility of damage to containers, their appurtenances or contents as follows:~~

~~(1) Containers shall be installed with as much road clearance as practicable but not less than the minimum road clearance of the vehicle under maximum spring deflection. This clearance shall be measured to the bottom of the container, or to the lowest fitting, support or attachment on the container or container housing, whichever is lower.~~

~~(2) Fuel containers and container carriers shall be securely mounted to prevent jarring loose and slipping or rotating, and the fastenings shall be designed and constructed to withstand without permanent visible deformation static loading in any direction equal to four times the weight of the container filled with fuel. When containers are mounted within a vehicle, the securing of the container to the vehicle shall comply with this provision. Any hoods, domes or removable portions of the housing or cabinet shall be provided with means to keep them firmly in place in transit.~~

~~(3) All container valves, appurtenances and connections shall be adequately protected to prevent damage due to accidental contacts with stationary objects, from loose objects, stones, mud, or ice, thrown up from the ground or floor, and from damage due to overturn or similar vehicular accident. In the case of permanently mounted containers, this provision may be met by the location on the vehicle, with parts of the vehicle furnishing the protection. On portable (removable) containers the protection for container valves and connections shall be permanently attached to the container.~~

~~(d) Access to a compartment containing LP-gas tanks or cylinders shall be by a door or opening in the exterior wall of the commercial coach. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the bottom vent is located in the access door or wall, it shall not be located above the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than 12 inches below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

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69. Repeal Section 4422.

§ 4422. Container Valves and Accessories

~~(a) Containers and safety relief valves located less than 18 inches (457 mm) from any component of an internal combustion engine exhaust system shall be shielded by a vehicle frame member or by a noncombustible baffle to dissipate radiated or convected heat with an air space on both sides of the frame member or baffle.~~

~~(b) Listed two-stage regulators shall be supplied. Such regulators shall have a capacity not less than the total input of all LP-Gas appliances installed in the vehicle. Provisions shall be made for securely mounting the regulator by attaching it to the container valve, container, supporting standard, or vehicle wall. If the regulator is not mounted by the vehicle manufacturer, instructions for proper installation shall be provided. Regulators shall be installed so the regulator vent opening will not be affected by the elements such as by sleet, snow, freezing rain, ice, mud or by wheel spray.~~

~~(c) A listed LP-Gas excess flow valve shall be provided in accordance with the following:~~

~~1. The inlet or outlet of each service valve of a permanently mounted container shall be equipped with such a listed excess flow valve or a listed POL adapter with an integral excess flow valve.~~

~~2. Vehicles having removable (DOT) type containers shall have furnished or installed a listed POL adapter with an integral listed excess flow valve.~~

Note: Authority cited: Section ~~48022-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

70. Repeal Section 4423.

§ 4423. LP-Gas Container Safety Relief Devices

~~(a) DOT containers shall be provided with safety relief devices as required by the regulations of the U. S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with Subsection 221 of the Standard for the Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58-1976 (ANSI)). Safety relief valves shall have direct communication with the vapor space of the vessel.~~

~~(b) Final stage regulators shall be equipped on the low pressure side with one or both of the following:~~

~~(1) A relief valve having a start-to-discharge pressure setting of not less than 1.7 times and not more than 3 times the delivery pressure of the regulator.~~

~~(2) A shutoff device that shuts the gas off at the inlet side when the downstream pressure reaches the overpressure limits of not less than 1.7 times and not more than 3 times the delivery pressure of the regulator. Such a device shall not open to permit flow of gas until it has been manually reset.~~

~~(c) Systems installed outside of a vehicle shall be so located that discharge from safety relief devices shall be not less than 3 feet (0.9m) horizontally away from any openings into the vehicle and from all the internal combustion engine exhaust termination(s) below the level of such discharge. When a system is located in a recess vaportight to the inside, vent openings in such recess shall be not less than 3 feet~~

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~~(0.9m) horizontally away from any opening into the vehicle below the level of these vents.~~

~~EXCEPTIONS: Doors not having openable windows or screens below the level of the gas compartment vents are excepted from this requirement.~~

~~(d) Safety relief valves located within liquefied petroleum gas container compartments may be less than three feet from openings provided:~~

~~(1) The bottom vent of the compartment is at the same level or lower than the bottom of any opening into the vehicle, or~~

~~(2) The compartment is not located on the same wall plane as the opening(s) and is at least two feet horizontally from such openings.~~

Note: Authority cited: Section ~~48022-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

71. Repeal Section 4424.

§ 4424. Container Mounting

~~(a) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in Section 4421.~~

~~(b) Doors, hoods, domes or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit.~~

~~(c) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit.~~

~~(d) Containers shall be mounted on a substantial support or a base secured firmly to the commercial coach chassis. Neither the container nor its support shall extend below the axle.~~

72. Repeal Section 4425.

§ 4425. System Design and Service-Line Pressure

~~(a) Systems shall be of the vapor withdrawal type.~~

~~(b) Vapor, at a pressure not over 18 inches water column, shall be delivered from the container into the gas supply connection.~~

~~(c) Container openings for vapor withdrawal shall be located in the vapor space when the container is in service or shall be provided with a suitable internal withdrawal tube which communicates with the vapor space in or near the highest point in the container when it is mounted in service position, with the commercial coach on a level surface. Containers shall be permanently and legibly marked in a conspicuous manner on the outside to show the correct mounting position and the position of the service outlet connection. The method of mounting in place shall be such as to minimize the possibility of an incorrect positioning of the container.~~

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73. Repeal Section 4426.

§ 4426. Electrical Equipment

~~All electrical equipment installed in conjunction with gas equipment shall be listed for the purpose intended.~~

74. Repeal Section 4428.

§ 4428. Gas Piping Systems

~~The requirements of this article shall govern the installation of all gas piping systems attached to any commercial coach. The requirements of this article applicable to gas-piping systems shall not apply to piping designated as an integral part of an appliance or to gas appliance connectors.~~

75. Repeal Section 4429.

§ 4429. Piping Design

~~Commercial coaches requiring fuel gas for any purpose shall be equipped with a gas-piping system that is designed for LP gas only, combination LP natural gas or natural gas.~~

76. Repeal Section 4430.

§ 4430. Materials

~~All materials used for the installation, extension, alteration or repair of any gas-piping system shall be new and free from defects or internal obstructions. It shall not be permissible to repair defects in gas piping or fittings. Inferior or defective materials shall be removed and replaced with acceptable material. The system shall be made of materials having a melting point of not less than 1,450 degrees F., except as provided in Section 4436. They may consist of one or more of the following materials.~~

~~(a) Steel or wrought-iron pipe shall comply with ANSI Standard B36.10-1970 for Wrought Steel and Wrought Iron Pipe. Threaded brass pipe in iron pipe sizes may be used.~~

~~(b) Fittings for gas piping shall be wrought iron, malleable iron, steel or brass (containing not more than 75 percent copper).~~

~~(c) Copper tubing shall be annealed type, grade K or L, conforming to the Specifications for Seamless Copper Water Tube (ASTM B88-72), or shall comply with the Specifications for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, (ASTM B280-73). When used on systems designed for natural gas, such tubing shall be internally tinned.~~

~~(d) Steel tubing shall have a minimum wall thickness of 0.032 inch for tubing of 1/2 inch diameter and smaller and 0.049 inch for diameters 1/2 inch and larger. Steel tubing shall be constructed in accordance with ASTM Specification for Electrical Resistance-Welded Coiled Steel Tubing for Gas and Fuel Oil Lines, (ASTM A539-73), and shall be externally corrosion protected.~~

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77. Repeal Section 4431.

§ 4431. Expandable or Multiple Commercial Coaches

~~Where gas piping is to be installed in more than one portion of an expandable or multiple commercial coach, the design and construction shall be as follows.~~

~~(a) There shall be only one point of crossover between each unit which shall be readily accessible from the exterior of the commercial coach.~~

~~(b) The connector between units shall be a listed flexible connector for exterior use and sized in accordance with Section 4434 of this chapter.~~

~~(c) Protective caps or plugs shall be permanently attached to the coach by means of a metal chain and used to seal the system when not in use.~~

78. Repeal Section 4434.

§ 4434. Gas Pipe Sizing

~~Gas piping systems shall be sized so that the pressure drop to any appliance inlet connection from any gas supply connection, when all appliances are in operation at maximum capacity, is not more than 0.5 inch water column as determined on the basis of test, or in accordance with Appendix CC-M-2. The natural gas supply connection(s) shall be not less than the size of the gas piping and/or not smaller than 3/4 inch nominal pipe size.~~

79. Repeal Section 4435.

§ 4435. Joints for Gas Pipe

~~All pipe joints in the piping system, unless welded or brazed, shall be screw threaded joints that comply with ANSI Standard Pipe Threads (except Dryseal) B 2.1—1968. Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 degrees F. Pipe shall not be bent.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

80. Repeal Section 4436.

§ 4436. Tubing Joints

~~Tubing joints shall be made with either a single or a double flare of the proper degree, as recommended by the tubing manufacturer, or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 degrees F. Metallic ball sleeve compression type tubing fittings shall not be used.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

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81. Repeal Section 4437.

§ 4437. Concealed Tubing

~~Tubing shall not be run inside walls, floors, ceilings or partitions. Where tubing passes through walls, floors, ceilings, partitions or similar installations, such tubing shall be protected by the use of weather resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes.~~

82. Repeal Section 4438.

§ 4438. Pipe-Joint Compound

~~Screw joints shall be made up tight with listed pipe joint compound, insoluble in liquefied petroleum gas, and shall be applied to the male threads only.~~

83. Repeal Section 4439.

§ 4439. Concealed Joints

~~No piping or tubing joints shall be located in any floor, wall, partition or similar concealed construction space.~~

84. Repeal Section 4440.

§ 4440. Couplings

~~Where it is necessary to join sections of screw piping, right and left nipples and couplings shall not be used. Ground joint unions may be used to connect heat-producing appliances to the appliance branch piping.~~

85. Repeal Section 4441.

§ 4441. Hangers and Supports

~~(a) All gas piping shall be supported by straps or hangers at intervals of not more than four feet, except where support is provided by structural members. The gas supply connection shall be rigidly anchored to a structural member within six inches of the gas supply connection. Piping shall be installed so that it will not be subject to undue strains and stresses.~~

~~(b) Metallic gas piping straps or hangers shall be galvanized or equivalently protected metal.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

86. Repeal Section 4442.

§ 4442. Electrical Ground

~~Gas piping shall not be used for an electrical ground.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

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87. Repeal Section 4443.

§ 4443. Identification of Gas Supply Connections

A label shall be permanently attached on the outside of the exterior wall of the commercial coach adjacent to the gas supply connection which reads (as appropriate either):

LP-Gas System
~~This gas piping system is designed for use of liquefied petroleum gas only.~~
~~DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.~~
~~CONTAINER SHUTOFF VALVES SHALL BE CLOSED DURING TRANSIT.~~
~~When connecting to lot outlet, use a listed gas supply connector, for mobile homes, rated at~~
 ~~400,000 Btuh~~ or more.
 ~~250,000 Btuh~~
~~Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.~~
~~After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.~~

Combination LP-Gas and Natural Gas System
~~This gas piping system is designed for use of either liquefied petroleum gas or natural gas.~~
~~NOTICE: BEFORE TURNING ON GAS BE CERTAIN APPLIANCES ARE DESIGNED FOR THE GAS CONNECTED AND ARE EQUIPPED WITH CORRECT ORIFICES. SECURELY CAP THIS INLET WHEN NOT CONNECTED FOR USE.~~
~~When connecting to lot outlet, use a listed gas supply connector, for mobile homes, rated at~~
 ~~400,000 Btuh~~ or more.
 ~~250,000 Btuh~~
~~Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.~~
~~After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.~~

The appropriate BTUH input rating shall be marked.

Note: See Article 1, Section 4031 for label size and type of material.

88. Repeal Section 4444.

§ 4444. Gas-Supply Connection Cap

A protective cap or plug permanently attached to the vehicle shall be installed to effectively close the gas supply connection when not in use on LP gas, combination LP-natural or natural-gas-piping systems.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

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89. Repeal Section 4445.

§ 4445. Appliance Connections

~~All gas-burning appliances shall be connected to the gas-piping system with materials as provided in Section 4430 or with listed gas appliance connectors. Gas appliance connectors shall not be run through walls, ceilings, floors or partitions. Aluminum tubing and connectors shall not be used in exterior locations.~~

90. Repeal Section 4446.

§ 4446. Appliance Shutoff Valves

~~A shutoff valve shall be installed in the fuel-piping outside of each gas appliance within the vehicle, upstream of the union or connector in addition to any valve on the appliance. The shutoff valve shall be located within 6 feet of a cooking appliance and within 3 feet of any other appliance.~~

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Section ~~18055 18025~~, Health and Safety Code.

91. Repeal Section 4450.

§ 4450. Testing Before Appliances Are Connected

~~Piping systems shall stand a pressure of at least six inches mercury or three psi for a period of not less than ten minutes without showing any drop in pressure. Pressure shall be measured with a mercury manometer or slope gage or equivalent device calibrated so as to be read in increments of not greater than one-tenth pound. The source of pressure shall be isolated before the pressure tests are made. Before test is begun, the temperature of the air and of the piping shall be the same, and constant air temperature shall be maintained throughout the test.~~

92. Repeal Section 4451.

§ 4451. Testing After Appliances Are Connected

~~After appliances are connected, the piping system shall be pressurized to not less than 10 inches nor more than 14 inches water column and the appliance connections tested for leakage with soapy water or bubble solution.~~

93. Repeal Section 4452.

§ 4452. Leaks

~~(a) Leaks in gas piping shall be located by applying soapy water to the exterior of the piping.~~

~~(b) Fire, ether or acid shall not be used to locate or repair leaks, nor shall any substance other than air be introduced into the gas piping.~~

~~(c) It shall not be permissible to repair defects in gas piping or fittings. Defective pipe or fitting shall be removed and replaced with sound material.~~

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94. Repeal Section 4453.

~~§ 4453. Rodent Resistance~~

~~All exterior openings around piping, ducts, plenums, chimneys and vents shall be sealed to resist the entrance of rodents.~~

95. Repeal Section 4455.

~~§ 4455. General~~

~~The requirements of this article shall govern the installation of all oil piping systems attached to any commercial coach except piping approved as an integral part of the appliance.~~

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code, Reference: Section ~~18055-18025~~, Health and Safety Code.

96. Repeal Section 4456.

~~§ 4456. Expandable or Multiple Commercial Coaches~~

~~When a commercial coach is composed of two or more units, or includes expandable rooms, the oil piping system shall be located only in the unit containing the oil supply connection.~~

97. Repeal Section 4457.

~~§ 4457. Materials~~

~~All materials used for the installation, extension, alteration, or repair of any oil piping system shall be new and free from defects or internal obstructions. The system shall be made of materials having a melting point of not less than 1,450 degrees F, except as provided in 4459. They shall consist of one or more of the following materials:~~

~~(a) Steel or wrought iron pipe shall comply with American National Standard for Wrought Steel or Wrought Iron Pipe, B36.10-1970. Threaded copper or brass pipe in iron pipe sizes may be used.~~

~~(b) Fittings for oil piping shall be wrought iron, malleable iron, steel, or brass (containing not more than 75 percent copper).~~

~~(c) Copper tubing shall be annealed type, Grade K or L, conforming to the Specifications for Seamless Copper Water Tube (ASTM B88-72), or shall comply with the specifications for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, (ASTM B280-73).~~

~~(d) Steel tubing shall have a minimum wall thickness of 0.032 inch for diameters up to 1/2 inch and 0.049 inch for diameters 1/2 inch and larger. Steel tubing shall be constructed in accordance with the Specification for Electric Resistance Welded Coiled Steel Tubing for Gas and Fuel Oil Lines (ASTM A539-73) and shall be externally corrosion protected.~~

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98. Repeal Section 4458.

§ 4458. Size of Oil Piping

~~The minimum size of all fuel-oil tank piping connecting outside tanks to the appliances shall be no smaller than three-eighths-inch OD copper tubing or one-fourth-inch ips. In those cases where No. 1 fuel oil is used with an automatic pump (fuel lifter), one-fourth-inch OD copper tubing may be used if specified by the pump manufacturer.~~

99. Repeal Section 4459.

§ 4459. Joints for Oil Piping

~~All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with ANSI Standards Pipe Threads (except Dryseal) B2.1—1968. Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 degrees F.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

100. Repeal Section 4460.

§ 4460. Tubing Joints

~~Tubing joints shall be made with either a single or a double flare of the proper degree, as recommended by the tubing manufacturer, or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 degrees F. Metallic ball-sleeve compression-type tubing fittings shall not be used.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

101. Repeal Section 4461.

§ 4461. Pipe-Joint Compound

~~Threaded joints shall be made up tight with listed pipe-joint compound which shall be applied to the male threads only.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

102. Repeal Section 4463.

§ 4463. Grade of Piping

~~Fuel-oil piping installed in conjunction with gravity-feed systems to oil-heating equipment shall slope in a gradual rise upward from a central location to both the oil tank and the appliance in order to eliminate air locks.~~

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103. Repeal Section 4464.

§ 4464. Hangers and Supports

~~All oil piping shall be supported by galvanized or equivalently protected metal straps or hangers at intervals of not more than four feet, except where support is provided by structural members. The supply connection shall be rigidly anchored to a structural member within six inches of the supply connection. Piping shall be installed so that it will not be subject to undue strains and stresses.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

104. Repeal Section 4465.

§ 4465. Testing for Leakage

~~Before setting the system in operation, tank installations and piping shall be checked for oil leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage.~~

105. Repeal Section 4468.

§ 4468. Oil Tanks

~~Oil tanks and listed automatic pumps (oil lifters) installed for gravity flow of oil to heating equipment shall be installed so that the top of the tank is no higher than 8 feet above the appliance oil control and the bottom of the tank is not less than 18 inches above the appliance oil control.~~

106. Repeal Section 4469.

§ 4469. Auxiliary Oil-Storage Tank

~~Oil supply tanks affixed to a commercial coach shall be so located as to require filling and draining from the outside and shall be in a place readily available for inspection. If the fuel supply tank is located in a compartment of a commercial coach, the compartment shall be ventilated at the bottom to permit diffusion of vapors and shall be insulated from the structural members of the body. Tanks so installed shall be provided with an outside fill and vent pipe and an approved liquid level gage.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

107. Repeal Section 4470.

§ 4470. Shutoff Valve

~~A readily accessible listed manual shutoff valve shall be installed at the outlet of an oil supply tank. The valve shall be installed to close against the supply.~~

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108. Repeal Section 4471.

§ 4471. Fuel-Oil Filters

All oil tanks, ~~except for integrally mounted tanks, shall be equipped with a listed oil filter or strainer located downstream from the tank shutoff valve. The fuel-oil filter or strainer shall contain a sump with a drain for the entrapment of water.~~

109. Amend Section 4473.

§ 4473. Appliances

(a) All heat-producing appliances used in commercial ~~coaches~~ modulars shall be specifically listed, labeled, or certified by an approved testing agency in accordance with nationally recognized standards, except as provided in ~~these regulations~~ this article. Heat-producing appliances, vents, and chimneys shall be installed in accordance with the terms of their listing and the manufacturer's instructions.

(b) In addition, appliances and equipment for heating of grease or other liquids shall be designed in such a manner that means are provided to prevent the spillage of liquids when the ~~vehicle unit~~ is in transit. ~~This subsection shall become effective April 1, 1980.~~

(c) ~~All fuel burning appliances, except ranges, ovens, commercial food and heat-processing equipment, illuminating appliances, clothes dryers, solid fuel burning fireplaces and fireplace stoves, shall be installed to provide for the complete separation of the combustion system from the interior atmosphere of the commercial coach. Combustion air inlets and flue gas outlets shall be listed or certified as components of the appliance. The required separation may be obtained by:~~

~~(1) The installation of direct vent system (sealed combustion system) appliances, or
(2) The installation of appliances within enclosures so as to separate the appliance combustion system and venting system from the interior atmosphere of the vehicle. There shall not be any door, removable access panel, or other opening into the enclosure from the inside of the vehicle. Any opening for ducts, piping, wiring, etc., shall be sealed.~~

(d) ~~Solid fuel burning factory built fireplaces and fireplace stoves shall be listed for use in mobile structures and may be installed in commercial coaches provided they and their installation conform to the following:~~

~~(1) A fireplace or fireplace stove shall not be considered as a heating facility for determining compliance with thermal protection.~~

~~(2) A fireplace or fireplace stove, air intake assembly, hearth extension and the chimney shall be installed in accordance with the terms of their listings and their manufacturer's instructions.~~

~~(3) The fireplace or fireplace stove shall not be installed in a sleeping room.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055-18025~~, Health and Safety Code.

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110. Repeal Section 4474.

§ 4474. Fuel Conversion

~~Heat-producing appliances shall not be converted from one fuel to another unless converted in accordance with the terms of their listing.~~

111. Repeal Section 4475.

§ 4475. Appliance Installation

~~(a) A forced air appliance and its return air system shall be designed and installed so that negative pressure created by the air circulating fan cannot affect its or another appliance's combustion air supply or act to mix products of combustion with circulating air.~~

~~(b) The air circulating fan of a furnace installed in an enclosure with another fuel-burning appliance shall be operable only when any door or panel covering an opening in the furnace fan compartment or in a return air plenum or duct is in the closed position. This does not apply if both appliances are direct vent system appliances. (Sealed combustion)~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

112. Repeal Section 4475.2.

§ 4475.2. Separation

~~(a) The interior walls and ceiling of fuel burning furnace and water heater enclosures, including access doors, shall be covered with 5/16 inch thick gypsum board or equivalent protection.~~

~~(b) Exposed interior surfaces adjacent to cooking ranges shall have a flame spread rating not exceeding 50. Adjacent surfaces are all exposed vertical surfaces between the range top and the overhead cabinets and/or ceiling and within 6 horizontal inches of the range.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections 48055 ~~18025~~ and ~~48058-18029.5~~, Health and Safety Code.

113. Repeal Section 4475.5.

§ 4475.5. Clothes Dryer Installation

~~(a) Clearance. Listed Type 1 clothes dryers shall be installed with a minimum clearance of 6 inches from adjacent combustible material, except that clothes dryers listed for installation at lesser clearances may be installed in accordance with their listing.~~

~~(b) Listed Type 2 clothes dryers shall be installed with clearances of not less than shown on the marking plate and in the manufacturer's instructions. Type 2 clothes dryers designed and marked "For use only in fire-resistive locations" shall not be installed elsewhere.~~

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~~(c) Exhausting. Type 1 clothes dryers shall not be installed in bathrooms or bedrooms unless exhausted to the outside air. Type 2 clothes dryers shall be exhausted to the outside air.~~

~~(d) Make-up Air. Provision for make-up air shall be provided for Type 2 clothes dryers, with a minimum free area of one square inch for each 1,000 Btu per hour total input rating of the dryer(s) installed.~~

~~(e) Exhaust Ducts. Type 1 and 2 clothes dryer exhaust ducts shall not be connected into any vent connector, gas vent, chimney, crawl space, attic or other similar concealed space. Ducts for exhausting clothes dryers shall not be put together with sheet metal screws or other fastening means which extend into the duct and which would catch lint and reduce the efficiency of the exhaust system.~~

~~(f) Exhaust ducts for Type 2 clothes dryers shall be constructed of sheet metal or other noncombustible material. Such ducts shall be equivalent in strength and corrosion resistance to ducts made of No. 24 galvanized sheet gage steel. Type 2 clothes dryers shall be equipped or installed with lint controlling means.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48055 18025 and 48058-18029.5~~, Health and Safety Code.

114. Repeal Section 4475.7.

§ 4475.7. Commercial Hoods and Kitchen Ventilation

~~Except as provided in Article 3.5, of these regulations, all commercial hoods and kitchen ventilation systems shall be designed and installed in accordance with the Uniform Mechanical Code, 1976 edition, Chapter 20.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

115. Repeal Section 4476.

§ 4476. Manufacturer's Instructions

~~(a) Operating instructions shall be provided with the appliance.~~

~~(b) The installer shall leave the manufacturer's installation instructions with the appliance.~~

~~(c) Information on clearances, input ratings, lighting and shutdown shall be attached to the appliances with the same permanence as the nameplate, and so located that it is easily readable when the appliance is properly installed.~~

~~(d) Each fuel burning appliance shall bear a permanent marking designating the type(s) of fuel for which it is listed.~~

116. Repeal Section 4476.5.

§ 4476.5. Safety Devices

~~(a) All appliances shall be equipped with a listed device or devices which will shut off the fuel supply to the main burner or burners in the event of pilot or ignition failure. In addition, liquefied petroleum gas burning appliances shall be equipped with a listed~~

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~~automatic device or devices which will shut off the flow of gas to the pilot in the event of ignition failure.~~

~~EXCEPTION: Listed shutoff devices are not required for listed appliances not requiring such devices and specific industrial appliances as approved by the department.~~

~~(b) All storage type water heaters, regardless of source of energy, in addition to the primary temperature control, shall be equipped with a listed temperature limiting device installed in accordance with applicable standards.~~

~~(c) All storage type water heaters, regardless of source of energy, shall be provided with a listed pressure relief valve. Each pressure relief valve shall be an automatic type with drain and shall be set at a pressure of not more than the maximum allowable working pressure of the water heater or system, whichever is lower.~~

~~(d) Relief valves shall be equipped with a full size drain of material able to withstand 225 degrees F (107 degrees C) which shall extend to the outside of the vehicle with the end directed downward. No part of the relief drain shall be trapped. The terminal end shall not be threaded.~~

Note: Authority cited: Section 48020-18015, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

117. Repeal Section 4477.

§ 4477. Securing

~~Every appliance shall be secured in place to avoid displacement and movement from vibration and road shock.~~

118. Repeal Section 4478.

§ 4478. Accessibility

~~Every heat-producing appliance shall be accessible for inspection, service, repair and replacement without removing permanent construction. Sufficient room shall be available to enable the operator to observe the burner, controls and ignition means while starting the appliance.~~

119. Repeal Section 4479.

§ 4479. Clearances—General

~~Clearances from heat-producing appliances to adjacent surfaces shall be not less than specified in the terms of their listing. Clearance spaces shall be framed in or guarded to prevent creation of storage space within the clearance specified.~~

120. Repeal Section 4480.

§ 4480. Venting

~~Every appliance designed to be vented shall be connected to an approved venting system and vented to the outside of the vehicle. Venting systems shall not terminate beneath the vehicle.~~

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~~(a) Venting systems shall be so designed and constructed as to develop a positive flow adequate to convey all combustion product to the outside atmosphere.~~

~~(b) A venting system which is an integral part of the vented appliance shall be installed in accordance with the terms of its listing, manufacturer's installation requirements, and applicable requirements of these regulations.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

121. Repeal Section 4481.

§ 4481. Types of Venting Systems

~~Venting of appliances shall be accomplished by one or more of the following:~~

~~(a) An integral vent system consisting entirely of listed components certified as part of the appliance.~~

~~(b) A vent system consisting entirely of listed or certified components, from the appliance outlet to the vent termination, installed in accordance with the appliance or vent manufacturer's installation instructions.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

122. Repeal Section 4482.

§ 4482. Single-Wall Vents

~~A single-wall metal vent or vent connector shall not be used unless listed or certified as a component part of the appliance.~~

123. Repeal Section 4483.

§ 4483. Appliance Air Supply

~~Every heat-producing appliance shall be so installed as to assure a sufficient supply of fresh air for proper fuel combustion. Air supply inlet and outlet equipment, when installed, shall maintain the required separation of combustion, ventilation and dilution air from the interior atmosphere of the commercial coach. All air supply inlet and outlet equipment shall be listed or certified as components of the appliance and installed in accordance with the appliance manufacturer's installation instructions.~~

124. Repeal Section 4484.

§ 4484. Vent Termination

~~Vent openings shall not terminate less than three feet from any motor-driven air intake that terminates into the interior of the vehicle.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

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125. Repeal Section 4485.

§ 4485. Joints

~~All joints and connections of any vent or vent connector shall be made secure and tight.~~

126. Repeal Section 4486.

§ 4486. Roof Jacks

~~Roof jacks shall be designed and installed to prevent either the ceiling or material from the ceiling cavity from extending below the ceiling line as indicated on the roof jack.~~

127. Repeal Section 4492.

§ 4492. Air Supply Systems

~~Supply ducts shall be made from galvanized steel, tinplated steel, or aluminum, or shall be listed Class 0, Class 1, or Class 2 air ducts. Class 2 air ducts shall be located at least 3 feet from the furnace bonnet or plenum. Ducts constructed from sheet metal shall be in accordance with Appendix Table CC-M-4.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

128. Repeal Section 4493.

§ 4493. Joints and Seams of Ducts

~~(a) Joints and seams of ducts shall be mechanically fastened and made substantially airtight. Slip joints shall have a contact lap of at least one inch and shall be mechanically fastened by sheet metal screws or equivalent method.~~

~~(b) Tapes shall be used for sealing joints and shall not be more combustible than listed flameproof fabric.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 ~~18025~~, Health and Safety Code.

129. Repeal Section 4494.

§ 4494. Installation

~~(a) Ducts shall be securely fastened in place and supported at least every four (4) feet.~~

~~(b) Fittings connecting the registers to the ducts system shall be constructed of metal or material which complies with the requirements of Class 0, 1, or 2 ducts under UL Standard 181.~~

~~(c) Registers shall be constructed of metal or conform with the following:~~

~~(1) Be made of materials classified 94V-0 or 94V-1 when tested as described in Underwriters' Laboratories, Inc. Standards for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances. UL 1976.~~

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~~(2) Resist without structural failure a 200 lb. concentrated load on a 2 inch diameter disc applied to the most critical area of the exposed face of the register. For this test the register is to be at a temperature of not less than 165 F and is to be supported in accordance with the manufacturer's instructions.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

130. Amend Section 4495.

§ 4495. Expandable or Multiple ~~Vehicle~~-Section Commercial Modular Ducts

(a) ~~An e~~Expandable or multiple vehicle-section commercial modulars may have ducts of the heating system installed in the various units. The points of connection must be so designed and constructed that when ~~the vehicle is~~ sections are fully expanded or coupled, the resulting duct joint will conform to the requirements of this subarticle.

(b) Crossover duct installations shall be designed to be effectively supported ~~by the vehicle~~. The installation shall be designed to provide a minimum clearance of four (4) inches between the bottom of the ducts and the ground.

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

131. Repeal Section 4496.

§ 4496. Sizing of Ducts

~~Ducts shall be designed so that when a labeled forced air furnace is installed and operated continually at its normal input rating in the commercial coach, with all registers in fully opened position the static pressure measured in the duct plenum shall not exceed 90% of that shown on the label of the appliance. When a cooling coil is installed between the furnace and the duct plenum, the total static pressure between the furnace and the coil shall not exceed that shown on the label of the appliance. The minimum dimension of any branch duct shall be at least one and one-half inches, and of any main duct, two and one-half inches.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

132. Repeal Section 4497.

§ 4497. Airtightness of Supply-Duct System

~~A supply duct system shall be considered substantially airtight when the static pressure in the duct system, with all registers sealed and with the furnace air circulator at high speed, is at least 80 percent of the static pressure measured in the furnace casing, with its outlets sealed and the furnace air circulator operating at high speed.~~

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133. Repeal Section 4498.

§ 4498. Test Equipment

~~For the purpose of Sections 4496 and 4497 pressures shall be measured with a water manometer or an equivalent device calibrated so as to read in increments of not greater than one-tenth inch water column.~~

134. Repeal Section 4498.5.

§ 4498.5. Duct and Plenum Insulation

~~Except for special purpose commercial coaches, every heating and cooling duct and plenum shall be installed in accordance with the following:~~

~~(a) Air supply ducts that are not within the coach insulation having an R factor of at least 4 shall be insulated.~~

~~(b) Supply ducts within the coach but not within the insulation described in (a) shall be insulated with rigid insulation having a thermal insulation (R) not less than 3 with a continuous vapor barrier having a perm rating of not more than 1.0.~~

~~(c) Supply ducts exposed directly to outside air, such as under chassis crossover ducts, shall be insulated with material having a thermal insulation (R) of not less than 4.0 with a continuous vapor barrier having a perm rating of not more than 1.0.~~

~~(d) Aluminum foil used as a vapor barrier shall be at least 2 mils in thickness.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055 18025~~, Health and Safety Code.

135. Repeal Section 4500.

§ 4500. Circulating Air Systems

~~Provisions shall be made to permit the return of circulating air from all rooms and living spaces to the circulating air supply inlet of the furnace.~~

~~(a) Duct Material. Return ducts and any diverting dampers contained therein shall be in accordance with the following:~~

~~(1) Circulating air supply shall be through ducts complying with Section 4492.~~

~~(2) Portions of return ducts directly above the heating surfaces, or closer than 2 feet from the outer jacket or casing of the furnace shall be constructed of metal in accordance with Appendix Table CC-M-4, or shall be listed Class 0 or Class 1 air ducts.~~

~~(b) Separation. There shall be a complete separation between any combustion air and circulating air supply.~~

~~(c) Air Requirements. The minimum unobstructed total area of the circulating air openings or ducts to a gravity-type warm-air furnace shall be not less than 7 square inches for each 1000 Btu/h approved rating or in accordance with the terms of listing and the manufacturer's installation instructions.~~

~~The minimum unobstructed total area of the circulating air openings or ducts to a blower-type warm-air furnace shall be not less than 2 square inches for every 1000 Btu/h approved output rating or bonnet capacity of the furnace.~~

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~~The total area of the circulating air openings or ducts need not be larger than the minimum sized circulating air opening or openings, or in accordance with the terms of listing and the manufacturer's installation instruction.~~

~~(1) Dampers. Volume dampers shall not be placed in any warm air furnace circulating air inlet in a manner which will reduce the required circulating air to the furnace.~~

~~(2) Ducts for Blower type Warm air Furnace. Circulating air for every fuel burning blower type warm air furnace shall be conducted into the blower housing from outside the furnace space by continuous airtight ducts.~~

~~(d) Permanent Openings. Living areas not served by return air ducts and which may be closed off from the return opening of a furnace by doors, sliding partitions or other means shall be provided with permanent uncloseable openings in the doors or separating partitions to allow circulated air to return to the furnace. Such openings may be grilled or louvered. The net free area of each opening shall be not less than one square inch for every five square feet of total living area which may be closed off from the furnace by the door or partition serviced by that opening.~~

~~(e) Prohibited Sources. The circulating air for a heating system shall not be taken from any of the following locations:~~

~~(1) Closer than 10 feet from any fuel burning appliance vent outlet or plumbing vent opening, unless such vent outlet is 3 feet above the circulating air inlet.~~

~~(2) Where it will pick up objectionable odors, fumes or flammable vapors.~~

~~(3) A hazardous or insanitary location.~~

~~(4) From a room or space having any direct fired, fuel burning appliances therein, except fireplaces, fireplace stoves, household cooking appliances and Class 1 clothes dryers.~~

~~(f) Screen. Every required circulating air inlet from outside the vehicle shall be covered with screen having 1/4 inch openings.~~

Note: Authority cited: Section 48020-18015, Health and Safety Code. Reference: Section 48055 18025, Health and Safety Code.

136. Repeal Section 4501.7.

§ 4501.7. Dampers

~~All dampers installed in the heating or air conditioning systems of commercial coaches shall be listed.~~

137. Repeal Section 4505.

§ 4505. Air Conditioning or Comfort Cooling Equipment

~~All air conditioning or comfort cooling equipment shall be listed, labeled or certified by an approved testing agency and installed in accordance with the terms of their listing and the manufacturer's instructions.~~

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138. Repeal Section 4506.

§ 4506. Installation

Cooling coils installed as a portion of, or in connection with, any forced-air furnace shall be installed on the downstream side unless specifically otherwise listed. No refrigerant evaporator or cooling coil shall be located in the air discharge duct of any forced-air furnace unless such furnace is listed for use with a cooling coil or is listed for operation at not less than .5-inch water column static pressure.

139. Repeal Appendix CC-M-1.

Appendix CC-M-1

Table CC-M-1

Standards for Heating, Cooling and Fuel-Burning Appliances, Pipe and Fittings, Systems, etc.

Type Appliances	ANSI	UL	Other Standards
Automatic Ice Making Equipment			NSF-12-1978
Commercial Cooking Equipment			
Exhaust Systems			NSF-33
Commercial Cooking and Hot Food Storage Equipment			NSF-4-1978
Commercial Gas Baking and Roasting Ovens	Z21.28-1974 *		
Commercial Gas-Fired and Electrically Heated Hot Water Generating Equipment			NSF-5-1978
Commercial Powered Food Preparation Equipment			SF-8-1978
Commercial Spray Dishwashing Machines			NSF-3-1978
Dispensing Freezers			NSF-6-1978
Factory-Built Fireplaces and Fireplace Stoves	A-131.3-197		UL-127-1971 GAL
Food Service Equipment			NSF-2-1978
Food Service Refrigerators and Storage Freezers			NSF-7-1978
Gas Counter Appliances	Z21.31-1975 *		
Gas Clothes Dryer, Type 1	Z21.5.1-1975 *		
Type 2	Z21.5.2-1974		
Gas-Fired Absorption Air Conditioners	Z21.40-1973 *		
Gas-Fired Direct Make-up Type Appliances	ANSI	UL	Other Standards
Air Heaters	Z21.83.4-1978		
Gas-Fired Direct Vent Cent. Furnaces	Z21.64-1978		

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Gas-Fired Duct Furnaces	Z21.34-1971 *	
Gas-Fired Gravity and Fan Type Floor Furn	Z21.48-1976 *	
Gas-Fired Gravity and Fan Sealed Comb. Wall Furn.	Z21.44-1978	
Gas-Fired Gravity and Forced Air Cent. Furnaces	Z21.47-1978	
Gas-Fired Illuminating Appliances	Z21.42-1971 *	
Gas-Fired Kettles, Steam Cookers and Gen	Z21.46-1974 *	
Gas-Fired Low Press. Steam and Hot Water Boilers	Z21.13-1971	
Gas Water Heaters, Auto, Storage Type with Inputs of 75,000 BTUH or Less	Z21.10.1-1975*	
Gas Water Heaters, Circulating Tank, Instantaneous and Large Auto, Storage Type	Z21.10.3-1975	
Gas Heating Appliances or Mobilehomes and Travel Trailers		307(b)-1965
Hotel and Restaurant Gas Ranges and Unit Broilers	Z21.3-1975 *	
Hotel and Restaurant Gas Deep Fat Fryers	Z21.27-1974 *	
Household Cooking Gas Appliances	Z21.1-1978	
Liquid Fuel-Burning Heating Appliances For MH & TT		307(a)-1976
Manual Food and Beverage Dispensing Equip		NSF-18-1978
Soda Fountain and Luncheonette Equipment		NSF-1-1978
Vending Machines for Food and Beverages		NSF-25-1978
Refrigerators Using Gas Fuel	Z21.19-1975 *	
Ferrous Pipe and Fittings Black and Hot Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses		ASTM A120-72a- WW-P-406D73
Electric Resistance Welded Coiled Steel Tubing for Gas and Fuel Oil Lines		ASTM A 539-73
Pipe Threads	B2.1-1968	
Type Appliances	ANSI	UL Other Standards
Wrought Steel and Wrought Iron Pipe	B36.10-1970	
Nonferrous Pipe, Tubing and		

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Fittings Coated Flexible Metal Gas Connectors for Exterior Use		IAPMO TSC 9-72
Metal Connectors for Gas Appliances	Z21.24-1973 *	
Manually Operated Gas Valves	Z21.15-1974 *	
Seamless Copper Water Tube		ASTM B88-72
Seamless Copper Tube for Air Conditioning and Refrigeration Field Service		ASTM B 280-73
Wrought Seamless Copper and Copper Alloy Tube		ASTM B251-71
Air Conditioning & Ventilating Systems		NFPA 90-A-1974
Air Ducts	UL 181-1974	
Automatic Gas Ignition Systems and Components	Z21.20-1975	
Automatic Valves for Gas Appliances	Z21.21-1974 *	
Gas Appliance Thermostats	Z21.23-1975 *	
Gas Vents	Z131.2-1973	UL 441-1973
Factory-Built Chimneys	A131.1-1971	UL 103-1971
Installation of Oil Burning Equipment	Z95.1-1974	NFPA No. 31-197
Installation of Gas Appliances, Gas Piping in Building		NFPA No. 54-197
LPG Containers and Accessories		ASME, DOT
Pigtails, Expansion Coils, and Flexible Hose Connectors for LP Gas		UL 569-1975
Quick-Disconnect Devices for Use with Gas	Z21.41-1971	
Resident Type Warm Air Heating and Air Conditioning		NFPA No. 90B73
Roof Jacks for Mobilehomes		UL 311-1976
Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems	Z21.22-1971 *	
Storage and Handling of Liquefied Petroleum Gas	Z106.1-1974	NFPA No. 58-1974
Tests for Flammability of Plastic Materials for Parts in Devices and Appliances	UL94-1976	
Tube Fittings for Flammable and Combustible Fluids and Refrigeration Service	UL 109-1978*	

*With Addenda.

Notes to Table

Abbreviations used in this Table refer to standards as identified below and elsewhere in this Standard.

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~~AGA: Standards and Tentative Standards published by the American Gas Association, Inc. Laboratories, 8501 East Pleasant Valley Rd., Cleveland, Ohio 44131.~~

~~ANSI: American National Standards Institute, 1430 Broadway, New York, New York 10017.~~

~~ASME: Standards and Tentative Standards published by the American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017.~~

~~ASTM: Standards and Tentative Standards published by the American Society for Testing and Materials, 1961 Race Street, Philadelphia, Pennsylvania 19103.~~

~~DOT: Regulations published in the Federal Code of Regulations for the Department of Transportation. Title 49, Parts 171-190 of the FR are applicable. Available from the U.S. Government Printing Office, Washington, D.C. 20234.~~

~~GAL: Standards of Gas Appliance Laboratory, Inc., 3138 East Olympic Blvd., Los Angeles, CA 90023~~

~~IAPMO: Standards (designated above as TSC (Trailer Standard)) published by the International Association of Plumbing and Mechanical Officials, 5032 Alhambra Ave., Los Angeles, California 90032.~~

~~NFPA: Standards published by the National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.~~

~~NSF: National Sanitation Foundation, 3475 Plymouth Rd., P.O. Box 1468, Ann Arbor, MI 48106.~~

~~UL: Standards and Tentative Standards published by the Underwriters Laboratories Inc., 207 East Ohio St., Chicago, Illinois 60611.~~

~~WWP: Standards published by the Federal Supply Service of the General Services Administration available from Specification Sales (3FRSBS), Bldg. 197, Washington Navy Yard, General Services Administration, Washington, D.C. 20407.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~48055-18025~~, Health and Safety Code.

140. Repeal Appendix CC-M-2.

Appendix CC-M-2

Sizing and Capacities of Gas Piping

~~In order to determine the size of piping to be used in designing a gas piping system, the following factors must be considered:~~

~~(1) Allowable loss in pressure from the commercial coach gas supply connection to appliance.~~

~~(2) Maximum gas consumption to be provided.~~

~~(3) Length of piping and number of fittings.~~

~~(4) Specific gravity of the gas.~~

~~(5) Diversity factor.~~

DESCRIPTION OF TABLES

~~(a) The quantity of gas to be provided at each outlet shall be determined directly from the manufacturer's Btu input rating of the appliance that will be installed.~~

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~~(b) Capacities for gas at low pressures (0.5 psig or less) in thousands of BTUH of 0.60 specific gravity gas for different sizes and lengths are shown in Table CC-M-3 for iron pipe or equivalent rigid pipe and for semirigid tubing. Table CC-M-3 is based upon a pressure drop of 0.5 inch water column. In using these Tables no additional allowance is necessary for an ordinary number of fittings.~~

~~(c) Capacities in thousands of Btu per hour of undiluted liquefied petroleum gases based on a pressure drop of 0.5 inch water column for different sizes and lengths are shown in Table CC-M-3 for iron pipe or equivalent rigid pipe and for semirigid tubing. In using these Tables, no additional allowance is necessary for an ordinary number of fittings.~~

~~(d) For any gas piping system, for special gas appliances or for conditions other than those covered by Table CC-M-3 such as longer runs, greater gas demands, or greater pressure drops, the size of each gas piping system shall be determined by standard engineering methods acceptable to the department.~~

~~USE OF CAPACITY TABLES~~

~~To determine the size of each section of gas piping in a system within the range of the capacity tables, proceed as follows:~~

~~(a) Determine the gas demand of each appliance to be attached to the piping system. When Table CC-M-3 is to be used to select the piping size, calculate the gas demand in terms of thousands of BTUH for each piping system outlet.~~

~~(b) Measure the length of piping from the gas supply connection, to the most remote outlet in the commercial coach.~~

~~(c) In the appropriate capacity table, select the column showing the measured length or the next longer length if the table does not give the exact length. This is the only length used in determining the size of any section of gas piping.~~

~~(d) Use this same vertical column to locate all gas demand figures for this particular system of piping.~~

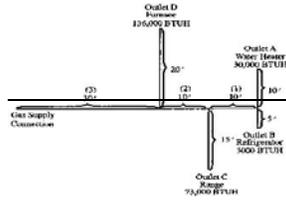
~~(e) Starting at the most remote outlet, find in the vertical column just selected the gas demand for that outlet. If the exact figure or demand is not shown, choose the next larger figure below in the column.~~

~~(f) Opposite this demand figure, in the first column at the left, will be found the correct size of gas piping.~~

~~(g) Using this same vertical column, proceed in a similar manner for each outlet and each section of gas piping. For each section of piping, determine the total gas demand supplied by that section. Where gas piping sections serve both heating and cooling equipment and the installation prevents both units from operating simultaneously, only the larger of the two demand loads need be used in sizing these sections. EXAMPLE OF PIPING SYSTEM DESIGN:~~

~~Determine the required pipe size of each section and outlet of the piping system shown in Exhibit 1, with a designated pressure drop of 0.05 inch water column.~~

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SOLUTION

(1) The length of pipe from the gas supply inlet to the most remote outlet (a) is 60 feet. This is the only distance used.

(2) Using the column marked 60 feet in the Table:

Outlet A, supplying 30,000 BTUH, requires 3/8" iron pipe. Outlet B, supplying 3,000 BTUH, requires 1/4" iron pipe.

Section 1, supplying outlets A and B, or 33,000 BTUH, requires 3/8" iron pipe.

Outlet C, supplying 73,000 BTUH, requires 3/4" iron pipe

Section 2, supplying outlets A, B, and C, or 106,000 BTUH, requires 3/4" iron pipe.

Outlet D, supplying 136,000 BTUH requires 3/4 inch pipe.

Section 3, supplying outlets A, B, C, and D, or 242,000 BTUH, requires 1" iron pipe.

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Section ~~18055 18025~~, Health and Safety Code.

141. Repeal Table CC-M-3.

TABLE CC-M-3
Gas Pipe Sizing

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of Btu's Per hour of Natural Gas For Gas Pressures of 0.5 Psig or Less and a Maximum Pressure Drop of 1/2 Inch Water Column

<i>Iron Pipe Sizes Length in Feet</i>											<i>Tubing Length in Feet</i>											
I.D.	10	20	30	40	50	60	70	80	90	100	OD.	10	20	30	40	50	60	70	80	90	100	
1/4"	67	46	37	31	28	25	23	21	20	19	3/8"	39	26	21	19	—	—	—	—	—	—	—
3/8"	147	104	81	70	62	56	51	48	45	42	1/2"	92	62	50	44	37	35	32	29	37	26	
1/2"	275	189	152	129	114	103	96	89	83	78	5/8"	199	134	107	90	79	72	67	62	59	22	
3/4"	567	393	315	267	237	217	196	185	173	162	3/4"	329	215	181	145	131	124	112	104	95	90	
1"	1074	732	590	504	448	409	378	346	322	307	7/8"	504	346	277	233	198	187	164	155	146	138	

Part II

Maximum Capacity of Different Sizes of Pipe and Tubing in Thousands of Btu's Per Hour of Undiluted Liquefied Petroleum Gas Based on a Maximum Pressure Drop of 1/2 Inch Water Column

<i>Iron Pipe Sizes Length in Feet</i>											<i>Tubing Length in Feet</i>										
I.D.	10	20	30	40	50	60	70	80	90	100	OD.	10	20	30	40	50	60	70	80	90	100
1/4"	43	29	24	20	18	16	15	14	13	12	3/8"	27	18	15	13	11	10	9	9	8	8
3/8"	95	65	52	45	40	36	33	31	29	27	1/2"	56	38	31	26	23	21	19	18	17	16
1/2"	175	120	97	82	73	66	64	57	53	50	5/8"	113	78	62	53	47	43	39	37	34	33
3/4"	360	250	200	170	151	138	125	118	110	103	3/4"	197	136	109	93	83	75	69	64	60	57
1"	680	465	375	320	285	260	240	220	215	195	7/8"	280	193	155	132	117	106	98	91	85	81

Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Section ~~18055 18025~~, Health and Safety Code.

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142. Repeal Table CC-M-4.

Table CC-M-4
Minimum Metal Thickness for Ducts*

Duct Type	Diameter 14 inches or less	OR Width over 14 inches
Round	0.013 in	0.016 in
Enclosed Rectangular	0.013 in	0.016 in
Exposed Rectangular	0.016 in	0.019 in

* When “nominal” thicknesses are specified, 0.003 inch shall be added to these “minimum” metal thicknesses.

Authority cited: Section 48020-18015, Health and Safety Code. Reference: Section 48055-18025, Health and Safety Code.

143. Amend Subarticle 4 Number.

Subarticle 4-5. Plumbing

144. Amend Section 4514.

§ 4514. ~~Application and Scope~~ Minimum Requirements

(a) The provisions of this subarticle relating to plumbing equipment and installations apply to all commercial ~~coaches~~ modulars manufactured after November 23, 1970, and sold, offered for sale, rented, or leased within this State. The provisions of this subarticle are also are applicable to the alteration or conversion of plumbing equipment and installations in any commercial ~~coach~~ modular bearing or required to bear a department insignia of approval.

~~(a) Standards for Equipment and Installations. Standards for equipment and installations are listed in Appendix CC-P. Equipment and installations conforming to these standards or to other standards approved by the department shall be considered acceptable when listed or labeled and installed in accordance with the requirements of this article and the conditions of their approval except where otherwise provided in this article.~~

(b) ~~Plumbing Standards. Plumbing fixtures, equipment, and installations in or on a commercial coach shall conform to the applicable requirements of the Uniform Plumbing Code, 1979 edition, as published by the International Association of Plumbing and Mechanical Officials, except as otherwise provided by this article. Plumbing systems, materials, fixtures, products, equipment, and installations in or on a commercial modular shall be in compliance with the sections and tables of the California Code of Regulations, Title 24, Part 5, California Plumbing Code (CPC), Chapters 2 through 15 to include Appendices A, B, and I, and to the provisions of this subarticle including standards for listing and labeling and compliance with manufacturer’s listing instructions.~~

(1) Exemption: Section 411.4 of the California Code of Regulations, Title 24, Part 5, California Plumbing Code.

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~~(c) The following provisions of the Uniform Plumbing Code, 1976 edition, are not adopted: Part 1, Chapter 1, Sections 102(f)(g), 103(k)(l)(m)(n), 104(a)(c), 105(a)(e)(f), 106(b), 109(d)(e), 113(a)(c)(d)(f), 114 (b)(d)(e), 117(b)(e)(i)(j)(l), 120(a)(b)(c)(e)(f), 124(d)(e)(f), 201, 301, 302, 303, 304, 305, 306, 307, 313, 314, 317, 319, 320, 321, 322, 401, 503, 506, 701, 704, 705, 910, 1001, 1004, Chapters 11, 12 and 13, Appendices D, E, G, and I.~~

Note: Authority cited: Sections ~~48020-18015~~ and ~~48055-18025~~, Health and Safety Code. Reference: Sections ~~48055-18025~~ and ~~18028~~, Health and Safety Code.

145. Amend Section 4515.

§ 4515. Definitions

~~(a) Definitions contained in the Health and Safety Code, Division 13, Part 2, (commencing with Section 18000) California Code of Regulations, Title 24, Part 5, California Plumbing Code (CPC) and the following definitions shall apply to this Article.~~

~~Body Waste. The discharge from any fixtures, appliance or appurtenance containing fecal matter or urine.~~

~~CPVC. Chlorinated Polyvinyl chloride.~~

~~Drain. Any pipe which carries waste or waterborn wastes in a vehicle drainage system.~~

~~(b) Drain Outlet. The discharge end of the vehicle unit main drain.~~

~~Drainage System. Includes all the piping within or attached to the structure which conveys sewage or other liquid wastes to the drain outlet(s).~~

~~(c) LPG (LP Gas/Liquefied Petroleum Gas). Means and includes a material composed predominantly of any of the following hydrocarbons or mixtures of them: propane, propylene, butanes (normal butane or isobutene) and butylenes. When reference is made to "LPG" or "LP Gas," it shall refer to petroleum gases in either liquid or gaseous state.~~

~~Main Drain. The principal artery of the vehicle drainage system to which drainage branches may be connected.~~

~~PB. Polybutylene.~~

~~(d) Toilet—Mechanical Seal. A toilet designed with a water flushing device and mechanical sealed trap.~~

~~(e) Toilet—Recirculating Chemical. A self-contained toilet in which waste is recirculated and chemically treated.~~

~~Uniform Plumbing Code—UPC. The 1979 edition as published by the International Association of Plumbing and Mechanical Officials.~~

~~(f) Waste Holding Tank. A liquid tight tank for the temporary retention of body and/or liquid waste.~~

~~Water Distribution System. The potable water piping within or attached to the vehicle.~~

~~(g) Water Supply Connection. The fitting or point of connection in the vehicle unit water distribution system designed for connection to a water supply.~~

~~(h) Water Storage Tank. A tank designed for the purpose of storing potable water.~~

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Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Sections ~~48055-18025 and 18028~~, Health and Safety Code.

146. Amend Section 4516.

§ 4516. Drainage Systems LPG — Construction and Marking of Containers

~~The drainage system shall be designed to provide an adequate circulation of air in all piping without danger of siphonage, aspiration or forcing of trap seals under condition of ordinary use.~~

~~(a) Materials. Drainage pipe shall be cast iron, galvanized steel, galvanized wrought iron, lead, brass, copper tube DWV, ABS plastic or other listed materials.~~

~~(b) Fittings. Drainage fittings shall be cast iron, malleable iron, lead, brass, copper DWV, ABS plastic or other listed materials having a recessed drainage pattern with smooth interior waterways of the same diameter as the piping and of a material conforming to the type of piping used.~~

~~Note: ABS drainage pipe and fittings shall only be used in vehicles with plumbing fixtures designed for domestic sewage.~~

~~(c) Drain Outlets.~~

~~(a) Except as provided in this article, each vehicle equipped with plumbing fixtures or equipment shall have at least one drain outlet which shall terminate within 18 inches of the outside wall of the vehicle.~~

~~(d) Cap or Plug. Drain outlets shall be equipped with a watertight cap or plug which shall be permanently attached to the vehicle.~~

~~(e) Clearance from Drain Outlet. The drain outlet and couplers shall be provided with a minimum clearance of three inches in any direction from all parts of the structure or appurtenances and with not less than 18 inches unrestricted clearance directly in front of the drain outlet.~~

Containers shall be constructed and marked in accordance with the specifications for LPG containers of the U.S. Department of Transportation (DOT) or An International Code, 2007 ASME Boiler & Pressure Vessel Code (BPVC-VIII, 2007), incorporated by reference herein. ASME containers shall have a design pressure of not less than 312.5 pounds per square inch gauge (psig).

Note: Authority cited: Sections ~~48020-18015 and 18025~~, Health and Safety Code. Reference: Section ~~48055-18028~~, Health and Safety Code.

147. Adopt Section 4516.1

§ 4516.1. LPG — Location and Installation of Containers and Systems

(a) No LP-gas container shall be installed or provision made for installing or storing, even temporarily, inside any commercial modular, except for listed, completely self-contained hand torches, lanterns, or similar equipment with containers having a maximum water capacity of not more than two and one-half (2 ½) pounds (approximately one (1) pound LPG capacity).

(b) Where provided, containers, control valves and regulating equipment shall be mounted on the hitch, installed in a single compartment that is vapor-tight to the inside of the commercial modular and accessible only from the outside, or mounted on the

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frame. Compartments shall be constructed of galvanized steel, not less than 0.0299 inch (0.759 mm) thick. Seams and joints shall be lapped, mechanically secured and made airtight to the interior. Alternate materials and methods of construction may be used if they provide equivalent quality, strength, effectiveness, fire resistance, durability and safety. Fuel-gas tubing from the gas-supply connection may pass through the wall, floor or ceiling of the compartment. Where such tubing passes through any wall, floor or ceiling, such tubing shall be protected by the use of bulkhead fittings or equivalent devices which shall snugly fit both the tubing and the hole in the compartment through which the tubing passes.

(c) Containers and container carriers shall be securely mounted, located, and installed, so as to minimize the possibility of damage to containers, their appurtenances or contents as follows:

(1) Containers shall be installed with as much road clearance as practicable but not less than the minimum road clearance under maximum spring deflection. This clearance shall be measured to the bottom of the container, or to the lowest fitting, support or attachment on the container or container housing, whichever is lower.

(2) Fuel containers and container carriers shall be securely mounted to prevent jarring-loose, slipping or rotating, and fastenings shall be designed and constructed to withstand, without permanent visible deformation, static loading in any direction equal to four times the weight of the container filled with fuel. When containers are mounted within a commercial modular, the securing of the container to the unit shall comply with this provision. Any hoods, domes or removable portions of the housing or cabinet shall be provided with means to keep them firmly in place in transit.

(3) All container valves, appurtenances and connections shall be adequately protected to prevent damage due to accidental contacts with stationary objects, from loose objects, stones, mud, or ice, thrown up from the ground or floor, and from damage due to overturn of the commercial modular or similar accident. In the case of permanently mounted containers, this provision may be met by the location on the commercial modular, with parts of the commercial modular furnishing the protection. On portable (removable) containers the protection for container valves and connections shall be permanently attached to the container.

(d) Access to a compartment containing LP gas tanks or cylinders shall be by a door or opening in the exterior wall of the commercial modular. Access doors or panels of compartments shall not be equipped with locks or require special tools or knowledge to open. The compartment shall be ventilated with two vents having an aggregate area of not less than two percent (2%) of the floor area of the compartment and shall open unrestricted to the outside atmosphere. The required vents shall be equally distributed between the floor and ceiling of the compartment. If the bottom vent is located in the access door or wall, it shall be flush with the floor level of the compartment. The top vent shall be located in the access door or wall with the bottom of the vent not more than twelve (12) inches below the ceiling level of the compartment. All vents shall have an unrestricted discharge to the outside atmosphere.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

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148. Adopt Section 4516.3

§ 4516.3. LPG — Container Valves and Accessories

(a) Containers and safety relief valves located less than eighteen (18) inches (457 mm) from any component of an internal combustion engine exhaust system shall be shielded by a frame member or by a noncombustible baffle to dissipate radiated or convected heat with an air space on both sides of the frame member or baffle.

(b) Each container shall have a listed two-stage regulator. Such regulators shall have a capacity not less than the total input of all installed LP-Gas appliances. The regulator shall be securely mounted by attaching it to the container valve, container, supporting standard or wall. If the regulator is not mounted by the manufacturer, instructions for proper installation shall be provided. Regulators shall be installed so the regulator vent opening will not be affected by the elements such as sleet, snow, freezing rain, ice, mud or by wheel spray.

(c) A listed LPG excess flow valve shall be provided in accordance with the following:

(1) The inlet or outlet of each service valve of a permanently mounted container shall be equipped with a listed excess flow valve or listed Petroleum, Oil, and Lubricant (POL) adapter with an integral excess flow valve.

(2) Removable Department of Transportation (DOT) type containers shall have furnished or installed a listed POL adapter with an integral listed excess flow valve.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

149. Amend Section 4516.5

§ 4516.5. Vents and Venting LPG — Gas Container Safety Relief Devices

~~(a) Materials. Vent pipe shall be cast iron, galvanized steel, galvanized wrought iron, lead, copper DWV, brass, ABS plastic, or other listed materials.~~

~~(b) Fittings. Vent fittings shall be cast iron, galvanized malleable iron or galvanized steel, lead, copper DWV, brass, ABS plastic, or other listed materials.~~

~~(c) Changes in direction of vent piping shall be made by the appropriate use of approved fittings and no such pipe shall be strained or bent. Burred ends shall be reamed to the full bore of the pipe.~~

(a) Department of Transportation (DOT) containers shall be provided with safety relief devices as required by the regulations of the U. S. Department of Transportation. ASME containers shall be provided with relief valves in accordance with Subsection 2.3.2 of the Liquefied Petroleum Gas Code (NFPA No. 58, 2001 (ANSI)), incorporated by reference herein. Safety relief valves shall have direct communication with the vapor space of the vessel.

(b) Final stage regulators shall be equipped on the low pressure side with one or both of the following:

(1) A relief valve having a start-to-discharge pressure setting of not less than 1.7 times and not more than three (3) times the delivery pressure of the regulator.

(2) A shutoff device that shuts the gas off at the inlet side when the downstream pressure reaches the overpressure limits of not less than 1.7 times and not more than

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three (3) times the delivery pressure of the regulator. Such a device shall not open to permit flow of gas until it has been manually reset.

(c) Systems installed outside of a commercial modular shall be so located that discharge from safety relief devices shall be not less than three (3) feet (0.9m) horizontally away from any openings into the commercial modular and from all the internal combustion engine exhaust termination(s) below the level of such discharge. When a system is located in a recess vaportight to the inside, vent openings to the exterior shall be not less than three (3) feet (0.9m) horizontally away from any opening into the interior of the unit below the level of these vents.

(d) Systems located near doors without screens or openable windows below the level of the gas compartment vents are exempt from the requirement of Subsection (c) of this section.

(e) Safety relief valves located within liquefied petroleum gas (LPG) container compartments may be less than three (3) feet (0.9m) from openings provided:

(1) The bottom vent of the compartment is at the same level or lower than the bottom of any opening into the interior.

(2) The compartment is not located on the same wall plane as the opening(s) and is at least two (2) feet (0.6096m) horizontally from such openings.

Note: Authority cited: Section ~~18020-18015~~, Health and Safety Code. Reference: Section ~~18055~~ 18025, Health and Safety Code.

150. Adopt Section 4516.7

§ 4516.7. LPG — Container Mounting

(a) Housings and enclosures shall be designed to provide proper ventilation at least equivalent to that specified in Section 4516.1 of this subarticle.

(b) Doors, hoods, domes or portions of housings and enclosures required to be removed or opened for replacement of containers shall incorporate means for clamping them firmly in place and preventing them from working loose during transit.

(c) Provisions shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit.

(d) Containers shall be mounted on a substantial support or a base secured firmly to the commercial modular chassis. Neither the container nor its support shall extend below the axle.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

151. Adopt Section 4516.9

§ 4516.9. LPG — System Design and Service-Line Pressure

(a) Systems shall be of the vapor-withdrawal type.

(b) Vapor, at a pressure not over eighteen (18) inches water column, shall be delivered from the container into the gas-supply connection.

(c) Container openings for vapor withdrawal shall be located in the vapor space when the container is in service or shall be provided with a suitable internal withdrawal tube

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which communicates with the vapor space in or near the highest point in the container when it is mounted in service position, with the commercial modular on a level surface. Containers shall be permanently and legibly marked in a conspicuous manner on the outside to show the correct mounting position and the position of the service outlet connection. The method of mounting in place shall be such as to minimize the possibility of an incorrect positioning of the container.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

152. Amend Section 4517.

§ 4517. ~~Traps Required~~ Gas Piping/Tubing — Systems

~~(a) Except as otherwise provided in these regulations, each plumbing fixture, excepting those having integral traps, shall be separately trapped by an approved type water seal trap.~~

~~(b) It is provided, however, that one (1) trap may serve a set of not more than three (3) single compartment sinks or laundry tubs of the same depth or three (3) lavatories immediately adjacent to each other and in the same room, if the waste outlets are not more than thirty (30) inches apart and the trap is centrally located when three (3) compartments are installed. The depth requirement may be waived in the case of approved type pump discharged fixtures or appliances.~~

~~(c) No food waste disposal unit shall be installed with any set of restaurant, commercial or industrial sinks served by a single trap; each such food waste disposal unit shall be connected to a separate trap. Each domestic clothes washer and each laundry tub shall be connected to a separate and independent trap; except that a trap serving a laundry tub may also receive the waste from a clotheswasher set adjacent thereto. No clotheswasher or laundry tub shall be connected to any trap for a kitchen sink.~~

~~(d) The vertical distance between a fixture outlet and the trap weir shall be as short as practicable, but in no case shall the tail piece from any fixture exceed twenty-four (24) inches in length.~~

The installation of all gas piping or tubing systems attached to any commercial modular sold, offered for sale, rent or lease within the state shall comply with this subarticle except for piping or tubing designated as an integral part of an appliance or to gas appliance connectors.

Note: Authority cited: Section ~~48020~~18015, Health and Safety Code. Reference: Section ~~48055~~18025, Health and Safety Code.

153. Adopt Section 4517.1

§ 4517.1. Gas Piping/Tubing — Piping Design

A commercial modular designed for a fuel gas piping system shall be equipped with a system that is designed for LP gas only, combination LP-natural-gas, or natural gas only.

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Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

154. Adopt Section 4517.2

§ 4517.2. Gas Piping/Tubing — Expandable or Multiple Commercial Modulares

Where fuel gas piping is to be installed in more than one (1) section of an expandable or multiple-section commercial modular, the design and construction shall comply with all of the following:

(a) There shall be only one (1) point of crossover between each section, which shall be readily accessible from the exterior of the commercial modular.

(b) The connector between sections shall be of approved pipe or a listed flexible connector for exterior use and sized in accordance with Section 4517.3 of this subarticle.

(c) Protective caps or plugs shall be permanently attached to the unit by means of a metal chain and used to seal the system when not in use.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

155. Amend Section 4517.3

§ 4517.3. Traps Prohibited Gas Piping/Tubing — Supply Sizing

A trap that depends on concealed interior partitions for its seal, full S' traps, bell traps, and crown-vented traps are prohibited. No fixture shall be double-trapped. Drum traps may be installed only when approved by the department for special conditions. No drum trap shall be installed without a vent.

The natural gas supply connection(s) between the gas piping inlet and the gas meter shall not be less than three-fourth (3/4) inch nominal pipe size.

Note: Authority cited: Section ~~48020~~18015, Health and Safety Code. Reference: Section ~~48055~~ 18025, Health and Safety Code.

156. Adopt Section 4517.4

§ 4517.4. Gas Piping/Tubing — Concealed Areas

(a) Steel or copper tubing shall not be run inside walls, floors, ceilings or partitions. Where steel or copper tubing passes through walls, floors, ceilings, partitions or similar installations, such tubing shall be protected by the use of weather-resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes.

(b) Corrugated Stainless Steel Tubing (CSST) shall be installed in accordance with its listing and labeling.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

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157. Amend Section 4517.5

§ 4517.5. Trap Seals Gas Piping/Tubing — Concealed Joints

~~Each P' trap shall have a water seal of not less than two (2) inches and not more than four (4) inches, except where a deeper seal is necessary for special conditions. Traps shall be set true with respect to their water seals and where necessary they shall be protected from freezing.~~

No gas piping or tubing joints shall be located in any floor, wall, ceiling, partition or similar concealed construction space.

Note: Authority cited: Section ~~48020~~18015, Health and Safety Code. Reference: Section ~~48055~~18025, Health and Safety Code.

158. Adopt Section 4517.6

§ 4517.6. Gas Piping/Tubing — Gas-Supply Connection Cap

A protective cap or plug permanently attached to the unit shall be installed to effectively close the gas-supply connection when not in use on LPG, combination LP-natural or natural-gas-piping or tubing systems.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

159. Repeal 4517.7

§ 4517.7. Plumbing Fixtures

~~Plumbing fixtures shall have smooth impervious surfaces, be free from defects and concealed fouling surfaces, capable of resisting road shock and vibration and shall conform to nationally recognized applicable standards or other approved standards.~~

Note: Authority cited: Section ~~48020~~18015, Health and Safety Code. Reference: Section ~~48055~~18025, Health and Safety Code.

160. Amend Section 4518

§ 4518. Water Distribution System Electrical Equipment

~~Piping systems shall be sized to provide an adequate quantity of water to each plumbing fixture at a flow rate sufficient to keep the fixture in a clean and sanitary condition without any danger of backflow or siphonage.~~

~~(a) Materials. Water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, chlorinated polyvinyl chloride, polybutylene or other material listed for hot and cold water distribution systems.~~

~~(b) Used Material. Piping and tubing which has previously been used for any purpose other than for potable water systems shall not be used.~~

(a) All electrical equipment installed in combination with gas equipment shall be listed for the purpose intended.

(b) Gas piping shall not be used for an electrical ground.

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Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~18055~~
~~18025~~, Health and Safety Code.

161. Amend Section 4519.

§ 4519. Water Supply Connections

~~(a) Each~~ A commercial ~~each~~ modular equipped with a water distribution system designed for connection to an outside source shall have a water-supply connection which shall terminate within 18 inches of the outside wall of the ~~vehicle~~ commercial modular and

~~(b) Cap or Plug. Water supply connections shall be equipped with a watertight cap or plug, which shall be permanently attached to the ~~vehicle~~ unit for use during transportation or movement.~~

Note: Authority cited: Section ~~48020-18015~~, Health and Safety Code. Reference: Section ~~18055~~
~~18025~~, Health and Safety Code.

162. Adopt Section 4519.1

§ 4519.1. Potable Water Storage Tanks.

Potable water storage tanks installed in plumbing systems shall comply with the following:

(a) Tanks shall be listed to approved standards and installed in a location to be removable for service, repair or replacement without the necessity of removing permanent structural, mechanical or electrical equipment. Where the tank is installed in such a manner that it may be subject to road damage it shall be provided with mechanical protection.

(b) Non-pressure gravity tanks shall be equipped with a vent at the top of the tank. Vents and overflow pipe openings shall be protected from the entrance of dirt, insects and other contamination.

(c) Potable water storage tanks designed to be pressurized, shall be equipped with a listed air pressure relief valve set to open at not more than 125 pounds per square inch gauge (psig) (862 KPA) or in accordance with the tank manufacturer's instructions.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

163. Adopt Section 4520

§ 4520. Fuel Conversion

Heat-producing appliances shall not be converted from one fuel to another unless converted in accordance with the terms of its listing.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

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164. Adopt Section 4520.1

§ 4520.1 Securing

Every appliance shall be secured in place to avoid displacement and movement from vibration and road shock.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

165. Adopt Section 4520.2

§ 4520.2 Testing After Appliances Are Connected

After appliances are connected, the piping system shall be pressurized to not less than ten (10) inches nor more than fourteen (14) inches water column and the appliance connections tested for leakage with soapy water or bubble solution.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

166. Adopt Section 4521

§ 4521. Rodent Resistance

All exterior openings around piping, tubing, ducts, plenums, chimneys and vents shall be sealed to resist the entrance of rodents.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

167. Amend Section 4522

§ 4522. Potable Water Storage Tanks—Oil Piping—General

~~Potable water storage tanks installed in plumbing systems shall comply with the following:~~

~~(a) Tanks shall be listed to approved standards and installed in a location to be removable for service, repair or replacement without the necessity of removing permanent structural, mechanical or electrical equipment. Where the tank is installed in such a manner that it may be subject to road damage it shall be provided with mechanical protection.~~

~~(b) Non-pressure gravity tanks shall be equipped with a vent at the top of the tank. Vents and overflow pipe openings shall be protected from the entrance of dirt, insects and other contamination.~~

~~(c) Potable water storage tanks designed to be pressurized, shall be equipped with a listed air pressure relief valve set to open at not more than 125 psig (862 KPA) or in accordance with the tank manufacturer's instructions.~~

The installation of all oil piping systems attached to any commercial modular shall comply with this subarticle except piping approved as an integral part of an appliance.

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Note: Authority cited: Section ~~48020~~-18015, Health and Safety Code. Reference: Section ~~48055~~18025, Health and Safety Code.

168. Adopt Section 4522.1

§ 4522.1. Oil Piping — Expandable or Multiple Commercial Modulares

When a commercial modular is composed of multiple sections, or includes expandable rooms, the oil-piping system shall be located only in the section containing the oil-supply connection.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

169. Adopt Section 4522.2

§ 4522.2. Oil Piping — Materials

All materials used for the installation, extension, alteration, or repair of any oil-piping system shall be new and free from defects or internal obstructions. The system shall be made of materials having a melting point of not less than 1,450 degrees Fahrenheit (787.8 degrees Celsius), except as provided in Section 4522.4 of this subarticle. They shall consist of one (1) or more of the following materials:

(a) Steel or wrought-iron pipe shall comply with American National Standard for Wrought-Steel or Wrought-Iron Pipe, B36.10-1970. Threaded copper or brass pipe in iron pipe sizes may be used.

(b) Fittings for oil piping shall be wrought iron, malleable iron, steel, or brass (containing not more than 75 percent copper).

(c) Copper tubing shall be annealed type, Grade K or L, conforming to the specifications for Seamless Copper Water Tube (ASTM B88-72), or shall comply with the specifications for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, (ASTM B280-73).

(d) Steel tubing shall have a minimum wall thickness of 0.032 inch for diameters up to one-half (1/2) inch and 0.049 inch for diameters one-half (1/2) inch and larger. Steel tubing shall be constructed in accordance with the Specification for Electric-Resistance Welded Coiled Steel Tubing for Gas and Fuel Oil Lines (ASTM A539-73) and shall be externally corrosion protected.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

170. Adopt Section 4522.3

§ 4522.3. Oil Piping — Size

The minimum size of all fuel-oil tank piping connecting outside tanks to the appliances shall be no smaller than three-eighths (3/8) inch outside diameter copper tubing or one-fourth (1/4) inch iron pipe size. In those cases where No. 1 fuel oil is used with an automatic pump (fuel lifter), one-fourth (1/4) inch outside diameter copper tubing may be used if specified by the pump manufacturer.

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Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

171. Adopt Section 4522.4

§ 4522.4. Oil Piping — Joints

All pipe joints in the piping system, unless welded or brazed, shall be threaded joints that comply with ANSI Standards Pipe Threads (except Dryseal) B2.1-1968. Right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 degrees Fahrenheit (537.8 degrees Celsius).

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

172. Adopt Section 4522.5

§ 4522.5. Oil Piping — Tubing Joints

Tubing joints shall be made with either a single or a double flare of the proper degree, as recommended by the tubing manufacturer, or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 degrees Fahrenheit (537.8 degrees Celsius). Metallic ball sleeve compression-type tubing fittings shall not be used.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

173. Adopt Section 4522.6

§ 4522.6. Oil Piping — Pipe-Joint Compound

Threaded joints shall be made tight with listed pipe-joint compound which shall be applied to the male threads only.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

174. Adopt Section 4522.7

§ 4522.7. Oil Piping — Grade of Piping

Fuel-oil piping installed in conjunction with gravity feed systems to oil-heating equipment shall slope in a gradual rise upward from a central location to both the oil tank and the appliance in order to eliminate air locks.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

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175. Adopt Section 4522.8

§ 4522.8. Oil Piping — Testing for Leakage

Before operating the system, piping and tank installations shall be checked for oil leaks with fuel oil of the same grade that will be burned in the appliance. No other material shall be used for testing fuel-oil tanks and piping. Tanks shall be filled to maximum capacity for the final check for oil leakage.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

176. Adopt Section 4523

§ 4523. Oil Tanks

Oil tanks and listed automatic pumps (oil lifters) installed for gravity flow of oil to heating equipment shall be installed so that the top of the tank is no higher than eight (8) feet above the appliance oil control and the bottom of the tank is not less than eighteen (18) inches above the appliance oil control.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

177. Adopt Section 4523.1

§ 4523.1. Oil Tank — Auxiliary Oil-Storage Tank

Oil-supply tanks affixed to a commercial modular shall be so located as to require filling and draining from the outside and shall be in a place readily available for inspection. If the fuel-supply tank is located in a compartment of a commercial modular, the compartment shall be ventilated at the bottom to permit diffusion of vapors and shall be insulated from the structural members of the body. Tanks so installed shall be provided with an outside fill and vent pipe and an approved liquid-level gauge.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

178. Adopt Section 4523.2

§ 4523.2. Oil Tank — Shutoff Valve

A readily accessible and listed manual shutoff valve shall be installed at the outlet of an oil-supply tank. The valve shall be installed to close against the supply.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

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179. Adopt Section 4523.3

§ 4523.3. Oil Tank — Fuel-Oil Filters

All oil tanks, except for integrally mounted tanks, shall be equipped with a listed oil filter or strainer located downstream from the tank shutoff valve. The fuel-oil filter or strainer shall contain a sump with a drain for the entrapment of water.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

180. Repeal Appendix CC-P-1.

Appendix CC-P-1

~~Wall Surfacing for Tub and Shower Enclosures~~

- ~~I. Material: The wall covering material must have an exposed surface that is impervious to water; the substrate material must be resistant to deterioration from exposure to high humidity and temporary water leakage.~~
- ~~A. Strength: The complete wall assembly, including the wall covering substrate, shall be capable of withstanding a uniform load of five pounds per square foot applied perpendicular to the surface. The deflection, under load, shall not exceed 1/180 of the wall, for the assembly; or 1/240 the distance between framing members, for the wall covering substrate.~~
- ~~B. Surface Finish: The exposed surface must meet the minimum requirements of the American Hardboard Association PS59-73, Prefinished Hardboard Paneling, Class 1, as certified by the panel manufacturer.~~
- ~~C. Size: The minimum thickness of the material shall be 1/8" nominal. The width to be sufficient to give continuous unbroken surface from corner to corner, or end of tub in corner installation, in an installation incorporating a shower, the unbroken surface must continue to a height of at least 6' above the floor of the shower.~~
- ~~D. Type: The substrate material shall also meet the requirements of the appropriate standard listed below:~~
- ~~(1) Hardboard: of high strength and water resistance to meet Commercial Standard CS-251-63, or AHA PS-58-73, either standard or tempered.~~
- ~~(2) Softwood Plywood: must meet U.S. Product Standard P.S. 1-66 including exterior type glue line and grade A face veneer "suitable for painting."~~
- ~~(3) Hardwood Plywood: must meet CA-35-61 Type II glue line and sound grade face veneer.~~
- ~~(4) Other Materials: not meeting D-1, D-2, D-3 above, shall meet the requirements of this code and their appropriate Product Standard, Industry Standard, Commercial Standard, or Federal Specification.~~

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- II. Installation: _____ The material must be installed in conformance with this code and the application instructions provided by the material manufacturer. In case of conflict, this regulation shall take precedence.
- A. Framing: _____ Wood framing shall be spaced not more than 16" o.c. Blocking shall be 1" x 3" or equal, installed horizontally at height to match rim of the tub or shower pan. All corners shall have sufficient framing members for attachment of corner moldings.
- B. Fastening: _____ All edges and ends of panel shall occur on framing members. Panels shall be applied to wood framing members using water resistant, non-hard setting adhesive. Adhesive shall be applied to the face of all framing members except locations where panel edges fall beneath applied moldings. Panels may also be applied over solid backing using an adhesive. Note: Fasteners, if necessary, shall be used only in locations where they will be covered by applied moldings, and shall be used on not more than two adjacent edges. No other interior fasteners, or fixtures, other than required functional plumbing fixtures shall penetrate the face of the panel. Openings for these plumbing fixtures must be sealed with caulk.
- C. Corners and Edges: _____ All corners and edges must be caulked or sealed against moisture penetration. A non-hard setting sealant material must be used with applied moldings. Fastening of moldings to framing shall not be greater than 6" o.c.

181. Repeal Appendix CC-P-2.

Appendix CC-P-2

Plumbing Material Standards

Materials	ANSI	ASTM	FS	Other Standards
Ferrous Pipe Fittings				
Cast Iron Screwed Fittings	B16.4	1971		
Malleable Iron Screwed Fittings	B16.3	1971		
Special Cast Iron Fittings				IAPMO-PS 5-66
Welded Wrought Iron Pipe	B36.2	1969	A72	1968
Wrought Steel and Wrought Iron Pipe	B36.10	1970		
Black and Hot Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe				
Steel Pipe	A120	1972a		
Welded and Seamless Steel Pipe	B125.1	1972	A53-	1972a
Pipe Threads (Except Dry Seal)	B2.	1968		
Cast Iron Soil Piping and Fittings	A12.5.	1971	A74-72	WW-P-404D-1969
Nonferrous Pipe and Fittings				
Seamless Copper, Pipe, Standard Sizes	H26.1	1973	B42	197
Wrought Seamless Copper and Copper Alloy Tube	H23.4	1973	B251-	1974
Seamless Copper Water Tube	H23.1	1973	B88	1972
Copper Drainage Tube (DWV)	H23.6	1973	B306-	1973

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Wrought Copper & Bronze Solder Joint Pressure Fittings	B16.22	1973		
Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings	B16.29	1966		
Cast Brass Solder Joint Pressure Fittings	B16.18	1972		
Cast Brass Solder Joint Drainage Fittings-				
DWV	B16.23	1969		
Cast Bronze Fittings for Flared Copper Tubes	B16.26	1967		
Seamless Red Brass Pipe, Standard Sizes	H27.1	1973	B43	1972
Cast Bronze Threaded Fittings, 150 300 Lb	B16.15	1971		
Plastic Pipe and Fittings ABS Plastic Drain, Waste, and Vent Pipe and Fittings	D2661	1973	L P322B	IAPMO PS 17-71 NSF 14 1970
PVC Plastic Drain, Waste and Vent Pipe and Fittings	D2665	1973	L P320B 14	IAPMO PS27-69 1970
Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot Water Distribution Systems	D2846	1973		NSF 14 1970
Polybutylene (PB) Plastic Pipe (SDR PR)	D2662	1973		
Polybutylene (PB) Plastic Hot Water Distribution	D3309			
Miscellaneous Pipe Nipples, Threaded			WW N	351B(1) 1970
Rubber Gaskets for Cast Iron Soil Pipe Fittings	C564	1970		
Backflow Prevention Devices				IAPMO PS 31 71
Valve, Bronze, Gate 125 150 and 200 Pound			WW V 154D	73
Valve, Cast Iron Gate, Threaded and Flanged			WW V 58B	71
Plumbing Fixture Setting Compound			HH C	536A'54
Cast Brass and Tubing P-Traps				IAPMO PS 2-66
Relief Valves and Automatic Gas Shutoff Devices for Hot Water Supply Systems	Z21.22*	1971		
Solvent Cement for ABS Plastic Pipe and Fittings	D2235	1973		NSF 14 1970
Solvent Cements for PVC Plastic Pipe and Fittings	D2564	1973a		NSF 14 1970
Anti Siphon Trap Vent Device				NSP 24 1972
Diversion Tees and Twin Waste Elbow				IAPMO PS 9-66
Flexible Copper Water Connectors				IAPMO PS 14 71
Dishwasher Drain Airgaps				IAPMO PS 23-68
Coated Flexible Metal Gas Connectors for Exterior Use.				IAPMO TSC 9-72

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Plumbing Fixtures-Plumbing Fixtures for Land Use	WW-P 541D-71	
Vitreous China Plumbing Fixtures	A112.19.2 1973	NSF 24-70
Enameled Cast Iron Plumbing	A112.19.1 1973	
Porcelain Enameled Formed Steel Plumbing Fixtures		IAPMO TSC22-72
Formed Metal Porcelain Enameled Sanitaryware		IAPMO PS 5-67
Gel Coated Glass Fiber Rein- forced Polyester		
Resin Bathtub Units	Z124.1 1967	NSF 24-72
Gel Coated Glass Fiber Rein- forced Polyester		
Resin Shower Receptor and Shower Stall Units	Z124.2 1967	NSF 24-72
Drains for Prefabricated and Precast Showers		IAPMO PS 4-66 NSF 24-72
Cultured Marble Lavatory		IAPMO PS 18-72
Prefabricated Shower Receptors, Shower		
Enclosures and Non Metallic Bathtubs		IAPMO PS 11-72 NSF 24-72
Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings	Z97.1-1972	

* With Addenda

Notes to Table

Abbreviations used in Table refer to standards as identified below and elsewhere in this standard. ANSI: American National Standards Institute, 1430 Broadway, New York, N.Y. 10017.
 ASTM: Standards and Tentative Standards published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.
 FS: Federal Specifications published by the Federal Supply Service of the General Services Administration available from Specification Sales (3FRSBS), Bldg. 197, Washington Navy Yard, General Services Administration, Washington, D.C. 20407.
 IAPMO: Standards and Tentative Standards designated as UPC-PS (Uniform Plumbing Code—Product Standard) and TSC (Trailer Standard) available from the International Association of Plumbing and Mechanical Officials, 5032 Alhambra Ave., Los Angeles, CA 90032.
 NSF: Standards published by the National Sanitation Foundation, NSF Building, 3475 Plymouth Road, Ann Arbor, Michigan 48105.
 PS: Product Standards available from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Authority cited: Section ~~48020~~18015, Health and Safety Code. Reference: Section ~~48055~~18025, Health and Safety Code.

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182. Amend Article 3.5 Heading.

Article 3.5. Special Purpose Commercial ~~Coaches~~ Modulars

183. Amend Section 4525.

§ 4525. ~~Application and Scope~~ Minimum Requirements

(a) The provisions of this article relating to construction and fire safety apply to all special purpose commercial ~~coaches~~ modulars, manufactured after September 1, 1979, which are sold or offered for sale, rented or leased within this state.

(b) The provisions of this article relating to construction and fire safety apply to the alteration or ~~conversion~~ remanufacture of any construction or fire safety equipment or installations in any special purpose commercial ~~coach~~ modular bearing or required to bear a department insignia of approval.

(c) The provisions of this article relating to construction and fire safety apply to the alteration, ~~conversion~~ remanufacture, addition or change in occupancy of any construction and fire safety equipment or installations of any special purpose commercial ~~coach~~ modular as defined in this article.

(d) ~~In addition to the provisions of this article, the provisions of the California Administrative Code, Title 17, Chapter 5, Subchapter 2, Group 1, Article 10, apply to Mobile Food Preparation Units. Where~~ When a person proposes to sell, offer for sale, rent or lease a special purpose commercial ~~coach~~ modular designed as a mobile food facility, mobile food preparation unit, or stationary mobile food preparation unit manufactured after the effective date of this article, or where a department insignia of approval has not been issued, it will be necessary that such person obtain written certification from the appropriate local Health Department or State Department of Health, indicating that the special purpose commercial ~~coach~~ modular complies with the applicable provisions of the California ~~Administrative Code of Regulations~~, Title 17, Division 1, Chapter 5, Subchapter 2, Group 1, Article 10 ~~relating to mobile food preparation units.~~

(e) All defined special purpose commercial modular mobile food facility vehicles are subject to requirements specified in Health and Safety Code, Division 104, Part 7, California Retail Food Code, Chapter 10, Mobile Food Facilities (Commencing with Section 114294) (HSC Part 7) and to the implementing regulations under the California Code of Regulations, Title 17, Division 1, Chapter 5, Subchapter 2, Group 1, Article 10.

(f) No later than March 31, 2012, special purpose commercial modular units or portions of existing units undergoing alteration, remanufacturing, repair, conversion or change in occupancy type shall be in compliance with the applicable regulations and standards. Thereafter, units or portions of existing units undergoing alteration, remanufacturing, repair, conversion or change of occupancy type shall be designed and constructed in accordance with this article.

Note: Authority cited: Section ~~48020~~ 18015, Health and Safety Code. Reference: Section ~~48055~~ 18025, Health and Safety Code.

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184. Adopt Section 4526.

§ 4526. Definitions

(a) Anti-Siphon Trap Vent Device. A device that is installed above the connection of the trap arm that opens automatically to allow air into a fixture drain.

(b) Mobile Food Facility. Any vehicle used in conjunction with a commissary or other permanent food facility upon which food is sold or distributed at retail. "Mobile Food Facility" does not include a "transporter" used to transport packaged food from a food facility, or other approved source to the consumer.

(c) Vehicle. A vehicle is a device, with attached wheels and axles, by which any person or property may be propelled, moved or drawn upon a highway or roadway excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

185. Amend Section 4527.

§ 4527. Fire Safety

~~Multipurpose passenger vehicles~~ Special purpose commercial modulars are subject to Federal Standards under the National Traffic and Motor Vehicle Safety Act of 1966 and are exempt from the requirements of ~~these regulations~~ this article relating to interior finish flame spread limitations.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Section 18025, Health and Safety Code.

186. Amend Section 4528.

§ 4528. Exits

~~(a) Each special purpose commercial coach modular shall have a minimum of two (2) exits located remote from each other and so arranged as to provide a means of unobstructed travel to the outside of the vehicle.~~

(b) Special purpose commercial modular units designed, manufactured, altered, used or converted for use as either a module of a permanently constructed building or as a fixture improvement to real property, shall comply with the construction standards for commercial modulars, and shall have exits as prescribed by the California Building Code (CBC), California Code of Regulations, Title 24, Part 2, Chapter 10.

(c) Special purpose commercial modulars designed as bathrooms or shower room facilities only, may be provided with at least one (1) exterior door in each bathroom or shower room. This door shall not be used for any purpose that interferes with its function as a means of egress.

~~(b)(d) The alternate means of egress shall be located in the side opposite the main exit door, or the roof, or the rear of the vehicle, with unobstructed passage of 24" x 24" (61 cm x 61 cm) minimum opening to the outside. Special purpose commercial modular units subject to the federal motor vehicle safety standards as vehicles, shall be~~

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designed and constructed with an alternate or second exit. The alternate or second exit shall provide a clear unobstructed path of travel. Any equipment or fixtures shall not obstruct the alternate exit either inside or outside the unit required by Subsection (a).

(e) The alternate exit shall be located either:

(1) In an area opposite the main exit door or in the rear of the special purpose commercial modular, with a net clear openable area of 5.7 square feet (0.53 m²). The minimum net clear openable height dimension shall be twenty-four (24) inches (610 mm). The minimum net clear openable width dimension shall be twenty (20) inches (508 mm).

(2) In the roof of the special purpose commercial modular, with unobstructed passage to a 24 x 24 inches (61 cm x 61 cm) minimum opening to the outside.

~~(e)(f)~~ The bottom of the alternate or means of egress second exit required by Subsection (a) of this section shall not be more than four (4) feet (1.22 m) either above the vehicle floor of the special purpose commercial modular or above a readily accessible horizontal surface capable of supporting a weight of 300 pounds (136 kg).

~~(d)(g)~~ The latch mechanism of any exit facility means of exit shall be operable by hand, and shall not require the use of a key or special tool or key for operation from the inside.

~~(e)(h)~~ Alternate-If an alternate or second exits, is other than a standard doors, it shall be labeled with the word "EXIT" with one (1") inch (2.54 cm) minimum letters on a contrasting background.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

187. Amend Section 4529.

§ 4529. Ceiling Height

(a) Each special purpose-vehicle commercial modular shall have a minimum ceiling height of seventy-four (74) inches (188 cm) over the inside aisle-way portion of the unit.

(b) Light fixtures are allowed to protrude a maximum of three (3) inches (7.62 cm) into minimum ceiling height.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

188. Amend Section 4530.

§ 4530. Room Dimensions and Construction

(a) There shall be a clear, unobstructed height over the aisle-way portion of the unit of at least 74 inches (188 cm) from floor to ceiling, and a minimum of 30 inches (76 cm) of unobstructed horizontal aisle space.

(b) Floors, walls, and ceiling of mobile food preparation units shall be constructed so that the surfaces are durable, impervious, smooth and easily cleanable. The juncture of the floors and walls shall be covered with the floor surface extending up the wall at least 4 inches (10 cm). Special purpose commercial modulares designed for public accommodation shall comply with the accessibility provisions of the California Code of Regulations, Title 24, Part 2, California Building Code (CBC), Chapter 11B.

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~~(c) Construction joints and seams of mobile food preparation units shall be sealed to provide durable, smooth and easily cleanable surfaces. Soldered joints and seams shall be smooth to the touch. Silicone sealant or equivalent waterproof compounds shall be acceptable for sealing narrow seams or crevices which are 1/8 inch (3 mm) or less in width, providing they are properly applied and they prevent the entrance of liquid or vermin.~~

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

189. Amend Section 4531.

§ 4531. Glass and Glazed Openings

~~The provisions of Article 3, Division 1, Section 4371 shall apply to glass and glazing in all special purpose vehicles.~~

The provisions of Chapter 24 of the California Code of Regulations, Title 24, Part 2, California Building Code (CBC) shall apply to glass and glazing in all special purpose commercial modulares not subject to the federal standards under the National Traffic and Motor Vehicle Safety Act of 1966.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

190. Amend Section 4532.

§ 4532. Electrical

~~(a) Except as provided in Subsection (b), the provisions of Article 3, Division 2, Subarticle 3 of this subchapter, and the following shall apply to electrical equipment and installations of all special purpose commercial modulares.~~

~~(a) All 115-220 volt electrical wiring in mobile food preparation units shall be installed in listed electrical conduit.~~

~~(b) All ceiling light fixtures in mobile food preparation units shall be recessed or flush mounted and sealed and have approved safety covers. The minimum clearance from the floor to the light fixture shall be at least 74 inches (188 cm) or the fixture shall be installed out of the traffic aisle or work area. Each special purpose commercial modular shall have an appropriately rated branch circuit panelboard. The panelboard shall be installed so that its bottom is at least twenty-four (24) inches (61 cm) above the floor, unless the panelboard is listed for installation in wet locations.~~

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

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191. Amend Section 4533.

§ 4533. Mechanical

(a) Except as provided in Subsections (b) and (c), the provisions of Article 3, Division 3, Subarticle 4 of this subchapter, shall apply to mechanical equipment and installations of all special purpose commercial coaches modulars.

(b) Make-up air shall be provided at the rate of that exhausted and may be accomplished from screened service openings, screened vents in the ceiling, or mechanically through an air-conditioning system, but not through open doors or operable windows.

(c) Ducts shall be securely fastened in place and supported at least every four (4) feet.

Note: Authority cited: Section 18015, Health and Safety Code. Reference: Sections 18025 and 18028, Health and Safety Code.

192. Amend Section 4534.

§ 4534. Plumbing

(a) Except as provided in Subsections (b) through (h) the provisions of Article 3, Division 4 Subarticle 5 of this subchapter, and the following shall apply to plumbing equipment and installations of all special purpose commercial coaches modulars:

(a) At least a two-compartment metal sink equipped with hot and cold running water with dual integral metal drainboards, installed with at least 1:100 slope toward the sink, and fabricated with a minimum 1/2 inch (12.7 mm) lip or rim to prevent the draining liquid from spilling onto the floor shall be provided in each mobile food preparation unit. The dimensions of each compartment shall be at least 12 inches (30.5 cm) wide, 30.5 cm (12 inches) long, and 9 inches (22.9 cm) deep. Each drainboard shall be at least the size of the adjacent sink compartments. If multi-use eating and drinking utensils are used, the sink shall have three compartments. The sink shall be equipped with a mixing faucet and shall be provided with a swivel spigot capable of servicing any sink compartment.

(b) Hand washing facilities, including a lavatory supplied with hot and cold running water with a mixing type faucet, hand washing cleanser and single-service towels in permanently installed dispensers shall be provided and maintained in each mobile food preparation unit. The lavatory basin shall have a minimum dimensions of 9" x 9" or (22.9 cm x 22.9 cm) and 5" (12.7 cm) in depth. The hand washing facilities shall be separated from the utensil washing sinks by a metal guard, with a height of at least 3" (76 mm) extending from the back edge of the drainboard to the front edge of the drainboard. The corners of the barrier shall be rounded. No separation barrier is required if the distance between the hand washing sink and the utensil drainboards is at least 2' (61 cm). In pipe joints for gas pipes, right and left nipples or couplings shall not be used. Unions, if used, shall be of ground joint type. The material used for welding or brazing pipe connections shall have a melting temperature in excess of 1,000 degrees Fahrenheit (537.8 degrees Celsius). Pipe shall not be bent.

(c) An adequate quantity of potable water for food preparation, cleaning and handwashing purposes shall be provided in all mobile food preparation units by either

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~~an approved self-contained water supply tank having a minimum capacity of 30 gallons (114 liters) or an approved water system hook-up. Hose connection valves shall be at least 5' (1.5 meters) above the ground and be kept covered with a protective screw-type cap which is attached to the vehicle. The hose connection shall consist of a quick-disconnect device which is compatible with a complementary device installed on the potable water hose(s) at the point of supply.~~

~~The water system shall be of such materials and designed and constructed so water or air can be introduced without the water becoming contaminated. The water system shall deliver at least one gallon (4 liters) per minute to each sink basin in the unit. Tubing joints shall be made with either a single or a double flare of the proper degree as recommended by the tubing manufacturer, or with other listed vibration-resistant fittings, or joints may be brazed with material having a melting point exceeding 1,000 degrees Fahrenheit (537.8 degrees Celsius). Metallic ball sleeve compression-type tubing fittings shall not be used.~~

~~(d) A water heater with a minimum capacity of 3 gallons (11 liters) or an instantaneous heater capable of producing water of 120 degrees Fahrenheit (49 celsius) interconnected with the potable water supply, shall be provided in all mobile food preparation units and shall operate independently of the vehicle engine and/or generator. Hot and cold water, under pressure, shall be provided at hand washing and utensil sinks from mixing faucets. Tubing shall not be run inside walls, floors, ceilings, or partitions. Where tubing passes through walls, floors, ceilings, partitions, or similar installations, such tubing shall be protected by the use of weather-resistant grommets that shall snugly fit both the tubing and the hole through which the tubing passes. Screw joints shall be made up tight with listed pipe-joint compound, insoluble in liquefied petroleum gas, and shall be applied to the male threads only.~~

~~(e) All liquid (including melting ice water) waste systems in mobile food preparation units shall be connected to an approved liquid waste tank with a minimum capacity of 45 gallons (170 liters) or shall be designed to be connected to a sewage disposal system. No piping or tubing joints shall be located in any floor, wall, partition, ceiling or similar concealed construction space.~~

~~(f) All tanks, lines, couplings, valves, or any other plumbing in mobile food preparation units shall be designed, installed, maintained, and constructed of materials that will not contaminate the water supply, food, utensils, or equipment. Where it is necessary to join sections of screw piping, right and left nipples and couplings shall not be used. Ground joint unions may be used to connect heat-producing appliances to the appliance branch piping.~~

~~(g) A label identifying gas supply connections shall be attached permanently on the outside of the exterior wall of the special purpose commercial modular adjacent to the gas supply connection which reads (as appropriate) either:~~

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Combination LP Gas and Natural Gas System

This gas piping system is designed for use of either liquefied petroleum gas or natural gas.

NOTICE: BEFORE TURNING ON GAS BE CERTAIN APPLIANCES ARE DESIGNED FOR THE GAS CONNECTED AND ARE EQUIPPED WITH CORRECT ORIFICES. SECURELY CAP THIS INLET WHEN NOT CONNECTED FOR USE.

When connecting to lot outlet, use a listed gas supply connector, for mobile homes, rated at

- 100,000 Btuh** **or more.**
 250,000 Btuh

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

LP-Gas System

This gas piping system is designed for use of liquefied petroleum gas only.

DO NOT CONNECT NATURAL GAS TO THIS SYSTEM. CONTAINER SHUTOFF VALVES SHALL BE CLOSED DURING TRANSIT.

When connecting to lot outlet, use a listed gas supply connector, for mobile homes, rated at

- 100,000 Btuh** **or more.**
 250,000 Btuh

Before turning on gas, make certain all gas connections have been made tight, all appliance valves are turned off, and any unconnected outlets are capped.

After turning on gas, test gas piping and connections to appliances for leakage with soapy water or bubble solution, and light all pilots.

The appropriate BTUH input rating shall be marked by the manufacturer.
Note: See Article 1, Section 4031 for label size and type of material.

~~(g)-(h) Water and waste storage tanks in mobile food preparation units shall be installed so as to be easily drained, flushed, and cleaned with an easily accessible outlet. Breather tubes or overflow pipe openings shall be protected from the entrance of dust, insects, and other contamination. All waste lines shall be connected to the waste tank with watertight seals. An anti-siphon trap vent device shall be permitted for use only as a secondary vent in accordance with the following:~~

~~(1) Installation of an anti-siphon trap vent device shall be in accordance with the terms of its listing.~~

~~(2) An anti-siphon trap vent device shall be installed in an accessible location that provides a free flow of air for the device.~~

~~(3) An anti-siphon trap vent device shall not serve more than two (2) fixtures.~~

~~(4) An anti-siphon trap vent device shall not be used for more than two (2) consecutive fixtures before being vented to outside atmosphere.~~

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(5) An anti-siphon trap vent device that protects two (2) fixtures shall be drained, at a minimum, by a common 1.5 inch (38.1 mm) diameter drain.

(6) An anti-siphon trap vent device shall not serve as a primary vent for toilets or holding tanks.

(7) A fixture drain or main drain that bypasses a holding tank shall be vented by a primary vent in accordance with Chapter 9 of the California Code of Regulations, Title 24, Part 5, California Plumbing Code (CPC).

Note: Authority cited: Section 18025 and 18028 Health and Safety Code. Reference: Section 18025 and 18028, Health and Safety Code.

193. Repeal Section 4535.

§ 4535. Ventilation

~~Mechanical exhaust ventilation equipment shall be provided over all cooking equipment to remove cooking odors, smoke, steam, grease and vapors. The ventilation shall be adequate to provide a reasonable condition of comfort for employees. Grease filters or other means of grease extraction are required and shall be of steel construction, or other approved material, and shall be readily accessible for cleaning. Every joint and seam shall be substantially tight. No solder shall be used, except for sealing a joint or seam. Every hood shall be so designed and installed to provide for thorough cleaning of the entire hood. When grease gutters are provided they shall drain to a collecting receptacle fabricated, designed, and installed to be readily accessible for cleaning. All ducts in the exhaust system shall have a slope of at least 1:6. All seams in this duct work shall be substantially tight to prevent the accumulation of grease. The ducts shall have sufficient clean-outs to make them readily accessible for cleaning. Make-up air shall be provided at the rate of that exhausted. It may be accomplished from screened service openings, screened vents in the ceiling, or mechanically through an air conditioning system, but not through open doors or openable windows.~~

194. Repeal Section 4536.

§ 4536. Equipment

~~All equipment installed in mobile food preparation units shall comply with the following:~~

~~(a) Compressor units that are not an integral part of equipment, auxiliary engines, generators, batteries, battery chargers, gas-fueled water heaters, and similar equipment shall be installed so as to be accessible only from the outside of the vehicle to provide for proper interior vehicle cleaning, maintenance, and safety.~~

~~(b) All equipment shall be so installed as to be easily cleaned, prevent vermin harborage and provide adequate access for service and maintenance. Equipment shall be spaced apart for easy cleaning or shall be sealed together. Food service equipment which is set apart from adjacent equipment and counters, shelves, walls, panels, or cabinets shall have at least 10 cm (4 inches) of unobstructed space between the equipment and adjacent surfaces. Round metal equipment legs of a sanitary design and at least 10 cm (4 inches) high shall be provided on elevated counter equipment. Food service equipment shall be secured so as to prevent undue movement during transit.~~

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~~(c) All equipment shall be sealed to the floor with a metal covered base to prevent moisture from getting under the equipment or it shall be raised at least 6 inches (15 cm) off the floor by means of an easily cleanable round metal leg and foot.~~

~~(d) Equipment, including the interior of cabinet units or compartments, shall be constructed so as to have smooth, easily accessible, and easily cleanable surfaces (free from channels, crevices, flanges, ledges, sharp or jagged edges, or other cleaning obstructions). Unfinished wooden surfaces are not permitted. Food contact surfaces shall be constructed of metal, high pressure laminated plastics, or laminated hardwood which are in compliance with NSF Standards. These surfaces must be kept free of cracks, cuts, and other obstructions which would interfere with proper cleaning.~~

~~(e) Space around pipes, conduits, or hoses that extend through cabinets, floors, or outer walls shall be sealed. The closure shall be smooth and easily cleanable.~~

~~Service Openings. Service openings shall be limited to 216 square inches (1394 sq. cm) each. The service openings may not be closer together than 18 inches (46 cm).~~

~~They shall be provided with a hinged or sliding closing device of screen not less than 7 mesh per cm (16 mesh per inch) or a solid material. The service opening shall be kept closed when not in actual use.~~

Article 5. Third-Party Approval and Enforcement

195. Amend Section 4876.

§ 4876. Design Approval Procedures and Requirements

(a) Plans approved by the department prior to the effective date of ~~this article~~ any amendments to standards used in those plans shall remain valid until expiration as provided in this subchapter subsection. All plans and manual approval shall expire on the last day of the fifteenth month following the month of the approval by the Design Approval Agency. The Design Approval Agency shall provide for the renewal of expiring plans and manuals which comply with the requirements of this subchapter.

(b) The requirements of Section 4017 of this subchapter regarding the size and contents of drawings shall apply to plans submitted to a Design Approval Agency.

(c) Upon approval of a plan or quality control manual, the Design Approval Agency shall issue a unique plan approval number for each plan or manual. The plan approval number shall be prefaced by an identification given the agency by the department. Each page of an approved plan, each page of an amendment, and each manual cover, shall be wet-marked or electronically stamped ~~marked, wet-stamped or electronically stamped~~ with the words “Approved: State of CA-Certified Design Approval Agency,” along with the name of the Design Approval Agency, the date of approval, the date of expiration and the plan approval number. The Design Approval Agency shall transmit complete copies of plans, amendments or manual bearing the approval mark to the manufacturer within ten (10) days of the approval date.

(d) When typical system approvals are used as provided in Sections 4015(b) and 4016 of this subchapter, the Design Approval Agency shall require the manufacturer's plans to contain a system of indexing which eliminates confusion as to the applicability of typical systems throughout the manufacturer's plans.

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(e) The Design Approval Agency shall require an approved plan or manual to be amended in such a manner that all superseded information is removed from the plan or manual, which bears the agency's mark of approval. The Design Approval Agency shall require the manufacturer to provide written instructions which explain how to update the original plan or manual by the insert of the amendment or removal of superseded pages.

(f) The Design Approval Agency shall maintain a copy of all approvals for a period of three (3) years beyond their expiration.

Note: Authority cited: Section 18020, Health and Safety Code. Reference: Sections 18020 and 18025, Health and Safety Code.