

## Joint Appendix JA1

### Appendix JA1 – Glossary

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**ACCA** is the Air Conditioning Contractors of America

**ACCA MANUAL J** is the Air Conditioning Contractors of America document titled “Manual J - Residential Load Calculation” (ANSI/ACCA 2 Manual J – 2006).

**ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE** is a description of test procedures in the Reference Nonresidential Appendices 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.

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

**ACM** See Alternative Calculation Method.

**ACP** See Alternative Component Package.

**ADDITION** is any change to a building that increases conditioned floor area and conditioned volume. Addition is also any change that increases the floor area and 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.

**AFUE** See Annual Fuel Utilization Efficiency.

**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 BARRIER** is combination of interconnected materials and assemblies joined and sealed together to provide a continuous barrier to air leakage through the building envelope that separates conditioned from unconditioned space, or adjoining conditioned spaces of different occupancies or uses.

**AIR CONDITIONER** is an appliance that supplies cooled and dehumidified air to a space for the purpose of cooling objects within the space.

**AIR-COOLED AIR CONDITIONER** is an air conditioner using an air-cooled condenser.

**AIR-HANDLING UNIT or AIR HANDLER** is a blower or fan that distributes supply air to a room, space, or area.

**AIR FILTER EQUIPMENT or AIR FILTER DEVICE** is air-cleaning equipment used for removing particulate matter from the air.

**AIR FILTER MEDIA** is the part of the air filter equipment, that is the actual particulate removing agent.

**AIR LEAKAGE** is a measure of how much outside air comes into a home or building through a manufactured fenestration or exterior door products.

**AIR POROSITY** is a measure of the air-tightness of infiltration barriers in units of cubic feet per hour per square foot per inch of mercury pressure difference.

**AIRFLOW ACROSS THE EVAPORATOR** is the rate of airflow, usually measured in cfm across a heating or cooling coil. The efficiency of air conditioners and heat pumps is affected by the airflow across the evaporator (or condenser in the case of a heat pump).

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

**AIR-SOURCE HEAT PUMP** is an appliance that consists of one or more factory-made assemblies that includes an indoor conditioning coil, a compressor and a refrigerant-to-air heat exchanger, and that provides heating and cooling functions.

**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 not an addition. Alteration is also any change that is regulated by Part 6 to signs located either indoors or outdoors.

**ALTERED COMPONENT** is a component that has undergone an alteration and is subject to all applicable Standards requirements.

**ALTERNATIVE CALCULATION METHOD (ACM) APPROVAL MANUAL or ACM APPROVAL MANUAL** are the document that establishes the requirements for Energy Commission approval of performance software used to demonstrate compliance with the Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Published by the California Energy Commission.

**ALTERNATIVE CALCULATION METHOD (ACM) REFERENCE MANUAL or ACM REFERENCE MANUAL** contains the specific procedures to implement Sections 140.1 and 150.1 of Title 24, Part 6 of the California Code of Regulations in Compliance Software.

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

**ALTERED COMPONENT** is a component that has undergone an alteration and is subject to all applicable Standards requirements.

**ALTERNATIVE COMPONENT PACKAGE** is a set of building measures whose aggregate calculated energy use is less than or equal to the maximum allowed Energy Budget.

**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 §110.2.

**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 C78.377** is the American National Standards Institute document titled "Specifications for the Chromaticity of Solid State Lighting Products." (ANSI C78.377-2011).

**ANSI C79.1** is the American National Standards Institute document titled "Nomenclature for Glass Bulbs Intended for Use with Electric Lamps." (ANSI C79.1-2002).

**ANSI C82.2** is the American National Standard for Lamp Ballasts –Method of Measurement for Fluorescent Lamp Ballasts (ANSI C82.2:2002).

**ANSI C82.6-2005** is the American National Standards Institute document titled "Ballasts for High-Intensity Discharge Lamps – Methods of Measurement" (ANSI C82.6-2005).

**ANSI C82.77** is the American National Standard for Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment (ANSI C82.77-2002).

**ANSI Z21.10.3** is the American National Standards Institute document titled "Gas Water Heaters - Volume III, Storage Water Heaters With Input Ratings Above 75,000 Btu Per Hour," 2011 (ANSI Z21.10.3-2011/CSA 4.3-2011).

**ANSI Z21.13** is the American National Standards Institute document titled "Gas-Fired Low Pressure Steam and Hot Water Boilers," 2010 (ANSI Z21.13-2010/CSA 4.9-2010).

**ANSI Z21.40.4A** is the American National Standards Institute document titled "Addenda 1 to ANSI Z21.40.4-1996/CGA 2.94-M96, Performance Testing and Rating of Gas-Fired, Air Conditioning and Heat Pump Appliances," 1998 (ANSI Z21.40.4-1998/CGA 2.94A-M98).

**ANSI Z21.47** is the American National Standards Institute document titled "Gas-Fired Central Furnaces," 2006 (ANSI Z21.47-2006/CSA 2.3-2006).

**ANSI Z83.8** is the American National Standards Institute document titled "American National Standard/CSA Standard For Gas Unit Heaters, Gas Packaged Heaters, Gas Utility Heaters and Gas-Fired Duct Furnaces," 2009 (ANSI Z83.8 -2009/CSA 2.6-2009).

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

**APPLIANCE STANDARDS** are the Standards contained in the Appliance Efficiency Regulations.

**APPROVED** as to a home energy rating provider or home energy rating system, is reviewed and approved by the Commission under Title 20, Section 1675 of the California Code of Regulations.

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

**APPROVED CALCULATION METHOD** is compliance software, or alternative component packages, or exceptional methods approved under Section 10-109.

**AREAL HEAT CAPACITY** See Heat Capacity.

**AHRI** is the Air-Conditioning, Heating and Refrigeration Institute.

**AHRI 210/240** is the Air-conditioning, Heating, and Refrigeration Institute document titled "Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment," 2008 (ANSI/AHRI Standard 210/240-2008 with Addenda 1 and 2).

**ANSI/AHRI/CSA 310/380** is the Air-Conditioning, Heating, and Refrigeration Institute document titled "Standard for Packaged Terminal Air-Conditioners and Heat Pumps (CSA-C744-04)," 2004 (ANSI/AHRI/CSA Standard 310/380-2004).

**AHRI 320** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Water-Source Heat Pumps," 1998 (AHRI Standard 320-1998).

**AHRI 325** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Ground Water-Source Heat Pumps," 1998 (ARI Standard 325-1998).

**ANSI/AHRI 340/360** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment," 2007 (ANSI/AHRI Standard 340/360-2007 with Addenda 1 and 2).

**ANSI/AHRI 365** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Commercial and Industrial Unitary Air-Conditioning Condensing Units," 2009 (ANSI/AHRI Standard 365 (I-P)-2009).

**ANSI/AHRI 390** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Single Package Vertical Air-Conditioners and Heat Pumps," 2003 (ANSI/AHRI Standard 390 (I-P)-2003).

**ANSI/AHRI 400** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Liquid to Liquid Heat Exchangers," 2001 (ANSI/AHRI Standard 400 (I-P)-2001) with addenda 1 and 2.

**ANSI/AHRI 460** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Remote Mechanical-Draft Air-Cooled Refrigerant Condensers," 2005 (ANSI/AHRI Standard 460-2005).

**AHRI 550/590** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Water Chilling Packages Using the Vapor Compression Cycle," 2011 (AHRI Standard 550/590-(I-P)-2011).

**ANSI/AHRI 560** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Absorption Water Chilling and Water Heating Packages," 2000 (ANSI/AHRI Standard 560-2000).

**AHRI 680** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Residential Air Filter Equipment," 2009 (ANSI/AHRI Standard 680).

**AHRI 1230** is the Air-Conditioning, Heating and Refrigeration Institute document titled "Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment," 2010 (AHRI Standard 1230-2010) with Addendum 1.

**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 titled "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 titled "ASHRAE Handbook: Heating, Ventilating, and Air-Conditioning Applications" (2011).

**ASHRAE HANDBOOK, EQUIPMENT VOLUME** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "ASHRAE Handbook: Heating, Ventilating, and Air-Conditioning Systems and Equipment" (2008).

**ASHRAE HANDBOOK, FUNDAMENTALS VOLUME** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "ASHRAE Handbook: Fundamentals" (2009).

**ASHRAE STANDARD 52.2** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size," 2012 (ANSI/ASHRAE Standard 52.2-2012).

**ASHRAE STANDARD 55** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "Thermal Environmental Conditions for Human Occupancy," 2010 (ASHRAE Standard 55-2010).

**ASHRAE STANDARD 62.2** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings," 2010 (ANSI/ASHRAE Standard 62.2-2010 including ANSI/ASHRAE Addenda b, c, e, g, h, i and l to ANSI/ASHRAE 62.2-2010 published in the 2011 supplement, and ANSI/ASHRAE Addendum j to ANSI/ASHRAE Standard 62.2-2010 published in March, 2012, and ANSI/ASHRAE Addendum n to ANSI/ASHRAE Standard 62.2-2010 published in February, 2012).

**ASHRAE STANDARD 193** is the American Society of Heating, Refrigerating and Air-Conditioning Engineers document titled "Method of Test for Determining the Airtightness of HVAC Equipment," 2010 (ANSI/ASHRAE Standard 193-2010).

**ASME** is the American Society of Mechanical Engineers.

**ASME A112.18.1/CSA B125.1** is the American Society of Mechanical Engineers document titled "Plumbing Fixture Fittings" 2011 (ASME Standard A112.18.1-2011/CSA B125.1-11).

**ASTM** is the American Society for Testing and Materials International

**ASTM C55** is the American Society for Testing and Materials document titled "Standard Specification for Concrete Brick," 2014 (ASTM C55-14).

**ASTM C177** is the American Society for Testing and Materials document titled "Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus," 2013 (ASTM C177-13).

**ASTM C272** is the American Society for Testing and Materials document titled "Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions," 2012 (ASTM C272-12).

**ASTM C335** is the American Society for Testing and Materials document titled "Standard Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation," 2010 (ASTM C335-10).

**ASTM C518** is the American Society for Testing and Materials document titled "Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus," 2010 (ASTM C518-10).

**ASTM C731** is the American Society for Testing and Materials document titled "Standard Test Method for Extrudability, After Package Aging of Latex Sealants," 2010 (ASTM C731-10).

**ASTM C732** is the American Society for Testing and Materials document titled "Standard Test Method for Aging Effects of Artificial Weathering on Latex Sealants," 2006 (ASTM C732-06 (2012)).

**ASTM C836** is the American Society of Testing and Materials document titled, "Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course," 2012 (ASTM C836/C836M-12).

**ASTM C1167** is the American Society for Testing and Materials document titled "Standard Specification for Clay Roof Tiles," 2011 (ASTM C1167-11).

**ASTM C1371** is the American Society for Testing and Materials document titled "Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers," 2010 (ASTM C1371- 04a(2010)).

**ASTM C1492** is the American Society for Testing and Materials document entitled "Standard Specification for Concrete Roof Tile," 2009 (ASTM C1492-03(2009)).

**ASTM C1549** is the American Society for Testing and Materials document entitled, "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer," 2014 (ASTM C1549- 09 (2014)).

**ASTM C1583** is the American Society of Testing and Materials document titled, "Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)," 2013 (ASTM C1583/c1583M-13).

**ASTM D448** is the American Society for Testing and Materials document titled, "Standard Classification for Sizes of Aggregate for Road and Bridge Construction," 2012 (ASTM D448-12).

**ASTM D522** is the American Society of Testing and Materials document titled, "Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings," 2013 (ASTM D522/D522M-13).

**ASTM D822** is the American Society of Testing and Materials document titled, "Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings," 2013 (ASTM D822/D822M-13).

**ASTM D1003** is the American Society for Testing and Materials document titled "Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics," 2013 (ANSI/ASTM D1003-13).

**ASTM D1653** is the American Society of Testing and Materials document titled, "Standard Test Methods for Water Vapor Transmission of Organic Coating Films," 2013 (ASTM D1653-13).

**ASTM D1863** is the American Society for Testing and Materials document titled, "Standard Specification for Mineral Aggregate Used on Built-Up Roofs," 2011 (ASTM D1863/D1863M-05 (2011)).

**ASTM D2370** is the American Society of Testing and Materials document titled, "Standard Test Method for Tensile Properties of Organic Coatings," 2010 ASTM D2370-98 (2010).

**ASTM D2824** is the American Society of Testing and Materials document titled "Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings, Nonfibered, Asbestos Fibered, and Fibered without Asbestos," 2013 (ASTM D2824/D2824M-13).

**ASTM D3468** is the American Society of Testing and Materials document titled, "Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing," 2013 (ASTM D3468/D3468M-99 (2013)).

**ASTM D3805** is the American Society of Testing and Materials document titled "Standard Guide for Application of Aluminum-Pigmented Asphalt Roof Coatings," 1997 (ASTM D3805/D3805M-97 (2009)).

**ASTM D4798** is the American Society for Testing and Materials document titled "Standard Test Method for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method)," 2011 (ASTM D4798/D4798M-11).

**ASTM D5870** is the American Society of Testing and Materials document titled, "Standard Practice for Calculating Property Retention Index of Plastics," 2011 (ASTM D5870-11).

**ASTM D6083** is the American Society of Testing and Materials document titled, "Standard Specification for Liquid Applied Acrylic Coating Used in Roofing," 2005 (ASTM D6083-05e1).

**ASTM D6694** is the American Society of Testing and Materials document titled, "Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing," 2013 (ASTM D6694/D6694M-08 (2013)).

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

**ASTM E96** is the American Society for Testing and Materials document titled "Standard Test Methods for Water Vapor Transmission of Materials," 2014 (ASTM E96/E96M-14).

**ASTM E283** is the American Society for Testing and Materials document titled "Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen," 2012 (ASTM E283-04(2012)).

**ASTM E408** is the American Society for Testing and Materials document titled, "Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques," 2013 (ASTM E408-13).

**ASTM E779** is the American Society for Testing and Materials document titled, "Standard Test Method for Determining Air Leakage Rate by Fan Pressurization," 2010 (ASTM E779-10).

**ASTM E972** is the American Society for Testing and Materials document titled, "Standard Test Method for Solar Photometric Transmittance of Sheet Materials Using Sunlight," 1996 (ASTM E972-96(2013)).

**ASTM E1677** is the American Society for Testing and Materials document titled, "Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls," 2011 (ASTM E1677-11).

**ASTM E1918** is the American Society for Testing and Materials document entitled, "Standard Test Method for Measuring Solar reflectance of Horizontal and Low-Sloped Surfaces in the Field," 2015 (ASTM E1918-06(2015)).

**ASTM E1980** is the American Society for Testing and Materials document titled, "Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surface," 2011 (ASTM E1980-11)

**ASTM E2178** is the American Society for Testing and Materials document titled, "Standard Test Method for Air Permeance of Building Materials," 2013 (ASTM E2178-13).

**ASTM E2357** is the American Society for Testing and Materials document titled, "Standard Test Method for determining air leakage of air barrier assemblies" 2011 (ASTM E2357-11).

**ATTIC** is an enclosed space directly below the roof deck and above the ceiling beams.

**AUTO REPAIR** See Nonresidential Functional Area or Type of Use.

**AUTOMATED TELLER MACHINE (ATM)** is any electronic information processing device which accepts or dispenses currency in connection with a credit, deposit, or convenience account without involvement by a clerk.

**AUTOMATIC** is capable of operating without human intervention.

**BACK** is the back side of the building as one faces the front façade from the outside (see Front). This designation is used on the Certificate of Compliance (CF-1R form) to indicate the orientation of fenestration (e.g., Back-West).

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

**BRITISH THERMAL UNIT (BTU)** is the amount of heat needed to raise the temperature of one pound of water one degree Fahrenheit.

**BTU/H** is the amount of heat in Btu that is removed or added during one hour. Used for measuring heating and cooling equipment output.

**BUBBLE POINT** is the liquid saturation temperature of a refrigerant at a specified pressure.

**BUILDER** is the general contractor responsible for construction.

**BUILDING** is any structure or space covered by Section 100.0 of the Building Energy Efficiency Standards.

**BUILDING COMMISSIONING** is a systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

**BUILDING ENERGY EFFICIENCY STANDARDS** are the California Building Energy Efficiency Standards as set forth in the California Code of Regulations, Title 24, Part 6. Also known as the California Energy Code.

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

**BUILDING LOCATION DATA** is the specific outdoor design temperatures shown in Reference Joint Appendix JA2 used in calculating heating and cooling loads for the particular location of the building.

**BUILDING OWNER** is the owner of the building or dwelling unit.

**BUILDING PERMIT** is an electrical, plumbing, mechanical, building, or other permit or approval, that is issued by an enforcement agency, and that authorizes any construction that is subject to Part 6.

**BUILDING TYPES** is the classification of buildings defined by the CBC and applicable to the requirements of the Building Energy Efficiency Standards.

**CALIFORNIA ELECTRICAL CODE** is the 2007 California Electrical Code.

**CALIFORNIA ENERGY CODE** See Building Energy Efficiency Standards.

**CALIFORNIA ENERGY COMMISSION** Is the California State Energy Resources Conservation and Development Commission.

**CALL CENTER** is a phone center that handles large number of phone calls including but not limited to help desk, customer and sales support, technical support, emergency response, telephone answering service, and inbound and outbound telemarketing.

**CBC** is the 2007 California Building Code.

**CEILING** is the interior upper surface of a space separating it from an attic, plenum, indirectly or directly conditioned space or the roof assembly, which has a slope less than 60 degrees from horizontal.

**CENTRAL FAN-INTEGRATED VENTILATION SYSTEM** is a central forced air heating and/or cooling system which is intended to operate on a regular basis to bring in outdoor ventilation air and/or distribute air around the home for comfort and ventilation even when heating and cooling are not needed.

**CERTIFICATE OF COMPLIANCE** is a document with information required by the Commission that is prepared by the Documentation Author that indicates whether the building includes measures that require field verification and diagnostic testing.

**CERTIFICATE OF INSTALLATION** is a document with information required by the Commission that is prepared by the builder or installer verifying that the measure was installed to meet the requirements of the Standards.

**CERTIFICATE OF VERIFICATION** is a document with information required by the Commission that is prepared by the HERS Rater to certify that measures requiring field verification and diagnostic testing comply with the requirements.

**CERTIFICATION** is certification by the manufacturer to the Commission, as specified the Appliance Efficiency Regulations, that the appliance complies with the applicable standard for that appliance. The term certification is also used in other ways in the standards. Many of the compliance forms are certificates, whereby installers, HERS testers and others certify that equipment was correctly installed and/or tested.

**CERTIFIED** as to a home energy rater, is having been found by a certified home energy rating provider to have successfully completed the requirements established by that home energy rating provider.

**CERTIFIED TO THE ENERGY COMMISSION** means certified by the manufacturer in a declaration, executed under penalty of perjury of the laws of California, that all the information provided in the statement is true, complete, accurate and in compliance with all applicable provisions of Part 6; and the equipment, product, or device was tested under the applicable test method specified in Part 6.

**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. CIE 13.3 is the International Commission on Illumination (Commission Internationale de l'Eclairage) document titled "Method of Measuring and Specifying Colour Rendering Properties of Light Sources," 1995 (CIE 13.3-1995).

**CIE 15** is the International Commission on Illumination (Commission Internationale de l'Eclairage) document titled "Technical Report: Colorimetry," 2004 (CIE 15:2004).

**CIE 53** is the International Commission on Illumination (Commission Internationale de l'Eclairage) document titled "Methods of Characterizing the Performance of Radiometers and Photometers," (CIE 053-1982).

**COLOR RENDERING INDEX (CRI)**. The ability of a light source to reflect the color of illuminated objects with fidelity relative to ideal or natural light sources of the same color temperature. CRI is calculated according to CIE 13.3.

**CORRELATED COLOR TEMPERATURE (CCT)**. Description of color of light relative to the chromaticity of the radiative emission of heated black body and reported in temperature units of Kelvin according to CIE 15.

**CODES, CFR** is the 2014 Code of Federal Regulations.

**CLIMATE ZONES** are the 16 geographic areas of California for which the Commission has established typical weather data, prescriptive packages and energy budgets. Climate zones are defined by ZIP code and listed in Reference in Joint Appendix JA2 FIGURE 100.1-A is an approximate map of the 16 climate zones.

**CLOSED-CIRCUIT COOLING TOWER** is a cooling tower that utilizes indirect contact between a heated fluid, typically water or glycol, and the cooling atmosphere to transfer the source heat load indirectly to the air, essentially combining a heat exchanger and cooling tower into relatively compact device.

**CLTD** is the Cooling Load Temperature Difference.

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

**CODES, CBC** is the 2013 California Building Code.

**CODES, CEC** is the 2013 California Electrical Code.

**CODES, CMC** is the 2013 California Mechanical Code.

**CODES, CPC** is the 2013 California Plumbing 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 §110.2.

**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 §110.2.

**COEFFICIENT OF PERFORMANCE (COP), HEATING** 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 the Appliance Efficiency Regulations or §110.2.



**COMBINATION SPACE-HEATING AND WATER-HEATING APPLIANCE** is an appliance that is designed to provide both space heating and water heating from a single primary energy source.

**COMBINED HYDRONIC SPACE/WATER HEATING SYSTEM** is a system which both domestic hot water and space heating is supplied from the same water heating equipment. Combined hydronic space heating may include both radiant floor systems and convective or fan coil systems.

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

**COMMERCIAL BOILER** is a type of boiler with a capacity (rated maximum input) of 300,000 Btus per hour (Btu/h) or more and serving a space heating or water heating load in a commercial building.

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

**COMPLEX MECHANICAL SYSTEMS** are systems that include 1) fan systems each serving multiple thermostatically controlled zones, or 2) built-up air handler systems (non-unitary or non-packaged HVAC equipment), or 3) hydronic or steam heating systems, or 4) hydronic cooling systems. Complex systems are NOT the following: (a) unitary or packaged equipment listed in Tables 110.2-A, 110.2-B, 110.2-C, and 110.2-E that each serve one zone or (b) two-pipe, heating only systems serving one or more zones.

**COMPLIANCE APPROACH** is any one of the allowable methods by which the design and construction of a building may be demonstrated to be in compliance with Part 6. The compliance approaches are the performance compliance approach and the prescriptive compliance approach. The requirements for each compliance approach are set forth in §100.0(e)2 of Part 6.

**COMPLIANCE DOCUMENTS** are any of the documentation specified in §10-103(a) utilized to demonstrate compliance with Part 6 (i.e. Certificate of Compliance, Certificate of Installation, Certificate of Acceptance, and Certificate of Verification).

**COMPLIANCE OPTION** is a method or procedure for demonstrating compliance with Title 24, Part 6 and Part 11, Division 4.2 and 5.2 of the California Code of Regulations through modifications of approved calculation methods.

**COMPLIANCE SOFTWARE** is software that has been approved pursuant to Section 10-109 of Part 1 of Title 24 of the California Code of Regulations, to demonstrate compliance with the performance approach of Part 6.

**COMPUTER ROOM** is a room within a building whose primary function is to house electronic equipment and that has a design equipment power density exceeding 20 watts/ft<sup>2</sup> (215 watts/m<sup>2</sup>) of conditioned floor.

**CONDENSER SPECIFIC EFFICIENCY** is the full load condenser Total Heat of Rejection (THR) capacity at standardized conditions divided by the fan input electric power (including but not limited to spray pump electric input power for evaporative condensers) at 100% rated fan speed.

**CONDITIONED FLOOR AREA (CFA)** is the floor area in square feet (ft<sup>2</sup>) 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 FOOTPRINT** is a projection of all conditioned space on all floors to a vertical plane. The conditioned footprint area may be equal to the first floor area, or it may be greater, if upper floors project over lower floors. One way to think of the conditioned footprint area is as the area of the largest conditioned floor in the building plus the conditioned floor area of any projections from other stories that extend beyond the outline of that largest floor.

**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-ft<sup>2</sup>, or is provided with mechanical cooling that has a capacity exceeding 5 Btu/hr-ft<sup>2</sup> unless the space-conditioning system is designed for process load. (See "process load" and "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 (ft<sup>3</sup>) of the conditioned space within a building.

**CONSTRUCTION LAYERS** are roof, wall and floor constructions which represent an assembly of layers. Some layers are homogeneous, such as gypsum board and plywood sheathing, while other layers are non-homogeneous such as the combination of wood framing and cavity insulation typical in many buildings.

**CONTINUOUS AIR BARRIER** See Air Barrier

**CONTINUOUS INSULATION (c.i.)** is insulation that is continuous across all assemblies that separate conditioned from unconditioned space. It is installed on the exterior or interior or is integral to any opaque surface of the building envelope and has no thermal bridges other than fasteners and necessary service openings.

**CONTROLLED ATMOSPHERE** is an airtight space maintained at reduced oxygen levels for the purpose of reducing respiration of perishable product in longterm storage.

**CONTROLLED VENTILATION CRAWL SPACE (CVC)** is a crawl space in a residential building where the side walls of the crawlspace are insulated rather than the floor above the crawlspace. A CVC has automatically controlled crawl space vents. Credit for a CVC is permitted for low-rise residential buildings that use the performance approach to compliance.

**COOLER** is a space to be capable of operation at a temperature greater than or equal to 28°F but less than 55°F.

**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 Part 6 that reduces heat gain through the roof.

**COOL ROOF RATING COUNCIL (CRRC)** is a not-for-profit organization designated by the Commission as the Supervisory Entity with responsibility to rate and label the reflectance and emittance of roof products.

**COOLING COIL AIRFLOW** Is the air flow through the evaporator (indoor) coil of a direct expansion air conditioning unit in cooling mode. The air flow is expressed in cubic feet per minute (CFM) or liter per second (L/S) of standard air (standard air has a density of 0.075 lb/ft<sup>3</sup>).

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

**COOLING LOAD** is the rate at which heat must be extracted from a space to maintain a desired room condition.

**COOLING LOAD TEMPERATURE DIFFERENCE (CLTD)** is an equivalent temperature difference used for calculating the instantaneous external cooling loads across a wall or roof. The cooling load is the CLTD x U-factor x Area.

**COP** See Coefficient of Performance.

**COURTYARD** is an open space through one or more floor levels surrounded by walls within a building.

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

**CRRC** See Cool Roof Rating Council.

**CRRC-1** is the Cool Roof Rating Council document titled "Product Rating Program Manual." (2002)

**CTI** is the Cooling Technology Institute.

**CTI ATC-105** is the Cooling Technology Institute document titled "Acceptance Test Code for Water Cooling Towers," 2000 (CTI ATC-105-00).

**CTI ATC-105S(11)** is the Cooling Technology Institute document titled "Acceptance Test Code for Closed-Circuit Cooling Towers," 2011 (CTI ATC-105-11).

**CTI STD-201** is the Cooling Technology Institute document titled "Standard for Thermal Performance Certification of Evaporative Heat Rejection Equipment," 2011 (CTI STD-201-11).

**CURRENT AIR DEMAND** is the actual cubic feet per minute (acfm) of total airflow necessary for end uses in a compressed air system.

**CUSTOM ENERGY BUDGET** See Energy Budget.

**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.

**CYCLES OF CONCENTRATION** is the number of times the concentration of total dissolved (TDS) in cooling tower water is multiplied relative to the TDS in the makeup water. Because evaporation of pure water leaves dissolved solids behind in the system water, TDS increases over time as the tower operates. The number of times the dissolved minerals are concentrated is relative to the TDS in the makeup water. For example, five cycles of concentration represents five times the concentration of solids in the cooling tower system water relative to the TDS in the makeup water entering the tower.

**CRRC-1** is the Cool Roof Rating Council document titled "Product Rating Program."

**DATA CENTER** is a building whose primary function is to house computer rooms.

**DATA REGISTRY** is a web service with a user interface and database maintained by a Registration Provider that complies with the applicable requirements in Reference Joint Appendix JA7, with guidance from the Data Registry Requirements Manual, and provides for registration of residential or nonresidential compliance documentation used for demonstrating compliance with Part 6.

**RESIDENTIAL DATA REGISTRY** is a data registry that is maintained by a HERS Provider that provides for registration when required by Part 6 of all residential compliance documentation and the nonresidential Certification of Verification.

**NONRESIDENTIAL DATA REGISTRY** is a data registry that is maintained by the Registration Provider approved by the Commission that provides for registration, when required by Part 6, of all nonresidential documentation. However, nonresidential data registries may not provide for registration of nonresidential Certificate of Verification.

**DATA REGISTRY REQUIREMENTS MANUAL** is a document that provides additional detailed guidance regarding the functional and technical aspects of the Data Registry requirements given in Reference Joint Appendix JA7.

**DAYLIT ZONE** is the floor area under skylights or next to windows. Types of Daylit Zones include Primary Sidelit Daylit Zone, Secondary Sidelit Daylit Zone, and Skylit Daylit Zone.

**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 Reference Joint Appendix JA2. For those localities not listed in the Reference Joint Appendix JA2, the number of degree days is as determined by the applicable enforcing agency.

**DEMAND RESPONSE** is short-term changes in electricity usage by end-use customers from their normal consumption patterns. Demand response may be in response to

- (a) a change in the price of electricity; or
- (b) participation in programs or services designed to modify electricity use:
  - 1. in response to wholesale market prices; or
  - 2. when system reliability is jeopardized.

**DEMAND RESPONSE PERIOD** is a period of time during which electricity loads are modified in response to a demand response signal.

**DEMAND RESPONSE SIGNAL** is a signal sent by the local utility, Independent System Operator (ISO), or designated curtailment service provider or aggregator, to a customer, indicating a price or a request to modify electricity consumption, for a limited time period.

**DEMAND RESPONSIVE CONTROL** is a kind of control that is capable of receiving and automatically responding to a demand response signal.

**DEMISING PARTITION** is a wall, fenestration, floor, or ceiling that separates conditioned space from enclosed unconditioned space.

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

**DENSITY** is the mass per unit volume of a construction material as documented in an ASHRAE handbook, a comparably reliable reference or manufacturer's literature.

**DEPLETABLE SOURCES** is energy obtained from electricity purchased from a public utility, or energy obtained from burning coal, oil, natural gas, or liquefied petroleum gases.

**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 §140.4(b) for nonresidential, high-rise residential, and hotel/motel buildings and in §150.0 (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.

**DESIGN REVIEW** is an additional secondary review of the construction documents (drawings and specifications) that seeks to improve compliance with existing Title 24 regulations, encourage adoption of best practices in design, and encourage designs that are constructable and maintainable. It is an opportunity for an experienced design engineer to look at a project with a fresh perspective in an effort to catch missing or unclear design information and to suggest design enhancements.

**DEW POINT TEMPERATURE** is the vapor saturation temperature at a specified pressure for a substance undergoing phase change from vapor to liquid.

**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.xft.<sup>2</sup>), or is provided with mechanical cooling that has a capacity exceeding 5 Btu/(hr.xft.<sup>2</sup>), unless the space-conditioning system is designed and 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 unless the space-conditioning system is 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.

**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.

**DIVIDERS** are wood, aluminum or vinyl glazing dividers including mullions, muntins, munnions and grilles. Dividers may truly divide lights, be between the panes, or be applied to the exterior or interior of the glazing.

**DOCUMENTATION AUTHOR** is a person who prepares a Title 24, Part 6 document that must subsequently be reviewed and signed by a responsible person in order to certify compliance with Part 6.

**DOMINANT OCCUPANCY** is the occupancy type in mixed occupancy buildings with the greatest percentage of total conditioned floor area.

**DUCT LOSSES** is heat transfer into or out of a space conditioning system duct through conduction or leakage.

**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 Reference Residential Appendix RA3 and Reference Nonresidential Appendix NA2.

**DUCT SYSTEM** Includes all ducts, duct fittings, plenums and fans assembled to form a continuous passageway for the distribution of air.

**ENTIRELY NEW OR REPLACEMENT DUCT SYSTEMS** installed as part of an alteration of a dwelling unit's space conditioning system(s) shall be constructed of at least 75% new duct material and may include reused parts from the dwelling unit's existing duct system (e.g. registers, boots, air handler, coil, plenums, duct material, etc.) but only if the reused parts are accessible and they can be sealed to prevent leakage.

**DUV** is the closest distance from the chromaticity coordinate of the light source to the Planckian locus on the CIE ( $u'$ ,  $2/3 v'$ ) coordinates with "+" sign for above and "-" sign for below the Planckian locus.

**DWELLING** is a building that contains one or two dwelling units used, intended or designed to be used, rented, leased, let or hired out to be occupied for living purposes.

**DWELLING UNIT** is a single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

**EAST-FACING** 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.

**EDGE OF GLASS** is the portion of fenestration glazing that is within two and one half inches of the spacer.

**EER** See Energy Efficiency Ratio.

**ELECTRIC HEATING** is an electrically powered heating source, such as electric resistance, heat pumps with no auxiliary heat or with electric auxiliary heat, solar with electric back-up, etc.

**ELECTRIC RESISTANCE HEATING** is a heating system that converts electric energy directly into heat energy by passing a current through an electric resistance. Electric resistance heat is inherently less efficient than gas as a heating energy source because it must account for losses associated with generation from depletable fossil fuels and transmission to the building site.

**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 Part 6.

**ENERGY COMMISSION** See Commission.

**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 §110.2.

**ENERGY EFFICIENCY STANDARDS** See Building Energy Efficiency Standards.

**ENERGY FACTOR (EF)** of a water heater is a measure of overall water heater efficiency as determined using the applicable test method in the Appliance Efficiency Regulations.

**ENERGY MANAGEMENT CONTROL SYSTEM (EMCS)** is 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, and is 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.

**ENERGY STAR Start Time Test Method** is the ENERGY STAR program document entitled "ENERGY STAR Program Requirements for Lamps Version 1.0 – Start Time Test Method – Final" (August-2013)

**ENERGY STAR Ambient Temperature Life Test Method** is the ENERGY STAR program document entitled "ENERGY STAR Program Requirements for Lamps Version 1.0 - Ambient Temperature Life Test Method – Final" (August-2013)

**ENERGY STAR Elevated Temperature Light Output Ratio Test Method** is the ENERGY STAR program document entitled "ENERGY STAR Program Requirements for Lamps Version 1.0 – Elevated Temperature Light Output Ratio Test Method – Final" (August-2013)

**ENERGY STAR Elevated Temperature Life Test Method** is the ENERGY STAR program document entitled "ENERGY STAR Program Requirements for Lamps Version 1.0 – Elevated Temperature Life Test Method – Final" (August-2013)

**ENERGY STAR Product Specification for Lamps Noise Recommended Practice** is the ENERGY STAR program document entitled, "ENERGY STAR Program Requirements for Lamps Version 1.0 – Noise Recommended Practice – Final" (August-2013).

**ENFORCEMENT AGENCY** is the city, county or state agency responsible for approving the plans, issuing a building permit and approving occupancy of the dwelling unit.

**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** See Building Envelope.

**EVAPORATIVE COOLER** provides cooling to a building by either direct contact with water (direct evaporative cooler), no direct contact with water (indirect evaporative cooler), or a combination of direct and indirect cooling (indirect/direct evaporative cooler). The credit offered for evaporative coolers depends on building type and climate.

**EXCEPTIONAL METHOD** is a method for estimating the energy performance of building features that cannot be adequately modeled using the public domain computer programs and that is approved by the Executive Director.

**EXECUTIVE DIRECTOR** is the Executive Director of the Commission.

**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.

**EXPOSED THERMAL MASS** is mass that is directly exposed (uncovered) to the conditioned space of the building. Concrete floors that are covered by carpet are not considered exposed thermal mass.

**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. 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 definitions include the following:**

**ACE** is an NFRC-Approved Calculation Entity (ACE) that conducts calculations of fenestration product ratings for certification authorization using the NFRC Component Modeling approach and issues label certificates to Specifying Authorities for product certification authorization in accordance with NFRC requirements.

**ALTERATION** is any change to an existing building's exterior fenestration product that is not a repair (see Fenestration Repair) that:

- (a) Replaces existing fenestration in an existing wall or roof with no net area added is considered an alteration and is subject to the Alteration Section in Part 6; or
- (b) Replaces existing fenestration and adds new net area in the existing wall or roof; is subject to the Alteration Section in Part 6.
- (c) Adds a new window that increases the net fenestration area to an existing wall or roof. New added window is not subject to the maximum window wall ration in Part 6.

**ALTERED COMPONENT** is a new fenestration component that has undergone an alteration other than a repair and is subject to all applicable Standards requirements.

**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 end panels or two side windows are angled with respect to the center window. Common angles are 30° and 45°, although other angles may be employed.

**CMA (Component Modeling Approach)** is a Fenestration Product Certification Program from the National Fenestration Rating Council (NFRC) which enables energy-related performance ratings for nonresidential fenestration products, including the thermal performance U-factor, Solar Heat Gain Coefficient, and Visible Transmittance.

**CENTER OF GLASS U-FACTOR** is the U-factor for the glass portion only of vertical or horizontal fenestration and is measured at least two and one half inches from the frame. Center of glass U-factor does not consider the U-factor of the frame.

**CMAST (Component Modeling Approach Software Tool)** is an NFRC approved software that allows a user to create a fenestration product "virtually" and generate its energy-related performance ratings, including the thermal performance U-factor, Solar Heat Gain Coefficient, and Visible Transmittance.

**CURTAIN WALL/STOREFRONT** is an external nonbearing wall intended to separate the exterior non-conditioned and interior conditioned spaces. It also consists of any combination of framing materials, fixed glazing, opaque glazing, operable windows, or other in-fill materials.

**GLAZED DOOR** is an exterior door having a glazed area of 50 percent or greater of the area of the door.

**DUAL-GLAZED GREENHOUSE WINDOWS** is a double glass pane separated by an air or other gas space that adds conditioned volume but not conditioned floor area to a building.

**DYNAMIC GLAZING SYSTEMS** are glazing systems that have the ability to reversibly change their performance properties, including U-factor, Solar Heat Gain Coefficient (SHGC) and/or Visible Transmittance (VT) between well-defined end points. These may include, but are not limited to chromogenic glazing systems and integrated shading systems (Defined below). Dynamic Glazing systems do not include internally mounted or externally mounted shading devices that attach to the window framing/glazing that may or may not be removable.

- (a) **CHROMOGENIC GLAZING** is a class of switchable glazing that includes active materials (e.g. electrochromic) and passive materials (e.g. photochromic and thermochromic) permanently integrated into the glazing assembly. Their primary function is to switch reversibly from a high transmission state to a low transmission state with associated changes in VT and SHGC.
- (b) **INTEGRATED SHADING SYSTEM** is a class of fenestration products including an active layer: e.g. shades, louvers, blinds or other materials permanently integrated between two or more glazing layers. The U-factor and/or SHGC and VT of the insulating glass assembly can be altered by reversibly changing the enclosed active layer.

**FAÇADE** is the contiguous exterior of a building surface, but not limited to fenestration products.

**FENESTRATION AREA** for windows is the total window rough opening area which includes the fenestration, fenestration frame components in the exterior walls and roofs.

**FENESTRATION PRODUCT** is any transparent or translucent material plus any sash, frame, mullions and dividers, in the facade of a building, including, but not limited to, windows, sliding glass doors, French doors, skylights, curtain walls, dynamic glazing, garden windows and glass block.

**FENESTRATION REPAIR** shall not increase the preexisting energy consumption of the repaired component, system, or equipment. Replacement of any component, system, or equipment for which there are requirements in the Standards are considered an alteration (see Fenestration, Alterations) and not a repair and is subject to the requirements of Part 6 of the Standard.

**FIELD-FABRICATED** is a fenestration product 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. Field fabricated does not include site-built fenestration.

**FIN** is an opaque surface, oriented vertically and projecting outward horizontally from an exterior vertical surface.

- (a) **FIN OFFSET** is the horizontal distance from the edge of exposed exterior glazing at the jamb of a window to the fin.
- (b) **FIN PROJECTION** is the horizontal distance, measured outward horizontally, from the surface of exposed exterior glazing at the jamb of a window to the outward edge of a fin.
- (c) **SIDE FINs** are vertical shading elements mounted on either side of a glazed opening that can protect the glazing from lateral low angle sun penetration.

**FIXED** is fenestration that is not designed to be opened or closed.

**GREENHOUSE or GARDEN WINDOW** is a window unit that consists of a three-dimensional, five-sided structure generally protruding from the wall in which it is installed. Operating sash may or may not be included.



**LOW-E COATING** is a low emissivity metallic coating applied to glazing in fenestration products. See Soft Coat and Hard Coat.

- (a) **HARD COAT** is a low emissivity metallic coating applied to the glass, which will be installed in a fenestration product, through a pyrolytic process (at or near the melting point of the glass so that it bonds with the surface layer of glass). Hard coatings are less susceptible to oxidation and scratching as compared to soft coats. Hard coatings generally do not have as low emissivity as soft coats.
- (b) **SOFT COAT** is a low emissivity metallic coating applied to glass, which will be installed in a fenestration product through a sputter process where molecules of metals such as stainless steel or titanium are sputtered onto the surface of glass. Soft coats generally have lower emissivity than hard coats.

**MANUFACTURED or KNOCKED DOWN 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. 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 not provided with temporary and permanent labels as described in Section 10-111.

**NFRC 100** is the National Fenestration Rating Council document titled “NFRC 100: Procedure for Determining Fenestration Product U-factors.” (2011; NFRC 100 includes procedures for site fenestration formerly included in a separate document, NFRC 100-SB).

**NFRC 200** is the National Fenestration Rating Council document titled “NFRC 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.” (2011).

**NFRC 202** is the National Fenestration Rating Council document entitled “NFRC 202: Procedures for Determining Translucent Fenestration Product Visible Transmittance at Normal Incidence.” (2011).

**NFRC 203** is the National Fenestration Rating Council document entitled “NFRC 203: Procedure for Determining Visible Transmittance of Tubular Daylighting Devices.” (2012).

**NFRC 400** is the National Fenestration Rating Council document titled “NFRC 400: Procedure for Determining Fenestration Product Air Leakage.” (2010).

**OPERABLE** is fenestration that is designed to be opened or closed.

**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.

**OVERHANG** is a contiguous opaque surface, oriented horizontally and projecting outward horizontally from an exterior vertical surface.

**OVERHANG OFFSET** is the vertical distance from the edge of exposed exterior glazing at the head of a window to the overhang.

**OVERHANG PROJECTION** is the horizontal distance, measured outward horizontally from the surface of exposed exterior glazing at the head of a window to the outward edge of an overhang.

**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.

**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. These include storefront systems, curtain walls, and atrium roof systems.

**SKYLIGHT** is fenestration installed on a roof less than 60 degrees from the horizontal.

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

**SKYLIGHT TYPE** Is one of the following three types of skylights: glass mounted on a curb, glass not mounted on a curb or plastic (assumed to be mounted on a curb).

**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 (SHGC<sub>c</sub>)** 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.

**SPANDREL PANEL** is opaque glazing material most often used to conceal building elements between floors of a building so they cannot be seen from the exterior, also known as “opaque in-fill systems.”

**TINTED GLASS** is colored glass by incorporation of a mineral admixture resulting in a degree of tinting. Any tinting reduces both visible and radiant transmittance.

**U-FACTOR, CENTER OF GLAZING (U<sub>c</sub>)** is the U-Factor for the center of glazing area.

**U-FACTOR, TOTAL FENESTRATION PRODUCT (U<sub>t</sub>)** is the U-Factor for the total fenestration product.

**VISIBLE TRANSMITTANCE (VT)** is the ratio (expressed as a decimal) of visible light that is transmitted through a glazing fenestration. The higher the VT rating, the more light is allowed through a window.

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

**VISIBLE TRANSMITTANCE, TOTAL FENESTRATION PRODUCT (VT or VT<sub>t</sub>)** is the VT for the total fenestration product.

**VISIBLE TRANSMITTANCE (VT)** is the ratio (expressed as a decimal) of visible light that is transmitted through a glazing fenestration. The higher the VT rating, the more light is allowed through a window.

**WINDOW** is fenestration that is not a skylight and that is an assembled unit consisting of a frame and sash component holding one or more pieces of glazing.

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

**WINDOW FILM** is fenestration attachment products which consist of a flexible adhesive-backed polymer film which may be applied to the interior or exterior surface of an existing glazing system.

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

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

**FIELD TECHNICIAN** is a person who performs acceptance tests in accordance with the specifications in Reference Nonresidential Appendix NA-7 and reports the results of the acceptance tests on the Certificate of Acceptance document, in accordance with the requirements of §10-103(a)4.

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

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

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

**FLUID COOLER** is a fan-powered heat rejection device that includes a water or glycol circuit connected by a closed circulation loop to a liquid-cooled refrigerant condenser, and may be either evaporative-cooled, air-cooled or a combination of the two.

**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.

**FOSSIL FUELS** are fuels which are derived from natural gas, coal, oil and liquefied petroleum products. These are generally nonrenewable resources, although natural gas may also be produced by other means, such as biomass conversion.

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

**FRAMING EFFECTS** is the effect on the overall U-factor due to the type and amount of framing in walls, roofs/ceilings and floors. For compliance, fixed values for wood framing percentages are assumed when calculating U-factors.

**FRAMING PERCENTAGE** is the fraction of the surface of a partition that is framing as compared to that portion which is cavity.

**FREEZER** is a space designed to maintain less than 28°F.

**FRONT** is the primary entry side of the building (front facade) used as a reference in defining the orientation of the building or unit plan. The orientation of the front facade may not always be the same as that for the front door itself.

**GAP WIDTH** is the distance between lites in multi-glazed systems. This is typically measured from inside surface to inside surface, though some manufacturers may report "overall" insulated glass (IG) width, which is measured from outside surface to outside surface.

**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 system that uses natural gas or liquefied petroleum gas as fuel to heat a conditioned space.

**GAS INFILLS** are air, argon, krypton, CO<sub>2</sub>, SF<sub>6</sub>, or a mixture of these gasses between the panes of glass in insulated glass units.

**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.

**GEOTHERMAL HEAT PUMP** See Ground Source Heat Pump.

**GLAZING** See Fenestration Product.

**GLAZING AREA** See Fenestration Area.

**GLOBAL WARMING POTENTIAL (GWP)** is the radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time.

**GLOBAL WARMING POTENTIAL VALUE (GWP VALUE)** is the 100-yr GWP value first published by the Intergovernmental Panel on Climate Change (IPCC) in its Second Assessment Report (SAR) (IPCC, 1995; or if a 100-yr GWP value was not specified in the IPCC SAR, it means the GWP value published by the IPCC in its Fourth Assessment A-3 Report (AR4) (IPCC, 2007); or if a 100-yr GWP value was not specified in the IPCC AR4, then the GWP value will be determined by the Commission based on data, studies and/or good engineering or scientific judgment. Both the 1995 IPCC SAR values and the 2007 IPCC AR4 values

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are published in table 2.14 of the 2007 IPCC AR4. The SAR GWP values are found in column “SAR (100-yr)” of Table 2.14.; the AR4 GWP values are found in column “100 yr” of Table 2.14.”

**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.

**GRILLES** See Dividers.

**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.

**GROUND FLOOR AREA** is the slab-on-grade area of a slab-on-grade building and the conditioned footprint area of a raised floor building (for compliance with the low-rise residential standards).

**GROUND SOURCE HEAT PUMP** is a heat pump that uses the earth as a source of energy for heating and a sink for energy when cooling. Some systems pump water from an aquifer in the ground and return the water to the ground after transferring heat from or to the water. A few systems use refrigerant directly in a loop of piping buried in the ground. Those heat pumps that use either a water loop or pump water from an aquifer have efficiency test methods that are accepted by the Energy Commission. These efficiency values are certified to the Energy Commission by the manufacturer and are expressed in terms of heating Coefficient of Performance (COP) and cooling Energy Efficiency Ratio (EER).

**HABITABLE SPACE** is building space intended for continual human occupancy; such space generally includes areas used for living, sleeping, dining, and cooking but does not generally include bathrooms, toilets, hallways, storage areas, closets or utility rooms.

**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)** or thermal capacity is the measurable physical quantity that characterizes the amount of heat required to change a substance's temperature by a given amount.

**HEAT PUMP** is an appliance, that consists of one or more assemblies; that uses an indoor conditioning coil, a compressor, and a refrigerant-to-outdoor air heat exchanger to provide air heating; and that may also provide air cooling, dehumidifying, humidifying, circulating, or air cleaning.

**HEATED SLAB FLOOR** is a concrete floor, either on-grade, raised, or a lightweight concrete slab topping. Heating is provided by a system placed within or under the slab, and is sometimes referred to as a radiant slab floor.

**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.

**HERS** Is the California Home Rating System as described in Title 20, Chapter 4, Article 8, Section 1670.

**HERS PROVIDER** is an organization that administers a home energy rating system as described in Title 20, Chapter 4, Article 8, Section 1670.

**HERS PROVIDER DATA REGISTRY** is a residential data registry maintained by an approved HERS provider.

**HERS RATER** is a person who has been trained, tested, and certified by a HERS Provider to perform the field verification and diagnostic testing required for demonstrating compliance with the Part 6, as described in Title 20, Chapter 4, Article 8, Section 1670.

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

**HI HTG BOILER STANDARD** is the Hydronics Institute document titled “Testing and Rating Standard for Rating Boilers,” 1989.

**HIGH-RISE RESIDENTIAL BUILDING** is a building, other than a hotel/motel, of Occupancy Group R, Group R-2 or R-4 with four or more stories.

**HOME ENERGY RATING SYSTEM (HERS) PROVIDER** See HERS Rater.

**HOOD** is a device designed to capture and contain cooking effluent including, grease, smoke, steam, heat, and vapor until it is exhausted through a duct or recirculating system. Hoods are categorized as Type 1 or Type 2:

**TYPE I HOOD** is a hood used for collecting and removing convective heat, grease particulate, condensable vapor, and smoke. It includes listed grease filters, baffles, or extractors for removing the grease and a fire-suppression system. Type I hoods are installed over cooking appliances, such as ranges, fryers, griddles, broilers, and ovens, that produce smoke or grease-laden vapors. For Type I hoods, the following types of hoods are commonly available:

**WALL-MOUNTED CANOPY HOOD** is mounted against a wall above a single appliance or a line of appliances, or it may be free-standing with a vertical back panel extending from the rear of the appliance(s) to the hood. It typically extends beyond the front and sides of the appliance(s) on all open sides. The wall acts as a back panel, forcing replacement air to be drawn across the front and/or side(s) of the cooking appliance, thus increasing the effectiveness of the hood to capture and contain effluent generated by the cooking operations.

**SINGLE ISLAND CANOPY HOOD** is placed over a single appliance or line of appliances. It is open on all sides and overhangs the front, rear, and sides of the appliance(s). A single island canopy is more susceptible to cross-drafts and requires a greater exhaust airflow than an equivalent sized wall-mounted canopy to capture and contain effluent generated by the cooking operations.

**DOUBLE ISLAND CANOPY HOOD** is placed over back-to-back appliances or lines of appliances. It is open on all sides and overhangs the front and the sides of the appliance(s). It may have a wall panel between the backs of the appliances.

**BACKSHELF or PROXIMITY HOOD** is a low-proximity hood, or a wall-mounted sidewall hood that:

- (a) is positioned lower in height and depth than a canopy hood;
- (b) is set back from the front of the appliance;
- (c) is closed to the rear of the appliances by (a) a panel when the appliance is freestanding, or (b) a panel or wall when the appliance is wall mounted, and;
- (d) is located above the cooking surface.

This style of hood can be constructed with partial end panels to increase its effectiveness in capturing the effluent generated by the cooking operations.

**EYEBROW HOOD** is mounted directly to the face or top of an appliance above the opening(s) or door(s) from which effluent is emitted, overhanging the front of the opening(s) to capture the effluent.

**PASS-OVER HOOD** is a back shelf hood constructed and installed low enough to allow food to be passed over the top.

**TYPE II HOOD** is a type of hood that collects and removes steam, heat, and products of combustion where grease or smoke is not present. It may or may not have grease filters or baffles and is not required to have a fire-suppression system.

**HORIZONTAL GLAZING** See "Skylight."

**HOTEL/MOTEL** is a building or buildings that has 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.

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**HSPF** See Heating Seasonal Performance Factor.

**HVAC SYSTEM** is a space conditioning system or ventilation system.

**HYDRONIC COOLING SYSTEM** is any cooling system which uses water or a water solution as a source of cooling or heat rejection, including chilled water systems (both air and water-cooled) as well as water-cooled or evaporatively cooled direct expansion systems, such as water source (water-to-air) heat pumps.

**HYDRONIC SPACE HEATING SYSTEM** is a system that uses water-heating equipment, such as a storage tank water heater or a boiler, to provide space heating. Hydronic space heating systems include both radiant floor systems and convective or fan coil systems. See Combined Hydronic Space/Water Heating System.

**IES HB** See "IES Lighting Handbook."

**IES LIGHTING HANDBOOK** is the Illuminating Engineering Society National Association document titled "The IES Lighting Handbook: Reference and Applications, Tenth Edition" (2011).

**ANSI/IES RP-16-10** is the document coauthored by the American National Standards Institute and the Illuminating Engineering Society of North America, Recommended Practice titled "Nomenclature and Definitions for Illuminating Engineering."

**IES LM-9** is the Illuminating Engineering Society document titled, "Electrical and Photometric Measurements of Fluorescent Lamps." (IES LM-9-2009)

**IES LM-20** is the Illuminating Engineering Society document titled "Photometric Testing of Reflector-Type Lamps – Incandescent Lamps." (IES LM-20-13)

**IES LM-45** is the Illuminating Engineering Society document titled, "Electrical and Photometric Measurements of General Service Incandescent Filament Lamps." (IES LM-45-09)

**IES LM-46** is the Illuminating Engineering Society document titled, "Photometric Testing of Indoor Luminaires Using High Intensity Discharge or Incandescent Filament Lamps." 2004. (IES-LM-46-12)

**IES LM-51** is the Illuminating Engineering Society document titled, "Electrical and Photometric Measurements of High Intensity Discharge Lamps." (IES LM-51-13)

**IES LM-66** is the Illuminating Engineering Society document titled, "Electrical and Photometric Measurements of Single-Ended Compact Fluorescent Lamps." (IES LM66-11)

**IES LM-79-08** is the Illuminating Engineering Society document titled, "IES Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products."

**IES LM-80** is the Illuminating Engineering Society document titled, "Measuring Lumen Maintenance of LED Light Sources." (IES LM 80-08).

**IES TM-15-11** is the Illuminating Engineering Society document titled, "Luminaire Classification Systems for Outdoor Luminaires."

**IES TM-21** is the Illuminating Engineering Society document titled, "Projecting Long Term Lumen Maintenance of LED Light Sources." (IES TM-21-11).

**IG UNIT**, See "Insulating Glass Unit."

**INDEPENDENT IDENTITY** is having no financial interest in, and not advocating or recommending the use of any product or service as a means of gaining increased business with firms or persons specified in Section 1673(i) of the California Home Energy Rating System Program regulations (California Code of Regulations, Title 20, Division 2, Chapter 4, Article 8). (Financial Interest is an ownership interest, debt agreement, or employer/employee relationship. Financial interest does not include ownership of less than 5 percent of the outstanding equity securities of a publicly traded corporation).

**NOTE:** The definitions of "independent entity" and "financial interest," together with Title 20, Section 1673(i), prohibit conflicts of interest between HERS Providers and HERS Raters, or between Providers/Raters and builders/subcontractors.

**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.

**INFILTRATION CONTROLS** are measures taken to control the infiltration of air. (Mandatory Infiltration control measures include weather-stripping, caulking, and sealing in and around all exterior joints and openings).

**INSTALLER** means the builder's subcontractor or the person installing the equipment.

**INSULATING GLASS UNIT** is a self-contained unit, including the glazings (lites or panes of glass), spacer(s), films (if any), gas infills, and edge caulking, installed in fenestration products. It does not include the frame.

**INSULATION** is a material that limits heat transfer. Insulating material of the types and forms listed in Section 110.8(a) may be installed only if the manufacturer has certified that the insulation complies with the Standards for Insulating Material, Title 24, Part 12, Chapter 12-13 of the California Code of Regulations. (Movable insulation is designed to cover windows and other glazed openings part of the time to reduce heat loss and heat gain.)

**INTEGRATED ENERGY EFFICIENCY RATIO (IEER)** is a single-number cooling part load efficiency figure of merit calculated per the method described in AHRI Standard 340/360. This metric replaces the IPLV for ducted and non-ducted units.

**INTEGRATED PART LOAD VALUE (IPLV)** is a single-number figure of merit calculated per the method described in AHRI Standard 550/590 for use with chillers.

**INTERIOR PARTITION** is an interior wall or floor/ceiling that separates one area of conditioned space from another within the building envelope.

**IPLV** See Integrated Part Load Value.

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

**ISO 13256-2** is the International Organization for Standardization document titled "Water-source heat pumps Testing and rating for performance -- Part 1: Water-to-water and brine-to-water heat pumps," 1998.

**ISO/IEC 17011** is the International Organization for Standardization and the International Electrotechnical Commission document titled "Conformity assessment – General requirements for accreditation bodies accrediting conformity assessment bodies." (EN ISO/IEC 17011:2004)

**ISO/IEC 17020** is the International Organization for Standardization and the International Electrotechnical Commission document titled "General criteria for the operation of various types of bodies performing inspection." (EN ISO/IEC 17020:2004)

**ISO/IEC 17025** is the International Organization for Standardization and the International Electrotechnical Commission document titled "General requirements for the competence of testing and calibration laboratories." 2005 (ANS/ISO/IEC Standard 17025:2005).

**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.

**KNEE WALL** is a sidewall separating conditioned space from attic space under a pitched roof. Knee walls should be insulated as an exterior wall as specified by the chosen method of compliance.

**LANGELIER SATURATION INDEX (LSI)** is expressed as the difference between the actual system pH and the saturation pH. LSI indicates whether water will precipitate, dissolve, or be in equilibrium with calcium carbonate, and is a function of hardness, alkalinity, conductivity, pH and temperature.

**LARGEST NET CAPACITY INCREMENT** is the largest increase in capacity when switching between combinations of base compressors that is expected to occur under the compressed air system control scheme.

**LEFT SIDE** is the left side of the building as one faces the front facade from the outside. This designation is used on the Certificate of Compliance and other compliance documentation.

**LIGHTING** definitions:

**Accent Lighting** is directional lighting designed to highlight or spotlight objects. It can be recessed, surface mounted or mounted to a pendant, stem or track.

**Chandelier** is a ceiling-mounted, close-to-ceiling or suspended decorative luminaire that uses glass, crystal, ornamental metals or other decorative material.

**Compact Fluorescent Lamp** is a fluorescent lamp less than 9 inches maximum overall length (M.O.L.) with a T5 or smaller diameter glass tube that is folded, bent or bridged.

**Decorative Lamp** is a lamp with a candle-like or globe shape envelope including shapes B, BA, C, CA, DC, G, and F as defined in ANSI C79.1-, and with at least 5 percent of its total flux radiated in the 110 deg – 180 deg zone of vertical angles, as measured from the nadir, when the lamp is oriented in a base up position.

**Decorative (Lighting/Luminaire)** is lighting or luminaires installed only for aesthetic purposes and that does not serve as display lighting or general lighting.

**Display Lighting** is lighting that provides a higher level of illuminance to a specific area than the level of surrounding ambient illuminance. Types of display lighting include:

**Floor:** supplementary lighting required to highlight features, such as merchandise on a clothing rack, which is not displayed against a wall.

**Wall:** supplementary lighting required to highlight features, such as merchandise on a shelf, which is displayed on perimeter walls.

**Window:** lighting of objects such as merchandise, goods, and artifacts, in a show window, to be viewed from the outside of a space through a window.

**Case:** lighting of small art objects, artifacts or valuable collections which involves customer inspection of very fine detail from outside of a glass enclosed display case.

**General Lighting** is installed electric lighting that provides a uniform level of illumination throughout an area, exclusive of any provision for special visual tasks or decorative effect, exclusive of daylighting, and also known as ambient lighting.

**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.

**Illuminance** is the incident luminous flux density on a differential element of surface located at a point and oriented in a particular direction, expressed in lumens per unit area.

**Illumination** is light incident on a surface of body, or the general condition of being illuminated.

**Inseparable Solid State Lighting (SSL) Luminaire** is a luminaire featuring solid state lighting components such as LEDs and driver components, which cannot be easily removed or replaced by the end user, thus requiring replacement of the entire luminaire. Removal of solid state lighting components may require the cutting of wires, use of a soldering iron, or damage to or destruction of the luminaire.

**Lamp** is an electrical appliance that produces optical radiation for the purpose of visual illumination, designed with a base to provide an electrical connection between the lamp and a luminaire, and designed to be installed into a luminaire by means of a lamp-holder integral to the luminaire.



**Landscape Lighting** is a type of outdoor lighting that is recessed into or mounted on the ground, paving or raised deck, 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 outdoor luminaire that uses an electric lamp to replicate the appearance of a pre-electric lantern, which used a flame to generate light.

**Light** is the luminous equivalent of power and is properly called luminous flux.

**Lighting**, or illumination, is the application of light to achieve some practical or aesthetic effect.

**Light Emitting Diode (LED)** is a p-n junction solid state diode whose radiated output is a function of its physical construction, material used, and exciting current. The output may be in the near ultraviolet, the visible or in the infrared regions of the spectrum.

**LED Light Engine** is an integrated assembly comprised of LED packages, LED components, LED arrays, LED modules, or LED driver, and other optical, thermal, mechanical and electrical components. The device is intended to connect directly to the branch circuit through a custom connector compatible with the LED luminaire for which it was designed and does not use an ANSI standard base. (IES RP-16-10)

Note: Non-integrated assemblies such as remote mounted drivers, shall also be considered LED light engines, so long as interconnecting conductors of appropriate gauge and length are employed between the drivers and LED packages, arrays or modules, and electrical interconnects are employed at both ends of the conductors.

**Low Voltage** is less than 90 volts.

**Lumen Maintenance** is a strategy used to provide a precise, constant level of lighting from a lighting system regardless of the age of the lamps or the maintenance of the luminaires.

**Luminaire** is a complete lighting unit consisting of lamp(s) and the parts that distribute the light, position and protect the lamp(s), and connect the lamp(s) to the power supply.

**Luminance** is a measure of the light emitting power of a surface, in a particular direction, per unit apparent area.

**Luminous flux** is visually evaluated radiant flux and defines "light" for purposes of lighting design and illuminating engineering.

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

**Omnidirectional lamp** is a general service replacement lamp with an ANSI standard base that emits the majority of light produced in an even distribution. Omnidirectional lamps shall have a luminous distribution that has at least 5 percent of its total flux radiated in the 135 deg – 180 deg zone of vertical angles, as measured from the nadir, when the lamp is oriented in a the base up position. An omnidirectional lamp oriented base up with its luminous intensity values measured on 22.5 deg horizontal angle increments and 5 deg vertical angle increments, shall have 90 percent of the luminous intensities measured values vary by no more than 25 percent from the average of all measured values in all planes. Omnidirectional lamps can be standard; having an ANSI standard lamp shape of A, BT, P, PS, S or T, or omnidirectional lamps can have a non-standard shape, such as a self-ballasted compact fluorescent that utilize a bare spiral.

**Ornamental lighting** for compliance with Part 6 is the following:

**Luminaires** installed outdoor which are rated for 100 watts or less that are post-top luminaires, lanterns, pendant luminaires, chandeliers and marquee lighting.

**Decorative Luminaires** installed indoor that are chandeliers, sconces, lanterns, neon and cold cathode, light emitting diodes, theatrical projectors, moving lights and light color panels.

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

**Permanently Installed lighting** consists of luminaires that are affixed to land, within the meaning of Civil Code Sections 658 and 660, except as provided below. Permanently installed luminaires may be mounted inside or outside of a building or site. Permanently installed luminaires may have either plug-

in or hardwired connections for electric power. Examples include track and flexible lighting systems; lighting attached to walls, ceilings, columns, inside or outside of permanently installed cabinets, internally illuminated cabinets, mounted on poles, in trees, or in the ground; attached to ceiling fans and integral to exhaust fans. Permanently installed lighting does not include portable lighting or lighting that is installed by the manufacturer in exhaust hoods for cooking equipment, refrigerated cases, food preparation equipment, and scientific and industrial equipment.

**Portable Lighting** is lighting, with plug-in connections for electric power, that is: table and freestanding floor lamps; attached to modular furniture; workstation task luminaires; luminaires attached to workstation panels; attached to movable displays; or attached to other personal property.

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

**Precision Lighting** is task lighting for commercial or industrial work that illuminates low contrast, finely detailed, or fast moving objects.

**Radiant power** is the time-rate-flow of radiant energy.

**Radiant Energy** is the electromagnetic or photonic radiant energy from a source.

**Sconce** is a wall mounted decorative accent luminaire.

**Source (light)** is the general term used to reference a source of light. It can refer variously to an electric lamp, a light emitting diode (LED), an entire luminaire with lamp and optical control, or fenestration for daylighting.

**Special Effects Lighting** is lighting installed to give off luminance instead of providing illuminance, which does not serve as general, task, or display lighting.

**Task Lighting** is lighting that is not general lighting and that specifically illuminates a location where a task is performed.

**Temporary Lighting** is a lighting installation, with plug-in connections, that does not persist beyond 60 consecutive days or more than 120 days per year.

**Track Lighting** is a system that includes luminaires and a track, rails, or cables that both mount the system, and deliver electric power. Track lighting includes the following types:

**Line-Voltage Track Lighting** is equipped with luminaires that use line-voltage lamps or that are equipped with integral transformers at each luminaire.

**Low-Voltage Track Lighting** is equipped with remote transformers for use with low-voltage equipment along the entire length of track.

**Track-Mounted Luminaires** are luminaires designed to be attached at any point along a track lighting system. Track mounted luminaires may be line-voltage or low-voltage.

**Tuning** is the ability to set maximum light levels at a lower level than full lighting power.

**LIQUID LINE** is the refrigerant line that leads from the condenser to the evaporator in a split system air conditioner or heat pump. The refrigerant in this line is in a liquid state and is at an elevated temperature. This line should not be insulated.

**LISTED** is in accordance with Article 100 of the California Electrical Code.

**LOW-GWP REFRIGERANT** is a compound used as a heat transfer fluid or gas that is: (A) any compound or blend of compounds, with a GWP Value less than 150; and (B) U.S. EPA Significant New Alternatives Policy (SNAP)-approved; and (C) not an ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, §82.3 (as amended March 10, 2009).

**LOW-RISE ENCLOSED SPACE** is an enclosed space located in a building with 3 or fewer stories.

**LOW-RISE RESIDENTIAL BUILDING** is a building, other than a hotel/motel that is Occupancy Group:

**R-2**, multi-family, with three stories or less; or

**R-3**, single family; or

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**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.

**MAKEUP AIR** is outdoor air deliberately brought into the building from the outside and supplied to the vicinity of an exhaust hood to replace air, vapor, and contaminants being exhausted. Makeup air is generally filtered and fan-forced, and it may be heated or cooled depending on the requirements of the application. Makeup air may be delivered through outlets integral to the exhaust hood or through outlets in the same room. (see Stds.)

**MANDATORY MEASURES CHECKLIST** is a form used by the building plan checker and field inspector to verify compliance of the building with the prescribed list of mandatory features, equipment efficiencies and product certification requirements. The documentation author indicates compliance by initialing, checking, or marking N/A (for features not applicable) in the boxes or spaces provided for the designer.

**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 §110.0 through §110.9 of Part 6.

**LIGHTING CONTROLS** consist of the following:

**Astronomical Time-Switch Control** is an Automatic Time-Switch Control that controls lighting based on the time of day and astronomical events such as sunset and sunrise, accounting for geographic location and calendar date.

**Automatic Daylight Control** uses one or more photosensors to detect changes in daylight illumination and then automatically adjusts the luminous flux of the electric lighting system in response.

**Automatic Multi-Level Daylight Control** adjusts the luminous flux of the electric lighting system in either a series of steps or by continuous dimming in response to available daylight. This kind of control uses one or more photosensors to detect changes in daylight illumination and then automatically adjusts the electric lighting levels in response.

**Automatic Time Switch Control** controls lighting based on the time of day.

**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.

**Countdown Timer Switch** turns lighting or other loads ON when activated using one or more selectable count-down time periods and then automatically turns lighting or other loads OFF when the selected time period had elapsed.

**Dimmer** varies the luminous flux of the electric lighting system by changing the power delivered to that lighting system.

**Dimmer, Full-Range** (Also known as a Continuous Dimmer) varies the luminous flux of the electric lighting system over a continuous range from the device's maximum light output to the device's minimum light output without visually apparent abrupt changes in light level between the various steps.

**Dimmer, Stepped** varies the luminous flux of the electric lighting system in one or more predetermined discrete steps between maximum light output and OFF with changes in light level between adjacent steps being visually apparent.

**Lighting Control, Self Contained** is a unitary lighting control module that requires no additional components to be a fully functional lighting control.

**Lighting Control System** requires two or more components to be installed in the building to provide all of the functionality required to make up a fully functional and compliant lighting control.

**Multi-Level Astronomical Time Switch** is an Astronomical Time Switch Control that reduces lighting power in multiple steps.

**Multi-Level Lighting Control** reduces power going to a lighting system in multiple steps.

**Multiscene Programmable Control** allows for two or more pre-defined lighting settings, in addition to all-OFF, for two or more groups of luminaires to suit multiple activities in the space.

**Occupant Sensing Controls** automatically control levels of illumination, allow for manual operation, and consist of the following types:

**Motion Sensor** is used outdoors, automatically turns lights OFF after an area is vacated of occupants, and automatically turns the lights ON when the area is occupied.

**Occupant Sensor** is used indoors and automatically turns lights OFF after an area is vacated of occupants and is capable of automatically turning the lights ON when an area is occupied.

**Partial-ON Occupant/Motion Sensor** automatically turns lights OFF after an area is vacated of occupants and is capable of automatically or manually turning ON part of the lights when an area is occupied.

**Partial-OFF Occupant/Motion Sensor** automatically turns OFF part of the lights after an area is vacated of occupants and is capable of automatically turning ON the lights when an area is occupied.

**Vacancy Sensor** automatically turns lights OFF after an area is vacated of occupants but requires lights to be turned ON manually.

**Part-Night Outdoor Lighting Control** is a time or occupancy-based lighting control device or system that is programmed to reduce or turn off the lighting power to an outdoor luminaire for a portion of the night.

**Photo Control** automatically turns lights ON and OFF, or automatically adjusts lighting levels, in response to the amount of daylight that is available. A Photo Control may also be one component of a field assembled lighting system, the component having the capability to provide a signal proportional to the amount of daylight to a Lighting Control System to continuously dim or brighten the electric lights in response.

**Track Lighting Integral Current Limiter** consists of a current limiter integral to the end-feed housing of a manufactured line-voltage track lighting system.

**Track Lighting Supplementary Overcurrent Protection Panel** is a Panelboard containing Supplementary Overcurrent Protection Devices as defined in Article 100 of the California Electrical Code, and used only with line voltage track lighting.

**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.

**MEDICAL AND CLINICAL CARE** See Nonresidential Functional Area or Type of Use.

**MERV** is the Minimum Efficiency Reporting Value as determined by ASHRAE Standard 52.2 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size.

**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 curtain wall system.

**MICROCHANNEL CONDENSER** is an air-cooled condenser for refrigeration systems which utilizes multiple small parallel gas flow passages in a flat configuration with fin surfaces bonded between the parallel gas passages.

**MINISPLIT AIR CONDITIONERS AND HEAT PUMPS** are systems that have a single outdoor section and one or more indoor sections. The indoor sections cycle on and off in unison in response to a single indoor thermostat.

**MIXED OCCUPANCY BUILDING** is a building designed and constructed for more than one type of occupancy, such as a three story building with ground floor retail and second and third floor residential apartments.

**MODEL** is a single floor plan of a dwelling unit design. To be considered the same model; dwelling units shall be in the same subdivision or multi-family housing development and have the same energy designs and features, including the same floor area and volume. For multi-family buildings, variations in the exterior surface areas caused by the location of dwelling units within the building do not cause dwelling units to be considered different models.

**NOTE:** For purposes of establishing HERS sampling groups, variations in the basic floor plan layout, energy design, compliance features, zone floor area, or zone volume, that do not change the HERS features to be tested, the heating or cooling capacity of the HVAC unit(s), or the number of HVAC units specified for each dwelling unit, shall not cause dwelling units to be considered different models.

**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 (ACM) Approval Manuals.

**MOVABLE SHADING DEVICE** See "Operable Shading Device."

**MULLION** is a vertical framing member separating adjoining window or door sections. See Dividers.

**MULTI-FAMILY DWELLING UNIT** is a dwelling unit of occupancy type R, as defined by the CBC, sharing a common wall and/or ceiling/floor with at least one other dwelling unit.

**MULTIPLE-SPLIT AIR CONDITIONERS AND HEAT PUMPS** are systems that have two or more indoor sections. The indoor sections operate independently and can be used to condition multiple zones in response to multiple indoor thermostats.

**MULTIPLE ZONE** is a supply fan (and optionally a return fan) with heating and/or cooling heat exchangers (e.g. DX coil, chilled water coil, hot water coil, furnace, electric heater) that serves more than one thermostatic zone. Zones are thermostatically controlled by features including but not limited to variable volume, reheat, recool and concurrent operation of another system.

**MULTIPLE ZONE SYSTEM** is an air distribution system that supplies air to more than one Space Conditioning Zone, each of which has one or more devices (such as dampers, cooling coils, and heating coils) that regulate airflow, cooling, or heating capacity to the zone.

**MUNTINS** See Dividers.

**NET EXHAUST FLOW RATE** is the exhaust flow rate for a hood, minus any internal discharge makeup air flow rate.

**NEMA SSL 7A** is the National Electrical Manufacturers Association document titled "Phase Cut Dimming for Solid State Lighting: Basic Compatibility," 2013 (NEMA SSL 7A-2013).

**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 §1410.0 for nonresidential occupancies and §150.2 for residential occupancies.

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

**NFRC** is the National Fenestration Rating Council. This is a national organization of fenestration product manufacturers, glazing manufacturers, manufacturers of related materials, utilities, state energy offices, laboratories, home builders, specifiers (architects), and public interest groups.

**NOTE:** This organization is designated by the Commission as the Supervisory Entity, which is responsible for rating the U-factors and solar heat gain coefficients of manufactured fenestration

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products (i.e., windows, skylights, glazed doors) that must be used in compliance calculations. See also Fenestration Area and Fenestration Product.

**NFRC 100** is the National Fenestration Rating Council document titled “NFRC 100: Procedure for Determining Fenestration Product U-factors.” (2014) **NFRC 200** is the National Fenestration Rating Council document titled “NFRC 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.” (2014).

**NFRC 202** is the National Fenestration Rating Council document titled “NFRC 202: Procedures for Determining Translucent Fenestration Product Visible Transmittance at Normal Incidence.” (2014).

**NFRC 203** is the National Fenestration Rating Council document titled “NFRC 203: Procedure for Determining Visible Transmittance of Tubular Daylighting Devices.” (2014).

**NFRC 400** is the National Fenestration Rating Council document titled “NFRC 400: Procedure for Determining Fenestration Product Air Leakage.” (2014).

**NONDEPLETABLE SOURCES** is defined as energy that is not obtained from depletable sources. Also referred to as renewable energy, including solar and wind power. See Energy Obtained from Nondepletable Sources.

**NONDUCTED SYSTEM** Is an air conditioner or heat pump that is designed to be permanently installed equipment and directly heats or cools air within the conditioned space using one or more indoor coils that are mounted on room walls and/or ceilings. The unit may be of a modular design that allows for combining multiple outdoor coils and compressors to create one overall system.

**NONRESIDENTIAL BUILDING** is any building which is identified in the California Building Code Table; Description of Occupancy as Group A, B, E, F, H, M, or S; and is a U; as defined by Part 2 of Title 24, CCR.

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

**NONRESIDENTIAL BUILDING OCCUPANCY TYPES** are building types in which a minimum of 90 percent of the building floor area functions as one of the following, which do not qualify as any other Building Occupancy Types more specifically defined in Section 100.1, and which do not have a combined total of more than 10 percent of the area functioning of any Nonresidential Function Areas specifically defined in Section 100.1:

**Auditorium Building** is a public building in which a minimum of 90 percent of the building floor area are rooms with fixed seating that are primarily used for public meetings or gatherings.

**Classroom Building** is a building for an educational institution in which a minimum of 90 percent of the building floor area are classrooms or educational laboratories.

**Commercial and Industrial Storage Building** is a building for which a minimum or 90% of the building floor area is used for storing items.

**Convention Center Building** is a building in which a minimum of 90 percent of the building floor area are rooms for meetings and conventions, which have neither fixed seating nor fixed staging.

**Financial Institution Building** is a building in which a minimum of 90 percent of the building floor area are rooms used for an institution which collects funds from the public and places them in financial assets, such as deposits, loans, and bonds.

**General Commercial and Industrial Work Building** is a building in which a minimum of 90 percent of the building floor area are rooms for performing a craft, assembly or manufacturing operation.

**Grocery Store Building** is a building in which a minimum of 90 percent of the building floor area is sales floor for the sale of foodstuffs.

**Library Building** is a building which is in which a minimum of 90 percent of the building floor area are rooms use as a repository of literary materials kept for reading or reference, such as books, periodicals, newspapers, pamphlets and prints..

**Medical Buildings and Clinic Buildings** are non “I” occupancy buildings in which a minimum of 90 percent of the building floor area are rooms where medical or clinical care is provided, does not

provide overnight patient care, and is used to provide physical and mental care through medical, dental, or psychological examination and treatment.

**Office Building** is a building of CBC Group B Occupancy in which a minimum of 90 percent of the building floor area are rooms in which business, clerical or professional activities are conducted.

**Parking Garage Building** is a building in which a minimum of 90 percent of the building floor area is for the purpose of parking vehicles, which consists of at least a roof over the parking area enclosed with walls on all sides. The building includes areas for vehicle maneuvering to reach designated parking spaces. If the roof of a parking structure is also used for parking, the section without an overhead roof is considered an outdoor parking lot instead of a parking garage.

**Religious Facility Building** is a building in which a minimum of 90 percent of the floor area in the building floor area are rooms for assembly of people to worship.

**Restaurant Building** is a building in which a minimum of 90 percent of the building floor area are rooms in which food and drink are prepared and served to customers in return for money.

**School Building** is a building in which a minimum of 90 percent of the building floor area is used for an educational institution, but in which less than 90 percent of the building floor area is classrooms or educational laboratories, and may include an auditorium, gymnasium, kitchen, library, multi-purpose room, cafeteria, student union, or workroom. A maintenance or storage building is not a school building.

**Theater Building** is a building in which a minimum of 90 percent of the building floor area are rooms having tiers of rising seats or steps for the viewing of motion pictures, or dramatic performances, lectures, musical events and similar live performances.

**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.

**NONRESIDENTIAL FUNCTION AREAS** are those areas, rooms, and spaces within Nonresidential Buildings which fall within the following particular definitions, and are defined according to the most specific definition:

**Aisle Way** is the passage or walkway between storage racks in a Commercial or Industrial Storage Building, where the racks are permanently anchored to the floor and used to store materials such as goods and merchandise, **Atrium** is a large-volume indoor space created by openings between two or more stories but is not used for an enclosed stairway, elevator hoistway, escalator opening, or utility shaft for plumbing, electrical, air-conditioning or other equipment.

**Auditorium Room** is a room with fixed seats used for public meetings or gatherings.

**Auto Repair Bay** is a room or area used to repair automotive equipment and/or vehicles.

**Beauty Salon** is a room or area in which the primary activity is manicures, pedicures, facials, or the cutting or styling of hair.

**Civic Meeting Place** is a space in a government building designed or used for public debate, discussion, or public meetings of governmental bodies.

**Classroom, Lecture, Training, Vocational Room** is a room or area where an audience or class receives instruction.

**Commercial and Industrial Storage Area** is a room or area used for storing of items such as goods and merchandise.

**Commercial and Industrial Storage Area (refrigerated)** is a room or area used for storing items items such as goods and merchandise where mechanical refrigeration is used to maintain the space temperature at 55° F or less.

**Convention, Conference, and Meeting Centers** are rooms or areas that are designed or used for meetings, conventions or events, and that have neither fixed seating nor fixed staging.

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

**Dining** is a room or area where meals that are served to the customers will be consumed.

**Electrical/Mechanical/Telephone Room** is a room in which the building's electrical switchbox or control panels, telephone switchbox, and/or HVAC controls or equipment is located.

**Exercise Center or Gymnasium** is a room or area equipped for gymnastics, exercise equipment, or indoor athletic activities.

**Exhibit, Museum Area** is a room or area in a museum that has for its primary purpose exhibitions, having neither fixed seating nor fixed staging. An exhibit does not include a gallery or other place where art is for sale. An exhibit does not include a lobby, conference room, or other occupancies where the primary function is not exhibitions.

**Financial Transaction Area** is a room or area used by an institution that collects funds from the public and places them in financial assets, such as deposits, loans and bonds, and includes tellers, work stations, and customers' waiting areas; to complete financial transactions. Financial transaction areas do not include private offices, hallways, restrooms, or other support areas.

**General Commercial and Industrial Work Area** is a room or area in which an art, craft, assembly or manufacturing operation is performed. Lighting installed in these areas is classified as follows:

**High bay:** Where the luminaires are 25 feet or more above the floor.

**Low bay:** Where the luminaires are less than 25 feet above the floor.

**Precision:** Where visual tasks of small size or fine detail such as electronics assembly, fine woodworking, metal lathe operation, fine hand painting and finishing, egg processing operations, or tasks of similar visual difficulty are performed.

**Grocery Sales Area** is a room or area 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 or an area where food is prepared.

**Laboratory, Scientific** is a room or area where research, experiments, and measurement in medical and physical sciences are performed requiring examination of fine details. The area may include workbenches, countertops, scientific instruments, and associated floor spaces. Scientific laboratory does not refer to film, computer, and other laboratories where scientific experiments are not performed.

**Laundry** is a room or area primarily designed or used for laundering activities.

**Library Area** is a room or area primarily designed or used as a repository for literary materials, such as books, periodicals, newspapers, pamphlets and prints, kept for reading or reference.

**Reading Area** is a room or area in a library containing tables, chairs, or desks for patrons to use for the purpose of reading books and other reference documents. Library reading areas include reading, circulation, and checkout areas. Reading areas do not include private offices, meeting, photocopy, or other rooms not used specifically for reading by library patrons.

**Stack Area** is a room or area in a library with grouping of shelving sections. Stack aisles include pedestrian paths located in stack areas.

**Lobby:**

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

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

**Locker or Dressing Room** is a room or area for changing clothing, sometimes equipped with lockers.



**Lounge** is a room or area in a public place such as a hotel, airport, club, or bar, where you can sit, wait and relax.

**Mall** is a roofed or covered common pedestrian area within a mall building that serves as access for two or more tenants.

**Medical and Clinical Care Area** is a non "I" occupancy room or area in a building that does not provide overnight patient care and that is used to provide physical and mental care through medical, dental, or psychological examination and treatment, including, but not limited to, laboratories and treatment spaces.

**Museum** is a room or area in which the primary function is the care or exhibit of works of artistic, historical, or scientific value. 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 Area** is a room, area in a building of CBC Group B Occupancy in which business, clerical or professional activities are conducted.

**Open Area** is a warehouse facility term describing a large unobstructed area that is typically used for the handling and temporary storage of goods.

**Parking Garage Areas** include the following:

**Parking Areas** are the areas of a Parking Garage used for the purpose of parking and maneuvering of vehicles on a single floor. Parking areas include sloping floors of a parking garage. Parking areas do not include Daylight Transition Zones, Dedicated Ramps, or the roof of a Parking Garage, which may be present in a Parking Garage.

**Daylight Transition Zone** in a Parking Garage is the interior path of travel for vehicles to enter a parking garage as needed to transition from exterior daylight levels to interior light levels. Daylight Transition Zones only include the path of vehicular travel and do not include adjacent Parking Areas.

**Dedicated Ramps** in Parking Garages are driveways specifically for the purpose of moving vehicles between floors of a parking garage and which have no adjacent parking. Dedicated ramps do not include sloping floors of a parking structure, which are considered Parking Areas.

**Religious Worship Area** is a room or area in which the primary function is for an assembly of people to worship. Religious worship does not include classrooms, offices, or other areas in which the primary function is not for an assembly of people to worship.

**Restroom** is a room providing personal facilities such as toilets and washbasins.

**Retail Merchandise Sales Area** is a room or area in which the primary activity is the sale of merchandise.

**Server Room** is a room smaller than 500 square feet, within a larger building, in which networking equipment and Information Technology (IT) server equipment is housed, and a minimum of five IT servers are installed in frame racks.

**Server Aisle** is an aisle of racks of Information Technology (IT) server equipment in a Server Room. While networking equipment may also be housed on these racks, it is largely a room to manage server equipment.

**Stairs** is a series of steps providing passage for persons from one level of a building to another, including escalators.

**Stairwell** is a vertical shaft in which stairs are located.

**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 Area** is a room or area in a building intended for lease for which a specific tenant is not identified at the time of building permit application.

**Theater Areas** include the following:

**Motion Picture Theater** is an assembly room or area with tiers of rising seats or steps for the showing of motion pictures.

**Performance Theater** is an assembly room or area with tiers of rising seats or steps for the viewing of dramatic performances, lectures, musical events and similar live performances.

**Transportation Function Area** is the ticketing area, waiting area, baggage handling areas, concourse, in an airport terminal, bus or rail terminal or station, subway or transit station, or a marine terminal.

**Videoconferencing Studio** is a room with permanently installed videoconferencing cameras, audio equipment, and playback equipment for both audio-based and video-based two-way communication between local and remote sites.

**Vocational Area** is a room or area 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 or area where samples of merchandise are displayed.

**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.

**NSHP GUIDEBOOK** is the New Solar Homes Partnership Guidebook, currently adopted by the Energy Commission.

**OCCUPIABLE SPACE** is any enclosed space inside the pressure boundary and intended for human activities, including, but not limited to, all habitable spaces, toilets, closets, halls, storage and utility areas, and laundry areas.

**OPEN COOLING TOWER** is an open or direct contact cooling tower which exposes water directly to the cooling atmosphere, thereby transferring the source heat load from the water directly to the air by a combination of heat and mass transfer.

**ORIENTATION, CARDINAL** is one of the four principal directional indicators, north, east, south, and west, which are marked on a compass. Also called cardinal directions.

**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).

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

**OUTDOOR AREAS** are areas external to a building. These include but are not limited to the following areas:

**Building entrance way** is the external area of any operable doorway in or out of a building, including overhead doors. These areas serve any doorway, set of doors (including elevator doors such as in parking garages), turnstile, vestibule, or other form of portal that is ordinarily used to gain access to the building by its users and occupants. Where buildings have separate one-way doors to enter and to leave, this also includes any area serving any doors ordinarily used to leave the building.

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

**Canopy** is a permanent structure, other than a parking garage area, 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 designed or used primarily for the purpose of parking vehicles, having 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. A Carport is not a Garage.

**Hardscape** is the area of an improvement to a site that is paved or has other structural features such as 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.

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

**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.

**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.

**Stairways and Ramps.** Stairways are one or more flights of stairs with the necessary landings and platforms connecting them to form a continuous and uninterrupted passage from one level to another. An exterior stairway is open on at least one side, except for required structural columns, beams, handrails and guards. The adjoining open areas shall be either yards, courts or public ways. The other sides of the exterior stairway need not be open. Ramps are walking surfaces with a slope steeper than 5 percent.

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

**OUTDOOR LIGHTING ZONE** is a geographic area designated by the California Energy Commission in accordance with Part 1, Section 10-114, 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.

**OUTSIDE AIR** See Outdoor Air.

**PACKAGED AIR CONDITIONER OR HEAT PUMP** is an air conditioner or heat pump that combines both the condenser and air handling capabilities in a single enclosure or package.

**PARALLEL FAN-POWERED TERMINAL UNIT** is a terminal unit that combines a VAV damper in parallel with a fan that only runs when the terminal unit is providing heating to the space.

**PART 6** is Title 24, Part 6 of the California Code of Regulations.

**PARTY PARTITION** is a wall, floor, or ceiling that separates the conditioned spaces of two different tenants.

**PART-LOAD OPERATION** occurs when a loaded air compressor is operating below its maximum rated capacity.

**PARTICLE SIZE EFFICIENCY** is the fraction (percentage) of particles that are captured on air filter equipment as determined during rating tests conducted in accordance with ASHRAE Standard 52.2 or AHRI Standard 680. Particle Size Efficiency is measured in three particle size ranges: 0.3-1.0, 1.0-3.0, 3.0-10 microns.

**PERM** is equal to 1 grain of water vapor transmitted per 1 square foot per hour per inch of mercury pressure difference.

**PLENUM** is an air compartment or chamber, including uninhabited crawl space, areas above a ceiling or below a floor, including air spaces below raised floors of computer/data processing centers, or attic spaces, to which one or more ducts are connected and which forms part of either the supply-air, return-air or exhaust air system, other than the occupied space being conditioned.

**POOLS, ANSI/NSPI-5** is the American National Standards Institute and National Spa and Pool Institute document titled "American National Standard for Residential Inground Swimming Pools" 2003 (ANSI/NSPI-5 2003).

**POOLS, AUXILIARY POOL LOADS** are features or devices that circulate pool water in addition to that required for pool filtration, including, but not limited to, solar pool heating systems, filter backwashing, pool cleaners, waterfalls, fountains, and spas.

**POOLS, BACKWASH VALVE** is a diverter valve designed to backwash filters located between the circulation pump and the filter, including, but not limited to, slide, push-pull, multi-port, and full-flow valves.

**POOLS, MULTI-SPEED PUMP** is a pump capable of operating at two (2) or more speeds and includes two-speed and variable-speed pumps.

**POOLS, NSF/ANSI 50** is the NSF International (formerly National Sanitation Foundation) Standard and American National Standards Institute document titled "Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs" 2005 (NSF/ANSI 50 – 2005).

**POOLS, RESIDENTIAL** are permanently installed residential in-ground swimming pools intended to use by a single-family home for noncommercial purposes and with dimensions as defined in ANSI/NSPI-5.

**PRESSURE BOUNDARY** is the primary air enclosure boundary separating indoor and outdoor air. For example, a volume that has more leakage to the outside than to the conditioned space would be considered outside the pressure boundary. Exposed earth in a crawlspace or basement shall not be considered part of the pressure boundary.

**PRIMARY AIRFLOW** is the airflow (cfm or L/s) supplied to the zone from the air-handling unit at which the outdoor air intake is located. It includes outdoor intake air and recirculated air from that air-handling unit but does not include air transferred or air recirculated to the zone by other means.

**PRIMARY STORAGE** is compressed air storage located between the compressors and any dryers or other conditioning equipment.

**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 BOLER** is a type of boiler with a capacity (rated maximum input) of 300,000 Btus per hour (Btu/h) or more that serves a process.

**PROCESS, COVERED** are processes that are regulated under Part 6, serving computer rooms, data centers, elevators, escalators and moving walkways, laboratories, enclosed parking garages, commercial kitchens, refrigerated warehouses, commercial refrigeration, compressed air systems, and process boilers.

**PROCESS, EXEMPT** is process that is not listed as a covered process.

**PROCESS LOAD** is a load resulting from a process.

**PROCESS LOAD, COVERED** is a load resulting from a covered process. (see Stds.)

**PROCESS LOAD, EXEMPT** is a load resulting from an exempt process.

**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.

**PROPOSED DESIGN BUILDING** is a proposed building being modeled using rules described in the Alternative Calculation Method Manual. In order for a building to comply with the standards, the proposed building energy use must be less than or equal to the Standard Design Building energy use and meet the mandatory requirements in the Title 24 Building Energy Efficiency Standards.

**PROPOSED DESIGN BUILDING ENERGY USE** is the predicted energy use of proposed building derived from application of the building energy use modeling rules described in the Alternative Calculation Method (ACM) Approval Manual.

**PUBLIC ADVISER** is the Public Adviser of the Commission.

**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.

**R-VALUE** is the measure of the thermal resistance of insulation or any material or building component expressed in ft<sup>2</sup>-hr-°F/Btu.

**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.

**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.

**REAR** See Back.

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

**RECORD DRAWINGS** are drawings that document the as installed location and performance data on all lighting and space conditioning system components, devices, appliances and equipment, including but not limited to wiring sequences, control sequences, duct and pipe distribution system layout and sizes, space conditioning system terminal device layout and air flow rates, hydronic system and flow rates, and connections for the space conditioning system. Record drawings are sometimes called "as built."

**RECOVERED ENERGY** is energy used in a building that (1) is 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.

**RECOVERY EFFICIENCY** is one measure of the efficiency of water heaters. It is required for water heating energy calculations for some types of water heaters. It is a measure of the percentage of heat from combustion of gas or oil which is transferred to the water. For non-storage type water heaters, the recovery efficiency is really a thermal efficiency.

**REFERENCE APPENDICES** are the Reference Joint Appendices (JA), the Reference Residential Appendices (RA), and the Reference Nonresidential Appendices (NA).

**REFERENCE COMPUTER PROGRAM** is the reference method against which other methods are compared. For the Nonresidential Standards, the reference computer program is DOE 2.1E. For the low-rise Residential Standards the reference computer program is CALRES.

**REFERENCE JOINT APPENDICES** Are the Reference Joint Appendices published by the Commission.

**REFERENCE NONRESIDENTIAL APPENDICES** Are the Nonresidential Appendices published by the Commission.

**REFERENCE RESIDENTIAL APPENDICES** Are the Residential Appendices published by the Commission.

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

**REFRIGERANT CHARGE** is to the amount of refrigerant that is installed or “charged” into an air conditioner or heat pump. The refrigerant is the working fluid. It is compressed and becomes a liquid as it enters the condenser. The hot liquid is cooled in the condenser and flows to the evaporator where it released through the expansion valve. When the pressure is released, the refrigerant expands into a gas and cools. Air is passed over the evaporator to provide the space cooling. When an air conditioner or heat pump has too much refrigerant (overcharged) the compressor may be damaged. When an air conditioner has too little refrigerant (undercharged), the efficiency of the unit is reduced. A thermostatic expansion valve (TXV) can mitigate the impact of improper refrigerant charge.

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

**REFRIGERATED WAREHOUSE** is a building or a space greater than or equal to 3,000 square feet constructed for storage or handling of products, where mechanical refrigeration is used to maintain the space temperature at 55°F or less.

**REGISTERED DOCUMENT** means the document has been submitted to a residential or nonresidential data registry for retention, and the data registry has assigned a unique registration number to the document.

**REGISTRATION PROVIDER** is an organization that administers a data registry service that conforms to the requirements of Reference Joint Appendix JA-7.

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

**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 of an existing building. Repairs shall not increase the preexisting energy consumption of the repaired component, system, or equipment. Replacement of any component, system or equipment for which there are requirements in the standards is considered an alteration and not a repair.

**REPLACEMENT AIR** is outdoor air that is used to replace air removed from a building through an exhaust system. Replacement air may be derived from one or more of the following: makeup air, supply air, transfer air and infiltration. However, the ultimate source of all replacement air is outdoor air. When replacement air exceeds exhaust, the result is exfiltration.

**Supply Air** is air entering a space from an air-conditioning, heating or ventilating system for the purpose of comfort conditioning. Supply air is generally filtered, fan-forced, and heated, cooled, humidified or dehumidified as necessary to maintain specified temperature and humidity conditions.

**Transfer Air** is air transferred, whether actively by fans or passively by pressure differentials, from one room to another within a building through openings in the room envelope.

**Infiltration Air** is outdoor air that enters a building or space through openings in the building or space envelope due to negative pressure in the space or building relative to the exterior of the building envelope.

**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.

**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.

**RIGHT SIDE** is the right side of the building as one faces the front facade from the outside (see Front). This designation is used to indicate the orientation of fenestration and other surfaces, especially in model homes that are constructed in multiple orientations.

**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.

**ROOF, LOW-SLOPED** is a roof that has a ratio of rise to run of 2:12 or less (9.5 degrees from the horizontal).

**ROOF, STEEP-SLOPED** is a roof that has a ratio of rise to run of greater than 2:12 (9.5 degrees from the horizontal).

**ROOF RECOVER BOARD** is a rigid type board, installed directly below a lowsloped roof membrane, with or without above deck thermal insulation, to: (a) improve a roof system's compressive strength, (b) physically separate the roof membrane from the thermal insulation, (c) physically separate a new roof covering from an underlying roof membrane as part of a roof overlay project.

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

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

**R-VALUE** is the measure of the thermal resistance of insulation or any material or building component expressed in (ft<sup>2</sup>-hr °F)/Btu.

**SATURATED CONDENSING TEMPERATURE (CONDENSING TEMPERATURE)** is: (a) for single component and azeotropic refrigerants, the saturation temperature corresponding to the refrigerant pressure at the condenser entrance, or (b) for zeotropic refrigerants, the arithmetic average of the Dew Point and Bubble Point temperatures corresponding to the refrigerant pressure at the condenser entrance.

**SC** See Shading Coefficient.

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

**SEASONAL ENERGY EFFICIENCY RATIO (SEER)** is the total cooling output of an 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.

**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.

**SHOWER HEAD** is a fixture for directing the spray of water in a shower. A shower head may incorporate one or more sprays, nozzles or openings. All components that are supplied standard together and function from one inlet (i.e., after the mixing valve) form a single shower head.

**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, 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 letters 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 FAMILY RESIDENCE** is a building that is of Occupancy Group R-3.

**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.

**SINGLE ZONE is an HVAC** system with a supply fan (and optionally a return fan) and heating and/or cooling heat exchangers (e.g. DX coil, chilled water coil, hot water coil, furnace, electric heater) that serves a single thermostatic zone. This system may or may not be constant volume.

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

**SLAB-ON-GRADE** is an exterior concrete floor in direct contact with the earth below the building.

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

**SMACNA HVAC DUCT CONSTRUCTION STANDARDS** is the Sheet Metal Contractors' National Association document "HVAC Duct Construction Standards Metal and Flexible - 3rd Edition," 2006 (2006ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition).



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

**SOLAR REFLECTANCE** See Reflectance.

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

**SOLAR SAVINGS FRACTION (SSF)** is the fraction of domestic hot water demand provided by a solar water-heating system.

**SOLAR ZONE** is a section of the roof designated and reserved for the future installation of a solar electric or solar thermal system.

**SOUTH-FACING** 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 heating, ventilating or cooling within or associated with conditioned spaces in a building, and may incorporate use of components such as chillers/compressors, distribution systems (air ducts, water piping, refrigerant piping), pumps, air handlers, cooling and heating coils, air or water cooled condensers, economizers, terminal units, and associated controls.

**SPACER, ALUMINUM** is a metal channel that is used either against the glass (sealed along the outside edge of the insulated glass unit), or separated from the glass by one or more beads of caulk, which is used to separate panes of glass in an insulated glass unit.

**SPACER, INSULATING** is a non-metallic, relatively non-conductive material, usually of rubber compounds, that is used to separate panes of glass in an insulated glass unit.

**SPACER, OTHER** is a wood, fiberglass, or composite material that is used as a spacer between panes of glass in insulated glass units.

**SPACER, SQUIGGLE** is a flexible material, usually butyl, formed around a thin corrugated aluminum strip that is used as a spacer in insulated glass units.

**SPECIFIC HEAT** is the quantity of heat that must be added to a unit mass of a material to increase its temperature by one degree. Typical units are Btu/°F-lb.

**SPLIT SYSTEM AIR CONDITIONER OR HEAT PUMP** is an air conditioner or heat pump that has physically separate condenser and air handling units that work together as a single cooling system.

**STANDARD DESIGN BUILDING** is a building that complies with the mandatory and prescriptive requirements in the Title 24 Building Energy Efficiency Standards by using the building energy modeling rules described in the Alternative Calculation Method (ACM) Approval Manual.

**STANDARDS** See Building Energy Efficiency Standards.

**STANDBY LOSS, BTU/HR** is the heat lost per hour from the stored water above room temperature. It is one of the measures of efficiency of water heaters required for water heating energy calculations for some types of water heaters. This standby loss is expressed as Btu/hr.

**STANDBY LOSS, PERCENT** is the ratio of heat lost per hour to the heat content of the stored water above room temperature. It is one of the measures of efficiency of water heaters required for water heating energy calculations for some types of water heaters. Standby loss is expressed as a percentage.

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

**STORAGE, COOL** is a storage area within a refrigerated warehouse where space temperatures are maintained between 32° F and 55° F.

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

**SUBORDINATE OCCUPANCY** is any occupancy type, in mixed occupancy buildings, that is not the dominant occupancy. See Dominant Occupancy, Mixed Occupancy.

**SUCTION LINE** is the refrigerant line that leads from the evaporator to the condenser in a split system air conditioner or heat pump. This line is insulated since it carries refrigerant at a low temperature.

**SUSPENDED FILMS** are low-e coated plastic films stretched between the elements of the spacers between panes of glazing; acts as a reflector to slow the loss of heat from the interior to the exterior.

**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.

**TDV ENERGY** See Time Dependent Valuation (TDV) Energy.

**THERMAL BREAK WINDOW FRAME** is metal fenestration frames that are not solid metal from the inside to the outside, but are separated in the middle by a material, usually urethane, with a lower conductivity.

**THERMAL CONDUCTIVITY** is the quantity of heat that will flow through a unit area of the material per hour when the temperature difference through the material is one degree.

**THERMAL EMITTANCE** See Emittance, Thermal.

**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 over time of a material or building component to the passage of heat in (hr. x ft.<sup>2</sup> 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.

**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.

**TITLE 24** is all of the building standards and associated administrative regulations published in Title 24 of the California Code of Regulations. The Building Energy Efficiency Standards are contained in Part 6. Part 1 contains the administrative regulations for the building standards.

**TOTAL HEAT OF REJECTION (THR)** is the heat absorbed at the evaporator plus the heat picked up in the suction line plus the heat added to the refrigerant in the compressor.

**TOWNHOUSE** is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.

**TRANSFER AIR** is air transferred, whether actively by fans or passively by pressure differentials, from one room to another within a building through openings in the room envelope.

**TRIM COMPRESSOR** is a compressor that is designated for part-load operation, handling the short term variable trim load of end uses, in addition to the fully loaded base compressors.

**U-FACTOR, CENTER OF GLAZING (U<sub>c</sub>)** is the U-factor for the center of glazing area

**U-FACTOR**, is the overall coefficient of thermal transmittance of a fenestration, wall, floor, roof or ceiling component, in Btu/(hr. x ft.<sup>2</sup> x °F), including air film resistance at both surfaces.

**U-FACTOR, TOTAL FENESTRATION PRODUCT (U<sub>t</sub>)** is the U-factor for the total fenestration product.

**UIMC** See Unit Interior Mass Capacity.

**UL** is the Underwriters Laboratories.

**UL 1574** is the Underwriters Laboratories document titled "Track Lighting Systems," 2000.

**UL 1598** is the Underwriters Laboratories document titled "Standard for Luminaires," 2000.

**UL 181** is the Underwriters Laboratories document titled "Standard for Factory-Made Air Ducts and Air Connectors," 1996.

**UL 181A** is the Underwriters Laboratories document titled "Standard for Closure Systems for Use With Rigid Air Ducts and Air Connectors," 1994.

**UL 181B** is the Underwriters Laboratories document titled "Standard for Closure Systems for Use With Flexible Air Ducts and Air Connectors," 1995.

**UL 723** is the Underwriters Laboratories document titled "Standard for Test for Surface Burning Characteristics of Building Materials," 1996.

**UL 727** is the Underwriters Laboratories document titled "Standard for Oil-Fired Central Furnaces," 2006.

**UL 731** is the Underwriters Laboratories document titled "Standard for Oil-Fired Unit Heaters," 2006 with revisions 1 through 7.

**UL 2108** is the Underwriters Laboratories document titled "Low Voltage Lighting Systems," 2008.

**UL DATA ACCEPTANCE PROGRAM (DAP)** is an Underwriters Laboratory program that utilizes work conducted by a client as well as third-party test facilities in accordance with national and international accreditation criteria to facilitate the conduct of investigations of products. Among the types UL uses are Witnessed Test Data Program (WTDP) where UL witnesses the tests being conducted, Client Test Data Program (CTDP) which is where the client conducts the test and submits the data for UL review, and Third Party Test Data Program (TPTDP) where testing is conducted by another testing organization for clients and submitted to UL for review.

**UL®** is the Underwriters Laboratories.

**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.

**U-VALUE** See U-factor.

**VAPOR RETARDER CLASS** is a measure of the ability of a material or assembly to limit the amount of moisture that passes through the material or assembly. Vapor retarder class shall be defined using the desiccant method with Procedure A of ASTM E96 as follows:

Class I: 0.1 perm or less

Class II:  $0.1 < \text{perm} < 1.0$  perm

Class III:  $1.0 < \text{perm} < 10$  perm (see Stds.)

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

**VENDING MACHINE** is a machine for vending and dispensing refrigerated or non-refrigerated food and beverages or general merchandise.

**VENTILATION AIR** is that portion of supply air which comes from outside plus any recirculated air that has been treated to maintain the desired quality of air within a designated space. See also Outside Air.

**VINYL WINDOW FRAME** is a fenestration frame constructed with a polyvinyl chloride (PVC) which has a lower conductivity than metal and a similar conductivity to wood.

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

**WATER BALANCE IN EVAPORATIVE COOLING TOWERS** The water balance of a cooling tower is:

$$M = E + B, \text{ where:}$$

M = makeup water (from the mains water supply)

E = losses due to evaporation

B = losses due to blowdown

**WEATHERSTRIPPING** is a specially designed strip, seal or gasket attached to doors and windows to prevent infiltration and exfiltration through cracks around the openings. Weatherstripping is one of the mandatory requirements for all new residential construction. See Infiltration, Exfiltration.

**WEIGHTED AVERAGING** is an arithmetic technique for determining an average of differing values for the members of a set by weighting each value by the extent to which the value occurs. In some cases when two or more types of a building feature, material or construction assembly occur in a building, a weighted average of the different types may be sufficiently accurate to represent the energy impact of each type considered separately.

**WEST-FACING** See Orientation.

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

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

**WOOD STOVE** See Wood Heater.

**ZONAL CONTROL** is the practice of dividing a residence into separately controlled HVAC zones. This may be done by installing multiple HVAC systems that condition a specific part of the building, or by installing one HVAC system with a specially designed distribution system that permits zonal control. The Energy Commission has approved an alternative calculation method for analyzing the energy impact of zonally controlled space heating and cooling systems. To qualify for compliance credit for zonal control, specific eligibility criteria specified in the Residential ACM Manual must be met.

**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 computer rooms, 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 §140.4(b)3 or §150.0(h), as applicable, can be maintained throughout the zone by a single controlling device.