

EFFICIENCY STANDARDS

CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 6

SUBCHAPTER 1 ALL OCCUPANCIES—GENERAL PROVISIONS

SECTION 100 – SCOPE

(a) **Buildings Covered.** The provisions of Title 24, Part 6, apply to all buildings:

1. That are of Occupancy Group A, B, E, F, H, M, R, S, or U; and
2. For which an application for a building permit or renewal of an existing permit is filed (or is required by law to be filed) on or after the effective date of the provisions, or which are constructed by a governmental agency; and
3. That are:
 - A. Unconditioned, indirectly or directly conditioned by mechanical heating or mechanical cooling or process spaces; or
 - B. Low-rise residential buildings that are heated with a wood heater or another non-mechanical heating system.

EXCEPTION 1 to Section 100 (a): Qualified historic buildings, as defined in the [State-California](#) Historic Building Code (Title 24, Part 8).

EXCEPTION 2 to Section 100 (a): Building departments, at their discretion, may exempt temporary buildings, temporary outdoor lighting or temporary lighting in an unconditioned building, or structures erected in response to a natural disaster. Temporary buildings or structures shall be completely removed upon the expiration of the time limit stated in the permit.

(b) **Parts of Buildings Regulated.** The provisions of Title 24, Part 6, apply to the building envelope, space-conditioning systems, water-heating systems, and indoor lighting systems of buildings, and outdoor lighting systems and signs located either indoors or outdoors that are covered by Section 100 (a) as set forth in TABLE 100-A.

(c) **Floors and Habitable Stories.**

1. Only habitable floors that have at least 50 percent of their volume above grade as defined in the CBC shall be counted in determining how many habitable stories a building has.
2. All conditioned space in a floor shall comply with Title 24, Part 6, whether or not the floor is above grade and whether or not it is habitable. All unconditioned space in a floor shall comply with the lighting requirements of Title 24, Part 6, whether or not the floor is above grade and whether or not it is habitable.

(d) **Outdoor Lighting and Indoor and Outdoor Signs.** The provisions of Title 24, Part 6, apply to outdoor lighting systems and to signs located either indoors or outdoors as set forth in TABLE 100-A.

(e) **Sections Applicable to Particular Buildings.** TABLE 100-A and this subsection list the provisions of Title 24, Part 6, that are applicable to different types of buildings covered by Section 100 (a).

1. **All buildings.** Sections 100 through 119 apply to all buildings.

EXCEPTION to Section 100(e)1: Spaces or requirements not listed in TABLE 100-A

2. **Newly constructed buildings.**

A. **All newly constructed buildings.** Sections 110 through 119 apply to all newly constructed buildings within the scope of Section 100 (a). In addition, newly constructed buildings shall meet the requirements of B, C or D, as applicable.

B. **Nonresidential, high-rise residential, and hotel/motel buildings that are mechanically heated or mechanically cooled.**

- i. **Sections applicable.** Sections 120 through 147 apply to newly constructed nonresidential buildings, high-rise residential buildings, and hotels/motels that are mechanically heated or mechanically cooled.

ii. Compliance approaches. In order to comply with Title 24, Part 6, newly constructed nonresidential buildings, high-rise residential buildings, and hotels/motels that are mechanically heated or mechanically cooled must meet the requirements of:

a. Mandatory measures: The applicable provisions of Sections 120 through 139; and

b. Either:

Performance approach: Section 141; or

Prescriptive approach: Sections 142 through 148.

C. **Unconditioned nonresidential buildings and process spaces.** Sections 119, 130 through 132, 143 (c), 146, 147, and 148 apply to all newly constructed unconditioned buildings and process spaces within the scope of Section 100 (a).

D. **Low-rise residential buildings.**

i. Sections applicable. Sections 150 through 151 apply to newly constructed low-rise residential buildings.

ii. Compliance approaches. To comply with Title 24, Part 6, newly constructed low-rise residential buildings must meet the requirements of:

a. Mandatory measures: The applicable provisions of Sections 110 through 119, and 150; and

b. Either:

Performance approach: Section 151 (a) through (e); or

Prescriptive approach: Sections 151 (a) and (f).

EXCEPTION 1 to Section 100 (d) 2 D ii b: Seasonally occupied agricultural housing limited by state or federal agency contract to occupancy not more than 180 days in any calendar year.

EXCEPTION 2 to Section 100 (d) 2 D ii b: Low-rise residential buildings that are heated with a wood heater or another non-mechanical heating system and that use no energy obtained from depletable sources for lighting or water heating.

3. **New construction in existing buildings.**

A. **Nonresidential, high-rise residential, and hotel/motel buildings.** Section 149 applies to new construction in existing buildings that will be nonresidential, high-rise residential, and hotel/motel occupancies.

B. **Low-rise residential buildings.** Section 152 applies to new construction in existing buildings that will be low-rise residential occupancies.

4. **Installation of insulation in existing buildings.** Section 118 (d) applies to buildings in which insulation is being installed in existing attics, or on existing water heaters, or existing space conditioning ducts.

5. **Outdoor Lighting.** Sections 119, 130, 132, 147, and 150 apply to newly constructed outdoor lighting systems, and Section 149 applies to outdoor lighting additions and alterations.

6. **Signs.** Sections 130, 132 and 148 apply to newly constructed signs located either indoors or outdoors and Section 149 applies to sign alterations located either indoors or outdoors.

(f) **Mixed Occupancy.** When a building is designed and constructed for more than one type of occupancy, the space for each occupancy shall meet the provisions of Title 24, Part 6, applicable to that occupancy.

EXCEPTION to Section 100 (f): If ~~a residential one~~ occupancy constitutes ~~at least 90~~ **more than 70** percent¹ of the conditioned floor area of the building ~~or a nonresidential occupancy constitutes more than 90 percent of the conditioned floor area of the building~~, the entire building ~~envelope, HVAC, and water heating~~ may comply with the provisions of Title 24, Part 6 applicable to that occupancy, provided that the applicable ~~lighting requirements in Sections 146 through 148 or 150(k) are met for each occupancy and space and~~ mandatory measures in Sections 110 through 139, and 150, are met for each occupancy ~~and space~~.

(g) **Administrative Requirements.** Administrative requirements relating to permit requirements, enforcement by the commission, locally adopted energy standards, interpretations, claims of exemption, approved calculation methods,

rights of appeal, and certification and labeling requirements of fenestration products and roofing products are specified in California Code of Regulations, Title 24, Part 1, Sections 10-101 to 10-114.

(h) **Certification Requirements for Manufactured Devices.** Title 24, Part 6, limits the installation of the following manufactured devices to those that have been certified by their manufacturer to meet or exceed minimum specifications or efficiencies adopted by the commission.

1. Central air-conditioning heat pumps and other central air conditioners (Sections 111 and 112).
2. Combination equipment: space heating and cooling, or space heating and water heating [Section 112 (a) 3].
3. Fenestration products (Section 116).
4. Fluorescent lamp ballasts (Section 111).
5. Gas space heaters (Sections 111 and 112).
6. Insulating materials and cool roofs (Section 118).
7. Lighting control devices and lighting control systems (Section 119).
8. Oil-fired storage water heaters (Section 113).
9. Other heating and cooling equipment (Sections 111 and 112).
10. Plumbing fittings (Section 111).
11. Pool heaters (Section 114).
12. Refrigerators, refrigerator-freezers, and freezers (Section 111).
13. Room air conditioners (Section 111).
14. Slab floor perimeter insulation [Section 150 (l)].
15. Water heaters (Section 113).

The certification status of any such manufactured device may be confirmed only by reference to:

1. A directory published or approved by the commission; or
2. A copy of the application for certification from the manufacturer and the letter of acceptance from the commission staff; or
3. Written confirmation from the publisher of a commission-approved directory that a device has been certified; or
4. A commission-approved label on the device.

NOTE: Title 24, Part 6, does not require a builder, designer, owner, operator, or enforcing agency to test any certified device to determine its compliance with minimum specifications or efficiencies adopted by the commission.

TABLE 100-A APPLICATION OF STANDARDS

Occupancies	Application	Mandatory	Prescriptive	Performance	Additions/Alterations
General Provisions		100, 101, 102, 110, 111			
Nonresidential, High-Rise Residential, And Hotels/Motels	General	140	142	141	149
	Envelope (conditioned)	116, 117, 118	143		
	Envelope (unconditioned, process spaces)		143 (c)		
	HVAC (conditioned)	112, 115, 120-125	144		
	Water Heating (conditioned)	113, 123	145		
	Indoor Lighting (conditioned, process spaces)	119, 130, 131	143 (c), 146		
	Indoor Lighting (unconditioned)	119, 130, 131	143 (c), 146		
	Outdoor Lighting	119, 130, 132	147		
<u>Refrigerated Warehouse</u>	<u>Envelope and HVAC</u>	<u>126</u>	<u>N.A.</u>	N.A.	
Signs	Indoor and Outdoor	130, 132 133	148		
Low-Rise Residential	General	150	151 (a, f)	151 (a-e)	152
	Envelope (conditioned)	116, 117, 118, 150 (a-g, l)			
	HVAC (conditioned)	112, 115, 150 (h, i, m)			
	Water heating (conditioned)	113, 150 (j)			
	Indoor Lighting (conditioned and parking garages)	119(d), 150 (k)			
	Outdoor Lighting	119(d), 150 (k)			

SECTION 101 – DEFINITIONS AND RULES OF CONSTRUCTION

(a) Rules of Construction.

1. Where the context requires, the singular includes the plural and the plural includes the singular.
2. The use of "and" in a conjunctive provision means that all elements in the provision must be complied with, or must exist to make the provision applicable. Where compliance with one or more elements suffices, or where existence of one or more elements makes the provision applicable, "or" (rather than "and/or") is used.
3. "Shall" is mandatory and "may" is permissive.

(b) Definitions. Terms, phrases, words and their derivatives in Title 24, Part 6, shall be defined as specified in Section 101. Terms, phrases, words and their derivatives not found in Section 101 shall be defined as specified in Title 24, Part 2, Chapter 2 of the California Code of Regulations. Terms, phrases, words and their derivatives not found in either Title 24, Part 6, or Chapter 2 shall be defined as specified in Title 24, Part 2, Chapter 2 of the *California Building Code*. Where terms, phrases, words and their derivatives are not defined in any of the references above, they shall be defined as specified in *Webster's Third New International Dictionary of the English Language, Unabridged* (1987 edition), unless the context requires otherwise.

ACCA is the Air-~~e~~Conditioning Contractors of America.

ACCA MANUAL J is the Air Conditioning Contractors of America document entitled “Manual J - Residential Load Calculation, Eighth Edition” (2003).

ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE is a description of test procedures in the Nonresidential AppendicesACM Manual that includes equipment and systems to be tested, functions to be tested,

conditions under which the test shall be performed, the scope of the tests, results to be obtained, and measurable criteria for acceptable performance.

ACCENT (LIGHT) is a directional luminaire designed to highlight or spotlight objects. It can be recessed, surface mounted, or mounted to a pendant, stem, or track.

ACCESSIBLE is having access thereto, but which first may require removal or opening of access panels, doors, or similar obstructions.

ADDITION is any change to a building that increases conditioned floor area and conditioned volume. See also, “newly conditioned space.” Addition is also any change that increases the floor area or volume of an unconditioned building of an occupancy group or type regulated by Part 6. Addition is also any change that increases the illuminated area of an outdoor lighting application regulated by Part 6.

AGRICULTURAL BUILDING is a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. It is not a structure that is a place of human habitation, a place of employment where agricultural products are processed, treated or packaged, or a place used by the public.

AIR-TO-AIR HEAT EXCHANGER is a device which will reduce the heat losses or gains ~~which that~~ occur when a building is mechanically ventilated, by transferring heat between the conditioned air being exhausted and ~~the unconditioned outside~~ air being supplied.

ALTERATION is any change to a building's water-heating system, space-conditioning system, lighting system, or envelope that is not an addition. Alteration is also any change that is regulated by Part 6 to an outdoor lighting system ~~that is regulated by Part 6~~ that is not an addition. Alteration is also any change that is regulated by Part 6 to signs located either indoors or outdoors ~~that is regulated by Part 6~~.

ALTERNATIVE CALCULATION METHODS (ACMs) are the ~~commission's~~ Commission's Public Domain Computer Programs, one of the ~~commission's~~ Commission's Simplified Calculation Methods, or any other calculation method approved by the ~~e~~Commission. ACMs are also referred to as compliance software.

ALTERNATIVE CALCULATION METHODS APPROVAL MANUAL is the document that specifies the procedures and tests required for approval of Alternative Calculation Methods.

ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE) is a measure of the percentage of heat from the combustion of gas or oil which is transferred to the space being heated during a year, as determined using the applicable test method in the Appliance Efficiency Regulations or Section 112.

ANNUNCIATED is a type of visual signaling device that indicates the on, off, or other status of a load.

ANSI is the American National Standards Institute.

ANSI Z21.10.3 is the American National Standards Institute document entitled “Gas Water Heaters, Volume I, Storage Water Heaters with input ratings above 75,000 Btu per hour,” 2001 (ANSI Z21.10.3-2001).

ANSI Z21.13 is the American National Standards Institute document entitled “Gas-Fired Low Pressure Steam and Hot Water Boilers,” 2000 (ANSI Z21.13-2000).

ANSI Z21.40.4 is the American National Standards Institute document entitled “Performance Testing and Rating of Gas-Fired, Air Conditioning and Heat Pump Appliances,” 1996 (ANSI Z21.40.4-1996).

ANSI Z21.47 is the American National Standards Institute document entitled “Gas-Fired Central Furnaces,” 2001 (ANSI Z21.47-2001).

ANSI Z83.8 is the American National Standards Institute document entitled “Gas Unit Heaters and Gas-Fired Duct Furnaces,” 2002 (ANSI Z83.8 -2002).

APPLIANCE EFFICIENCY REGULATIONS are the regulations in Title 20, Section 1601 et seq. of the California Code of Regulations.

APPROVED BY THE COMMISSION means approval under Section 25402.1 of the Public Resources Code.

APPROVED CALCULATION METHOD (See “alternative calculation methods.”)

ARI is the Air-conditioning and Refrigeration Institute.

ARI 210/240 is the Air-conditioning and Refrigeration Institute document entitled “Unitary Air-Conditioning and Air-Source Heat Pump Equipment,” 2003 (ARI 210/240-2003).

ARI 310/380 is the Air-conditioning and Refrigeration Institute document entitled “Packaged Terminal Air-Conditioners and Heat Pumps,” 1993 (ARI 310/380-93).

ARI 320 is the Air-conditioning and Refrigeration Institute document entitled “Water-Source Heat Pumps,” 1998 (ARI 320-98).

ARI 325 is the Air-conditioning and Refrigeration Institute document entitled “Ground Water-Source Heat Pumps,” 1998 (ARI 325-98).

ARI 340/360 is the Air-conditioning and Refrigeration Institute document entitled “Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment,” 2000 (ARI 340/360-2000).

ARI 365 is the Air-conditioning and Refrigeration Institute document entitled, "Commercial and Industrial Unitary Air-Conditioning Condensing Units," 2002 (ARI 365-2002).

ARI 460 is the Air-conditioning and Refrigeration Institute document entitled “Remote Mechanical-Draft Air-Cooled Refrigerant Condensers,” 2000 (ARI 460-2000).

ARI 550/590 is the Air-conditioning and Refrigeration Institute document entitled “Standard for Water Chilling Packages Using the Vapor Compression Cycle,” 1998 (ARI 550/590-98).

ARI 560 is the Air-conditioning and Refrigeration Institute document entitled “Absorption Water Chilling and Water Heating Packages,” 2000 (ARI 560-2000).

ASHRAE is the American Society of Heating, Refrigerating, and Air-conditioning Engineers.

ASHRAE CLIMATIC DATA FOR REGION X is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document entitled "ASHRAE Climatic Data for Region X, Arizona, California, Hawaii and Nevada," Publication SPCDX, 1982 and “Supplement,” 1994.

ASHRAE HANDBOOK, APPLICATIONS VOLUME is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document entitled "ASHRAE Handbook: Heating, Ventilating, and Air-Conditioning Applications" (2003).

ASHRAE HANDBOOK, EQUIPMENT VOLUME is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document entitled "ASHRAE Handbook: Heating, Ventilating, and Air-Conditioning Systems and Equipment" (2000).

ASHRAE HANDBOOK, FUNDAMENTALS VOLUME is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document entitled "ASHRAE Handbook: Fundamentals" (2001).

ASHRAE 55 is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document entitled "Thermal Environmental Conditions for Human Occupancy," 1992 (ASHRAE Standard 55-1992).

ASME is the American Society of Mechanical Engineers.

ASTM is the American Society for Testing and Materials.

ASTM C55 is the American Society for Testing and Materials document entitled “Standard Specification for Concrete Brick,” 2001 (ASTM C55-01).

ASTM C177 is the American Society for Testing and Materials document entitled “Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus,” 1997 (ASTM C177-97).

ASTM C272 is the American Society for Testing and Materials document entitled “Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions,” 2001 (ASTM C272-01).

ASTM C335 is the American Society for Testing and Materials document entitled “Standard Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation,” 1995 (ASTM C335-95).

ASTM C518 is the American Society for Testing and Materials document entitled “Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus,” 2002 (ASTM C518-02).

ASTM C731 is the American Society for Testing and Materials document entitled “Standard Test Method for Extrudability, After Package Aging of Latex Sealants,” 2000 (ASTM C731-00).

ASTM C732 is the American Society for Testing and Materials document entitled “Standard Test Method for Aging Effects of Artificial Weathering on Latex Sealants,” 2001 (ASTM C732-01).

ASTM C1167 is the American Society for Testing and Materials document entitled “Standard Specification for Clay Roof Tiles,” 1996 (ASTM C1167-96).

ASTM C1371 is the American Society for Testing and Materials document entitled “Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers,” 1998 (ASTM C1371-98).

ASTM D822 is the American Society of Testing and Materials document entitled, “Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings,” 2001 (ASTM D822-01).

ASTM D1003 is the American Society for Testing and Materials document entitled “Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics,” 2000 (ANSI/ASTM D1003-00).

ASTM D2824 is the American Society of Testing and Materials document entitled “Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings, Nonfibered, Asbestos Fibered, and Fibered without Asbestos,” 2002 (ASTM D2824-02).

ASTM D3805 is the American Society of Testing and Materials document entitled “Standard Guide for Application of Aluminum-Pigmented Asphalt Roof Coatings,” 1997 (ASTM D3805-97 (reapproved 2003)).

ASTM D6848 is the American Society of Testing and Materials document entitled “Standard Specification for Aluminum-Pigmented Emulsified Asphalt Used as a Protective Coating for Roofing,” 2002 (ASTM D6848-02).

ASTM D4798 is the American Society for Testing and Materials document entitled “Standard Test Method for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method),” 2001 (ASTM D4798-01).

ASTM E96 is the American Society for Testing and Materials document entitled “Standard Test Methods for Water Vapor Transmission of Materials,” 200 (ASTM E96-00).

ASTM E283 is the American Society for Testing and Materials document entitled “Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen,” 1991 (ASTM E283-91(1999)).

ASTM E408 is the American Society for Testing and Materials document entitled, “Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques,” 1971 (ASTM E408-71(2002)).

ATRIUM is a large volume space created by openings connecting two or more stories and is used for purposes other than an enclosed stairway, an elevator hoistway, an escalator opening, or as a utility shaft for plumbing, electrical, air conditioning or other equipment and is not a mall.

AUTOMATIC is capable of operating without human intervention.

AUTOMATIC MULTI-LEVEL DAYLIGHTING CONTROL is a multi-level lighting control that automatically reduces lighting in multiple steps or continuous dimming in response to available daylight. This control uses one or more photosensors to detect changes in daylight illumination and then change the electric lighting level in response to the daylight changes.

AUTOMATIC TIME SWITCH CONTROL DEVICES are devices capable of automatically turning loads off and on based on time schedules.

BATHROOM is a room containing a shower, tub, toilet or a sink that is used for personal hygiene. See “Residential Space Type”.

BAY WINDOW is a combination assembly which is composed of three or more individual windows either joined side by side or installed within opaque assemblies and which projects away from the wall on which it is installed. Center windows, if used are parallel to the wall on which the bay is installed. The two side windows are angled with respect to the center window(s). Common angles are 30° and 45°, although other angles are sometimes employed.

BELOW-GRADE WALL is the portion of a wall, enclosing conditioned space, that is below the grade line.

BUILDING is any structure or space covered by Section 100 of the Building Energy Efficiency Standards, for which a permit is sought

BUILDING ENVELOPE is the ensemble of exterior and demising partitions of a building that enclose conditioned space.

CALIFORNIA ELECTRICAL CODE is the ~~2001-2006~~ California Electrical Code.

CALIFORNIA HISTORICAL BUILDING CODE is the California Historical Building Code, California Code of Regulations, Title 24, Part 8 and Part 2 (Chapter 34)

CAPTIVE-KEY OVERRIDE is a type of lighting control in which the key that activates the override cannot be released when the lights are in the on position.

CBC is the ~~2001-2006~~ California Building Code.

CERTIFYING ORGANIZATION is an independent organization recognized by the commission to certify manufactured devices for performance values in accordance with procedures adopted by the commission.

CHANDELIERS, ~~(see “ornamental chandeliers.”)~~ is a ceiling-mounted, close-to-ceiling, or suspended decorative luminaire that uses glass, crystal, ornamental metals, or other decorative material and that typically is used in hotel/motels, restaurants, or churches as a significant element in the interior architecture

CLIMATE CONTROL SYSTEM ~~(See “space conditioning system.”)~~

CLIMATE ZONES are the 16 geographic areas of California for which the ~~e~~C commission has established typical weather data, prescriptive packages and energy budgets. Climate zone boundary descriptions are in the document "California Climate Zone Descriptions" (July 1995), incorporated herein by reference. FIGURE 101-A is an approximate map of the 16 climate zones.

CMC is the ~~2001-2006~~ California Mechanical Code.

COEFFICIENT OF PERFORMANCE (COP), COOLING, is the ratio of the rate of net heat removal to the rate of total energy input, calculated under designated operating conditions and expressed in consistent units, as determined using the applicable test method in the Appliance Efficiency Regulations or Section 112.

COEFFICIENT OF PERFORMANCE (COP), HEATING, is the ratio of the rate of net heat output to the rate of total energy input, calculated under designated operating conditions and expressed in consistent units, as determined using the applicable test method in the Appliance Efficiency Regulations or Section 112.

COEFFICIENT OF PERFORMANCE (COP), HEAT PUMP is the ratio of the rate of useful heat output delivered by the complete heat pump unit (exclusive of supplementary heating) to the corresponding rate of energy input, in consistent units and as determined using the applicable test method in Appliance Efficiency Regulations or Section 112

COMBUSTION EFFICIENCY is a measure of the percentage of heat from the combustion of gas or oil that is transferred to the space being heated or lost as jacket loss

COMMISSION is the California State Energy Resources Conservation and Development Commission.

COMPLETE BUILDING is an entire building with one occupancy making up 90 percent of the floor area (see also “entire building”).

CONDITIONED FLOOR AREA (CFA) is the floor area (in square feet) of enclosed conditioned space on all floors of a building, as measured at the floor level of the exterior surfaces of exterior walls enclosing the conditioned space.

CONDITIONED SPACE is space in a building that is either directly conditioned or indirectly conditioned.

CONDITIONED SPACE, DIRECTLY is an enclosed space that is provided with wood heating, is provided with mechanical heating that has a capacity exceeding 10 Btu/hr-ft², or is provided with mechanical cooling that has a capacity exceeding 5 Btu/hr-ft², unless the space-conditioning system is designed for a process space. (See “Process space”)

CONDITIONED SPACE, INDIRECTLY is enclosed space, including, but not limited to, unconditioned volume in atria, that (1) is not directly conditioned space; and (2) either (a) has a thermal transmittance area product (UA) to directly conditioned space exceeding that to the outdoors or to unconditioned space and does not have fixed vents or openings to

the outdoors or to unconditioned space, or (b) is a space through which air from directly conditioned spaces is transferred at a rate exceeding three air changes per hour.

CONDITIONED VOLUME is the total volume (in cubic feet) of the conditioned space within a building.

CONTINUOUS DIMMING ~~is a lighting control method that is capable of varying the light output of lamps over a continuous range from full light output to minimum light output. (See “dimming, continuous.”)~~

COOL ROOF is a roofing material with high thermal emittance and high solar reflectance, or low thermal emittance and exceptionally high solar reflectance as specified in Section 118 (i) that reduces heat gain through the roof.

COOLING EQUIPMENT is equipment used to provide mechanical cooling for a room or rooms in a building.

CRAWL SPACE is a space immediately under the first floor of a building adjacent to grade.

CRRC-1 is the Cool Roof Rating Council document entitled “Product Rating Program Manual.”

CTI is the Cooling ~~Power~~ Technology Institute.

CTI ATC-105 is the Cooling ~~Power~~ Technology Institute document entitled “Acceptance Test Code for Water Cooling Towers,” 2000 (CTI ATC-105-00).

CTI STD-201 is the Cooling ~~Power~~ Technology Institute document entitled “Certification Standard for Commercial Water Cooling Towers,” 2002 (CTI STD-201-02).

CURTAIN WALL is an external nonbearing wall intended to separate the exterior and interior environments, which may consist entirely (or principally) of a combination of framing materials, glass and glazing, opaque in-fill and other surfacing materials supported by (or within) a framework

C-VALUE (also known as C-factor) is the time rate of heat flow through unit area of a body induced by a unit temperature difference between the body surfaces, in Btu (hr. x ft.² x °F). It is not the same as K-value or K-factor.

DAYLIGHT AREA is the floor area under skylights or next to windows. The daylight area includes Primary Sidelit Daylight Area, Secondary Sidelit Daylight Area, and Skylit Daylight Area. ~~DAYLT AREA~~ is the floor area that is illuminated by daylight through vertical glazing or skylights as specified in Section 131 (e).

DAYLIGHT AREA, PRIMARY SIDELIT is the floor area directly adjacent to vertical glazing. The Primary Sidelit Daylight Area is primary sidelit depth multiplied by the sidelit width. The sidelit width is the width of the window plus, on each side, the lesser of either 2 feet, the distance to a 60-inch or higher permanent partition or one half the distance to the closest skylight or vertical glazing. The primary sidelit depth is the horizontal distance perpendicular to the glazing which is the lesser of one window head height, the distance to the nearest 60-inch or higher permanent partition, or one half the distance to the closest skylight or vertical glazing.

DAYLIGHT AREA, SECONDARY SIDELIT is the floor area illuminated by vertical glazing, but not directly adjacent to the vertical glazing. The Secondary Daylight Area is secondary sidelit depth multiplied by the sidelit width, less the Primary Sidelit Daylight Area. The sidelit width is the width of the window plus, on each side, the lesser of either 2 feet, the distance to a 60-inch or higher permanent partition or one half the distance to the closest skylight or vertical glazing. The secondary sidelit depth is the horizontal distance perpendicular to the glazing which is the lesser of two window head heights, the distance to the nearest 60-inch or higher permanent partition, or one half the distance to the closest skylight or vertical glazing.

DAYLIGHT AREA, SKYLIT is the rough opening of the skylight, plus, in each horizontal direction perpendicular to the sides of the skylight opening, extended horizontally of the lateral and longitudinal dimensions of the skylight, the lesser of 70% of the floor-to-ceiling height, the distance to any permanent partition or permanent rack which is farther away than 70% of the distance between the top of the permanent partition or permanent rack and the ceiling, or one half the horizontal distance to the edge of the closest skylight or vertical glazing.

DEADBAND is the temperature range within which the HVAC system is neither calling for heating or cooling.

DECORATIVE GAS APPLIANCE is a gas appliance that is designed or installed for visual effect only, cannot burn solid wood, and simulates a fire in a fireplace.

DEGREE DAY, HEATING, is a unit, based upon temperature difference and time, used in estimating fuel consumption and specifying nominal annual heating load of a building. For any one day, when the mean temperature is less than 65°F,

there exist as many degree days as there are Fahrenheit degrees difference in temperature between the mean temperature for the day and 65°F. The number of degree days for specific geographical locations are those listed in the Residential Manual. For those localities not listed in the Residential Manual, the number of degree days is as determined by the applicable enforcing agency.

DEMAND RESPONSE is controlling electricity loads in buildings in response to an electronic signal sent by the local utility requesting their customers to reduce electricity consumption.

DEMAND RESPONSE PERIOD is a period of time during which the local utility is curtailing electricity loads by sending out a demand response signal.

DEMAND RESPONSE SIGNAL is an electronic signal sent out by the local utility indicating a request to their customers to curtail electricity consumption.

DEMAND RESPONSIVE LIGHTING CONTROL is a control that reduces lighting power consumption in response to a demand response signal.

DEMISING PARTITION ~~S~~are is a barrier-wall, fenestration, floor, or ceiling that separates conditioned space from enclosed unconditioned space.

DEMISING WALL is ~~a wall that is a demising partition.~~

DESIGN CONDITIONS are the parameters and conditions used to determine the performance requirements of space-conditioning systems. Design conditions for determining design heating and cooling loads are specified in Section 144 (b) for nonresidential, high-rise residential, and hotel/motel buildings and in Section 150-(h) for low-rise residential buildings.

DESIGN HEAT GAIN RATE is the total calculated heat gain through the building envelope under design conditions.

DESIGN HEAT LOSS RATE is the total calculated heat loss through the building envelope under design conditions.

DIMMING, CONTINUOUS is a lighting control method that is capable of varying the light output of lamps over a continuous range from full light output to minimum light output.

DIMMING, STEPPED is a lighting control method that varies the light output of lamps in one or more predetermined discrete steps between full light output and off.

DIRECT DIGITAL CONTROL (DDC) is a type of control where controlled and monitored analog or binary data, such as temperature and contact closures, are converted to digital format for manipulation and calculations by a digital computer or microprocessor, then converted back to analog or binary form to control mechanical devices.

DIRECTLY CONDITIONED SPACE is ~~an enclosed space that is provided with wood heating, is provided with mechanical heating that has a capacity exceeding 10 Btu/(hr.×ft.²), or is provided with mechanical cooling that has a capacity exceeding 5 Btu/(hr.×ft.²), unless the space-conditioning system is designed for a process space. (See “Process space”)~~

DISPLAY LIGHTING is lighting confined to the area of a display that provides a higher level of illuminance than the level of surrounding ambient illuminance.

DISPLAY PERIMETER is the length of an exterior wall in a Group B; Group F, Division 1; or Group M Occupancy that immediately abuts a public sidewalk, measured at the sidewalk level for each story that abuts a public sidewalk.

DOOR is an operable opening in the building envelope that is not a fenestration product, including swinging and roll-up doors, fire doors, and access hatches. Doors that are more than one-half glass in area are considered a fenestration product.

DUAL-GLAZED GREENHOUSE WINDOWS are a type of dual-glazed fenestration product which adds conditioned volume but not conditioned floor area to a building.

DUCT SEALING is a procedure for installing a space conditioning distribution system that minimizes leakage of air from or to the distribution system. Minimum specifications for installation procedures, materials, diagnostic testing and field verification are contained in the Residential [Appendix RA4](#) and [Reference](#) Nonresidential [Appendix NA1ACM Approval Manuals](#).

EAST-FACING is oriented to within 45 degrees of true east, including 45°00'00" south of east (SE), but excluding 45°00'00" north of east (NE). (See “orientation.”)

ECONOMIZER, AIR, is a ducting arrangement, including dampers, linkages, and an automatic control system, that allows a cooling supply fan system to supply outside air to reduce or eliminate the need for mechanical cooling.

ECONOMIZER, WATER, is a system by which the supply air of a cooling system is cooled directly or indirectly by evaporation of water, or other appropriate fluid, in order to reduce or eliminate the need for mechanical cooling.

EFFECTIVE APERTURE (EA) is a measure of the extent that vertical glazing or skylights are effective for providing daylighting. ~~The effective aperture for vertical glazing is specified in Exception 1 to Section 131 (e). The effective aperture for skylights is specified in Section 146 (a) 4 E.~~

EFFICACY, LAMP is the quotient of rated initial lamp lumens divided by the rated lamp power (watts), without including auxiliaries such as ballasts, transformers, and power supplies, ~~measured at 25°C according to IESNA and ANSI Standards.~~

~~**EFFICACY, LIGHTING SYSTEM** is the quotient of rated initial lamp lumens measured at 25°C according to IESNA and ANSI Standard times the ballast factor, divided by the input power (watts) to the ballast or other auxiliary device (e.g. transformer); expressed in lumens per watt.~~

ELECTRONICALLY-COMMUTATED MOTOR is a brushless DC motor with a permanent magnet rotor that is surrounded by stationary motor windings, and an electronic controller that varies rotor speed and direction by sequentially supplying DC current to the windings.

EMITTANCE, THERMAL is the ratio of the radiant heat flux emitted by a sample to that emitted by a blackbody radiator at the same temperature.

ENCLOSED SPACE is space that is substantially surrounded by solid surfaces, including walls, ceilings or roofs, doors, fenestration areas, and floors or ground.

ENERGY BUDGET is the maximum amount of Time Dependent Valuation (TDV) energy that a proposed building, or portion of a building, can be designed to consume, calculated with the approved procedures specified in Title 24, Part 6.

ENERGY EFFICIENCY RATIO (EER) is the ratio of net cooling capacity (in Btu/hr.) to total rate of electrical energy input (in watts), of a cooling system under designated operating conditions, as determined using the applicable test method in the Appliance Efficiency Regulations or Section 112.

~~**ENERGY FACTOR (EF)** of a water heater is a measure of overall water heater efficiency, is the ratio of energy output to energy consumption of a water heater, expressed in equivalent units, under designated operating conditions over a 24-hour use cycle, as determined using the applicable test method in the Appliance Efficiency Regulations.~~

ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) is often a computerized control system designed to regulate the energy consumption of a building by controlling the operation of energy consuming systems, such as the heating, ventilation and air conditioning (HVAC), lighting and water heating systems. The EMCS is also capable of monitoring environmental and system loads and adjusting HVAC operations in order to optimize energy usage and respond to demand response signals.

ENERGY OBTAINED FROM DEPLETABLE SOURCES is electricity purchased from a public utility, or any energy obtained from coal, oil, natural gas, or liquefied petroleum gases.

ENERGY OBTAINED FROM NONDEPLETABLE SOURCES is energy that is not energy obtained from depletable sources.

ENFORCEMENT AGENCY is the city, county, or state agency responsible for issuing a building permit.

ENTIRE BUILDING is the ensemble of all enclosed space in a building, including the space for which a permit is sought, plus all existing conditioned and unconditioned space within the structure.

ENVELOPE ~~means~~ (See “building envelope.”)

EXFILTRATION is uncontrolled outward air leakage from inside a building, including leakage through cracks and interstices, around windows and doors, and through any other exterior partition or duct penetration.

EXTERIOR DOOR is a door through an exterior partition that is opaque or has a glazed area that is less than or equal to one-half of the door area. Doors with a glazed area of more than one half of the door area are treated as a fenestration product.

EXTERIOR FLOOR/SOFFIT is a horizontal exterior partition, or a horizontal demising partition, under conditioned space. For low-rise residential occupancies, exterior floors also include those on grade.

EXTERIOR PARTITION is an opaque, translucent, or transparent solid barrier that separates conditioned space from ambient air or space that is not enclosed. For low-rise residential occupancies, exterior partitions also include barriers that separate conditioned space from unconditioned space, or the ground.

EXTERIOR ROOF/CEILING is an exterior partition, or a demising partition, that has a slope less than 60 degrees from horizontal, that has conditioned space below, and that is not an exterior door or skylight.

EXTERIOR ROOF/CEILING AREA is the area of the exterior surface of exterior roof/ceilings.

EXTERIOR WALL is any wall or element of a wall, or any member or group of members, which defines the exterior boundaries or courts of a building and which has a slope of 60 degrees or greater with the horizontal plane. An exterior wall or partition is not an exterior floor/soffit, exterior door, exterior roof/ceiling, window, skylight, or demising wall.

EXTERIOR WALL AREA is the area of the opaque exterior surface of exterior walls.

FACTORY ASSEMBLED COOLING TOWERS are cooling towers constructed from factory-assembled modules either shipped to the site in one piece or put together in the field.

FENESTRATION PRODUCT is any transparent or translucent material plus any sash, frame, mullions and dividers, in the envelope of a building, including, but not limited to, windows, sliding glass doors, french doors, skylights, curtain walls, garden windows, and other doors with a glazed area of more than one half of the door area.

FENESTRATION PRODUCT, FIELD-FABRICATED is a fenestration product including a glazed exterior door whose frame is made at the construction site of standard dimensional lumber or other materials that were not previously cut, or otherwise formed with the specific intention of being used to fabricate a fenestration product or exterior door. Field fabricated does not include site-built fenestration with a label certificate or products required to have temporary or permanent labels.

FENESTRATION PRODUCT, SITE-BUILT is fenestration designed to be field-glazed or field assembled units using specific factory cut or otherwise factory formed framing and glazing units that are manufactured with the intention of being assembled at the construction site and are provided with an NFRC label certificate for site-built fenestration. Examples of site-built fenestration include storefront systems, curtain walls, and atrium roof systems.

FENESTRATION SYSTEM is a collection of fenestration products included in the design of a building. (See “fenestration product”)

FIELD ERECTED COOLING TOWERS are cooling towers which are custom designed for a specific application and which can not be delivered to a project site in the form of factory assembled modules due to their size, configuration, or materials of construction.

~~**FIELD-FABRICATED FENESTRATION PRODUCT OR EXTERIOR DOOR** is a fenestration product or exterior door whose frame is made at the construction site of standard dimensional lumber or other materials that were not previously cut, or otherwise formed with the specific intention of being used to fabricate a fenestration product or exterior door. Field fabricated does not include site-built fenestration with a label certificate or products required to have temporary or permanent labels.~~

FIREPLACE is a hearth and fire chamber or similar prepared place in which a ~~solid fuel~~ fire may be ~~burned~~ made and which is built in conjunction with a flue or chimney, as defined in CBC Section 3102.2 and as further clarified in the CBC, including but not limited to factory-built fireplaces, masonry fireplaces, and masonry heaters as further clarified in the CBC.

FLOOR/SOFFIT TYPE is a type of floor/soffit assembly having a specific heat capacity, framing type, and U-factor.

FLUX is the rate of energy flow per unit area.

FOOD PREPARATION EQUIPMENT is cooking equipment intended for commercial use, including coffee machines, espresso coffee makers, conductive cookers, food warmers including heated food servers, fryers, griddles, nut warmers, ovens, popcorn makers, steam kettles, ranges, and cooking appliances for use in commercial kitchens, restaurants, or other business establishments where food is dispensed.

~~**FRAMED PARTITION or ASSEMBLY** is a partition or assembly constructed using separate structural members spaced not more than 32 inches on-center.~~

GAS COOLING EQUIPMENT is cooling equipment that produces chilled water or cold air using natural gas or liquefied petroleum gas as the primary energy source.

GAS HEATING SYSTEM is a natural gas or liquefied petroleum gas heating system.

GAS LOG is a self-contained, free-standing, open-flame, gas-burning appliance consisting of a metal frame or base supporting simulated logs, and designed for installation only in a vented fireplace.

GENERAL LIGHTING is lighting designed to provide a substantially uniform level of illumination throughout an area, exclusive of any provision for special visual tasks or decorative effect. When designed for lower-than-task illuminance used in conjunction with other specific task lighting systems, it is also called "ambient" lighting.

GLAZING (See "fenestration product.")

GOVERNMENTAL AGENCY is any public agency or subdivision thereof, including, but not limited to, any agency of the state, a county, a city, a district, an association of governments, or a joint power agency.

GROSS EXTERIOR ROOF AREA is the sum of the skylight area and the exterior roof/ceiling area.

GROSS EXTERIOR WALL AREA is the sum of the window area, door area, and exterior wall area.

GU-24 is the designation of a lamp holder and socket configuration, based on a coding system by the International Energy Consortium, where "G" indicates the broad type of two or more projecting contacts, such as pins or posts, "U" distinguishes between lamp and holder designs of similar type but that are not interchangeable due to electrical or mechanical requirements, and "24" indicates 24 millimeters center to center spacing of the electrical contact posts.

HABITABLE STORY is a story that contains space in which humans may work or live in reasonable comfort, and that has at least 50 percent of its volume above grade.

HEAT CAPACITY (HC) is the amount of heat necessary to raise the temperature of all the components of a unit area in an assembly by 1°F. It is calculated as the sum of the average thickness times the density times the specific heat for each component, and is expressed in Btu per square foot per °F.

HEAT PUMP is a device that is capable of heating by refrigeration, and that may include a capability for cooling.

HEATED SLAB FLOOR is a concrete slab floor or a lightweight concrete topping slab laid over a raised floor, with embedded space heating hot water pipes. The heating system using the heated slab floor is sometimes referred to as radiant slab floors or radiant heating.

HEATING EQUIPMENT is equipment used to provide mechanical heating for a room or rooms in a building.

HEATING SEASONAL PERFORMANCE FACTOR (HSPF) is the total heating output of a central air-conditioning heat pump (in Btu) during its normal use period for heating divided by the total electrical energy input (in watt-hours) during the same period, as determined using the applicable test method in the Appliance Efficiency Regulations.

HI is the Hydronics Institute of the Gas Appliance Manufacturers Association (GAMA).

HI HTG BOILER STANDARD is the Hydronics Institute document entitled "Testing and Rating Standard for Rating Boilers," 1989.

HIGH-RISE RESIDENTIAL BUILDING is a building, other than a hotel/motel, of Occupancy Group R, Division 1 with four or more habitable stories.

~~**HORIZONTAL GLAZING** (See "skylight.")~~

HOTEL/MOTEL is a building or buildings incorporating six or more guest rooms or a lobby serving six or more guest rooms, where the guest rooms are intended or designed to be used, or which are used, rented, or hired out to be occupied, or which are occupied for sleeping purposes by guests, and all conditioned spaces within the same building envelope. Hotel/motel also includes all conditioned spaces which are (1) on the same property as the hotel/motel, (2) served by the same central heating, ventilation, and air-conditioning system as the hotel/motel, and (3) integrally related to the functioning of the hotel/motel as such, including, but not limited to, exhibition facilities, meeting and conference facilities, food service facilities, lobbies, and laundries.

HVAC SYSTEM (See “space-conditioning system.”)

IESNA HB (See “IESNA Lighting Handbook”)

IESNA LIGHTING HANDBOOK is the Illuminating Engineering Society National Association document entitled “The IESNA Lighting Handbook: Reference and Applications, Ninth Edition” (2000).

~~**INDIRECTLY CONDITIONED SPACE** is enclosed space, including, but not limited to, unconditioned volume in atria, that (1) is not directly conditioned space; and (2) either (a) has a thermal transmittance area product (UA) to directly conditioned space exceeding that to the outdoors or to unconditioned space and does not have fixed vents or openings to the outdoors or to unconditioned space, or (b) is a space through which air from directly conditioned spaces is transferred at a rate exceeding three air changes per hour.~~

~~**INDUSTRIAL EQUIPMENT** is manufactured equipment used in industrial processes.~~

INFILTRATION is uncontrolled inward air leakage from outside a building or unconditioned space, including leakage through cracks and interstices, around windows and doors, and through any other exterior or demising partition or pipe or duct penetration.

INTEGRATED PART LOAD VALUE (IPLV) is a single-number figure of merit based on part load EER or COP expressing part load efficiency for air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities for the equipment as determined using the applicable test method in the Appliance Efficiency Regulations or Section 112.

ISO 13256-1 is the International Organization for Standardization document entitled "Water-source heat pumps -- Testing and rating for performance -- Part 1: Water-to-air and brine-to-air heat pumps," 1998.

~~**ISOLATION DEVICE** is a device that prevents the conditioning of a zone or group of zones in a building while other zones of the building are being conditioned.~~

~~**KITCHEN** in a residential dwelling unit is a room or area used for cooking, food storage and preparation and washing dishes, including associated counter tops and cabinets, refrigerator, stove, ovens, and floor area. Adjacent areas are considered kitchen if the lighting for the adjacent areas is on the same switch as the lighting for the kitchen. See Residential Space Type.~~

LIGHT EMITTING DIODE (LED), is an solid-state electrical diode which produces optical radiation, also known as Solid State Lighting (SSL).

LIGHTING FLOOR AREA is the floor area (in square feet) of enclosed space on all floors of a building, as measured at the floor level of the interior surfaces of all walls.

~~**LOW-RISE ENCLOSED SPACE** is an enclosed space located in a building with three or fewer stories.~~

~~**LOW-RISE RESIDENTIAL BUILDING** is a building, other than a hotel/motel that is of Occupancy Group R, Division 1, and is multi-family with three stories or less, or a single family residence three stories or less, or that is of Occupancy Group R, Division 3, or an Occupancy Group U building located on a residential site.~~

LOW-SLOPED ROOF is a roof that has a ratio of rise to run of 2:12 or less.

LPG is liquefied petroleum gas. Propane is one type of LPG.

LUMINAIRE is a complete lighting unit consisting of a lamp(s) and the parts designed to distribute the light, to position and protect the lamp(s), and to connect the lamp(s) to the power supply; commonly referred to as "lighting fixtures," or "instruments."

~~**MALL BUILDING** is a single building enclosing a number of tenants and occupants wherein two or more tenants have a main entrance into one or more malls.~~

MANUAL is capable of being operated by personal intervention.

MANUFACTURED DEVICE is any heating, cooling, ventilation, lighting, water heating, refrigeration, cooking, plumbing fitting, insulation, door, fenestration product, or any other appliance, device, equipment, or system subject to Sections 110 through 119 of Title 24, Part 6.

MANUFACTURED FENESTRATION PRODUCT is a fenestration product constructed of materials which are factory cut or otherwise factory formed with the specific intention of being used to fabricate a fenestration product. A manufactured fenestration product is typically assembled before delivery to a job site. However a “knocked-down” or partially assembled product sold as a fenestration product is also a manufactured fenestration product when provided with temporary and permanent labels as described in Section 10-111; otherwise it is a site-built fenestration product when provided with temporary and permanent labels as described in Section 10-111; otherwise it is a site-built fenestration product.

MECHANICAL COOLING is lowering the temperature within a space using refrigerant compressors or absorbers, desiccant dehumidifiers, or other systems that require energy from depletable sources to directly condition the space. In nonresidential, high-rise residential, and hotel/motel buildings, cooling of a space by direct or indirect evaporation of water alone is not considered mechanical cooling.

MECHANICAL HEATING is raising the temperature within a space using electric resistance heaters, fossil fuel burners, heat pumps, or other systems that require energy from depletable sources to directly condition the space.

METAL BUILDING is a complete integrated set of mutually dependent components and assemblies that form a building, which consists of a steel-framed superstructure and metal skin. This does not include structural glass or metal panels such as in a curtainwall system.

MODELING ASSUMPTIONS are the conditions (such as weather conditions, thermostat settings and schedules, internal gain schedules, etc.) that are used for calculating a building's annual energy consumption as specified in the Alternative Calculation Methods Manuals.

MOTION SENSOR, LIGHTING, is a device that automatically turns lights off soon after an area is vacated. The term ~~M~~otion ~~S~~ensor applies to a device that controls outdoor lighting systems. When the device is used to control indoor lighting systems, it is termed an occupant sensor. The device also may be called an occupancy sensor, ~~or~~ occupant-sensing device, or vacancy sensor.

MOVABLE SHADING DEVICE (See “operable shading device.”)

MULTI-LEVEL LIGHTING CONTROL is a lighting control that reduces lighting power in multiple steps while maintaining a reasonably uniform level of illuminance throughout the area controlled.

MULTISCENE ~~DIMMING-PROGRAMMABLE~~ SYSTEM is a lighting control device that has the capability of setting light levels throughout a continuous range, and that has pre-established settings within the range.

NEWLY CONDITIONED SPACE is any space being converted from unconditioned to directly conditioned or indirectly conditioned space. Newly conditioned space must comply with the requirements for an addition. See Section 149 for nonresidential occupancies and Section 152 for residential occupancies.

NEWLY CONSTRUCTED BUILDING is a building that has never been used or occupied for any purpose.

NFRC 100 is the National Fenestration Rating Council document entitled “NFRC 100: Procedure for Determining Fenestration Product U-factors.” (1997 or November 2002; NFRC 100 includes procedures for site fenestration formerly included in a separate document, NFRC 100-SB)¹

NFRC 200 is the National Fenestration Rating Council document entitled “NFRC 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.” (1995 or November 2002)²

NFRC 400 is the National Fenestration Rating Council document entitled “NFRC 400: Procedure for Determining Fenestration Product Air Leakage.” (1995 or January 2002)³

¹ Either the 1997 edition or the November 2002 edition may be used for product rating prior to April 1, 2004. Product ratings authorized by NFRC prior to April 1, 2004 are valid for the full certification period. Beginning April 1, 2004 only the November 2002 edition may be used for new product rating.

² Either the 1995 edition or the November 2002 edition may be used for product rating prior to April 1, 2004. Product ratings authorized by NFRC prior to April 1, 2004 are valid for the full certification period. Beginning April 1, 2004 only the November 2002 edition may be used for new product rating.

NONRESIDENTIAL BUILDING is any building which is a Group A, B, E, F, H, M, ~~or S~~, ~~or~~ and is a U Occupancy when the Group U Occupancy is on a nonresidential site.

NOTE: Requirements for high-rise residential buildings and hotels/motels are included in the nonresidential sections of Title 24, Part 6.

NONRESIDENTIAL COMPLIANCE MANUAL is the manual developed by the commission, under Section 25402.1 (e) of the Public Resources Code, to aid designers, builders, and contractors in meeting the energy efficiency requirements for nonresidential, high-rise residential, and hotel/motel buildings.

NONSTANDARD PART LOAD VALUE (NPLV) is a single-number part-load efficiency figure of merit for chillers referenced to conditions other than IPLV conditions. (See “Integrated Part Load Value”)

NORTH-FACING (See “orientation.”) ~~is oriented to within 45 degrees of true north, including 45°00'00" east of north (NE), but excluding 45°00'00" west of north (NW).~~

NONRESIDENTIAL FUNCTION AREA OR TYPE OF USE OCCUPANCY TYPE is one of the following:

Atria (see “atrium.”)

Atrium is a large-volume space created by openings connecting two or more stories and is used for purposes other than an enclosed stairway, an elevator hoistway, an escalator opening, or as a utility shaft for plumbing, electrical, air-conditioning or other equipment and is not a mall.

Auditorium is the part of a public building where an audience sits in fixed seating, or a room, area, or building with fixed seats used for public meetings or gatherings not specifically for the viewing of dramatic performances.

Auto repair is the portion of a building used to repair automotive equipment and/or vehicles, exchange parts, and may include work using an open flame or welding equipment.

Beauty Salon is a room or area in which the primary activity is manicures, pedicures, facials, or the cutting or styling of hair. Also known as beauty shop or beauty parlor.

Civic meeting space is a city council or board of supervisors meeting chamber, courtroom, or other official meeting space accessible to the public.

Classroom, lecture, or training is a room or area where an audience or class receives instruction.

Commercial and industrial storage is a room, area, or building used for storing items.

Convention, conference, multipurpose and meeting centers is an assembly room, area, or building that is used for meetings, conventions and multiple purposes, including, but not limited to, dramatic performances, and that has neither fixed seating nor fixed staging.

Corridor is a passageway or route into which compartments or rooms open.

Dining is a room or rooms in a restaurant or hotel/motel (other than guest rooms) where meals that are served to the customers will be consumed.

Dormitory is a building consisting of multiple sleeping quarters and having interior common areas such as dining rooms, reading rooms, exercise rooms, toilet rooms, study rooms, hallways, lobbies, corridors, and stairwells, other than high-rise residential, low-rise residential, and hotel/motel occupancies.

Electrical/mechanical room is a room in which the building's electrical switchbox or control panels, and/or HVAC controls or equipment is located.

Exercise center/gymnasium is a room or building equipped for gymnastics, exercise equipment, or indoor athletic activities.

Exhibit is a room or area that is used for exhibitions that has neither fixed seating nor fixed staging.

³ Either the 1995 edition or the January 2002 edition may be used for product rating prior to April 1, 2004. Product ratings authorized by NFRC prior to April 1, 2004 are valid for the full certification period. Beginning April 1, 2004 only the January 2002 edition may be used for new product rating.

Financial institution is a public establishment used for conducting financial transactions including the custody, loan, exchange, or issue of money, for the extension of credit, and for facilitating the transmission of funds.

General commercial and industrial work is a room, area, or building in which an art, craft, assembly or manufacturing operation is performed.

High bay: Luminaires 25 feet or more above the floor.

Low bay: Luminaires less than 25 feet above the floor.

Grocery sales is a room, area, or building that has as its primary purpose the sale of foodstuffs requiring additional preparation prior to consumption.

Hotel function area is a hotel room or area such as a hotel ballroom, meeting room, exhibit hall or conference room, together with pre-function areas and other spaces ancillary to its function.

Kitchen/food preparation is a room or area with cooking facilities and/or an area where food is prepared.

Laundry is a place where laundering activities occur.

Library is a repository for literary materials, such as books, periodicals, newspapers, pamphlets and prints, kept for reading or reference.

Lobby, Hotel is the contiguous space in a hotel/motel between the main entrance and the front desk, including reception, waiting and seating areas.

Lobby, Main entry is the contiguous space in buildings other than hotel/motel that is directly located by the main entrance of the building through which persons must pass, including reception, waiting and seating areas.

Locker/dressing room is a room or area for changing clothing, sometimes equipped with lockers.

Lounge/recreation is a room used for leisure activities which may be associated with a restaurant or bar.

Mall is a roofed or covered common pedestrian area within a mall building that serves as access for two or more tenants. ~~(See “mall building.”)~~

Medical and clinical care is a room, area, or building that does not provide overnight patient care and that is used to promote the condition of being sound in body or mind through medical, dental, or psychological examination and treatment, including, but not limited to, laboratories and treatment facilities.

Museum is a space in which the primary function is the care or exhibit of works of artistic, historical, or scientific value ~~are cared for and exhibited. A museum does not include a gallery or other place where art is for sale. A museum does not include a lobby, conference room, or other occupancies where the primary function is not the care or exhibit of works of artistic, historical, or scientific value.~~

Office is a room, area, or building of CBC Group B Occupancy other than restaurants.

Parking garage is a covered building or structure for the purpose of parking vehicles, which consists of at least a roof over the parking area, enclosed with walls on all sides. Parking garages may have fences, ~~or~~ rails, partial walls, or other barriers in place of one or more walls. The structure has an entrance(s) and exit(s), and includes areas for vehicle maneuvering to reach the parking spaces. If the roof of a parking structure is also used for parking, the section without an overhead roof is considered a parking lot instead of a parking garage.

Precision commercial or industrial work is a room, area, or building in which an art, craft, assembly or a manufacturing operation is performed involving visual tasks of small size or fine detail such as electronic assembly, fine woodworking, metal lathe operation, fine hand painting and finishing, egg processing operations, or tasks of similar visual difficulty.

Religious worship is a room, area, or building for worship.

Restaurant is a room, area, or building that is a food establishment as defined in Section 27520 of the Health and Safety Code.

Restroom is a room or suite of rooms providing personal facilities such as toilets and washbasins.

Retail merchandise sales is a room, area, or building in which the primary activity is the sale of merchandise.

School is a building or group of buildings that is predominately classrooms and that is used by an organization that provides instruction to students.

Senior housing is housing other than Occupancy Group I that is specifically for habitation by seniors, including but not limited to independent living quarters, and assisted living quarters. Commons areas may include dining, reading, study, library or other community spaces and/or medical treatment or hospice facilities.

Stairs, active/inactive, is a series of steps providing passage from one level of a building to another, including escalators.

Support area is a room or area used as a passageway, utility room, storage space, or other type of space associated with or secondary to the function of an occupancy that is listed in these regulations.

Tenant lease space is a portion of a building intended for lease for which a specific tenant is not identified at the time of permit application.

Theater, motion picture, is an assembly room, a hall, or a building with tiers of rising seats or steps for the showing of motion pictures.

Theater, performance, is an assembly room, a hall, or a building with tiers of rising seats or steps for the viewing of dramatic performances, lectures, musical events and similar live performances.

Transportation function is the ticketing area, waiting area, baggage handling areas, concourse, or other areas not covered by primary functions in Table 146-C in an airport terminal, bus or rail terminal or station, subway or transit station, or a marine terminal.

Vocational room is a room used to provide training in a special skill to be pursued as a trade.

Waiting area is an area other than a hotel lobby or main entry lobby normally provided with seating and used for people waiting.

Wholesale showroom is a room where samples of merchandise are displayed.

OCCUPANT SENSOR, LIGHTING, is a device that automatically turns lights off soon after an area is vacated. The term ~~O~~ccupant ~~S~~ensor applies to a device that controls indoor lighting systems. When the device is used to control outdoor lighting systems, it is termed a motion sensor. The device also may be called an occupancy sensor, ~~or~~ occupant-sensing device, or vacancy sensor.

OPERABLE SHADING DEVICE is a device at the interior or exterior of a building or integral with a fenestration product, which is capable of being operated, either manually or automatically, to adjust the amount of solar radiation admitted to the interior of the building.

ORIENTATION, EAST-FACING is oriented to within 45 degrees of true east, including 45°00'00" south of east (SE), but excluding 45°00'00" north of east (NE).

ORIENTATION, NORTH-FACING is oriented to within 45 degrees of true north, including 45°00'00" east of north (NE), but excluding 45°00'00" west of north (NW).

ORIENTATION, SOUTH-FACING is oriented to within 45 degrees of true south including 45°00'00" west of south (SW), but excluding 45°00'00" east of south (SE).

ORIENTATION, WEST-FACING is oriented to within 45 degrees of true west, including 45°00'00" north of due west (NW), but excluding 45°00'00" south of west (SW).

~~**ORNAMENTAL CHANDELIERS** are ceiling-mounted, close-to-ceiling, or suspended decorative luminaires that use glass, crystal, ornamental metals, or other decorative material and that typically are used in hotel/motels, restaurants, or churches as a significant element in the interior architecture.~~

OUTDOOR AIR (Outside air) is air taken from outdoors and not previously circulated in the building.

OUTDOOR LIGHTING definitions include the following:

Building entrance is any operable doorway in or out of a building, including overhead doors.

Building façade is the exterior surfaces of a building, not including horizontal roofing, signs, and surfaces not visible from any reasonable viewing location.

Canopy is a permanent structure, other than a parking garage as defined in Section 101, consisting of a roof and supporting building elements, with the area beneath at least partially open to the elements. A canopy may be freestanding or attached to surrounding structures. A canopy roof may serve as the floor of a structure above.

Carport is a covered, open-sided structure used solely for the purpose of parking vehicles, consisting of a roof over the parking area. Typically, carports are free-standing or projected from the side of the building and are only two or fewer car lengths deep.

Hardscape is an improvement to a site that is paved and-or has other structural features, including but not limited to, curbs, plazas, entries, parking lots, site roadways, driveways, walkways, sidewalks, bikeways, water features and pools, storage or service yards, loading docks, amphitheaters, outdoor sales lots, and private monuments and statuary.

Landscape lighting is lighting that is recessed into or mounted on the ground, -or paving, or raised deck, mounted on the ground; which is mounted less than 42” above grade; or mounted onto trees or trellises, and that is intended to be aimed only at landscape features.

Lantern is an ornamental outdoor luminaire that uses an electric lamp to replicate a pre-electric lantern, which used a flame to generate light.

Lighting zone is a geographic area designated by the California Energy Commission that determines requirements for outdoor lighting, including lighting power densities and specific control, equipment or performance requirements. Lighting zones are numbered LZ1, LZ2, LZ3, and LZ4.

Marquee lighting is a permanent lighting system consisting of one or more rows of many small lights, light emitting diodes (LEDs), or fiber optic lighting attached to a canopy.

Ornamental lighting is post-top luminaires, lanterns, pendant luminaires, chandeliers, and marquee lighting.

Outdoor lighting is all electrical lighting for parking lots, signs, building entrances, outdoor sales areas, outdoor canopies, landscape lighting, lighting for building facades and hardscape lighting.

Outdoor sales frontage is the portion of the perimeter of an outdoor sales area immediately adjacent to a street, road, or public sidewalk.

Outdoor sales lot is an uncovered paved area used exclusively for the display of vehicles, equipment or other merchandise for sale. All internal and adjacent access drives, walkway areas, employee and customer parking areas, vehicle service or storage areas are not outdoor sales lot areas, but are considered hardscape.

Parking lot is an uncovered area for the purpose of parking vehicles. Parking lot is a type of hardscape.

Paved area is an area that is paved with concrete, asphalt, stone, brick, gravel, or other improved wearing surface, including the curb.

Pendant is a mounting method in which the luminaire is suspended from above.

Post Top Luminaire is an ornamental outdoor luminaire that is mounted directly on top of a lamp-post.

Principal viewing location is anywhere along the adjacent highway, street, road or sidewalk running parallel to an outdoor sales frontage

Public monuments are statuary, buildings, structures, and/or hardscape on public land.

Sales canopy is a canopy specifically to cover and protect an outdoor sales area.

Vehicle service station is a gasoline, natural gas, or diesel, or other fuel dispensing station.

OVERALL HEAT GAIN is the total heat gain through all portions of the building envelope calculated as specified in Section 143 (b) 3 for determining compliance with the Overall Envelope Approach.

OVERALL HEAT LOSS is the total heat loss through all portions of the building envelope calculated as specified in Section 143 (b) 2 for determining compliance with the Overall Envelope Approach.

PERMANENTLY INSTALLED LIGHTING includes all luminaires attached to the inside or outside of a building or site, including track and flexible lighting system; lighting attached to walls, ceilings, columns, inside or outside of permanently installed cabinets, internally illuminated case work, mounted on poles, in trees, or in the ground; attached to ceiling fans and integral to exhaust fans that are other than exhaust hoods for cooking equipment.. Permanently installed

luminaires may have either plug-in or hardwired connections for electric power. Permanently installed lighting does not include portable lighting or lighting that is installed by the manufacturer in refrigerators, stoves, microwave ovens, exhaust hoods for cooking equipment, refrigerated cases, vending machines, food preparation equipment, and scientific and industrial equipment.

PHOTOCONTROL is an electric device- that detects changes in illumination levels then controls ~~its lighting~~electric load at predetermined illumination levels.

PORTABLE LIGHTING is lighting with plug-in connections for electric power that is table and freestanding floor lamps, attached to modular furniture, workstation task lights, lights attached to workstation panels, movable displays, and other equipment that is not permanently installed lighting.

~~**POOR QUALITY LIGHTING TASKS** are visual tasks that require Illuminance Category E or greater, because of the choice of a writing or printing method that produces characters that are of small size or lower contrast than good quality alternatives that are regularly used in offices.~~

~~**PRIVATE OFFICE or WORK AREA** is an office bounded by 72-inch or higher permanent partitions and is no more than 200 square feet.~~

PRIMARY SIDELIT DAYLIGHT AREA (See Daylight Area, Primary Sidelit)

PROCESS is an activity or treatment that is not related to the space conditioning, lighting, service water heating, or ventilating of a building as it relates to human occupancy.

PROCESS SPACE is a space that is thermostatically controlled to maintain a process environment temperature less than 55° F or to maintain a process environment temperature greater than 90° F for the whole space that the system serves, or that is a space with a space-conditioning system designed and controlled to be incapable of operating at temperatures above 55° F or incapable of operating at temperatures below 90° F at design conditions.

PROCESS LOAD is a load resulting from a process.

PUBLIC AREAS are spaces generally open to the public at large, customers or congregation members, or similar spaces where occupants need to be prevented from controlling lights for safety, security, or business reasons.

RADIANT BARRIER is a highly reflective, low emitting material installed at the underside surface of the roof deck and the inside surface of gable ends or other exterior vertical surfaces in attics to reduce solar heat gain into the attic,~~as specified by Section 151(f)2.~~

RAISED FLOOR is a floor (partition) over a crawl space, or an unconditioned space, or ambient air.

READILY ACCESSIBLE is capable of being reached quickly for operation, repair or inspection, without requiring climbing or removing obstacles, or resorting to access equipment.

RECOOL is the cooling of air that has been previously heated by space-conditioning equipment or systems serving the same building.

RECOVERED ENERGY is energy used in a building that (1) is ~~mechanically~~ recovered from space conditioning, service water heating, lighting, or process equipment after the energy has performed its original function; (2) provides space conditioning, service water heating, or lighting; and (3) would otherwise be wasted.

~~**REDUCED FLICKER OPERATION** is the operation of a light, in which the light has a visual flicker less than 30 percent for frequency and modulation.~~

REFLECTANCE, SOLAR is the ratio of the reflected solar flux to the incident solar flux.

REFRIGERATED CASE is a manufactured commercial refrigerator or freezer, including but not limited to display cases, reach-in cabinets, meat cases, and frozen food and soda fountain units.

REFRIGERATED WAREHOUSE is a building or a space constructed for storage of products, where mechanical refrigeration is used to maintain the space temperature at 55° F or less.

REFRIGERATED SPACE is a building or a space that is a refrigerated warehouse, walk-in cooler, or a freezer.

REHEAT is the heating of air that has been previously cooled by cooling equipment or supplied by systems or an economizer.

RELATIVE SOLAR HEAT GAIN is the ratio of solar heat gain through a fenestration product (corrected for external shading) to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation, which is then reradiated, conducted, or convected into the space.

RELOCATABLE PUBLIC SCHOOL BUILDING is a relocatable building as defined by Title 24, Part 1, Section 4-314, which is subject to Title 24, Part 1, Chapter 4, Group 1.

REPAIR is the reconstruction or renewal for the purpose of maintenance of any component, system, or equipment part of an existing building for the purpose of its maintenance. Replacement of any component, system, or equipment for which there are requirements in the standards is considered an alteration and not a repair. **NOTE:** Repairs to low-rise residential buildings are not within the scope of these standards.

RESIDENTIAL BUILDING (See “high-rise residential building” and “low-rise residential building.”)

RESIDENTIAL COMPLIANCE MANUAL is the manual developed by the commission, under Section 25402.1 of the Public Resources Code, to aid designers, builders, and contractors in meeting energy efficiency standards for low-rise residential buildings.

RESIDENTIAL SPACE TYPE is one of the following:

Bathroom is a room or area containing a sink used for personal hygiene, toilet, shower, or a tub.

Closet is a non-habitable room used for the storage of linens, household supplies, clothing, non-perishable food, or similar uses, and which is not a hallway or passageway.

Garage is a non-habitable building or portion of building, attached to or detached from a residential dwelling unit, in which motor vehicles are parked.

Kitchen is a room or area used for cooking, food storage and preparation and washing dishes, including associated counter tops and cabinets, refrigerator, stove, ovens, and floor area. Adjacent areas are considered kitchen if the lighting for the adjacent areas is on the same switch as the lighting for the kitchen.

Laundry is a non-habitable room or space which contains plumbing and electrical connections for a washing machine or clothes dryer.

Storage Building is a non-habitable detached building used for the storage of tools, garden equipment, or miscellaneous items.

Utility Room is a non-habitable room or building which contains only HVAC, plumbing, or electrical controls or equipment; and which is not a bathroom, closet, garage, or laundry room.

ROOF is the outside cover of a building or structure including the structural supports, decking, and top layer that is exposed to the outside with a slope less than 60 degrees from the horizontal.

ROOFING PRODUCT is the top layer(s) of the roof that is exposed to the outside, which has characteristics including but not limited to reflectance, emittance, and mass.

ROOF/CEILING TYPE is a type of roof/ceiling assembly that has a specific framing type and U-factor.

RUNOUT is piping that is no more than 12 feet long and that ~~is connect~~sed to a fixture or an individual terminal unit.

SCIENTIFIC EQUIPMENT is measurement, testing or metering equipment used for scientific research or investigation, including but not limited to manufactured cabinets, carts and racks.

SCONCE is a wall mounted ornamental luminaire.

SEASONAL ENERGY EFFICIENCY RATIO (SEER) ~~means is~~ the total cooling output of an ~~an~~ central-air conditioner in Btu during its normal usage period for cooling divided by the total electrical energy input in watt-hours during the same period, as determined using the applicable test method in the Appliance Efficiency Regulations.

SECONDARY SIDELIT DAYLIGHT AREA (See Daylight Area, Secondary Sidelit)

SERIES FAN-POWERED TERMINAL UNIT is a terminal unit that combines a VAV damper in series with a downstream fan which runs at all times that the terminal unit is supplying air to the space.

SERVICE WATER HEATING is heating of water for sanitary purposes for human occupancy, other than for comfort heating.

SHADING is the protection from heat gains because of direct solar radiation by permanently attached exterior devices or building elements, interior shading devices, glazing material, or adherent materials.

SHADING COEFFICIENT (SC) is the ratio of the solar heat gain through a fenestration product to the solar heat gain through an unshaded 1/8-inch-thick clear double strength glass under the same set of conditions. For nonresidential, high-rise residential, and hotel/motel buildings, this shall exclude the effects of mullions, frames, sashes, and interior and exterior shading devices.

SIGN definitions include the following:

Electronic Message Center (EMC) is a pixilated image producing electronically controlled sign formed by any light source. Bare lamps used to create linear lighting animation sequences through the use of chaser circuits, also known as “chaser lights” are not consider an EMC.

Illuminated face is a side of a sign that has the message on it. For an exit sign it is the side that has the word “EXIT” on it.

Sign, cabinet is an internally illuminated sign consisting of frame and face(s), with a continuous translucent message panel, also referred to as a panel sign

Sign, channel letter is an internally illuminated sign with multiple components, each built in the shape of an individual three dimensional letter or symbol that are each independently illuminated, with a separate translucent panel over the light source for each element.

Sign, double-faced is a sign with two parallel opposing faces.

Sign, externally illuminated is any sign or a billboard that is lit by a light source that is external to the sign directed towards and shining on the face of the sign.

Sign, internally illuminated is a sign that is illuminated by a light source that is contained inside the sign where the message area is luminous, including cabinet signs and channel letter signs.

Sign, traffic is a sign for traffic direction, warning, and roadway identification.

Sign, unfiltered is a sign where the viewer perceives the light source directly as the message, without any colored filter between the viewer and the light source, including neon, cold cathode, and LED signs.

SINGLE PACKAGE VERTICAL AIR CONDITIONER (SPVAC): is a type of air-cooled small or large commercial package air-conditioning and heating equipment; factory assembled as a single package having its major components arranged vertically, which is an encased combination of cooling and optional heating components; is intended for exterior mounting on, adjacent interior to, or through an outside wall; and is powered by single or three-phase current. It may contain separate indoor grille(s), outdoor louvers, various ventilation options, indoor free air discharge, ductwork, wall plenum, or sleeve. Heating components may include electrical resistance, steam, hot water, gas, or no heat but may not include reverse cycle refrigeration as a heating means.

SINGLE PACKAGE VERTICAL HEAT PUMP (SPVHP): is an SPVAC that utilizes reverse cycle refrigeration as its primary heat source, with secondary supplemental heating by means of electrical resistance, steam, hot water, or gas.²

SITE-BUILT FENESTRATION is fenestration designed to be field-glazed or field assembled units using specific factory cut or otherwise factory formed framing and glazing units that are manufactured with the intention of being assembled at the construction site and are provided with an NFRC label certificate for site-built fenestration. Examples of site-built fenestration include storefront systems, curtain walls, and atrium roof systems.

SITE SOLAR ENERGY is ~~natural daylighting, or~~ thermal, chemical, or electrical energy derived from direct conversion of incident solar radiation at the building site.

SKYLIGHT is ~~glazing fenestration having installed on a slope-roof~~ less than 60 degrees from the horizontal ~~with conditioned or unconditioned space below.~~

SKYLIGHT AREA is the area of the rough opening for the skylight.

SKYLIGHT TYPE is a type of skylight assembly having a specific solar heat gain coefficient and U-factor whether glass mounted on a curb, glass not mounted on a curb or plastic (assumed to be mounted on a curb).

 **KYLIT DAYLIGHT AREA** (See Daylight Area, Skylit)

SMACNA is the Sheet Metal and Air-conditioning Contractors National Association.

SMACNA RESIDENTIAL COMFORT SYSTEM INSTALLATION STANDARDS MANUAL is the Sheet Metal Contractors' National Association document entitled "Residential Comfort System Installation Standards Manual, Seventh Edition." (1998).

SOLAR HEAT GAIN COEFFICIENT (SHGC) is the ratio of the solar heat gain entering the space through the fenestration area to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation, which is then reradiated, conducted, or convected into the space.

SOLAR HEAT GAIN COEFFICIENT, CENTER OF GLAZING (SHGCc) is the SHGC for the center of glazing area.

SOLAR HEAT GAIN COEFFICIENT, TOTAL FENESTRATION PRODUCT (SHGC or SHGCt) is the SHGC for the total fenestration product.

SOLAR REFLECTANCE INDEX (SRI) is a measure of the roof's ability to reject solar heat which includes both reflectance and emittance.

~~**SOUTH-FACING** is oriented to within 45 degrees of true south including 45°00'00" west of south (SW), but excluding 45°00'00" east of south (SE). (See "orientation.")~~

SPA is a vessel that contains heated water in which humans can immerse themselves, is not a pool, and is not a bathtub.

SPACE-CONDITIONING SYSTEM is a system that provides either collectively or individually heating, ventilating, or cooling within or associated with conditioned spaces in a building.

~~**SMACNA is the Sheet Metal and Air conditioning Contractors National Association.**~~

~~**STEPPED DIMMING** is a lighting control method that varies the light output of lamps in one or more predetermined discrete steps between full light output and off. (See "dimming, stepped.")~~

STEPPED SWITCHING is a lighting control method that varies the light output of a lighting system with the intent of maintaining approximately the relative uniformity of illumination by turning off alternate groups of lamps or luminaires.

STORAGE, COLD, is a storage area within a refrigerated warehouse where space temperatures are maintained at or above 32° F.

STORAGE, FROZEN is a storage area within a refrigerated warehouse where the space temperatures are maintained below 32° F.

SYSTEM is a combination of equipment, controls, accessories, interconnecting means, or terminal elements by which energy is transformed to perform a specific function, such as space conditioning, service water heating, or lighting.

TASK LIGHTING is lighting that is designed specifically to illuminate a task location, and that is generally confined to the task location.

~~**TEMPORARY LIGHTING** is a lighting installation where temporary connections, such as cord and plug, are used for electric power, and for which the installation with plug-in connections that does not persist beyond 60 consecutive days or more than 120 days per year.~~

THERMAL MASS is solid or liquid material used to store heat for later heating use or for reducing cooling requirements.

THERMAL RESISTANCE (R) is the resistance of a material or building component to the passage of heat in (hr. x ft.² x °F)/Btu.

THERMOSTATIC EXPANSION VALVE (TXV) is a refrigerant metering valve, installed in an air conditioner or heat pump, which controls the flow of liquid refrigerant entering the evaporator in response to the superheat of the gas leaving it.

THROW DISTANCE is the distance between the luminaire and the center of the plane lit by the luminaire on a display.

TIME DEPENDENT VALUATION (TDV) ENERGY is the time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.

U-FACTOR is the overall coefficient of thermal transmittance of a construction assembly, in Btu/(hr. x ft.² x °F), including air film resistance at both surfaces.

U-FACTOR, CENTER OF GLAZING (U-FACTOR_c) is the U-Factor for the center of glazing area.

U-FACTOR, TOTAL FENESTRATION PRODUCT (U-FACTOR or U-FACTOR_t) is U-Factor for the total fenestration product.

UL® is the Underwriters Laboratories.

UL 181 is the Underwriters Laboratories document entitled “Standard for Factory-Made Air Ducts and Air Connectors,” 1996.

UL 181A is the Underwriters Laboratories document entitled “Standard for Closure Systems for Use With Rigid Air Ducts and Air Connectors,” 1994.

UL 181B is the Underwriters Laboratories document entitled “Standard for Closure Systems for Use With Flexible Air Ducts and Air Connectors,” 1995.

UL 723 is the Underwriters Laboratories document entitled “Standard for Test for Surface Burning Characteristics of Building Materials,” 1996.

UL 727 is the Underwriters Laboratories document entitled “Standard for Oil-Fired Central Furnaces,” 1994.

UL 731 is the Underwriters Laboratories document entitled “Standard for Oil-Fired Unit Heaters,” 1995.

UL 1598 is the Underwriters Laboratories document entitled “Standard for Luminaires,” 2000.

UNCONDITIONED SPACE is enclosed space within a building that is not directly conditioned, or indirectly conditioned.

UNIT INTERIOR MASS CAPACITY (UIMC) is the amount of effective heat capacity per unit of thermal mass, taking into account the type of mass material, thickness, specific heat, density and surface area.

VACANCY SENSOR, LIGHTING, is an occupant sensor for which the lights must be manually turned on but the sensor automatically turns the lights off soon after an area is vacated. The device also may be called a manual-on occupant sensor.

VAPOR BARRIER is a material that has a permeance of one perm or less and that provides resistance to the transmission of water vapor.

VARIABLE AIR VOLUME (VAV) SYSTEM is a space-conditioning system that maintains comfort levels by varying the volume of ~~supply conditioned~~ air to the zones served.

VENDING MACHINE is a ~~commercial, coin-operated~~ machine for vending ~~and dispensing of~~ refrigerated or non-refrigerated food and beverages or general merchandise.

VERTICAL GLAZING (See “window”)

VERY VALUABLE MERCHANDISE is rare or precious objects, including, but not limited to, jewelry, coins, small art objects, crystal, china, ceramics, or silver, the selling of which involves customer inspection of very fine detail from outside of a locked case.

VISIBLE LIGHT TRANSMITTANCE (VLT) is the ratio (expressed as a decimal) of visible light that is transmitted through a glazing to the light that strikes the material.

VISIBLE TRANSMITTANCE, CENTER OF GLAZING (VT_c) is the VT for the center of glazing area.

VISIBLE TRANSMITTANCE, TOTAL FENESTRATION PRODUCT (VT or VT_t) is the VT for the total fenestration product.

WALL TYPE is a type of wall assembly having a specific heat capacity, framing type, and U-factor.

WEST-FACING ~~is oriented to within 45 degrees of true west, including 45°00'00" north of due west (NW), but excluding 45°00'00" south of west (SW). (See "orientation.")~~

WINDOW is fenestration that is not a skylight.

WINDOW AREA is the area of the surface of a window, plus the area of the frame, sash, and mullions.

WINDOW TYPE is a window assembly having a specific solar heat gain coefficient, relative solar heat gain, and U-factor.

WINDOW WALL RATIO is the ratio of the window area to the gross exterior wall area.

WOOD HEATER is an enclosed wood-burning appliance used for space heating and/or domestic water heating.

WOOD STOVE (See "wood heater.")

ZONE, CRITICAL is a zone serving a process where reset of the zone temperature setpoint during a demand shed event might disrupt the process, including but not limited to data centers, telecom and private branch exchange (PBX) rooms, and laboratories.

ZONE, NON-CRITICAL is a zone that is not a critical zone.

ZONE, SPACE-CONDITIONING, is a space or group of spaces within a building with sufficiently similar comfort conditioning requirements so that comfort conditions, as specified in Section 144 (b) 3 or 150 (h), as applicable, can be maintained throughout the zone by a single controlling device.

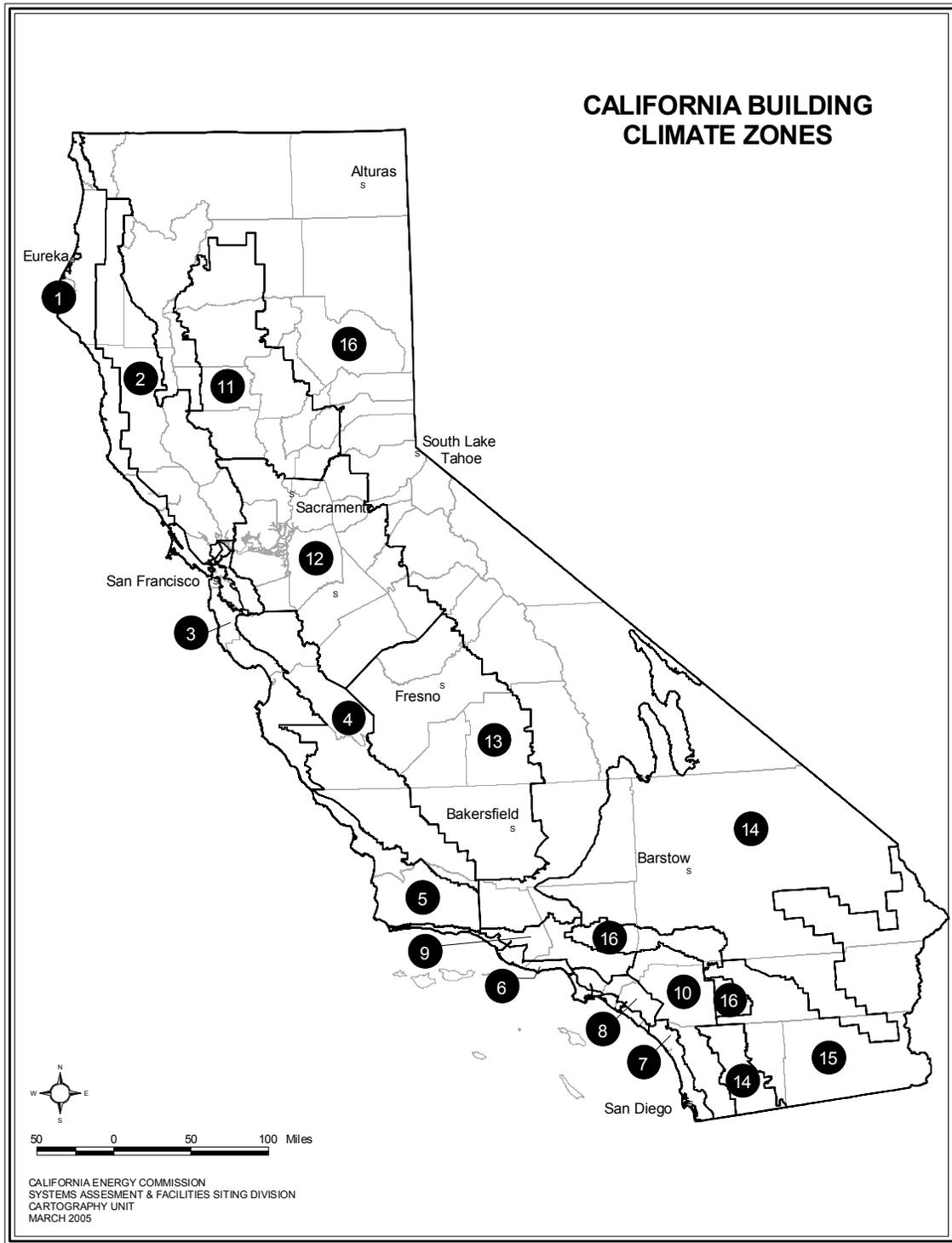


FIGURE 101-A—CALIFORNIA CLIMATE ZONES
Climate Zones for Residential and Nonresidential Occupancies

SECTION 102 – CALCULATION OF TIME DEPENDENT VALUATION (TDV) ENERGY

Time Dependent Valuation (TDV) energy shall be used to compare proposed designs to their energy budget when using the performance compliance approach. TDV energy is calculated by multiplying the site energy use (electricity kWh, natural gas therms, or fuel oil or LPG gallons) for each energy type times the applicable TDV multiplier. TDV multipliers vary for each hour of the year and by energy type (electricity, natural gas or propane), by climate zone and by building type (low-rise residential or nonresidential, high-rise residential or hotel/motel). TDV multipliers are published in the residential and nonresidential ACM Approval Manuals. TDV multipliers for propane shall be used for all energy obtained from depletable sources other than electricity and natural gas.

SECTION 103 – RESERVED.

SECTION 104 – RESERVED.

SECTION 105 – RESERVED.

SECTION 106 – RESERVED.

SECTION 107 – RESERVED.

SECTION 108 – RESERVED.

SECTION 109 – RESERVED.

¹ Change per CABEC recommendation.

End Notes

The following notes are an explanation of the changes that have been made. These notes are not part of the Standard.

² The definitions of SPVAC and SPVHP are added to support new equipment classes added to §112 per ASHRAE 90.1-2007.