

## CHAPTER 2 [CE]

# DEFINITIONS

### SECTION C201 GENERAL

**C201.1 Scope.** Unless stated otherwise, the following words and terms in this code shall have the meanings indicated in this chapter.

**C201.2 Interchangeability.** Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural includes the singular.

**C201.3 Terms defined in other codes.** Terms that are not defined in this code but are defined in the *International Building Code*, *International Fire Code*, *International Fuel Gas Code*, *International Mechanical Code*, *Uniform Plumbing Code* or the *International Residential Code* shall have the meanings ascribed to them in those codes.

**C201.4 Terms not defined.** Terms not defined by this chapter shall have ordinarily accepted meanings such as the context implies.

### SECTION C202 GENERAL DEFINITIONS

**ABOVE-GRADE WALL.** A wall enclosing *conditioned space* that is not a below-grade wall. This includes between-floor spandrels, peripheral edges of floors, roof and basement knee walls, dormer walls, gable end walls, walls enclosing a mansard roof and skylight shafts.

**ACCESS (TO).** That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction.

**ADDITION.** An extension or increase in the *conditioned space* floor area, number of stories, or height of a building or structure.

**AFFORDABLE HOUSING.** Affordable housing for the purposes of this code shall include buildings which: (a) receive or have received public funding or an allocation of federal low-income housing tax credits; and (b) are subject to a regulatory agreement, covenant, or other legal instrument recorded on the property title, and enforceable by The City of Seattle, Washington State Housing Finance Commission, State of Washington, King County, U.S. Department of Housing and Urban Development, or other similar entity as approved by the Seattle Director of Housing, that either:

1. Restricts at least 40 percent of the units to occupancy by households earning no greater than 60 percent of median income, and controls the rents that may be charged, for a minimum period of 40 years; or
2. Restricts initial and subsequent sales of at least 40 percent of the residential units to households with incomes no greater than 80 percent of median income, for a minimum period of 50 years. The sale price for sales subsequent to the initial sale shall be calculated to allow modest growth in homeowner equity while maintaining long-term affordability for future buyers.

**AIR BARRIER.** One or more materials joined together in a continuous manner to restrict or prevent the passage of air through the building thermal envelope and its assemblies.

**AIR CURTAIN.** A device, installed at the building entrance, that generates and discharges a laminar air stream intended to prevent the infiltration of external, unconditioned air into the conditioned spaces, or the loss of interior, conditioned air to the outside.

**ALTERATION.** Any construction, retrofit or renovation to an existing structure other than repair or addition. Also, a change in a building, electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type or purpose of the original installation.

**APPROVED.** Acceptable to the *code official*.

**APPROVED AGENCY.** An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification research reports, where such agency has been *approved* by the *code official*.

**ATTIC AND OTHER ROOFS.** ((All other roofs)) Roofs other than roofs with insulation entirely above deck and metal building roofs, including roofs with insulation entirely below (inside of) the roof structure (i.e., attics, cathedral ceilings, and single-rafter ceilings), roofs with insulation both above and below the roof structure, and roofs without insulation, ((but excluding roofs with insulation entirely above deck and metal building roofs.))

**AUTOMATIC.** Self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current strength, pressure, temperature or mechanical configuration (see “Manual”).

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**AUTOMATIC CONTROL DEVICE.** A device capable of automatically turning loads off and on without manual intervention.

**BELOW-GRADE WALL.** That portion of a wall in the building envelope that is entirely below the finish grade and in contact with the ground.

**BLOCK.** A generic concept used in energy simulation. It can include one or more thermal zones. It represents a whole building or portion of a building with the same use type served by the same HVAC system type.

**BOILER, MODULATING.** A boiler that is capable of more than a single firing rate in response to a varying temperature or heating load.

**BOILER SYSTEM.** One or more boilers, their piping and controls that work together to supply steam or hot water to heat output devices remote from the boiler.

**BUBBLE POINT.** The refrigerant liquid saturation temperature at a specified pressure.

**BUILDING.** Any structure used or intended for supporting or sheltering any use or occupancy, including any mechanical systems, service water heating systems and electric power and lighting systems located on the building site and supporting the building.

**BUILDING COMMISSIONING.** A process that verifies and documents that the building systems have been installed, and function according to the approved construction documents.

**BUILDING ENTRANCE.** Any doorway, set of doors, revolving door, vestibule, or other form of portal (including elevator doors such as in parking garages) that is ordinarily used to gain access to the building or to exit from the building by its users and occupants. This does not include doors solely used to directly enter mechanical, electrical, and other building utility service equipment rooms, or doors for emergency egress only. Where buildings have separate one-way doors to enter and leave, this also includes any doors ordinarily used to leave the building.

**BUILDING SITE.** A contiguous area of land that is under the ownership or control of one entity.

**BUILDING THERMAL ENVELOPE.** The below-grade walls, above-grade walls, floors, ceilings, roofs, and any other building element assemblies that enclose *conditioned space* or provides a boundary between *conditioned space*, *semiheated space* and exempt or unconditioned space.

**C-FACTOR (THERMAL CONDUCTANCE).** The coefficient of heat transmission (surface to surface) through a building component or assembly, equal to the time rate of heat flow per unit area and the unit temperature difference between the warm side and cold side surfaces (Btu/h ft<sup>2</sup> x °F) [W/(m<sup>2</sup> x K)].

**CAPTIVE KEY DEVICE.** A lighting control that will not release the key that activates the override when the lighting is on.

**CAVITY INSULATION.** Insulating material located between framing members.

**CERTIFIED COMMISSIONING PROFESSIONAL.** An individual who is certified by an ANSI/ISO/IEC 17024:2012 accredited organization to lead, plan, coordinate, and manage commissioning teams and implement the commissioning process.

**CHANGE OF OCCUPANCY.** A change in the use of a building or a portion of a building that results in any of the following:

1. A *change of occupancy* classification.
2. A change from one group to another group within an occupancy classification.
3. Any change in use within a group for which there is a change in the application of the requirements of this code.

**CIRCULATING HOT WATER SYSTEM.** A specifically designed water distribution system where one or more pumps are operated in the service hot water piping to circulate heated water from the water-heating equipment to the fixture supply and back to the water-heating equipment.

**CLERESTORY FENESTRATION.** See “Fenestration.”

**CLIMATE ZONE.** A geographical region based on climatic criteria as specified in this code.

**CODE OFFICIAL.** The (~~officer or other designated authority~~) Director of the Seattle Department of Construction and Inspections charged with the administration and enforcement of this code, or a duly authorized representative.

**COEFFICIENT OF PERFORMANCE (COP) – COOLING.** The ratio of the rate of heat removal to the rate of energy input, in consistent units, for a complete refrigerating system or some specific portion of that system under designated operating conditions.

**COEFFICIENT OF PERFORMANCE (COP) – HEATING.** The ratio of the rate of heat removal to the rate of heat delivered to the rate of energy input, in consistent units, for a complete heat pump system, including the compressor and, if applicable, auxiliary heat, under designated operating conditions.

**COMMERCIAL BUILDING.** For this code, all buildings not included in the definition of “Residential buildings.”

**COMPUTER ROOM.** A room whose primary function is to house equipment for the processing and storage of electronic data and that has a design *total information technology equipment (ITE) equipment load* less than or equal to 20 watts per square foot of conditioned floor area (215 watts/m<sup>2</sup>) or a design *ITE equipment load* less than or equal to 10 kW. See also “Data center.”

**CONDENSING UNIT.** A factory-made assembly of refrigeration components designed to compress and liquefy a specific refrigerant. The unit consists of one or more refrigerant compressors, refrigerant condensers (air-cooled, evaporatively cooled, or water-cooled), condenser fans and motors (where used) and factory-supplied accessories.

**CONDITIONED FLOOR AREA.** The horizontal projection of the floors associated with the *conditioned space*.

**CONDITIONED SPACE.** An area, room or space that is enclosed within the building thermal envelope and that is directly heated or cooled or that is indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned spaces, where they are separated from conditioned spaces by uninsulated walls, floors or ceilings, or where they contain uninsulated ducts, piping or other sources of heating or cooling. Elevator shafts, stair enclosures, enclosed corridors connecting conditioned spaces, and enclosed spaces through which conditioned air is transferred at a rate exceeding three air changes per hour are considered conditioned spaces for the purposes of the building thermal envelope requirements.

**CONTINUOUS INSULATION (CI).** Insulating material that is continuous across all structural members without metal thermal bridges other than fasteners that have a total cross-sectional area not greater than 0.04 percent (0.12 percent where all metal thermal bridges are stainless steel) of the envelope surface through which they penetrate, and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope.

**CONTROLLED PLANT GROWTH ENVIRONMENT.** Group F and U buildings or spaces that are used exclusively for and specifically controlled to facilitate and enhance plant growth and production by manipulating various indoor environmental conditions. Technologies include indoor agriculture, cannabis growing, hydroponics, aquaculture and aquaponics. Controlled indoor environment variables include, but are not limited to, temperature, air quality, humidity and carbon dioxide.

**CONTROLLED RECEPTACLE.** An electrical receptacle that is controlled by an automatic control device.

**CURTAIN WALL.** Fenestration products used to create an external nonload-bearing wall that is designed to separate the exterior and interior environments.

**DATA ACQUISITION SYSTEM.** An electronic system managed by the building owner to collect, tabulate and display metering information.

**DATA CENTER.** A room or series of rooms that share *Data Center Systems* whose primary function is to house equipment for the processing and storage of electronic data, which has a design *total information technology equipment (ITE) equipment power density* exceeding 20 watts per square foot of conditioned area and a total design *ITE equipment load* greater than 10 kW.

**DATA CENTER SYSTEMS.** HVAC systems, electrical systems, equipment, or portions thereof used to condition *ITE* or electrical systems in a *data center*.

**DAYLIGHT RESPONSIVE CONTROL.** A device or system that provides *automatic* control of electric light levels based on the amount of daylight in a space.

**DAYLIGHT ZONE.** The portion of the building interior floor area that is illuminated by natural daylight through sidelit and toplit fenestration.

**DECORATIVE APPLIANCE, VENTED.** A vented appliance wherein the primary function lies in the aesthetic effect of the flames.

**DEMAND CONTROL VENTILATION (DCV).** A ventilation system capability that provides for the automatic reduction of outdoor air intake below design rates when the actual occupancy of spaces served by the system is less than design occupancy.

**DEMAND RECIRCULATION WATER SYSTEM.** A water distribution system having one or more recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe.

**DOOR, GARAGE.** Doors rated by ASMA 105 with a single panel or sectional panels.

**DOOR, NONSWINGING.** Roll-up, tilt-up, metal coiling and sliding doors, access hatches, and all other doors that are not swinging doors or garage doors with less than or equal to 14 percent glazing.

**DOOR, SWINGING.** Doors that are hinged on one side and revolving doors.

**DUCT.** A tube or conduit utilized for conveying air. The air passages of self-contained systems are not to be construed as air ducts.

**DUCT SYSTEM.** A continuous passageway for the transmission of air that, in addition to ducts, includes duct fittings, dampers, plenums, fans and accessory air-handling equipment and appliances.

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

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**DX-DEDICATED OUTDOOR AIR SYSTEM UNITS (DX-DOAS UNITS).** A type of air-cooled, water-cooled or water source factory assembled product that dehumidifies 100 percent outdoor air to a low dew point and includes reheat that is capable of controlling the supply dry-bulb temperature of the dehumidified air to the designated supply air temperature. This conditioned outdoor air is then delivered directly or indirectly to the conditioned spaces. It may precondition outdoor air by containing an enthalpy wheel, sensible wheel, desiccant wheel, plate heat exchanger, heat pipes, or other heat or mass transfer apparatus.

**DYNAMIC GLAZING.** Any fenestration product that has the fully reversible ability to change its performance properties, including *U*-factor, SHGC, or VT.

**ECONOMIZER, AIR.** A duct and damper arrangement and *automatic* control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling during mild or cold weather.

**ECONOMIZER, WATER.** A system where the supply air of a cooling system is cooled indirectly with water that is itself cooled by heat or mass transfer to the environment without the use of mechanical cooling.

**ELECTRICAL LOAD COEFFICIENT (ELC).** In a *data center*, the ratio of the sum of three specific electrical losses (or losses calculated from efficiencies) to the *ITE* load itself. Specifically, *ELC* equals the sum of the incoming (to *ITE*) electrical service losses, UPS losses, and *ITE* distribution losses all divided by the peak *ITE* load. The design *ELC* is calculated at the full load design condition with active redundant equipment engaged, and the annual *ELC* is calculated the same way because it is assumed that *ITE* runs constantly at full power all year.

**ENCLOSED SPACE.** A volume surrounded by solid surfaces such as walls, floors, roofs, and openable devices such as doors and operable windows.

**END USE CATEGORY.** A load or group of loads that consume energy in a common or similar manner.

**ENERGY ANALYSIS.** A method for estimating the annual energy use of the *proposed design* and *standard reference design* based on estimates of energy use.

**ENERGY COST.** The total estimated annual cost for purchased energy for the building functions regulated by this code, including applicable demand charges.

**ENERGY RECOVERY VENTILATION SYSTEM.** Systems that employ air-to-air heat exchangers to recover energy from exhaust air for the purpose of preheating, precooling, humidifying or dehumidifying outdoor ventilation air prior to supplying the air to a space, either directly or as part of an HVAC system.

**ENERGY SIMULATION TOOL.** An *approved* software program or calculation-based methodology that projects the annual energy use of a building.

**ENERGY SOURCE METER.** A meter placed at the source of the incoming energy that measures the energy delivered to the whole building or metered space.

**ENTRANCE DOOR.** A vertical fenestration product used for occupant ingress, egress and access in nonresidential buildings including, but not limited to, exterior entrances utilizing latching hardware and *automatic* closers and containing over 50 percent glazing specifically designed to withstand heavy duty usage.

**EQUIPMENT ROOM.** A space that contains either electrical equipment, mechanical equipment, machinery, water pumps or hydraulic pumps that are a function of the building's services.

**EXTERIOR WALL.** Walls including both above-grade walls and below-grade walls.

**FAN BRAKE HORSEPOWER (BHP).** The horsepower delivered to the fan's shaft. Brake horsepower does not include the mechanical drive losses (belts, gears, etc.).

**FAN EFFICIENCY GRADE (FEG).** A numerical rating identifying the fan's aerodynamic ability to convert shaft power, or impeller power in the case of a direct-driven fan, to air power.

**FAN SYSTEM BHP.** The sum of the fan brake horsepower of all fans that are required to operate at fan system design conditions to supply air from the heating or cooling source to the *conditioned space(s)* and return it to the source or exhaust it to the outdoors.

**FAN SYSTEM DESIGN CONDITIONS.** Operating conditions that can be expected to occur during normal system operation that result in the highest supply fan airflow rate to conditioned spaces served by the system, other than during air economizer operation.

**FAN SYSTEM MOTOR NAMEPLATE HP.** The sum of the motor nameplate horsepower of all fans that are required to operate at design conditions to supply air from the heating or cooling source to the *conditioned space(s)* and return it to the source or exhaust it to the outdoors.

**FENESTRATION.** Products classified as either skylights or vertical fenestration.

**SKYLIGHTS.** Glass or other transparent or translucent glazing material installed at a slope of less than 60 degrees (91.05 rad) from horizontal, including unit skylights, tubular daylighting devices and glazing materials in solariums, sunrooms, roofs and sloped walls.

**VERTICAL FENESTRATION.** Windows that are fixed or operable, doors with no more than 50 percent glazed area and glazed block composed of glass or other transparent or translucent glazing materials and installed at a slope of not less than 60 degrees (91.05 rad) from horizontal. Opaque areas such as spandrel panels are not considered vertical fenestration.

**CLERESTORY FENESTRATION.** An upper region of vertical fenestration provided for the purpose of admitting daylight beyond the perimeter of a space. The entire clerestory fenestration assembly is installed at a height greater than 8 feet above the finished floor.

**FENESTRATION AREA.** Total area of the fenestration measured using the rough opening, and including the glazing, sash and frame.

**FENESTRATION PRODUCT, FIELD-FABRICATED.** 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 or exterior door. Field fabricated does not include site-built fenestration.

**FENESTRATION PRODUCT, SITE-BUILT.** A fenestration designed to be made up of field-glazed or field-assembled units using specific factory cut or otherwise factory-formed framing and glazing units. Examples of site-built fenestration include storefront systems, curtain walls, and atrium roof systems.

**F-FACTOR.** The perimeter heat loss factor for slab-on-grade floors (Btu/h × ft × °F) [W/(m × K)].

**FLOOR AREA, NET.** The actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

**FURNACE ELECTRICITY RATIO.** The ratio of furnace electricity use to total furnace energy computed as ratio =  $(3.412 \times E_{AE}) / (1000 \times E_F + 3.412 \times E_{AE})$  where  $E_{AE}$  (average annual auxiliary electrical consumption) and  $E_F$  (average annual fuel energy consumption) are defined in Appendix N to Subpart B of Part 430 of Title 10 of the Code of Federal Regulations and  $E_F$  is expressed in millions of Btus per year.

**GENERAL LIGHTING.** Lighting that provides a substantially uniform level of illumination throughout an area. General lighting shall not include lighting that provides a dissimilar level of illumination to serve a specific application or decorative feature within such area.

**GREENHOUSE.** A structure or a thermally isolated area of a building that maintains a specialized sunlit environment that is used exclusively for, and essential to, the cultivation, protection or maintenance of plants. Greenhouses are those that are erected for a period of 180 days or more.

**GROUP R.** Buildings or portions of buildings that contain any of the following occupancies as established in the *International Building Code*:

1. Group R-1.
2. Group R-2 where located more than three stories in height above grade plane.

**HEAT TRAP.** An arrangement of piping and fittings, such as elbows, or a commercially available heat trap that prevents thermosiphoning of hot water during standby periods.

**HEAT TRAP, PIPE CONFIGURED.** A pipe configured heat trap is either, as applicable:

1. A device specifically designed for the purpose or an arrangement of tubing that forms a loop of 360 degrees, or
2. Piping that from the point of connection to the water heater (inlet or outlet) includes a length of piping directed downward before connection to the vertical piping of the supply water or hot-water distribution system.

**HEATED SLAB-ON-GRADE FLOOR.** Slab-on-grade floor construction in which the heating elements, hydronic tubing, or hot air distribution system is in contact with, or placed within or under, the slab.

**HEATED WATER CIRCULATION SYSTEM.** A water distribution system having one or more recirculation pumps that pump water from a heated water source through a dedicated hot water circulation pipe or piping system.

**HIGH SPEED DOOR.** A nonswinging door used primarily to facilitate vehicular access or material transportation, with a minimum opening rate of 32 inches (813 mm) per second, a minimum closing rate of 24 inches (610 mm) per second and that includes an *automatic*-closing device.

**HISTORIC BUILDINGS.** ((Buildings that are listed in or eligible for listing in the National Register of Historic Places, or designated as historic under an appropriate state or local law.)) See *Landmark*.

**HUMIDISTAT.** A regulatory device, actuated by changes in humidity, used for *automatic* control of relative humidity.

**HVAC TOTAL SYSTEM PERFORMANCE RATIO (HVAC TSPR).** The ratio of the sum of a building's annual heating and cooling load in thousands of Btus to the sum of annual carbon emissions in pounds from energy consumption of the building HVAC systems. Carbon emissions shall be calculated by multiplying site energy consumption by the carbon emission factors from Table C407.1.

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**IEC DESIGN H MOTOR.** An electric motor that meets all of the following:

1. It is an induction motor designed for use with three-phase power.
2. It contains a cage rotor.
3. It is capable of direct-on-line starting.
4. It has 4, 6 or 8 poles.
5. It is rated from 0.4 kW to 1600 kW at a frequency of 60 Hz.

**IEC DESIGN N MOTOR.** An electric motor that meets all of the following:

1. It is an inductor motor designed for use with three-phase power.
2. It contains a cage rotor.
3. It is capable of direct-on-line starting.
4. It has 2, 4, 6 or 8 poles.
5. It is rated from 0.4 kW to 1600 kW at a frequency of 60 Hz.

**INFILTRATION.** The uncontrolled inward air leakage into a building caused by the pressure effects of wind or the effect of differences in the indoor and outdoor air density or both.

**INFORMATION TECHNOLOGY EQUIPMENT (ITE).** *ITE* includes computers, data storage, servers, and network/communication equipment.

**INSULATION ENTIRELY ABOVE DECK.** A roof with all insulation:

1. Installed above (outside of) the roof structure; and
2. Continuous (i.e., uninterrupted by framing members).

**INTEGRATED ENERGY EFFICIENCY RATIO (IEER).** A single-number figure of merit expressing cooling part-load EER efficiency for unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities for the equipment.

**INTEGRATED PART LOAD VALUE (IPLV).** A single number figure of merit based on part-load EER, COP, or kW/ton expressing part-load efficiency for air conditioning and heat pump equipment on the basis of weighted operation at various load capacities for equipment.

**INTEGRATED SEASONAL COEFFICIENT OF PERFORMANCE (ISCOP).** A seasonal efficiency number that is a combined value based on the formula listed in AHRI Standard 920 of the two COP values for the heating season of a DX-DOAS unit water or air source heat pump, expressed in W/W.

**INTEGRATED SEASONAL MOISTURE REMOVAL EFFICIENCY (ISMRE).** A seasonal efficiency number that is a combined value based on the formula listed in AHRI Standard 920 of the four dehumidification moisture removal efficiency (MRE) ratings required for DX-DOAS units, expressed in lb. of moisture/kWh.

**ISOLATION DEVICES.** Devices that isolate HVAC zones so they can be operated independently of one another. Isolation devices include separate systems, isolation dampers and controls providing shutoff at terminal boxes.

**IT (INFORMATION TECHNOLOGY) ENERGY.** Electrical energy consumed by UPS (uninterruptible power supply) units, servers, and associated electronic data storage and data processing equipment, but not by lighting or HVAC equipment.

**LABELED.** Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

**LANDMARK.** A building or structure that is subject to a requirement to obtain a certificate of approval from the City Landmarks Preservation Board before altering or making significant changes to specific features or characteristics, that has been nominated for designation or has been designated for preservation by the City Landmarks Preservation Board, that has been designated for preservation by the State of Washington, has been listed or determined eligible to be listed in the National Register of Historic Places, or is located in a landmark or special review district subject to a requirement to obtain a certificate of approval before making a change to the external appearance of the structure.

**LINER SYSTEM (LS).** A system that includes the following:

1. A continuous vapor barrier liner membrane that is installed below the purlins and that is uninterrupted by framing members.
2. An uncompressed, unfaced insulation resting on top of the liner membrane and located between the purlins.

For multilayer installations, the last rated *R-value* of insulation is for unfaced insulation draped over purlins and then compressed when the metal roof panels are attached.

**LISTED.** Equipment, materials, products or services included in a list published by an organization acceptable to the *code official* and concerned with evaluation of products or services that maintains periodic inspection of production of *listed* equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

**LOW SLOPED ROOF.** A roof having a slope less than 2 units vertical in 12 units horizontal.

**LOW-VOLTAGE DRY-TYPE DISTRIBUTION TRANSFORMER.** A transformer that is air-cooled, does not use oil as a coolant, has an input voltage less than or equal to 600 volts and is rated for operation at a frequency of 60 hertz.

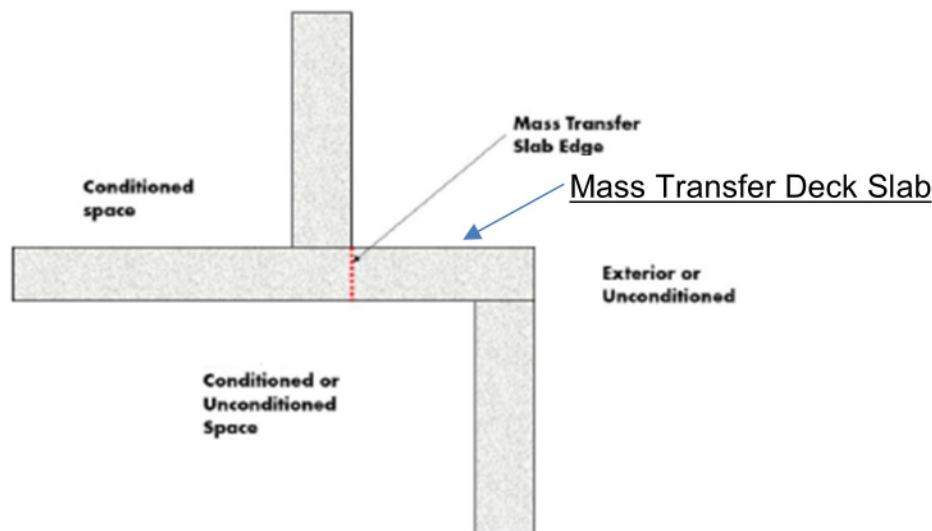
**LOW-VOLTAGE LIGHTING.** A lighting system consisting of an isolating power supply, the low voltage luminaires, and associated equipment that are all identified for the use.

**LUMINAIRE.** A complete lighting unit consisting of a lamp or lamps together with the housing designed to distribute the light, position and protect the lamps, and connect the lamps to the power supply.

**LUMINAIRE-LEVEL LIGHTING CONTROL.** A lighting system consisting of one or more *luminaires* where each *luminaire* has embedded lighting control logic, occupancy and ambient light sensors, and local override switching capability, where required. Each *luminaire* shall also have local or central wireless networking capabilities to detect and share information with other *luminaires* to adjust to occupancy and/or daylight in the space.

**MANUAL.** Capable of being operated by personal intervention (see “Automatic”).

**MASS TRANSFER DECK SLAB.** (~~EDGE. That portion of the above-grade wall made up of the concrete slab where it extends past the footprint of the floor above, and there is space (conditioned or unconditioned) below the slab.)~~ A concrete slab designed to transfer structural load from the building perimeter wall or column line above, laterally to an offset wall or column line below, and which has conditioned or semi-heated space on the inside of the upper wall and exterior or unconditioned space on the outside of the upper wall. The area of the slab edge shall be defined as the thickness of the slab multiplied by the ((~~perimeter~~)) length of the edge condition. Examples of this condition include, but are not limited to, the transition from an above-grade structure to a below-grade structure or the transition from a tower to a podium. Cantilevered balconies do not meet this definition.



**MECHANICAL COOLING.** Reducing the temperature of a gas or liquid by using vapor compression, absorption, desiccant dehumidification combined with evaporative cooling, or another energy-driven thermodynamic cycle. Indirect or direct evaporative cooling alone is not considered mechanical cooling.

**MECHANICAL HEATING.** Raising the temperature of a gas or liquid by use of fossil fuel burners, electric resistance heaters, heat pumps, or other systems that require energy to operate.

**MECHANICAL LOAD COEFFICIENT (MLC).** In a *data center*, the ratio of the cooling system’s net use of energy to that of the *ITE*. The design *MLC* is calculated for a local peak weather condition (stipulated in ASHRAE 90.4) and equals the sum of all active cooling equipment input power, divided by total power into the *ITE*. The annual *MLC* is calculated using hourly TMY3 weather data for the data center’s location and equals the sum of all energy flowing into the cooling system to respond to that weather, minus any energy successfully recovered to avoid any new energy use, all divided by the energy flowing into the *ITE* during the same period.

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**METAL BUILDING ROOF.** A roof that:

1. Is constructed with a metal, structural, weathering surface;
2. Has no ventilated cavity; and
3. Has the insulation entirely below deck (i.e., does not include composite concrete and metal deck construction nor a roof framing system that is separated from the superstructure by a wood substrate) and whose structure consists of one or more of the following configurations:
  - a. Metal roofing in direct contact with the steel framing members;
  - b. Metal roofing separated from the steel framing members by insulation;
  - c. Insulated metal roofing panels installed as described in item a. or b.

**METER.** A device that measures the flow of energy.

**MICROCELL.** A wireless communication facility consisting of an antenna that is either: (a) Four (4) feet in height and with an area of not more than 580 square inches; or (b) if a tubular antenna, no more than four (4) inches in diameter and no more than six (6) feet in length; and the associated equipment cabinet that is six (6) feet or less in height and no more than 48 square feet in floor area.

**MULTI-PASS.** A heat pump water heater control strategy requiring multiple passes of water through the heat pump to reach the final target storage water temperature.

**NAMEPLATE HORSEPOWER.** The nominal motor output power rating stamped on the motor nameplate.

**NEMA DESIGN A MOTOR.** A squirrel-cage motor that meets all of the following:

1. It is designed to withstand full-voltage starting and developing locked-rotor torque as shown in paragraph 12.38.1 of NEMA MG 1.
2. It has pull-up torque not less than the values shown in paragraph 12.40.1 of NEMA MG 1.
3. It has breakdown torque not less than the values shown in paragraph 12.39.1 of NEMA MG 1.
4. It has a locked-rotor current higher than the values shown in paragraph 12.35.1 of NEMA MG 1 for 60 Hz and paragraph 12.35.2 of NEMA MG 1 for 50 Hz.
5. It has a slip at rated load of less than 5 percent for motors with fewer than 10 poles.

**NEMA DESIGN B MOTOR.** A squirrel-cage motor that meets all of the following:

1. It is designed to withstand full-voltage starting.
2. It develops locked-rotor, breakdown and pull-up torques adequate for general application as specified in Sections 12.38, 12.39 and 12.40 of NEMA MG 1.
3. It draws locked-rotor current not to exceed the values shown in paragraph 12.35.1 of NEMA MG 1 for 60 Hz and paragraph 12.35.2 of NEMA MG 1 for 50 Hz.
4. It has a slip at rated load of less than 5 percent for motors with fewer than 10 poles.

**NEMA DESIGN C MOTOR.** A squirrel-cage motor that meets all of the following:

1. It is designed to withstand full-voltage starting and developing locked-rotor torque for high-torque applications up to the values shown in paragraph 12.38.2 of NEMA MG 1 (incorporated by reference; see §431.15).
2. It has pull-up torque not less than the values shown in paragraph 12.40.2 of NEMA MG 1.
3. It has breakdown torque not less than the values shown in paragraph 12.39.2 of NEMA MG 1.
4. It has a locked-rotor current not to exceed the values shown in paragraph 12.35.1 of NEMA MG 1 for 60 Hz and paragraph 12.35.2 of NEMA MG 1 for 50 Hz.
5. It has a slip at rated load of less than 5 percent.

**NETWORKED GUEST ROOM CONTROL SYSTEM.** A control system, able to be accessed from the front desk or other central location associated with a Group R-1 building, that is capable of identifying the occupancy status of each guest room according to a timed schedule, and is capable of controlling HVAC in each hotel and motel guest room separately.

**NONSTANDARD PART LOAD VALUE (NPLV).** A single-number part-load efficiency figure of merit calculated and referenced to conditions other than IPLV conditions, for units that are not designed to operate at ARI standard rating conditions.

**OCCUPANT SENSOR CONTROL.** An *automatic* control device or system that detects the presence or absence of people within an area and causes lighting, equipment or appliances to be regulated accordingly.

**ON-SITE RENEWABLE ENERGY.** Energy derived from solar radiation, wind, waves, tides, landfill gas, biogas, biomass, or the internal heat of the earth. The energy system providing on-site renewable energy shall be located on the project site.

**OPAQUE DOOR.** A door that is not less than 50 percent opaque in surface area.

**PERSONAL WIRELESS SERVICE FACILITY.** A wireless communication facility (WCF), including a microcell, which is a facility for the transmission and/or reception of radio frequency signals and which may include antennas, equipment shelter or cabinet, transmission cables, a support structure to achieve the necessary elevation, and reception and/or transmission devices or antennas.

**POWERED ROOF/WALL VENTILATORS.** A fan consisting of a centrifugal or axial impeller with an integral driver in a weather-resistant housing and with a base designed to fit, usually by means of a curb, over a wall or roof opening.

**POWER-OVER-ETHERNET LIGHTING (POE).** Lighting sources powered by DC current utilizing Ethernet cables.

**PROPOSED DESIGN.** A description of the proposed building used to estimate annual energy use and carbon emissions from energy consumption for determining compliance based on total building performance and *HVAC total performance ratio*.

**PUBLIC LAVATORY FAUCET.** A lavatory faucet that is not intended for private use as defined by the *Uniform Plumbing Code* and that is supplied with both potable cold and hot water.

**RADIANT HEATING SYSTEM.** A heating system that transfers heat to objects and surfaces within a conditioned space, primarily by infrared radiation.

**READY ACCESS (TO).** That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel or similar obstruction.

**REFRIGERANT DEW POINT.** The refrigerant vapor saturation temperature at a specified pressure.

**REFRIGERATED WAREHOUSE COOLER.** An enclosed storage space that has a total chilled storage area of 3,000 square feet or greater and is designed to maintain a temperature of greater than 32°F but less than 55°F.

**REFRIGERATED WAREHOUSE FREEZER.** An enclosed storage space that has a total chilled storage area of 3,000 ft<sup>2</sup> and is designed to maintain temperatures at or below 32°F.

**REFRIGERATION SYSTEM, LOW TEMPERATURE.** Systems for maintaining food product in a frozen state in refrigeration applications.

**REFRIGERATION SYSTEM, MEDIUM TEMPERATURE.** Systems for maintaining food product above freezing in refrigeration applications.

**REGISTERED DESIGN PROFESSIONAL.** An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or jurisdiction in which the project is to be constructed.

**REPAIR.** The reconstruction or renewal of any part of an existing building.

**REPLACEMENT AIR.** 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.

**REROOFING.** The process of recovering or replacing an existing roof covering. See “Roof Recover” and “Roof Replacement.”

**RESIDENTIAL BUILDING.** For this code, includes detached one- and two-family dwellings and multiple single-family dwellings (townhouses) as well as Group R-2 and R-3 buildings three stories or less in height above grade plane.

**ROOF ASSEMBLY.** A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof covering, underlayment, roof deck, insulation, vapor retarder and interior finish. See also *attic and other roofs, metal building roof, roof with insulation entirely above deck and single-rafter roof*.

**ROOF RECOVER.** The process of installing an additional *roof covering* over a prepared existing roof covering without removing the existing roof covering.

**ROOF REPAIR.** Reconstruction or renewal of any part of an existing roof for the purposes of its maintenance.

**ROOF REPLACEMENT.** The process of removing the existing roof covering, repairing any damaged substrate and installing a new *roof covering*.

**ROOFTOP MONITOR.** A raised section of a roof containing vertical fenestration along one or more sides.

**R-VALUE (THERMAL RESISTANCE).** The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area ( $h \times \text{ft}^2 \times \text{°F/Btu}$ ) [ $\text{m}^2 \times \text{K/W}$ ].

**SATURATED CONDENSING TEMPERATURE.** The saturation temperature corresponding to the measured refrigerant pressure at the condenser inlet for single component and azeotropic refrigerants, and the arithmetic average of the dew point and *bubble point* temperatures corresponding to the refrigerant pressure at the condenser entrance for zeotropic refrigerants.

**SDCI.** The Seattle Department of Construction and Inspections.

## DEFINITIONS

**SEMI-HEATED SPACE.** An enclosed space within a building, including adjacent connected spaces separated by an uninsulated component (e.g., basements, utility rooms, garages, corridors), which:

1. Is heated but not cooled, and has an installed heating system output capacity greater than or equal to 3.4 Btu/(h-ft<sup>2</sup>) but not greater than 8 Btu/(h-ft<sup>2</sup>);
2. Is not a walk-in or warehouse cooler or freezer space.

**SENSIBLE RECOVERY EFFECTIVENESS.** Change in the dry-bulb temperature of the outdoor air supply divided by the difference between the outdoor air and return air dry-bulb temperatures, expressed as a percentage, governed by AHRI Standard 1060.

**SERVICE WATER HEATING.** Heating water for domestic or commercial purposes other than space heating and process requirements.

**SIDELIT.** See Section C405.2.4.2.

**SINGLE-PASS.** A heat pump water heater control strategy using variable flow or variable capacity to deliver water from the heat pump at the final target storage water temperature in a single pass through the heat exchanger with variable incoming water temperatures.

**SINGLE-RAFTER ROOF.** A roof where the roof above and the ceiling below are both attached to the same wood rafter and where insulation is located in the space between these wood rafters.

**SKYLIGHT.** See “Fenestration.”

**SLAB BELOW GRADE.** Any portion of a slab floor in contact with the ground which is more than 24 inches below the final elevation of the nearest exterior grade.

**SLAB-ON-GRADE FLOOR.** That portion of a slab floor of the building envelope that is in contact with the ground and that is either above grade or is less than or equal to 24 inches below the final elevation of the nearest exterior grade.

**SLEEPING UNIT.** A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not *sleeping units*.

**SMALL BUSINESS.** Any business entity (including a sole proprietorship, corporation, partnership or other legal entity) which is owned and operated independently from all other businesses, which has the purpose of making a profit, and which has fifty or fewer employees.

**SMALL ELECTRIC MOTOR.** A general purpose, alternating current, single speed induction motor.

**SOLAR HEAT GAIN COEFFICIENT (SHGC).** The ratio of the solar heat gain entering the space through the fenestration assembly 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 ZONE.** A clear area or areas reserved solely for current and future installation of photovoltaic or solar hot water systems.

**SPACE CONDITIONING CATEGORY.** Categories are based on the allowed peak space conditioning output capacity per square foot of *conditioned floor area*, or the design set point temperature, for a building or space. Space conditioning categories (~~from lowest to highest~~) include: low energy, semi-heated, conditioned, refrigerated walk-in and warehouse coolers, and refrigerated walk-in and warehouse freezers.

**STANDARD REFERENCE DESIGN.** A version of the *proposed design* that meets the minimum requirements of this code and is used to determine the maximum annual energy use requirement and carbon emissions from energy consumption for compliance based on total building performance and *HVAC total system performance ratio*.

**STEEL-FRAMED WALL.** A *wall* with a cavity (insulated or otherwise) whose exterior surfaces are separated by steel framing members (i.e., typical steel stud *walls* and curtain *wall systems*).

**STOREFRONT.** A system of doors and windows mullied as a composite fenestration structure that has been designed to resist heavy use. *Storefront* systems include, but are not limited to, exterior fenestration systems that span from the floor level or above to the ceiling of the same story on commercial buildings, with or without mullied windows and doors.

**SUBSYSTEM METER.** A meter placed downstream of the energy supply meter that measures the energy delivered to a load or a group of loads.

**TEMPERATURE MAINTENANCE.** The system used to maintain the temperature of the building domestic hot water delivery system, typically by circulation and reheating or by a heat trace system.

**TEMPORARY GROWING STRUCTURE.** A temporary growing structure has sides and roof covered with polyethylene, polyvinyl or similar flexible synthetic material and is used to provide plants with either frost protection or increased heat retention. Temporary structures are those that are erected for a period of less than 180 days.

**THERMOSTAT.** An *automatic* control device used to maintain temperature at a fixed or adjustable set point.

**TIME SWITCH CONTROL.** An *automatic* control device or system that controls lighting or other loads, including switching off, based on time schedules.

**TOPLIT.** See Section C405.2.4.3.

**TUBULAR DAYLIGHTING DEVICE (TDD).** A non-operable skylight device primarily designed to transmit daylight from a roof surface to an interior ceiling surface via a tubular conduit. The device consists of an exterior glazed weathering surface, a light transmitting tube with a reflective inside surface and an interior sealing device, such as a translucent ceiling panel.

**U-FACTOR (THERMAL TRANSMITTANCE).** The coefficient of heat transmission (air to air) through a building component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/h × ft<sup>2</sup> × °F) [W/(m<sup>2</sup> × K)].

**UNHEATED SLAB-ON-GRADE FLOOR.** A slab-on-grade floor that is not a heated slab-on-grade floor.

**UNIFORM ILLUMINATION.** A quality of illumination delivered by a lighting system typically comprised of similar fixtures mounted at a regular spacing interval. This lighting system provides a uniform contrast ratio of no greater than 5:1 maximum-to-minimum ratio throughout the entire area served, including task areas.

**VARIABLE REFRIGERANT FLOW SYSTEM.** An engineered direct-expansion (DX) refrigerant system that incorporates a common condensing unit, at least one variable capacity compressor, a distributed refrigerant piping network to multiple indoor fan heating and cooling units each capable of individual *zone* temperature control, through integral *zone* temperature control devices and a common communications network. Variable refrigerant flow utilizes three or more steps of control on common interconnecting piping.

**VENTILATION.** The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

**VENTILATION AIR.** That portion of supply air that comes from outside (outdoors) plus any recirculated air that has been treated to maintain the desired quality of air within a designated space.

**VERTICAL FENESTRATION.** See “Fenestration.”

**VISIBLE TRANSMITTANCE [VT].** The ratio of visible light entering the space through the fenestration product assembly to the incident visible light, visible transmittance, includes the effects of glazing material and frame and is expressed as a number between 0 and 1. For skylights, VT shall be measured and rated in accordance with NFRC 202.

**VISIBLE TRANSMITTANCE – ANNUAL [VT-ANNUAL].** The ratio of visible light entering the space through the fenestration product assembly to the incident visible light during the course of a year, visible transmittance, which includes the effects of glazing material, frame, and light well or tubular conduit, and is expressed as a number between 0 and 1. For tubular daylighting devices, VT-annual shall be measured and rated in accordance with NFRC 203.

**VOLTAGE DROP.** A decrease in voltage caused by losses in the wiring system that connect the power source to the load.

**WALK-IN COOLER.** An enclosed storage space capable of being refrigerated to temperatures above 32°F but less than 55°F that can be walked into, has a ceiling height of not less than 7 feet (2134 mm) and has a total chilled storage area of less than 3,000 ft<sup>2</sup>.

**WALK-IN FREEZER.** An enclosed storage space capable of being refrigerated to temperatures at or below 32°F that can be walked into, has a ceiling height of not less than 7 feet and has a total chilled storage area of less than 3,000 ft<sup>2</sup>.

**WALL.** That portion of the *building envelope*, including opaque area and *fenestration*, that is vertical or tilted at an angle of 60 degrees from horizontal or greater. This includes *above-grade walls* and *below-grade walls*, between floor spandrels, peripheral edges of floors, and foundation *walls*.

**WALL, METAL BUILDING.** A *wall* whose structure consists of metal spanning members supported by steel structural members (i.e., does not include spandrel glass or metal panels in curtain *wall systems*).

**WALL, WOOD-FRAMED AND OTHER.** All other *wall* types, including wood stud *walls*.

**WATER HEATER.** Any heating appliance or equipment that heats potable water and supplies such water to the potable hot water distribution system.

**ZONE.** A space or group of spaces within a building with heating or cooling requirements that are sufficiently similar so that desired conditions can be maintained throughout using a single controlling device.

