REVISION RECORD
FOR THE STATE OF CALIFORNIA
ERRATA

January 1, 2017

2016 Title 24, Part 3, California Electrical Code

General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the backside or accompanying page.
2. This erratum is issued by the California Building Standards Commission in order to correct non-substantive printing errors or omissions in California Code of Regulations, Title 24, Part 3, of the 2016 California Electrical Code. Instructions are provided below.
3. Health and Safety Code Section 18938.5, establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission, and local adoptions and ordinances imposing building standards. An erratum to Title 24 is a non-regulatory correction because of a printing error or omission that does not differ substantively from the official adoption by the California Building Standards Commission. Accordingly, the corrected code text provided by this erratum may be applied on and after the stated effective date.
4. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

Title 24, Part 3

Remove Existing Pages	Insert Buff-Colored Pages
Pages 70-ix through 70-xiv	Pages 70-ix through 70-xiv
Pages CA Article 89 Matrix Table	Pages CA Article 89 Matrix Table
Pages 70-1 through 70-6	Pages 70-1 through 70-6
Pages 70-26.1 through 70-28	Pages 70-26.1 through 70-28
Pages 70-48.1 through 70-48.4	Pages 70-48.1 through 70-48.4
Pages 70-141.6 through 70-141.7	Pages 70-141.6 through 70-141.7
Pages 70-141.12 through 70-141.13	Pages 70-141.12 through 70-141.13
Pages 70-261.2 through 70-261.3	Pages 70-261.2 through 70-261.3
Pages 70-261.6 through 70-262	Pages 70-261.6 through 70-262
Pages 70-381.4 through 70-381.5	Pages 70-381.4 through 70-381.5
Pages 70-453 through 70-454	Pages 70-453 through 70-454
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Pages 70-469 through 70-470	Pages 70-469 through 70-470
Pages 70-542.1 through 70-542.2	Pages 70-542.1 through 70-542.2
Pages 70-565 through 70-570	Pages 70-565 through 70-570
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Pages 70-911 through 70-912	Pages 70-911 through 70-912

ARTICLE

Chapter 4 Equipment for General Use

ARTICLE

CALIFORNIA ARTICLE 89 - GENERAL CODE PROVISIONS

Adopting Agency	BSC	BSC-CG	SFM	HCD			DSA			OSHPD				DPH
				1	2	1-AC	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article														
Adopt Entire Article as amended (amended sections listed below)														
Adopt only those sections that are listed below	X		X	X	X	X	X	X	X	X	X	X	X	X
Article / Section														
89.101	X		X	X	X	X		X	X	X	X	X	X	X
89.101.8.2	X													
89.102	X													
89.107														X
89.108				X	X	X								
89.109							X							
89.109.1							X							
89.109.2								X	X					
89.110.1										X				
89.110.2											X			
89.110.3												X		
89.110.4													X	
89.111			X											

CALIFORNIA ARTICLE 89
GENERAL CODE PROVISIONS

SECTION 89.101
GENERAL

89.101.1 Title. *These regulations shall be known as the California Electrical Code, may be cited as such and will be referred to herein as "this code." The California Electrical Code is Part 3 of thirteen parts of the official compilation and publication of the adoption, amendment, and repeal of electrical regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This part incorporates by adoption the 2014 National Electrical Code of the National Fire Protection Association with necessary California amendments.*

89.101.2 Purpose. *The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation, and energy conservation; safety to life and property from fire and other hazards attributed to the built environment; and to provide safety to fire fighters and emergency responders during emergency operations.*

89.101.3 Scope. *The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building or structures throughout the State of California.*

> ***89.101.3.1 Nonstate-Regulated Buildings, Structures, and Applications.*** *Except as modified by local ordinance pursuant to Section 89.101.8, the building standards in the California Code of Regulations, Title 24, Parts 2, 2.5, 3, 4, 5, 6, 9, 10 and 11 shall apply to all occupancies and applications not regulated by a state agency.*
>
> ***89.101.3.2 State-Regulated Buildings, Structures, and Applications.*** *The model code, state amendments to the model code, and/or state amendments where there are no relevant model code provisions shall apply to the following buildings, structures, and applications regulated by state agencies and as specified in Sections 89.102 through 89.114, except where modified by local ordinance pursuant to Section 89.101.8. When adopted by a state agency, the provisions of this code shall be enforced by the appropriate enforcing agency, but only to the extent of authority granted to such agency by the state legislature.*
>
> ***Note:*** *See Preface to distinguish the model code provisions from the California provisions.*
>
> *1. State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California laws, buildings designed and constructed by the Regents of the University of California, and regulated by the Building Standards Commission. See Section 89.102 for additional scope provisions.*
>
> *2. Section 89.103 is reserved for the Board of State and Community Corrections.*
>
> *3. Section 89.104 is reserved for the Department of Consumer Affairs.*
>
> *4. Section 89.105 is reserved for the California Energy Commission.*
>
> *5. Section 89.106 is reserved for the Department of Food and Agriculture.*
>
> *6. Organized camps, laboratory animal quarters, public swimming pools, radiation protection, commissaries serving mobile food preparation vehicles and wild animal quarantine facilities regulated by the California Department of Public Health (DPH). See Section 89.107 for additional scope provisions.*
>
> *7. Hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing, and other types of dwellings containing sleeping accommodations with or without common toilets or cooking facilities. See Section 89.108.2.1.1 for additional scope provisions.*
>
> *8. Accommodations for persons with disabilities in buildings containing newly constructed covered multifamily dwellings, new common use areas serving existing covered multifamily dwellings, additions to existing buildings where the addition alone meets the definition of covered multifamily dwellings, and new common-use areas serving new covered multifamily dwellings which are regulated by the Department of Housing and Community Development. See Section 89.108.2.1.2 for additional scope provisions.*
>
> *9. Permanent buildings and permanent accessory buildings or structures constructed within mobilehome parks and special occupancy parks regulated by the Department of Housing and Community Development. See Section 89.108.2.1.3 for additional scope provisions.*

10. Accommodations for persons with disabilities regulated by the Division of the State Architect. See Section 89.109.1 for additional scope provisions.

11. Public elementary and secondary schools, community college buildings, and state-owned or state-leased essential service buildings regulated by the Division of the State Architect. See Section 89.109.2 for additional scope provisions.

12. Qualified historical buildings and structures and their associated sites regulated by the State Historical Building Safety Board with the Division of the State Architect. See Section 89.109.3 for additional scope provisions.

13. General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the California Department of Public Health (DPH) and correctional treatment centers regulated by the Office of Statewide Health Planning and Development. See Section 89.110 for additional scope provisions.

14. Applications regulated by the Office of the State Fire Marshal include, but are not limited to, the following in accordance with Section 89.111:

1. Buildings or structures used or intended for use as an:

1.1. Asylum, jail, prison.

1.2. Mental hospital, hospital, home for the elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.

1.3. Theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building, or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.

1.4. Small family day care homes, large family day care homes, residential facilities and residential facilities for the elderly and residential care facilities.

1.5. State institutions or other state-owned or state-occupied buildings.

1.6. High rise structures.

1.7. Motion picture production studios.

1.8. Organized camps.

1.9. Residential structures.

2. Tents, awnings or other fabric enclosures used in connection with any occupancy.

3. Fire alarm devices, equipment and systems in connection with any occupancy.

4. Hazardous materials, flammable and combustible liquids.

5. Public school automatic fire detection, alarm, and sprinkler systems.

6. Wildland-Urban Interface (WUI) fire areas.

15. Section 89.112 is reserved for the State Librarian.

16. Section 89.113 is reserved for the Department of Water Resources.

17. Section 89.114 is reserved for the California State Lands Commission.

***89.101.3.3 Exempted from this Code.** This code does not cover:*

***(A)** 1. Installations in ships, watercraft other than floating dwelling units, railway rolling stock, aircraft, automotive vehicles, commercial coaches, mobilehomes, and recreational vehicles.*

***(B)** 2. Installations underground in mines, mine shafts and tunnels.*

***(C)** 3. Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.*

***(D)** 4. Installation of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.*

***(E)** 5. Installations under the exclusive control of electrical utilities for the purpose of communication, or metering; or for the generation, control, transformation, transmission, and distribution of electrical energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.*

***Exception to (D)4 and (E)5:** In places of employment, the following shall apply: installations of conductors, equipment and associated enclosures subject to the jurisdiction of the California Public Utilities Commission, that are owned, operated and maintained by an electric, communications or electric railway utility, but not including conduit, vaults, and other like enclosures containing conductors and equipment of such a utility when located indoors or on premises not used exclusively for utility purposes, but do not apply to the utility's conductors and equipment therein.*

***(F)** 6. Installations on highways or bridges.*

89.101.4 Annexes. *Provisions contained in the annexes of this code shall not apply unless specifically adopted by a state agency or adopted by a local enforcing agency in compliance with Health and Safety Code Section 18901 et seq. for Building Standards Law, Health and Safety Code Section 17950 for State Housing Law and Health and Safety Code Section 13869.7 for Fire Protection Districts. See Section 89.101.8 of this code.*

89.101.5 Referenced Codes. *The codes, standards and publications adopted and set forth in this code, including other codes, standards and publications referred to therein are, by title and date of publication, hereby adopted as standard reference documents of this code. When this code does not specifically cover any subject related to building design and construction, recognized architectural or engineering practices shall be employed. The National Fire Codes, standards and the Fire Protection Handbook of the National Fire Protection Association are permitted to be used as authoritative guides in determining recognized fire prevention engineering practices.*

89.101.6 Non-Building Standards, Orders and Regulations. *Requirements contained in the National Electrical Code, or in any other referenced standard, code or document, which are not building standards as defined in Health and Safety Code Section 18909 shall not be construed as part of the provisions of this code. For nonbuilding standards, orders, and regulations, see other titles of the California Code of Regulations.*

89.101.7 Order of Precedence and Use.

89.101.7.1 Differences*. In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.*

89.101.7.2 Specific Provisions. *Where a specific provision varies from a general provision, the specific provision shall apply.*

89.101.7.3 Conflicts. *When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail.*

Exception: *Detached one-and two-family dwellings, efficiency dwelling units, lodging houses, live/work units, townhouses not more than three stories above grade plane with a separate means of egress, and their accessory structures, shall not be required to comply with the California Residential Code if constructed in accordance with the California Building Code.*

89.101.8 City, County, or City and County Amendments, Additions or Deletions. *The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary differences to the provisions contained in this code pursuant to complying with Section 89.101.8.1. The effective date of amendments, additions, or deletions to this code by city, county, or city and county filed pursuant to Section 89.101.8.1 shall be the date filed. However, in no case shall the amendments, additions, or deletions to this code be effective any sooner than the effective date of this code.*

Local modifications shall comply with Health and Safety Code Section 18941.5 for Building Standards Law, Health and Safety Code Section 17958 for State Housing Law or Health and Safety Code Section 13869.7 for Fire Protection Districts.

89.101.8.1 Findings and Filings.

1. The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical, or geological conditions.

Exception: *Hazardous building ordinances and programs mitigating unreinforced masonry buildings.*

2. The city, county, or city and county shall file the amendments, additions, or deletions expresslymarked and identified as to the applicable findings. Cities, counties, cities and counties, and firedepartments shall file the amendments, additions, or deletions, and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.

3. Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development, Division of Codes and Standards, P.O. Box 1407, Sacramento, CA 95812-1407 or at 2020 W. El Camino Avenue, Suite 250, Sacramento, CA 95833-1829.

89.101.8.2 Locally adopted energy standards – California Energy Code, Part 6.

In addition to the provisions of Section 89.101.8.1 of this Part, the provisions of this section applies to cities, counties, and city and county amending adopted energy standards affecting buildings and structures subject to the California Energy Code, Part 6.

Applicable provisions of Public Resources Code Section 25402.1 and applicable provisions of Chapter 10 of the California Administrative Code, Part 1 apply to local amendment of energy standards adopted by the California Energy Commission.

89.101.9 Effective Date of this Code. *Only those standards approved by the California Building Standards Commission that are effective at the time an application for building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the History Note page of this code.*

89.101.10 Availability of Codes. *At least one complete copy each of Titles 8, 19, 20, 24, and 25 with all revisions shall be maintained in the office of the building official responsible for the administration and enforcement of this code. Each state department concerned and each city, county, or city and county shall have an up-to-date copy of the code available for public inspection. See Health and Safety Code Section 18942 (e) (1) and (2).*

89.101.11 Format. *This part fundamentally adopts the National Electrical Code by reference on a chapter-by-chapter basis. When a specific chapter of the National Electrical Code is not printed in the code and is marked "Reserved", such chapter of the National Electrical Code is not adopted as a portion of this code. When a specific chapter of the National Electrical Code is marked "Not adopted by the State of California" but appears in the code, it may be available for adoption by local ordinance.*

> ***Note:*** *Matrix Adoption Tables at the front of each chapter may aid the code user in determining which chapter or sections within a chapter are applicable to buildings under the authority of a specific state agency, but they are not to be considered regulatory.*

89.101.12 Validity. *If any chapter, article, section, subsection, sentence, clause, or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes, or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.*

SECTION 89.102
BUILDING STANDARDS COMMISSION

89.102.1 *BSC Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

1. State Buildings for all occupancies.

Application *– State buildings (all occupancies), including buildings constructed by the Trustees of the California State University and the Regents of the University of California where no state agency has the authority to adopt building standards applicable to such buildings.*

Enforcing Agency *– State or local agency specified by the applicable provisions of law.*

Authority Cited *– Health and Safety Code section 18934.5.*

Reference *– Health and Safety Code, Division 13, Part 2.5, commencing with section 18901.*

2. University of California, California State Universities, and California Community Colleges.

Application *– Standards for lighting for parking lots and primary campus walkways at the University of California, California State Universities, and California Community Colleges.*

Enforcing Agency *– State or local agency specified by the applicable provisions of law.*

Authority Cited *– Government Code section 14617.*

Reference *– Government Code section 14617.*

3. Existing State-Owned Buildings, including those owned by the University of California and by the California State University *– Building seismic retrofit standards including abating falling hazards of structural and nonstructural components and strengthening of building structures. See also Division of the State Architect.*

Enforcing Agency *– State or local agency specified by the applicable provisions of law.*

Authority Cited *– Government Code section 16600*

Reference *– Government Code sections 16600 through 16604*

4. Unreinforced Masonry Bearing Wall Buildings.

Application *– Minimum seismic strengthening standards for buildings specified in Appendix Chapter 1 of the California Code for Building Conservation, except for buildings subject to building standards adopted pursuant to Part 1.5 (commencing with Section 17910).*

Enforcing Agency *– State or local agency specified by the applicable provisions of law.*

Authority Cited *– Health and Safety Code section 18934.7*

Reference *– Health and Safety Code ,Division 13, Part 2.5, commencing with Section 18901.*

89.102.1.1 State building. *For purposes of this code, a "state building" is a structure for which a state agency or state entity has authority to construct, alter, enlarge, replace, repair or demolish.*

89.102.1.2 Enforcement. *[CSU, UC, Judicial Council and CDCR] state agencies or state entities authorized to construct state buildings may appoint a building official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code.*

Exception: *State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.*

89.102.1.3 Enforcement, Reserved for DGS.

89.102.1.4 Adopting agency identification. *The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym **BSC**.*

89.102.2 BSC-CG. *Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to*

adopt and enforce such provisions of this code, unless otherwise stated.

Application *– All occupancies where no other state agency has the authority to adopt green building standards applicable to those occupancies.*

Enforcing agency *– State or local agency specified by the applicable provisions of law.*

Authority cited *– Health and Safety Code Sections 18930.5, 18938 and 18940.5.*

Reference *– Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.*

89.102.3 Alternative Materials, Design And Methods Of Construction And Equipment.

The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

89.102.3.1 Research Reports. *Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.*

89.102.3.2 Tests. *Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.*

SECTION 89.103

RESERVED FOR BOARD OF STATE AND COMMUNITY CORRECTIONS

SECTION 89.104

RESERVED FOR THE DEPARTMENT OF CONSUMER AFFAIRS

SECTION 89.105

RESERVED FOR THE CALIFORNIA ENERGY COMMISSION

SECTION 89.106

RESERVED FOR THE DEPARTMENT OF FOOD AND AGRIGULTURE

SECTION 89.107

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

89.107 *Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

Application *–Commissaries serving mobile food preparation units and public swimming pools.*

Enforcing Agency *– The California Department of Public Health and the local health agency.*

Authority Cited *– Health and Safety Code sections , 114304, 116050, and 131200.*

Reference *– Health and Safety Code sections 114304, 116050, 116053 and 131200.*

SECTION 89.108

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

89.108.1 Purpose. *The purpose of this code is to establish minimum standards to protect the health, safety, and general welfare of the occupant and the public against hazards that may arise from the use of electricity by governing the design, construction, reconstruction, installation, quality of materials, location, operation, and maintenance or use of electrical equipment, wiring and systems.*

89.108.2 AUTHORITY AND ABBREVIATIONS

89.108.2.1 General. *The Department of Housing and Community Development is authorized by law to promulgate and adopt building standards and regulations for several types of building applications. The applications under the authority of the Department of Housing and Community Development are listed in Sections 89.108.2.1.1 through 89.108.2.1.3.*

89.108.2.1.1 Housing Construction. *Application - Hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities including accessory buildings, facilities, and uses thereto. Sections of this code which pertain to applications listed in this section are identified using the abbreviation "HCD 1".*

Enforcing Agency*-Local building department or the Department of Housing and Community Development.*

Authority Cited*: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.*

Reference*: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.*

89.108.2.1.2 Housing Accessibility. *Application-Covered multifamily dwellings as defined in Chapter 2 of the California Code of Regulations, Title 24, Part 2, also known as the California Building Code including, but not limited to, lodging houses, dormitories, timeshares, condominiums, shelters for homeless persons, congregate residences, apartments, dwellings, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities.*

Sections of this code identified by the abbreviation "HCD 1-AC" require specific accommodations for persons with disabilities, as defined in Chapter 2 of the California Building Code. The application of such provisions shall be in conjunction with other requirements of this code and apply only to newly-constructed covered multifamily dwellings as defined in Chapter 2 of the California Building Code. "HCD 1-AC" applications include, but are not limited to, the following:

(1) All newly constructed covered multifamily dwellings as defined in Chapter 2 of the California Building Code.

(2) New common use areas as defined in Chapter 2 of the California Building Code serving existing covered multifamily dwellings.

(3) Additions to existing buildings, where the addition alone meets the definition of covered multifamily dwellings as defined in Chapter 2 of the California Building code.

(4) Common use areas serving covered multifamily dwellings.

(5) Where any portion of a building's exterior is preserved, but the interior of the building is removed, including all structural portions of floors and ceilings, the building is considered a new building for determining the application of the California Building Code, Chapter 11A.

"HCD 1-AC" building standards generally do not apply to public use areas or public accommodations such as hotels, motels and public housing. Public use areas, public accommodations and public housing as defined in Chapter 2 of the California Building Code are subject to the Division of the State Architect (DSA-AC) and are referenced in Section 1.9.1.

Newly constructed covered multifamily dwellings, which can also be defined as public housing, shall be subject to the requirements of Chapter 11A and Chapter 11B.

Enforcing Agency*-Local building department or the Department of Housing and Community Development.*

Authority Cited*: Health and Safety Code Sections 17040, 17050, 17920.9, 17921, 17921.3, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17927, 17928, 17959.6, 18300, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1, 18873.2, 18873.3, 18873.4, 18873.5, 18944.11, and 19990; and Government Code Section 12955.1.*

Reference*: Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, and 19960 through 19997; and Government Code Sections 12955.1 and 12955.1.1.*

89.108.2.1.3 Permanent Buildings in Mobilehome Parks and Special Occupancy Parks. *Application - Permanent buildings, and permanent accessory buildings or structures, constructed within mobilehome parks and special occupancy parks that are under the control and ownership of the park operator. Sections of this code which pertain to applications listed in this section are identified using the abbreviation "HCD 2".*

Enforcing Agency*— Local building department or other local agency responsible for the enforcement of Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 for mobilehome parks and Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 for special occupancy parks; or the Department of Housing and Community Development.*

Authority Cited*: Health and Safety Code Sections*

ARTICLE 100 - DEFINITIONS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X						X	X					
Adopt Entire Article as amended (amended sections listed below)			X	X	X				X	X	X	X	
Adopt only those sections that are listed below													
Article / Section													
Coordination (Selective)									X	X	X	X	
Ballasted Solar Photovoltaic System			X	X	X								
100													

ARTICLE 110 – REQUIREMENTS FOR ELECTRICAL INSTALLATIONS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X					
Adopt Entire Article as amended (amended sections listed below)				X	X				X	X	X	X	
Adopt only those sections that are listed below													
Article / Section													
110.2									X	X	X	X	
110.13(C)			X						X	X	X	X	
110.13 *Exception*				X	X								

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ARTICLE 280 – SURGE ARRESTERS, OVER 1000 VOLTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 285 – SURGE-PROTECTIVE DEVICES (SPDs) 1000 VOLTS OR LESS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

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ARTICLE 344 – RIGID METAL CONDUIT: TYPE RMC

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 348 – FLEXIBLE METAL CONDUIT: TYPE FMC

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 350 – LIQUIDTIGHT FLEXIBLE METAL CONDUIT: TYPE LFMC

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 352 – RIGID POLYVINYL CHLORIDE CONDUIT: TYPE PVC

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 398 – OPEN WIRING ON INSULATORS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X			X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 399 – OUTDOOR OVERHEAD CONDUCTORS OVER 1000 VOLTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article			X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 400 – FLEXIBLE CORDS AND CABLES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 402 – FIXTURE WIRES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 404 – SWITCHES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X			X		
Adopt Entire Article as amended (amended sections listed below)									X	X		X	
Adopt only those sections that are listed below						X							
Article / Section													
404 FPN						X							
404.4 (C)									X	X		X	

ARTICLE 406 – RECEPTACLES, CORD CONNECTORS, AND ATTACHMENT PLUGS (CAPS)

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X			X		
Adopt Entire Article as amended (amended sections listed below)									X	X		X	
Adopt only those sections that are listed below						X							
Article / Section													
406 FPN						X							
406.9 (C)(1)									X	X		X	

ARTICLE 408 – SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 409 – INDUSTRIAL CONTROL PANELS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 410 – LUMINAIRES, LAMPHOLDERS, AND LAMPS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 411 – LIGHTING SYSTEMS OPERATING AT 30 VOLTS OR LESS AND LIGHTING EQUIPMENT CONNECTED TO CLASS-2 POWER SOURCES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 422 - APPLIANCES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 480 – STORAGE BATTERIES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 490 – EQUIPMENT OVER 1000 VOLTS, NOMINAL

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

Chapter 4 Equipment for General Use

ARTICLE 400
Flexible Cords and Cables

I. General

400.1 Scope. This article covers general requirements, applications, and construction specifications for flexible cords and flexible cables.

400.2 Other Articles. Flexible cords and flexible cables shall comply with this article and with the applicable provisions of other articles of this *Code*.

400.3 Suitability. Flexible cords and cables and their associated fittings shall be suitable for the conditions of use and location.

400.4 Types. The use of flexible cords and flexible cables other than those in Table 400.4 shall require permission by the authority having jurisdiction.

Table 400.4 Flexible Cords and Cables *(See 400.4.)*

Trade Name	Type Letter	Voltage	AWG or kcmil	Number of Conductors	Insulation	AWG or kcmil	Nominal Insulation Thickness		Braid on Each Conductor	Outer Covering	Use		
							mm	mils					
Lamp cord	C	300 600	18–16 15–10	2 or more	Thermoset or thermoplastic	18–16 15–10	0.76 1.14	30 45	Cotton	None	Pendant or portable	Dry locations	Not hard usage
Elevator cable	E [1, 2,3,4]	300 or 600	20–2	2 or more	Thermoset	20–16 15–12 12–10 8–2	0.51 0.76 1.14 1.52	20 30 45 60	Cotton	Three cotton; outer one flame-retardant & moisture-resistant	Elevator lighting and control	Unclassified locations	
						20–16 15–12 12–10 8–2	0.51 0.76 1.14 1.52	20 30 45 60	Flexible nylon jacket				
Elevator cable	EO [1,2,4]	300 or 600	20–2	2 or more	Thermoset	20–16 15–12 12–10 8–2	0.51 0.76 1.14 1.52	20 30 45 60	Cotton	Three cotton; outer one flame-retardant & moisture-resistant	Elevator lighting and control	Unclassified locations	
										One cotton and a neoprene jacket.		Hazardous (classified) locations	
Elevator cable	ETP [2,4]	300 or 600							Rayon	Thermoplastic	Hazardous (classified) locations		
	ETT [2,4]	300 or 600							None	One cotton or equivalent and a thermoplastic jacket			

ARTICLE 511 – COMMERCIAL GARAGES, REPAIR AND STORAGE

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 513 – AIRCRAFT HANGARS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 514 – MOTOR FUEL DISPENSING FACILITIES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 515 – BULK STORAGE PLANTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 516 – SPRAY APPLICATION, DIPPING, COATING, AND PRINTING PROCESSES USING FLAMMABLE OR COMBUSTIBLE MATERIAL

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 517 – HEALTH CARE FACILITIES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article							X	X					
Adopt Entire Article as amended (amended sections listed below)			X						X	X	X	X	
Adopt only those sections that are listed below													
Article / Section													
517.2									X	X	X	X	
517.4			X						X	X		X	
517.10.1									X	X	X	X	
517.12(A)									X	X		X	
517.18(A) w/Exc. 2 & 2.1									X	X	X	X	
517.18(B) Exc. 1									X	X	X	X	
517.18(B) Exc. 3									X	X	X		
517.18(D)									X	X		X	
517.22			X						X	X	X	X	
517.22(A), (C), & (D)									X	X	X	X	
517.22(B)									X	X	X	X	
517.22(B)(1)									X		X	X	
517.22(B)(2)										X			
517.24									X	X	X	X	
517.26									X	X	X	X	
517.30(A)									X	X	X	X	
517.30(B)(3)									X		X	X	
517.30(B)(5)									X	X	X	X	
517.30(D.1)									X	X	X	X	
517.30(E)									X			X	
517.33(A)(5)			X						X	X		X	
517.33(A)(7)			X										
517.33(A)(8)a.1									X	X	X	X	
517.33(A)(8)j. – n.									X				
517.33(A)(10)									X	X	X	X	
517.33(A)(11)									X			X	
517.34(A)(9)									X	X	X	X	
517.34(B)(1.1)									X			X	
517.35(B)(4)			X						X	X		X	
517.35(C)									X	X			
517.40(A.1)									X	X		X	
517.41(B)									X	X		X	
517.41(E)										X		X	
517.42(C.3)			X						X	X		X	
517.42(C.3) With Exc.									X	X		X	
517.43(A)(6), (7)									X	X		X	
517.43(A)(8)									X	X	X	X	
517.43(A)(9)									X	X	X	X	
517.43(B)(1.1)									X	X		X	
517.44(B.1) w/Exc. 1									X	X		X	
517.44(B.1) Exc. 2			X						X	X		X	
517.45(D.1)									X	X	X	X	
517.45(E)											X	X	
517.45(F)									X		X	X	
517.45(G)									X	X	X	X	
517.123			X						X	X	X	X	

1. This state agency adopts the entire article as amended except for those sections indicated by the following symbol: †

ARTICLE 516

Spray Application, Dipping, Coating, and Printing Processes Using Flammable or Combustible Materials

Informational Note: Text that is followed by a reference in brackets has been extracted from NFPA 33-2011, *Standard for Spray Application Using Flammable and Combustible Materials*, or NFPA 34-2011, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids*. Only editorial changes were made to the extracted text to make it consistent with this *Code*.

516.1 Scope. This article covers the regular or frequent application of flammable liquids, combustible liquids, and combustible powders by spray operations and the application of flammable liquids, or combustible liquids at temperatures above their flashpoint, by dipping, coating, printing, or other means.

Informational Note: For further information regarding safeguards for these processes, such as fire protection, posting of warning signs, and maintenance, see NFPA 33-2011, *Standard for Spray Application Using Flammable and Combustible Materials*, and NFPA 34-2011, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids*. For additional information regarding ventilation, see NFPA 91-2010, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*.

516.2 Definitions. For the purpose of this article, the following definitions shall apply.

Flash-Off Area. An open or enclosed area after a spray application process where vapors are released due to exposure to ambient air or a heated atmosphere. [**33:**3.3.1.1]

Limited Finishing Workstation. An apparatus that is capable of confining the vapors, mists, residues, dusts, or deposits that are generated by a spray application process and that meets the requirements of Section 14.3 of NFPA 33, *Standard for Spray Application Using Flammable or Combustible Materials*, but does not meet the requirements of a spray booth or spray room, as herein defined. [**33:**3.3.15.1]

Resin Application Area. Any area in which polyester resins or gelcoats are spray applied. [**33:**3.3.1.2]

Spray Area. Any fully enclosed, partly enclosed, or unenclosed area in which ignitible quantities of flammable or combustible vapors, mists, residues, dusts, or deposits are present due to the operation of spray processes, including (1) any area in the direct path of a spray application process; (2) the interior of a spray booth or spray room or limited finishing workstation, as herein defined; (3) the interior of any exhaust plenum, eliminator section, or scrubber section; (4) the interior of any exhaust duct or exhaust stack leading from a spray application process; (5) the interior of any air recirculation filter house or enclosure, including secondary recirculation particulate filters; (6) any solvent concentrator (pollution abatement) unit or solvent recovery (distillation) unit. The following are not considered to be a part of the spray area: (1) fresh air make-up units; (2) air supply ducts and air supply plenums; (3) recirculation air supply ducts downstream of secondary filters; (4) exhaust ducts from solvent concentrator (pollution abatement) units. [**33:**3.3.2.3]

Informational Note: Unenclosed spray areas are locations outside of buildings or are localized operations within a larger room or space. Such are normally provided with some local vapor extraction/ventilation system. In automated operations, the area limits are the maximum area in the direct path of spray operations. In manual operations, the area limits are the maximum area of spray when aimed at 90 degrees to the application surface.

Spray Booth. A power-ventilated enclosure for a spray application operation or process that confines and limits the escape of the material being sprayed, including vapors, mists, dusts, and residues that are produced by the spraying operation and conducts or directs these materials to an exhaust system. [33:3.3.14]

Informational Note: A spray booth is an enclosure or insert within a larger room used for spray/coating/dipping applications. A spray booth may be fully enclosed or have open front or face and may include a separate conveyor entrance and exit. The spray booth is provided with a dedicated ventilation exhaust but may draw supply air from the larger room or have a dedicated air supply.

Spray Room. A power-ventilated fully enclosed room used exclusively for open spraying of flammable or combustible materials. A spray room is a purposefully enclosed room built for spray/coating/dipping applications provided with dedicated ventilation supply and exhaust. Normally the room is configured to house the item to be painted, providing reasonable access around the item/process. Depending on the size of the item being painted, such rooms may actually be the entire building or the major portion thereof. [**33:**3.3.15]

Unenclosed Spray Area. Any spray area that is not confined by a limited finishing workstation, spray booth, or spray room, as herein defined. [**33:**3.3.2.3.2]

Subsection 516.3(A)(1)2 was added by a tentative interim amendments (TIA).

516.3 Classification of Locations. Classification is based on quantities of flammable vapors, combustible mists, residues, dusts, or deposits that are present or might be present in quantities sufficient to produce ignitible or explosive mixtures with air.

(A) Zone Classification of Locations.

(1) For the purposes of this article, the zone system of electrical area classification shall be applied as follows:

a. The inside of open or closed containers or vessels shall be considered a Class I, Zone 0 location.

b. A Class I, Division 1 location shall be permitted to be alternatively classified as a Class I, Zone 1 location.

c. A Class I, Division 2 location shall be permitted to be alternatively classified as a Class I, Zone 2 location.

d. A Class II, Division 1 location shall be permitted to be alternatively classified as a Zone 21 location.

e. A Class II, Division 2 location shall be permitted to be alternatively classified as a Zone 22 location. [**33:** 6.2.2]

(2) For the purposes of electrical area classification, the division system and the zone system shall not be intermixed for any given source of release. [**33:**6.2.3]

(3) In instances of areas within the same facility classified separately, Class I, Zone 2 locations shall be permitted to abut, but not overlap, Class I, Division 2 locations. Class I, Zone 0 or Zone 1 locations shall not abut Class I, Division 1 or Division 2 locations. [**33:**6.2.4]

(4) Open flames, spark-producing equipment or processes, and equipment whose exposed surfaces exceed the autoignition temperature of the material being sprayed shall not be located in a spray area or in any surrounding area that is classified as Division 2, Zone 2, or Zone 22.

*Exception: This requirement shall not apply to drying, curing, or fusing apparatus. [**33:**6.2.5]*

(5) Any utilization equipment or apparatus that is capable of producing sparks or particles of hot metal and that is located above or adjacent to either the spray area or the surrounding Division 2, Zone 2, or Zone 22 areas shall be of the totally enclosed type or shall be constructed to prevent the escape of sparks or particles of hot metal. [**33:** 6.2.6]

(B) Class I, Division 1 or Class I, Zone 0 Locations. The following spaces shall be considered Class I, Division 1, or Class I, Zone 0, as applicable:

(1) The interior of any open or closed container or vessel of a flammable liquid

(2) The interior of any dip tank or coating tank

(3) The interior of any ink fountain, ink reservoir, or ink tank

Informational Note: For additional guidance, see Chapter 6 of NFPA 33-2011, *Standard for Spray Application Using Flammable or Combustible Materials*, and Chapter 6 of NFPA 34-2011, *Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids.*

(C) Class I, Division 1; Class I, Zone 1; Class II, Division 1; or Zone 21 Locations. The following spaces shall be considered Class I, Division 1, or Class I, Zone 1, Class II, Division 1, or Zone 21 locations, as applicable:

(1) The interior of spray booths and rooms except as specifically provided in 516.3(D)(7).

(2) The interior of exhaust ducts.

(3) Any area in the direct path of spray operations.

(4) For open dipping and coating operations, all spaces within a 1.5-m (5-ft) radial distance from the vapor sources extending from these surfaces to the floor. The vapor source shall be the liquid exposed in the process and the drainboard, and any dipped or coated object from which it is possible to measure vapor concentrations exceeding 25 percent of the lower flammable limit at a distance of 300 mm (1 ft), in any direction, from the object as in Figure 516.3(D)(1) .

(5) Sumps, pits, or belowgrade channels within 7.5 m (25 ft) horizontally of a vapor source. If the sump, pit, or channel extends beyond 7.5 m (25 ft) from the vapor source, it shall be provided with a vapor stop or it shall be classified as Class I, Division 1 for its entire length.

(6) All space in all directions outside of but within 900 mm (3 ft) of open containers, supply containers, spray gun cleaners, and solvent distillation units containing flammable liquids.

(7) For limited finishing workstations, the area inside the curtains or partitions. See Figure 516.3(D)(4).

(D) Class I, Division 2; Class I, Zone 2; Class II, Division 2; or Zone 22 Locations. The following spaces shall be considered Class I, Division 2; Class I, Zone 2; Class II, Division 2; or Zone 22, as applicable.

(1) Unenclosed Spray Processes. For unenclosed spraying, all space outside of but within 6 m (20 ft) horizontally and 3 m (10 ft) vertically of the Class I, Division 1 or Class I, Zone 1 location as defined in 516.3(A) and not separated from it by partitions. See Figure 516.3(D)(1) . [**33:**6.5.1]

(2) Closed-Top, Open-Face, and Open-Front Spray Booths and Spray Rooms. If spray application operations are conducted within a closed-top, open-face, or open-front booth or room, as shown in Figure 516.3(D)(2) , any electrical wiring or utilization equipment located outside of the booth or room but within 915 mm (3 ft) of any opening shall be suitable for Class I, Division 2; Class I, Zone 2; Class II, Division 2; or Zone 22 locations, whichever is applicable. The Class I, Division 2; Class I, Zone 2; Class II, Division 2; or Zone 22 locations shown in Figure 516.3(D)(2) shall extend from the edges of the open face or open front of the booth or room in accordance with the following:

of concentrations of nitrous oxide insufficient to produce loss of consciousness (conscious sedation).

Selected Receptacles. A minimum number of electrical receptacles to accommodate appliances ordinarily required for local tasks or likely to be used in patient care emergencies.

Task Illumination. Provision for the minimum lighting required to carry out necessary tasks in the described areas, including safe access to supplies and equipment, and access to exits.

Total Hazard Current. See *Hazard Current*.

Wet Procedure Location. The area in a patient care space where a procedure is performed that is normally subject to wet conditions while patients are present, including standing fluids on the floor or drenching of the work area, where either such condition is intimate to the patient or staff.

Informational Note: Routine housekeeping procedures and incidental spillage of liquids do not define a wet procedure location.

X-Ray Installations, Long-Time Rating. A rating based on an operating interval of 5 minutes or longer.

X-Ray Installations, Mobile. X-ray equipment mounted on a permanent base with wheels, casters, or a combination of both to facilitate moving the equipment while completely assembled.

X-Ray Installations, Momentary Rating. A rating based on an operating interval that does not exceed 5 seconds.

X-Ray Installations, Portable. X-ray equipment designed to be hand carried.

X-Ray Installations, Transportable. X-ray equipment to be conveyed by a vehicle or that is readily disassembled for transport by a vehicle.

C A *517.4 [OSHPD 1, 2 & 4] Services/Systems and Utilities. Refer to Section 1224.4.1, California Building Code.*

II. Wiring and Protection

517.10 Applicability.

(A) Applicability. Part II shall apply to patient care space of all health care facilities.

(B) Not Covered. Part II shall not apply to the following:

(1) Business offices, corridors, waiting rooms, and the like in clinics, medical and dental offices, and outpatient facilities

(2) Areas of nursing homes and limited care facilities wired in accordance with Chapters 1 through 4 of this *Code* where these areas are used exclusively as patient sleeping rooms

Informational Note: See NFPA *101*-2012, *Life Safety Code*®.

C A C ***517.10.1 [OSHPD 1, 2, 3, & 4] Applicability.*** *Part II shall apply to hospitals, skilled nursing facilities, clinics, and correctional treatment centers.*

Exception: Part II shall not apply to business offices, corridors, waiting rooms, and the like in clinics and outpatient facilities. C A C

517.11 General Installation — Construction Criteria. The purpose of this article is to specify the installation criteria and wiring methods that minimize electrical hazards by the maintenance of adequately low potential differences only between exposed conductive surfaces that are likely to become energized and could be contacted by a patient.

Informational Note: In a health care facility, it is difficult to prevent the occurrence of a conductive or capacitive path from the patient's body to some grounded object, because that path may be established accidentally or through instrumentation directly connected to the patient. Other electrically conductive surfaces that may make an additional contact with the patient, or instruments that may be connected to the patient, then become possible sources of electric currents that can traverse the patient's body. The hazard is increased as more apparatus is associated with the patient, and, therefore, more intensive precautions are needed. Control of electric shock hazard requires the limitation of electric current that might flow in an electrical circuit involving the patient's body by raising the resistance of the conductive circuit that includes the patient, or by insulating exposed surfaces that might become energized, in addition to reducing the potential difference that can appear between exposed conductive surfaces in the patient care vicinity, or by combinations of these methods. A special problem is presented by the patient with an externalized direct conductive path to the heart muscle. The patient may be electrocuted at current levels so low that additional protection in the design of appliances, insulation of the catheter, and control of medical practice is required.

517.12 Wiring Methods. Except as modified in this article, wiring methods shall comply with the applicable provisions of Chapters 1 through 4 of this *Code*.

C A C A ***(A)*** *[OSHPD 1, 2, & 4] Wall spaces in patient care rooms shall not be used for the installation of switchboards and panelboards, unless dedicated for that room.*

517.13 Grounding of Receptacles and Fixed Electrical Equipment in Patient Care Areas. Wiring in patient care areas shall comply with 517.13(A) and (B).

(A) Wiring Methods. All branch circuits serving patient care areas shall be provided with an effective ground-fault current path by installation in a metal raceway system, or a cable having a metallic armor or sheath assembly. The metal raceway system, or metallic cable armor, or sheath assembly shall itself qualify as an equipment grounding conductor in accordance with 250.118.

(B) Insulated Equipment Grounding Conductor.

(1) General. The following shall be directly connected to an insulated copper equipment grounding conductor that is

installed with the branch circuit conductors in the wiring methods as provided in 517.13(A).

(1) The grounding terminals of all receptacles.

(2) Metal boxes and enclosures containing receptacles.

(3) All non–current-carrying conductive surfaces of fixed electrical equipment likely to become energized that are subject to personal contact, operating at over 100 volts.

Exception: An insulated equipment bonding jumper that directly connects to the equipment grounding conductor is permitted to connect the box and receptacle(s) to the equipment grounding conductor.

Exception No. 1 to (3): Metal faceplates shall be permitted to be connected to the equipment grounding conductor by means of a metal mounting screw(s) securing the faceplate to a grounded outlet box or grounded wiring device.

Exception No. 2 to (3): Luminaires more than 2.3 m (7½ ft) above the floor and switches located outside of the patient care vicinity shall be permitted to be connected to an equipment grounding return path complying with 517.13(A).

(2) Sizing. Equipment grounding conductors and equipment bonding jumpers shall be sized in accordance with 250.122.

517.14 Panelboard Bonding. The equipment grounding terminal buses of the normal and essential branch-circuit panelboards serving the same individual patient care vicinity shall be connected together with an insulated continuous copper conductor not smaller than 10 AWG. Where two or more panelboards serving the same individual patient care vicinity are served from separate transfer switches on the essential electrical system, the equipment grounding terminal buses of those panelboards shall be connected together with an insulated continuous copper conductor not smaller than 10 AWG. This conductor shall be permitted to be broken in order to terminate on the equipment grounding terminal bus in each panelboard.

517.16 Use of Isolated Ground Receptacles. An isolated ground receptacle shall not be installed within a patient care vicinity. [**99:**6.3.2.2.7.1(B)]

517.17 Ground-Fault Protection.

(A) Applicability. The requirements of 517.17 shall apply to hospitals, and other buildings (including multiple-occupancy buildings) with critical care space or utilizing electrical life-support equipment, and buildings that provide the required essential utilities or services for the operation of critical care space or electrical life-support equipment.

(B) Feeders. Where ground-fault protection is provided for operation of the service disconnecting means or feeder disconnecting means as specified by 230.95 or 215.10, an additional step of ground-fault protection shall be provided in all next level feeder disconnecting means downstream toward the load. Such protection shall consist of overcurrent devices and current transformers or other equivalent protective equipment that shall cause the feeder disconnecting means to open.

The additional levels of ground-fault protection shall not be installed on the load side of an essential electrical system transfer switch.

(C) Selectivity. Ground-fault protection for operation of the service and feeder disconnecting means shall be fully selective such that the feeder device, but not the service device, shall open on ground faults on the load side of the feeder device. Separation of ground-fault protection time-current characteristics shall conform to manufacturer's recommendations and shall consider all required tolerances and disconnect operating time to achieve 100 percent selectivity.

Informational Note: See 230.95, informational note, for transfer of alternate source where ground-fault protection is applied.

(D) Testing. When equipment ground-fault protection is first installed, each level shall be performance tested to ensure compliance with 517.17(C).

517.18 General Care Areas.

(A) Patient Bed Location. Each patient bed location shall be supplied by at least two branch circuits, one from the critical branch and one from the normal system. All branch circuits from the normal system shall originate in the same panelboard. The electrical receptacles or the cover plate for the electrical receptacles supplied from the critical branch shall have a distinctive color or marking so as to be readily identifiable and shall also indicate the panelboard and branch-circuit number supplying them.

Branch circuits serving patient bed locations shall not be part of a multiwire branch circuit.

Exception No. 1: Branch circuits serving only special purpose outlets or receptacles, such as portable X-ray outlets, shall not be required to be served from the same distribution panel or panels.

Exception No. 2: The requirements of 517.18(A) shall not apply to patient bed locations in clinics, medical and dental offices, and outpatient facilities; psychiatric, substance abuse, and rehabilitation hospitals; sleeping rooms of nursing home;, and limited care facilities meeting the requirements of 517.10(B)(2).

[OSHPD 1, 2, 3, & 4] Section 517.10.1 Exception.

[OSHPD 1, 2, 3, & 4] Exception No. 2.1: Clinics, outpatient facilities, psychiatric, substance abuse, and rehabilitation hospitals, nursing homes, and correctional treatment centers providing only basic services.

Exception No. 3: A general care patient bed location served from two separate transfer switches on the critical branch shall not be required to have circuits from the normal system.

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includes clinics, medical and dental offices, outpatient facilities, nursing homes, limited care facilities, hospitals, and other health care facilities serving patients.

Informational Note: For information on the need for an essential electrical system, see NFPA 99-2012, *Health Care Facilities Code*.

517.26 Application of Other Articles. The life safety branch, *[OSHPD 1, 2, 3, & 4] critical branch, and equipment branch* of the essential electrical system shall meet the requirements of Article 700, except as amended by Article 517.

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Informational Note No. 1: For additional information, see NFPA 110-2013, *Standard for Emergency and Standby Power Systems*.

Informational Note No. 2: For additional information, see 517.30 and NFPA 99-2012, *Health Care Facilities Code*.

517.30 Essential Electrical Systems for Hospitals.

(A) Applicability. The requirements of Part III, 517.30 through 517.35, shall apply to hospitals *[OSHPD 1, 2 (facilities complying with Article 517.40(B), 3 & 4] correctional treatment centers providing optional services* where an essential electrical system is required.

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Informational Note No. 1: For performance, maintenance, and testing requirements of essential electrical systems in hospitals, see NFPA 99-2012, *Health Care Facilities Code*. For installation of centrifugal fire pumps, see NFPA 20-2013, *Standard for the Installation of Stationary Fire Pumps for Fire Protection*.

Informational Note No. 2: For additional information, see NFPA 99-2012, *Health Care Facilities Code*.

(B) General.

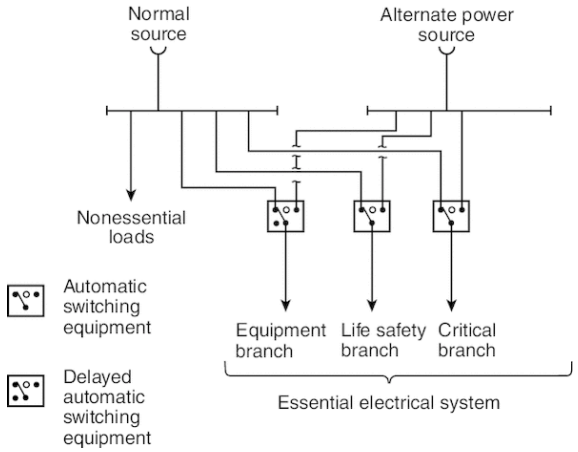
(1) Separate Branches. Essential electrical systems for hospitals shall be comprised of three separate branches capable of supplying a limited amount of lighting and power service that is considered essential for life safety and effective hospital operation during the time the normal electrical service is interrupted for any reason. The three branches are life safety, critical, and equipment.

(2) Transfer Switches. The number of transfer switches to be used shall be based on reliability, design, and load considerations. Each branch of the essential electrical system shall have one or more transfer switches. One transfer switch and downstream distribution system shall be permitted to serve one or more branches in a facility with a maximum demand on the essential electrical system of 150 kVA.

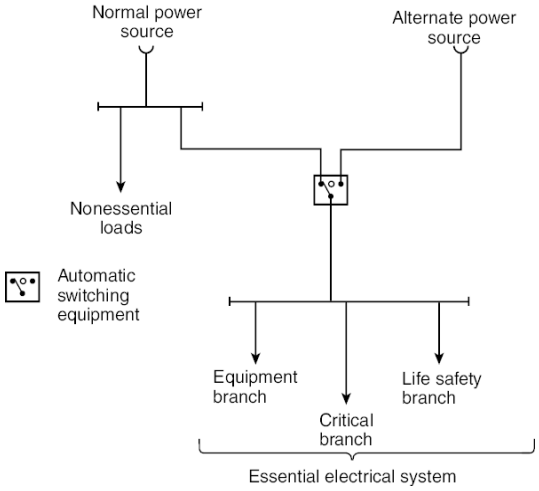
Informational Note No. 1: See NFPA 99-2012, *Health Care Facilities Code*, 6.4.3.2, Transfer Switches; 6.4.2.1.5, Automatic Transfer Switch Features; 6.4.2.1.5.15, Nonautomatic Transfer Switch Features; and 6.4.2.1.7, Nonautomatic Transfer Device Features.

Informational Note No. 2: See Informational Note Figure 517.30, No. 1.

Informational Note No. 3: See Informational Note Figure 517.30, No. 2.



Informational Note Figure 517.30, No. 1 Hospital — Minimum Requirement (greater than 150 kVA) for Transfer Switch Arrangement.



Informational Note Figure 517.30, No. 2 Hospital — Minimum Requirement (150 kVA or less) for Transfer Switch Arrangement.

(3) Optional Loads. Loads served by the generating equipment not specifically named in Article 517 shall be served by their own transfer switches such that the following conditions apply:

(1) These loads shall not be transferred if the transfer will overload the generating equipment.

(2) These loads shall be automatically shed upon generating equipment overloading.

[For OSHPD 1, 3, & 4] Loads served by such transfer switches, including the receptacles required to be supplied by the normal system pursuant to Articles 517-18 and 517-19, shall not be considered to be on the essential system.] C A C A

(4) Contiguous Facilities. Hospital power sources and alternate power sources shall be permitted to serve the essential electrical systems of contiguous or same site facilities.

(5) *[OSHPD 1, 2 (facilities complying with Article 517.40(B)),3, & 4] All automatic transfer switches in general acute care* C A

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hospitals, skilled nursing facilities complying with Article 517.40(B), and correctional treatment centers providing optional services shall be provided with an in-phase monitor relay and shall have provisions for electrically by-passing and isolating the transfer switch. The by-pass switch shall be capable of by-passing loads to the emergency source or normal source if the selected by-pass source voltage is available. Transfer switches rated over 150 volts to ground and equal to or greater than 1000 amps shall not be located in the same room with the normal service equipment.

(C) Wiring Requirements.

(1) Separation from Other Circuits. The life safety branch and critical branch of the essential electrical system shall be kept entirely independent of all other wiring and equipment and shall not enter the same raceways, boxes, or cabinets with each other or other wiring.

Where general care locations are served from two separate transfer switches on the essential electrical system in accordance with 517.18(A), Exception No. 3, the general care circuits from the two separate systems shall be kept independent of each other.

Where critical care locations are served from two separate transfer switches on the essential electrical system in accordance with 517.19(A), Exception No. 2, the critical care circuits from the two separate systems shall be kept independent of each other.

Wiring of the life safety branch and the critical branch shall be permitted to occupy the same raceways, boxes, or cabinets of other circuits not part of the branch where such wiring complies with one of the following:

(1) Is in transfer equipment enclosures

(2) Is in exit or emergency luminaires supplied from two sources

(3) Is in a common junction box attached to exit or emergency luminaires supplied from two sources

(4) Is for two or more circuits supplied from the same branch and same transfer switch

The wiring of the equipment branch shall be permitted to occupy the same raceways, boxes, or cabinets of other circuits that are not part of the essential electrical system.

(2) Isolated Power Systems. Where isolated power systems are installed in any of the areas in 517.33(A)(1) and (A)(2), each system shall be supplied by an individual circuit serving no other load.

(3) Mechanical Protection of the Essential Electrical System. The wiring of the life safety and critical branches shall be mechanically protected. Where installed as branch circuits in patient care spaces, the installation shall comply with the requirements of 517.13(A) and (B). The following wiring methods shall be permitted:

(1) Nonflexible metal raceways, Type MI cable, Type RTRC marked with the suffix –XW, or Schedule 80 PVC conduit. Nonmetallic raceways shall not be used for branch circuits that supply patient care areas.

(2) Where encased in not less than 50 mm (2 in.) of concrete, Schedule 40 PVC conduit, flexible nonmetallic or jacketed metallic raceways, or jacketed metallic cable assemblies listed for installation in concrete. Nonmetallic raceways shall not be used for branch circuits that supply patient care areas.

(3) Listed flexible metal raceways and listed metal sheathed cable assemblies in any of the following:

a. Where used in listed prefabricated medical headwalls
b. In listed office furnishings
c. Where fished into existing walls or ceilings, not otherwise accessible and not subject to physical damage
d. Where necessary for flexible connection to equipment

(4) Flexible power cords of appliances or other utilization equipment connected to the emergency system.

(5) Cables for Class 2 or Class 3 systems permitted by Part VI of this Article, with or without raceways.

Informational Note: See 517.13 for additional grounding requirements in patient care areas.

(D) Capacity of Systems. The essential electrical system shall have the capacity and rating to meet the maximum actual demand likely to be produced by the connected load.

Feeders shall be sized in accordance with 215.2 and Part III of Article 220. The generator set(s) shall have the capacity and rating to meet the demand produced by the load at any given time.

Demand calculations for sizing of the generator set(s) shall be based on any of the following:

(1) Prudent demand factors and historical data
(2) Connected load
(3) Feeder calculation procedures described in Article 220
(4) Any combination of the above

The sizing requirements in 700.4 and 701.4 shall not apply to hospital generator set(s).

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(D.1) [OSHPD 1, 2, 3, & 4] Capacity of Systems*. The essential electrical system shall have the capacity and rating to meet the maximum actual demand likely to be produced by the connected load.*

(E) Receptacle Identification. The cover plates for the electrical receptacles *[For OSHPD 1&4] and light switches* or the electrical receptacles *[For OSHPD 1&4] and light switches* themselves supplied from the essential electrical system shall have a distinctive color or marking so as to be readily identifiable. [**99:**6.4.2.2.6.2(C)]

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(F) Feeders from Alternate Power Source. A single feeder supplied by a local or remote alternate source shall be permitted

ARTICLE 600 – ELECTRIC SIGNS AND OUTLINE LIGHTING

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 604 – MANUFACTURED WIRING SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 605 – OFFICE FURNISHINGS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 610 – CRANES AND HOISTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 620 – ELEVATORS, DUMBWAITERS, ESCALATORS, MOVING WALKS, PLATFORM LIFTS, AND STAIRWAY CHAIRLIFTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X			X	X					X	X	X	
Adopt Entire Article as amended (amended sections listed below)			X				X	X	X				
Adopt only those sections that are listed below													
Article / Section													
620.21 (A)(5)									X				
620.71			X				X	X					

ARTICLE 625 – ELECTRIC VEHICLE CHARGING SYSTEM

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article							X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)			X[1]	X[1]	X[1]								
Adopt only those sections that are listed below													
Article / Section													
625.1.1	X			X									
625.52 (B)			†										
625.52 (C)			X	♦	♦								

1. This state agency adopts the entire article as amended except for those sections indicated by the following symbol: †
The ♦ designation indicates that the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures subject to HCD 1 and/or HCD 2.

ARTICLE 626 – ELECTRIFIED TRUCK PARKING SPACES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article			X	X	X		X	X					
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 630 – ELECTRIC WELDERS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 640 – AUDIO SIGNAL PROCESSING, AMPLIFICATION, AND REPRODUCTION EQUIPMENT

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X				X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

Where the driving machine of an electric elevator or the hydraulic machine of a hydraulic elevator is located in a remote machine room or remote machinery space, a single means for disconnecting all ungrounded main power-supply conductors shall be provided and be lockable open in accordance with 110.25.

(2) On Elevators with Generator Field Control. On elevators with generator field control, the disconnecting means shall be located within sight of the motor controller for the driving motor of the motor-generator set. Driving machines, motor-generator sets, or motion and operation controllers not within sight of the disconnecting means shall be provided with a manually operated switch installed in the control circuit to prevent starting. The manually operated switch(es) shall be installed adjacent to this equipment.

Where the driving machine or the motor-generator set is located in a remote machine room or remote machinery space, a single means for disconnecting all ungrounded main power-supply conductors shall be provided and be lockable open in accordance with 110.25.

(3) On Escalators and Moving Walks. On escalators and moving walks, the disconnecting means shall be installed in the space where the controller is located.

(4) On Platform Lifts and Stairway Chairlifts. On platform lifts and stairway chairlifts, the disconnecting means shall be located within sight of the motor controller.

(D) Identification and Signs. Where there is more than one driving machine in a machine room, the disconnecting means shall be numbered to correspond to the identifying number of the driving machine that they control.

The disconnecting means shall be provided with a sign to identify the location of the supply side overcurrent protective device.

620.52 Power from More Than One Source.

(A) Single-Car and Multicar Installations. On single-car and multicar installations, equipment receiving electrical power from more than one source shall be provided with a disconnecting means for each source of electrical power. The disconnecting means shall be within sight of the equipment served.

(B) Warning Sign for Multiple Disconnecting Means. Where multiple disconnecting means are used and parts of the controllers remain energized from a source other than the one disconnected, a warning sign shall be mounted on or next to the disconnecting means. The sign shall be clearly legible and shall read as follows:

WARNING

PARTS OF THE CONTROLLER ARE NOT DE-ENERGIZED BY THIS SWITCH.

The warning sign(s) or label(s) shall comply with 110.21(B).

(C) Interconnection Multicar Controllers. Where interconnections between controllers are necessary for the operation of the system on multicar installations that remain energized from a source other than the one disconnected, a warning sign in accordance with 620.52(B) shall be mounted on or next to the disconnecting means.

620.53 Car Light, Receptacle(s), and Ventilation Disconnecting Means. Elevators shall have a single means for disconnecting all ungrounded car light, receptacle(s), and ventilation power-supply conductors for that elevator car.

The disconnecting means shall be an enclosed, externally operable, fused motor-circuit switch or circuit breaker that is lockable open in accordance with 110.25 and shall be located in the machine room or control room for that elevator car. Where there is no machine room or control room, the disconnecting means shall be located in a machinery space or control space outside the hoistway that is readily accessible to only qualified persons.

Disconnecting means shall be numbered to correspond to the identifying number of the elevator car whose light source they control.

The disconnecting means shall be provided with a sign to identify the location of the supply side overcurrent protective device.

Exception: Where a separate branch circuit supplies car lighting, a receptacle(s), and a ventilation motor not exceeding 2 hp, the disconnecting means required by 620.53 shall be permitted to comply with 430.109(C). This disconnecting means shall be listed and shall be lockable open in accordance with 110.25.

620.54 Heating and Air-Conditioning Disconnecting Means. Elevators shall have a single means for disconnecting all ungrounded car heating and air-conditioning power-supply conductors for that elevator car.

The disconnecting means shall be an enclosed, externally operable, fused motor-circuit switch or circuit breaker that is lockable open in accordance with 110.25 and shall be located in the machine room or control room for that elevator car. Where there is no machine room or control room, the disconnecting means shall be located in a machinery space or control space outside the hoistway that is readily accessible to only qualified persons.

Where there is equipment for more than one elevator car in the machine room, the disconnecting means shall be numbered to correspond to the identifying number of the elevator car whose heating and air-conditioning source they control.

The disconnecting means shall be provided with a sign to identify the location of the supply side overcurrent protective device.

620.55 Utilization Equipment Disconnecting Means. Each branch circuit for other utilization equipment shall have a single means for disconnecting all ungrounded conductors. The disconnecting means shall be lockable open in accordance with 110.25.

Where there is more than one branch circuit for other utilization equipment, the disconnecting means shall be numbered to correspond to the identifying number of the equipment served. The disconnecting means shall be provided with a sign to identify the location of the supply side overcurrent protective device.

VII. Overcurrent Protection

620.61 Overcurrent Protection. Overcurrent protection shall be provided in accordance with 620.61(A) through (D)

(A) Operating Devices and Control and Signaling Circuits. Operating devices and control and signaling circuits shall be protected against overcurrent in accordance with the requirements of 725.43 and 725.45.

Class 2 power-limited circuits shall be protected against overcurrent in accordance with the requirements of Chapter 9, Notes to Tables 11(A) and 11(B).

(B) Overload Protection for Motors. Motor and branch-circuit overload protection shall conform to Article 430, Part III, and (B)(1) through (B)(4).

(1) Duty Rating on Elevator, Dumbwaiter, and Motor-Generator Sets Driving Motors. Duty on elevator and dumbwaiter driving machine motors and driving motors of motor-generators used with generator field control shall be rated as intermittent. Such motors shall be permitted to be protected against overload in accordance with 430.33.

(2) Duty Rating on Escalator Motors. Duty on escalator and moving walk driving machine motors shall be rated as continuous. Such motors shall be protected against overload in accordance with 430.32.

(3) Overload Protection. Escalator and moving walk driving machine motors and driving motors of motor-generator sets shall be protected against running overload as provided in Table 430.37.

(4) Duty Rating and Overload Protection on Platform Lift and Stairway Chairlift Motors. Duty on platform lift and stairway chairlift driving machine motors shall be rated as intermittent. Such motors shall be permitted to be protected against overload in accordance with 430.33.

Informational Note: For further information, see 430.44 for orderly shutdown.

(C) Motor Feeder Short-Circuit and Ground-Fault Protection. Motor feeder short-circuit and ground-fault protection shall be as required in Article 430, Part V.

(D) Motor Branch-Circuit Short-Circuit and Ground-Fault Protection. Motor branch-circuit short-circuit and ground-fault protection shall be as required in Article 430, Part IV.

620.62 Selective Coordination. Where more than one driving machine disconnecting means is supplied by a single feeder, the overcurrent protective devices in each disconnecting means shall be selectively coordinated with any other supply side overcurrent protective devices.

Selective coordination shall be selected by a licensed professional engineer or other qualified person engaged primarily in the design, installation, or maintenance of electrical systems. The selection shall be documented and made available to those authorized to design, install, inspect, maintain, and operate the system.

VIII. Machine Rooms, Control Rooms, Machinery Spaces, and Control Spaces

620.71 Guarding Equipment. Elevator, dumbwaiter, escalator, and moving walk driving machines; motor-generator sets; motor controllers; and disconnecting means shall be installed in a room set aside for that purpose unless otherwise permitted in 620.71(A) or (B). The room shall be secured against unauthorized access. *Installation of Elevator motor controller and/or motion controller in the hoistway is prohibited.* C A C A C A C A C

(A) Motor Controllers *for dumbwaiters, escalators, and moving walks*. Motor controllers shall be permitted outside the ~~spaces~~ *room* herein specified, provided they are in enclosures with doors or removable panels that are capable of being locked in the closed position and the disconnecting means is located adjacent to or is an integral part of the motor controller. Motor controller enclosures for escalator or moving walks shall be permitted in the balustrade on the side located away from the moving steps or moving treadway. If the disconnecting means is an integral part of the motor controller, it shall be operable without opening the enclosure.

(B) Driving Machines. Elevators with driving machines located on the car, on the counterweight, or in the hoistway, and driving machines for dumbwaiters, platform lifts, and stairway lifts, shall be permitted outside the ~~spaces~~ *room* herein specified. C A

IX. Grounding

620.81 Metal Raceways Attached to Cars. Metal raceways, Type MC cable, Type MI cable, or Type AC cable attached to elevator cars shall be bonded to metal parts of the car that are bonded to the equipment grounding conductor.

620.82 Electric Elevators. For electric elevators, the frames of all motors, elevator machines, controllers, and the metal enclosures for all electrical equipment in or on the car or in the hoistway shall be bonded in accordance with Article 250, Parts V and VII.

620.83 Nonelectric Elevators. For elevators other than electric having any electrical conductors attached to the car, the metal frame of the car, where normally accessible to persons, shall be bonded in accordance with Article 250, Parts V and VII.

620.84 Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts. Escalators, moving walks, platform lifts, and stairway chairlifts shall comply with Article 250.

620.85 Ground-Fault Circuit-Interrupter Protection for Personnel. Each 125-volt, single-phase, 15- and 20-ampere receptacle installed in pits, in hoistways, on elevator car tops, and in escalator and moving walk wellways shall be of the ground-fault circuit-interrupter type.

All 125-volt, single-phase, 15- and 20-ampere receptacles installed in machine rooms and machinery spaces shall have ground-fault circuit-interrupter protection for personnel.

A single receptacle supplying a permanently installed sump pump shall not require ground-fault circuit-interrupter protection.

X. Emergency and Standby Power Systems

620.91 Emergency and Standby Power Systems. An elevator(s) shall be permitted to be powered by an emergency or standby power system.

Informational Note: See ASME A17.1-2010/CSA B44-10, *Safety Code for Elevators and Escalators*, 2.27.2, for additional information.

(A) Regenerative Power. For elevator systems that regenerate power back into the power source that is unable to absorb the regenerative power under overhauling elevator load conditions, a means shall be provided to absorb this power.

(B) Other Building Loads. Other building loads, such as power and lighting, shall be permitted as the energy absorption means required in 620.91(A), provided that such loads are automatically connected to the emergency or standby power system operating the elevators and are large enough to absorb the elevator regenerative power.

(C) Disconnecting Means. The disconnecting means required by 620.51 shall disconnect the elevator from both the emergency or standby power system and the normal power system.

Where an additional power source is connected to the load side of the disconnecting means, which allows automatic movement of the car to permit evacuation of passengers, the disconnecting means required in 620.51 shall be provided with an auxiliary contact that is positively opened mechanically, and the opening shall not be solely dependent on springs. This contact shall cause the additional power source to be disconnected from its load when the disconnecting means is in the open position.

ARTICLE 625
Electric Vehicle Charging System

I. General

625.1 Scope. The provisions of this article cover the electrical conductors and equipment external to an electric vehicle that connect an electric vehicle to a supply of electricity by conductive or inductive means, and the installation of equipment and devices related to electric vehicle charging.

Informational Note No. 1: For industrial trucks, see NFPA 505-2011, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operation*.

Informational Note No. 2: UL 2594-2013, *Standard for Electric Vehicle Supply Equipment*, is a safety standard for electric vehicle supply equipment. UL 2202-2009, *Standard for Electric Vehicle Charging System Equipment*, is a safety standard for electric vehicle charging equipment.

625.1.1 [HCD 1][BSC-CG] Electric Vehicle (EV) Charging for New Construction. *In addition to requirements in this Article, electric vehicle charging shall comply with the California Green Building Standards Code (CALGreen) Chapter 4, Division 4.1., (CALGreen) Chapter 5, Division 5.1.*

625.2 Definitions.

Cable Management System (Electric Vehicle Supply Equipment). An apparatus designed to control and organize unused lengths of output cable to the electric vehicle.

Electric Vehicle. An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For the purpose of this article, off-road, self-propelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.

Electric Vehicle Connector. A device that, when electrically coupled (conductive or inductive) to an electric vehicle inlet, establishes an electrical connection to the electric vehicle for the purpose of power transfer and information exchange. This device is part of the electric vehicle coupler.

Informational Note: For further information, see 625.48 for interactive systems.

Electric Vehicle Coupler. A mating electric vehicle inlet and electric vehicle connector set.

Electric Vehicle Inlet. The device on the electric vehicle into which the electric vehicle connector is electrically coupled (conductive or inductive) for power transfer and information exchange. This device is part of the electric vehicle coupler. For the purposes of this *Code*, the electric vehicle inlet is considered to be part of the electric vehicle and not part of the electric vehicle supply equipment.

Informational Note: For further information, see 625.48 for interactive systems.

Electric Vehicle Storage Battery. A battery, comprised of one or more rechargeable electrochemical cells, that has no provision for the release of excessive gas pressure during normal charging and operation, or for the addition of water or electrolyte for external measurements of electrolyte-specific gravity.

Electric Vehicle Supply Equipment. The conductors, including the ungrounded, grounded, and equipment grounding conductors, and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

Informational Note No. 1: For further information, see 625.48 for interactive systems.

Informational Note No. 2: Within this article, the terms *electric vehicle supply equipment* and *electric vehicle charging system equipment* are considered to be equivalent.

Output Cable to the Electric Vehicle. An assembly consisting of a length of flexible EV cable and an electric vehicle connector (supplying power to the electric vehicle).

Personnel Protection System. A system of personnel protection devices and constructional features that when used together provide protection against electric shock of personnel.

Plug-In Hybrid Electric Vehicle (PHEV). A type of electric vehicle intended for on-road use with the ability to store and use off-vehicle electrical energy in the rechargeable energy storage system, and having a second source of motive power.

Power-Supply Cord. An assembly consisting of an attachment plug and length of flexible cord that connects the electric vehicle supply equipment (EVSE) to a receptacle.

Rechargeable Energy Storage System. Any power source that has the capability to be charged and discharged.

Informational Note: Batteries, capacitors, and electromechanical flywheels are examples of rechargeable energy storage systems.

625.4 Voltages. Unless other voltages are specified, the nominal ac system voltages of 120, 120/240, 208Y/120, 240, 480Y/277, 480, 600Y/347, and 600 volts and dc system voltages of up to 600 volts shall be used to supply equipment covered by this article.

625.5 Listed. All electrical materials, devices, fittings, and associated equipment shall be listed.

II. Equipment Construction

625.10 Electric Vehicle Coupler. The electric vehicle coupler shall comply with 625.10(A) through (F).

(A) Polarization. The electric vehicle coupler shall be polarized.

Exception: A coupler that is part of a listed electric vehicle supply equipment.

(B) Noninterchangeability. The electric vehicle coupler shall have a configuration that is noninterchangeable with wiring devices in other electrical systems. Nongrounding-type electric vehicle couplers shall not be interchangeable with grounding-type electric vehicle couplers.

(C) Construction and Installation. The electric vehicle coupler shall be constructed and installed so as to guard against inadvertent contact by persons with parts made live from the electric vehicle supply equipment or the electric vehicle battery.

(D) Unintentional Disconnection. The electric vehicle coupler shall be provided with a positive means to prevent unintentional disconnection.

(E) Grounding Pole. The electric vehicle coupler shall be provided with a grounding pole, unless provided as part of a listed isolated electric vehicle supply equipment system.

(F) Grounding Pole Requirements. If a grounding pole is provided, the electric vehicle coupler shall be so designed that the grounding pole connection is the first to make and the last to break contact.

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625.15 Markings. The electric vehicle supply equipment shall comply with 625.15(A) through (C).

(A) General. All electric vehicle supply equipment shall be marked by the manufacturer as follows:

FOR USE WITH ELECTRIC VEHICLES

(B) Ventilation Not Required. Where marking is required by 625.52(A), the electric vehicle supply equipment shall be clearly marked by the manufacturer as follows:

VENTILATION NOT REQUIRED

The marking shall be located so as to be clearly visible after installation.

(C) Ventilation Required. Where marking is required by 625.52(B), the electric vehicle supply equipment shall be clearly marked by the manufacturer, "Ventilation Required." The marking shall be located so as to be clearly visible after installation.

625.16 Means of Coupling. The means of coupling to the electric vehicle shall be either conductive or inductive. Attachment plugs, electric vehicle connectors, and electric vehicle inlets shall be listed or labeled for the purpose.

625.17 Cords and Cables.

(A) Power-Supply Cord. The cable for cord-connected equipment shall comply with all of the following:

(1) Be any of the types specified in 625.17(B)(1) or hard service cord, junior hard service cord, or portable power cable types in accordance with Table 400.4. Hard service cord, junior hard service cord, or portable power cable types shall be listed, as applicable, for exposure to oil and damp and wet locations.

(2) Have an ampacity as specified in Table 400.5(A)(1) or, for 8 AWG and larger, in the 60°C columns of Table 400.5(A)(2).

(3) Have an overall length as specified in 625.17(A)(3)a or b as follows:

a. When the interrupting device of the personnel protection system specified in 625.22 is located within the enclosure of the supply equipment or charging system, the power-supply cord shall be not more than 300 mm (12 in.) long,

b. When the interrupting device of the personnel protection system specified in 625.22 is located at the attachment plug, or within the first 300 mm (12 in.) of the power-supply cord, the overall cord length shall be a minimum of 1.8 m (6 ft) and shall be not greater than 4.6 m (15 ft).

(B) Output Cable to the Electric Vehicle. The output cable to the electric vehicle shall be Type EV, EVJ, EVE, EVJE, EVT, or EVJT flexible cable as specified in Table 400.4.

Informational Note: Listed electric vehicle supply equipment may incorporate output cables having ampacities greater than 60°C based on the permissible temperature limits for the components and the cable.

(C) Overall Cord and Cable Length. The overall usable length shall not exceed 7.5 m (25 ft) unless equipped with a cable management system that is part of the listed electric vehicle supply equipment.

(1) Not Fastened in Place. Where the electric vehicle supply equipment or charging system is not fastened in place, the cord-exposed usable length shall be measured from the face of the attachment plug to the face of the electric vehicle connector.

(2) Fastened in Place. Where the electric vehicle supply equipment or charging system is fastened in place, the usable length of the output cable shall be measured from the cable exit of the electric vehicle supply equipment or charging system to the face of the electric vehicle connector.

625.18 Interlock. Electric vehicle supply equipment shall be provided with an interlock that de-energizes the electric vehicle connector whenever the electrical connector is uncoupled from the electric vehicle. An interlock shall not be required for portable cord-and-plug-connected electric vehicle supply equipment intended for connection to receptacle outlets rated at 125 volts, single phase, 15 and 20 amperes. An interlock shall not be required for dc supplies less than 50 volts dc.

625.19 Automatic De-Energization of Cable. The electric vehicle supply equipment or the cable-connector combination of the equipment shall be provided with an automatic means to de-energize the cable conductors and electric vehicle connector upon exposure to strain that could result in either cable rupture or separation of the cable from the electric connector and exposure of live parts. Automatic means to de-energize the cable conductors and electric vehicle connector shall not be required for portable cord-and-plug-connected electric vehicle supply equipment intended for connection to receptacle outlets rated at 125 volts, single phase, 15 and 20 amperes. An interlock shall not be required for dc supplies less than 50 volts dc.

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625.22 Personnel Protection System. The electric vehicle supply equipment shall have a listed system of protection against electric shock of personnel. Where cord-and plug-connected electric vehicle supply equipment is used, the interrupting device of a listed personnel protection system shall be provided and shall be an integral part of the attachment plug or shall be located in the power-supply cord not more than 300 mm (12 in.) from the attachment plug.

III. Installation

625.40 Overcurrent Protection. Overcurrent protection for feeders and branch circuits supplying electric vehicle supply equipment shall be sized for continuous duty and shall have a rating of not less than 125 percent of the maximum load of the electric vehicle supply equipment. Where noncontinuous loads are supplied from the same feeder or branch circuit, the overcurrent device shall have a rating of not less than the sum of the noncontinuous loads plus 125 percent of the continuous loads.

625.41 Rating. Electric vehicle supply equipment shall have sufficient rating to supply the load served. Electric vehicle charging loads shall be considered to be continuous loads for the purposes of this article. Where an automatic load management system is used, the maximum electric vehicle supply equipment load on a service and feeder shall be the maximum load permitted by the automatic load management system.

625.42 Disconnecting Means. For electric vehicle supply equipment rated more than 60 amperes or more than 150 volts to ground, the disconnecting means shall be provided and installed in a readily accessible location. The disconnecting means shall be lockable open in accordance with 110.25.

625.44 Electric Vehicle Supply Equipment Connection. Electric vehicle supply equipment shall be permitted to be cord-and plug-connected to the premises wiring system in accordance with one of the following:

(A) Connections to 125-Volt, Single-Phase, 15- and 20-Ampere Receptacle Outlets. Electric vehicle supply equipment intended for connection to nonlocking, 2-pole, 3-wire grounding-type receptacle outlets rated at 125 V, single phase, 15 and 20 amperes or from a supply of less than 50 volts dc.

(B) Connections to Other Receptacle Outlets. Electric vehicle supply equipment that is rated 250 V maximum and complying with all of the following:

(1) It is intended for connection to nonlocking, 2-pole, 3-wire and 3-pole, 4-wire, grounding-type receptacle outlets rated not more than 50 amperes.

(2) EVSE is fastened in place to facilitate any of the following:

a. Ready removal for interchange

b. Facilitation of maintenance and repair

c. Repositioning of portable, movable, or EVSE fastened in place

(3) Power-supply cord length for electric vehicle supply equipment fastened in place is limited to 1.8 m (6 ft).

(4) Receptacles are located to avoid physical damage to the flexible cord.

All other electric vehicle supply equipment shall be permanently wired and fastened in place to the supporting surface, a wall, a pole, or other structure. The electric vehicle supply equipment shall have no exposed live parts.

625.46 Loss of Primary Source. Means shall be provided such that, upon loss of voltage from the utility or other electrical system(s), energy cannot be back fed through the electric vehicle and the supply equipment to the premises wiring system unless permitted by 625.48.

625.48 Interactive Systems. Electric vehicle supply equipment and other parts of a system, either on board or off board the vehicle, that are intended to be interconnected to a vehicle and also serve as an optional standby system or an electric power production source or provide for bi-directional power feed shall be listed and marked as suitable for that purpose. When used as an optional standby system, the requirements of Article 702 shall apply, and when used as an electric power production source, the requirements of Article 705 shall apply.

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625.50 Location. The electric vehicle supply equipment shall be located for direct electrical coupling of the EV connector (conductive or inductive) to the electric vehicle. Unless specifically listed and marked for the location, the coupling means of the electric vehicle supply equipment shall be stored or located at a height of not less than 450 mm (18 in.) above the floor level for indoor locations and 600 mm (24 in.) above the grade level for outdoor locations.

625.52 Ventilation. The ventilation requirement for charging an electric vehicle in an indoor enclosed space shall be determined by 625.52(A) or (B).

(A) Ventilation Not Required. Where electric vehicle storage batteries are used or where the electric vehicle supply equipment is listed for charging electric vehicles indoors without ventilation and marked in accordance with 625.15(B), mechanical ventilation shall not be required.

(B) Ventilation Required. Where the electric vehicle supply equipment is listed for charging electric vehicles that require ventilation for indoor charging, and is marked in accordance with 625.15(C), mechanical ventilation, such as a fan, shall be provided. The ventilation shall include both supply and exhaust equipment and shall be permanently installed and located to intake from, and vent directly to, the outdoors. Positive-pressure ventilation systems shall be permitted only in vehicle charging buildings or areas that have been specifically designed and approved for that application. Mechanical ventilation requirements shall be determined by one of the methods specified in 625.52(B)(1) through (B)(4).

(1) Table Values. For supply voltages and currents specified in Table 625.52(B)(1) or Table 625.52(B)(2), the minimum ventilation requirements shall be as specified in Table 625.52(B)(1) or Table 625.52(B)(2) for each of the total number of electric vehicles that can be charged at one time.

(2) Other Values. For supply voltages and currents other than specified in Table 625.52(B)(1)or Table 625.52(B)(2), the minimum ventilation requirements shall be calculated by means of the following general formulas, as applicable:

ARTICLE 700 – EMERGENCY SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X			X	X		X	X					
Adopt Entire Article as amended (amended sections listed below)			X						X	X	X	X	
Adopt only those sections that are listed below													
Article / Section													
700.3(A)									X	X	X	X	
700.3(B)									X				
700.5(C)									X	X	X	X	
700.12(B)(2) *w/Exc. 1,2, & 3*			X						X	X	X	X	

ARTICLE 701 – LEGALLY REQUIRED STANDBY SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	♦	♦		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

The ♦ designation indicates that the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures subject to HCD 1 and/or HCD 2.

ARTICLE 702 – OPTIONAL STANDBY SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 705 – INTERCONNECTED ELECTRIC POWER PRODUCTION SOURCES

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 708 – CRITICAL OPERATIONS POWER SYSTEMS (COPS)

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article			X	X			X	X					
Adopt Entire Article as amended (amended sections listed below)									X	X	X	X	
Adopt only those sections that are listed below													
Article / Section													
708.1									X	X	X	X	

ARTICLE 720 – CIRCUITS AND EQUIPMENT OPERATING AT LESS THAN 50 VOLTS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 725 – CLASS 1, CLASS 2, AND CLASS 3 REMOTE-CONTROL, SIGNALING, AND POWER-LIMITED CIRCUITS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 727 – INSTRUMENTATION TRAY CABLE: TYPE ITC

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 728 – FIRE-RESISTIVE CABLE SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article			X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 750 – ENERGY MANAGEMENT SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article			X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

ARTICLE 760 – FIRE ALARM SYSTEMS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X			♦	♦				X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)			X				X	X					
Adopt only those sections that are listed below						X							
Article / Section													
760 FPN						X							
760.1.1			X										
760.176 (F)(2)							X	X					
760.760 (G)(2)							X	X					

The ♦ designation indicates that the State Fire Marshal's adoption of this chapter or individual sections is applicable to structures subject to HCD 1 and/or HCD 2.

ARTICLE 770 – OPTICAL FIBER CABLES AND RACEWAYS

Adopting Agency	BSC	BSC-CG	SFM	HCD		DSA			OSHPD				DPH
				1	2	AC	SS	SS/CC	1	2	3	4	
Adopt Entire Article	X		X	X	X		X	X	X	X	X	X	
Adopt Entire Article as amended (amended sections listed below)													
Adopt only those sections that are listed below													
Article / Section													

Chapter 7 Special Conditions

ARTICLE 700
Emergency Systems

I. General

700.1 Scope. The provisions of this article apply to the electrical safety of the installation, operation, and maintenance of emergency systems consisting of circuits and equipment intended to supply, distribute, and control electricity for illumination, power, or both, to required facilities when the normal electrical supply or system is interrupted.

Informational Note No. 1: For further information regarding wiring and installation of emergency systems in health care facilities, see Article 517.

Informational Note No. 2: For further information regarding performance and maintenance of emergency systems in health care facilities, see NFPA 99-2012, *Health Care Facilities Code*.

Informational Note No. 3: For specification of locations where emergency lighting is considered essential to life safety, see NFPA *101*-2012, *Life Safety Code*.

Informational Note No. 4: For further information regarding performance of emergency and standby power systems, see NFPA 110-2013, *Standard for Emergency and Standby Power Systems*.

700.2 Definitions.

Emergency Systems. Those systems legally required and classed as emergency by municipal, state, federal, or other codes, or by any governmental agency having jurisdiction. These systems are intended to automatically supply illumination, power, or both, to designated areas and equipment in the event of failure of the normal supply or in the event of accident to elements of a system intended to supply, distribute, and control power and illumination essential for safety to human life. *(See Figure 700.2.)*

Informational Note: Emergency systems are generally installed in places of assembly where artificial illumination is required for safe exiting and for panic control in buildings subject to occupancy by large numbers of persons, such as hotels, theaters, sports arenas, health care facilities, and similar institutions. Emergency systems may also provide power for such functions as ventilation where essential to maintain life, fire detection and alarm systems, elevators, fire pumps, public safety communications systems, industrial processes where current interruption would produce serious life safety or health hazards, and similar functions.

Relay, Automatic Load Control. A device used to set normally dimmed or normally-off switched emergency lighting equipment to full power illumination levels in the event of a loss of the normal supply by bypassing the dimming/switching controls, and to return the emergency lighting equipment to normal status when the device senses the normal supply has been restored.

Informational Note: See ANSI/UL 924, *Emergency Lighting and Power Equipment*, for the requirements covering automatic load control relays.

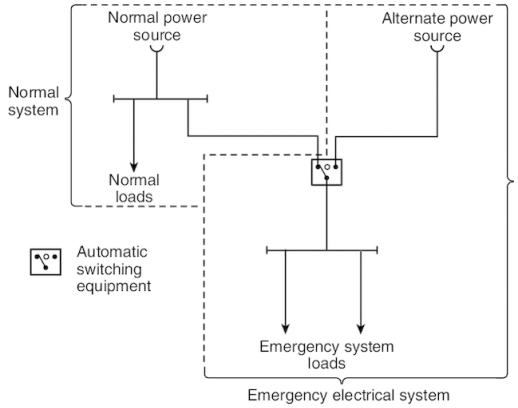

Figure 700.2 Emergency Systems.

700.3 Tests and Maintenance.

(A) Conduct or Witness Test. The authority having jurisdiction shall conduct or witness a test of the complete system upon installation and periodically afterward.

[OSHPD 1, 2, 3 & 4] Permanently installed on-site generator sets for health care facilities shall be tested in accordance with NFPA 110, Standard for Emergency and Standby Power Systems, Section 7.13, Installation Acceptance. All safety devices shall be tested as specified in Section 7.13.4.5; however, the safety devices provided may comply with NFPA 99, Health Facilities, Section 6.4.1.1.17 in lieu of NFPA 110, Section 5.6.5.2. The emergency power supply system shall be considered as a Level 1 system for testing purposes. Upon loss of normal power, the emergency power supply system shall provide emergency power within 10 seconds as required by 700.12. C A C A C A C A C A C

(B) Tested Periodically. Systems shall be tested periodically on a schedule acceptable to the authority having jurisdiction to ensure the systems are maintained in proper operating condition. *[OSHPD 1] The authority having jurisdiction is Department of Public Health, Licensing and Certification.* C A

(C) Battery Systems Maintenance. Where battery systems or unit equipments are involved, including batteries used for starting, control, or ignition in auxiliary engines, the authority having jurisdiction shall require periodic maintenance.

(D) Written Record. A written record shall be kept of such tests and maintenance.

(E) Testing Under Load. Means for testing all emergency lighting and power systems during maximum anticipated load conditions shall be provided.

Informational Note: For information on testing and maintenance of emergency power supply systems (EPSSs), see NFPA 110-2013, *Standard for Emergency and Standby Power Systems.*

700.4 Capacity.

(A) Capacity and Rating. An emergency system shall have adequate capacity and rating for all loads to be operated simultaneously. The emergency system equipment shall be suitable for the maximum available fault current at its terminals.

HISTORY NOTE APPENDIX

California Electrical Code

Title 24, Part 3, California Code of Regulations

Notes

For prior history, see the History Note Appendix to the *California Electrical Code*, 2013 Triennial Edition, effective January 1, 2014.

1. (BSC 01/14, HCD 01/14, DSA-SS 01/14, OSHPD 01/14, SFM 01/14,) Adoption by reference of the *2014 National Electrical Code (NEC)* with necessary state amendments and repeal of the 2011 edition of the *NEC*; effective on January 1, 2017.

2. Errata to correct editorial errors within the preface as well as throughout various chapters in this code. Effective January 1, 2017.