

CHAPTER 2

DEFINITIONS

SECTION 201 GENERAL

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

201.2 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.

201.3 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*, *International Plumbing Code* or the *International Residential Code* shall have the meanings ascribed to them in those codes.

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

SECTION 202 GENERAL DEFINITIONS

ABOVE-GRADE WALL. A wall more than 50 percent above grade and enclosing *conditioned space*. 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.

ACCESSIBLE. Admitting close approach as a result of not being guarded by locked doors, elevation or other effective means (see “Readily accessible”).

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

AIR BARRIER. Material(s) assembled and joined together to provide a barrier to air leakage through the building envelope. An air barrier may be a single material or a combination of materials.

AIR TRANSPORT FACTOR. The ratio of the rate of useful sensible heat removal from the conditioned space to the energy input to the supply and return fan motor(s), expressed in consistent units and under the designated operating conditions.

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

ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE). The ratio of annual output energy to annual input energy which includes any non-heating season pilot input loss, and for gas or oil-fired furnaces or boilers, does not include electrical energy.

APPROVED. Approval by the *code official or other authority having jurisdiction* as a result of investigation and tests conducted by him or her, or by reason of accepted principles or tests by nationally recognized organizations.

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”).

BASEMENT WALL. A wall 50 percent or more below grade and enclosing *conditioned space*.

BATHROOM. A room containing a bathtub, shower, spa or similar bathing fixture.

BEDROOM. A room or space 70 square feet or greater, with egress window and closet, used or intended to be used for sleeping. A “den,” “library,” “home office” with a closet, egress window, and 70 square feet or greater or other similar rooms shall count as a bedroom, but living rooms and foyers shall not.

BTU. Abbreviation for British thermal unit, which is the quantity of heat required to raise the temperature of 1 pound (0.454 kg) of water 1°F (0.56°C), (1 Btu = 1,055 J).

BUILDER. The general contractor or other person in charge of construction, who has the power to direct others with respect to the details to be observed in construction.

BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy.

BUILDING THERMAL ENVELOPE. The basement walls, exterior walls, floor, roof, and any other building element that enclose *conditioned space*. This boundary also includes the boundary between *conditioned space* and any exempt or unconditioned space.

CATEGORY I COMBUSTION APPLIANCE. A combustion appliance that operates with a non-positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.

CATEGORY II COMBUSTION APPLIANCE. A combustion appliance that operates with a non-positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the vent.

CATEGORY III COMBUSTION APPLIANCE. An appliance that operates with a positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.

CATEGORY IV COMBUSTION APPLIANCE. An appliance that operates with a positive vent static pressure and with a vent gas temperature that may cause excessive condensate production in the vent.

CUBIC FEET PER MINUTE (CFM). The quantity of air moved in 1 minute. A measurement typically applied to ventilation equipment.

DEFINITIONS

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 ($\text{Btu/h} \times \text{ft}^2 \times ^\circ\text{F}$) [$\text{W}/(\text{m}^2 \times \text{K})$].

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative. The Department of Public Service is not the code official and shall not be required to conduct inspections of construction or construction documents.

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 cooling system or factory-assembled equipment, as tested under a nationally recognized standard or designated operating conditions.

COEFFICIENT OF PERFORMANCE (COP)—HEAT PUMP—HEATING. The ratio of the rate of heat delivered to the rate of energy input, in consistent units, for a complete heat pump system under designated operating conditions. Supplemental heat shall not be considered when checking compliance with the heat pump equipment.

COMMERCIAL BUILDING. For this code, all buildings that are not included in the definition of “Residential buildings, excluding mobile homes.”

CONDENSER. A heat exchanger designed to liquefy refrigerant vapor by removal of heat.

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

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

CONDITIONED SPACE. An area or room within a building that meets one or more of the following criteria: (a) is provided with positive heating and/or cooling supply; (b) contains uninsulated ducts, pipes, or other systems designed to distribute heating and/or cooling; (c) is separated from any area or room that meets either (a) or (b) by an uninsulated wall, ceiling, or floor, or an opening.

CRAWL SPACE WALL. The opaque portion of a wall that encloses a crawl space and is partially or totally below grade.

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

DAYLIGHT ZONE.

1. **Under skylights.** The area under skylights whose horizontal dimension, in each direction, is equal to the skylight dimension in that direction plus either the floor-to-ceiling height or the dimension to a ceiling height opaque partition, or one-half the distance to adjacent skylights or vertical fenestration, whichever is least.
2. **Adjacent to vertical fenestration.** The area adjacent to vertical fenestration which receives daylight through the fenestration. For purposes of this definition and

unless more detailed analysis is provided, the daylight *zone* depth is assumed to extend into the space a distance of 15 feet (4572 mm) or to the nearest ceiling height opaque partition, whichever is less. The daylight *zone* width is assumed to be the width of the window plus 2 feet (610 mm) on each side, or the window width plus the distance to an opaque partition, or the window width plus one-half the distance to adjacent skylight or vertical fenestration, whichever is least.

DEADBAND. The temperature range in which no heating or cooling is used.

DEGREE DAY, COOLING. A unit, based on temperature difference and time, used in estimating cooling energy consumption and specifying nominal cooling load of a building in summer. For any one day, when the mean temperature is more than 65°F, there are as many degree days as there are degrees Fahrenheit difference in temperature between the mean temperature for the day and 65°F. Annual cooling degree days (CDD) are the sum of the degree days over a calendar year.

DEGREE DAY, HEATING. A unit, based upon temperature difference and time, used in estimating heating energy consumption and specifying nominal heating load of a building in winter. For any one day, when the mean temperature is less than 65°F, there are as many degree days as there are degrees Fahrenheit difference in temperature between the mean temperature for the day and 65°F. Annual heating degree days are the sum of the degree days over a calendar year.

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.

DIRECT-VENT APPLIANCES. Appliances that are constructed and installed so that all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged directly to the outside atmosphere. See also Sealed Combustion Venting System.

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.

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.

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 EFFICIENCY RATIO (EER). The ratio of net equipment cooling capacity in Btu/h to total rate of electric input in watts under designated operating conditions. When consistent units are used, this ratio becomes equal to COP (see also “Coefficient of performance”).

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.

ENTRANCE DOOR. Fenestration products used for ingress, egress and access in nonresidential buildings, including, but not limited to, exterior entrances that utilize latching hardware and automatic closers and contain over 50-percent glass specifically designed to withstand heavy use and possibly abuse.

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

EXTERIOR ENVELOPE. See “Building Thermal Envelope.”

EXTERIOR WALL. Walls including both above-grade walls and basement 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 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.

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. Skylights, roof windows, vertical windows (fixed or moveable), opaque doors, glazed doors, glazed block and combination opaque/glazed doors. Fenestration includes products with glass and nonglass glazing materials.

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

FINISHED AREA. An enclosed area in a house that is suitable for year-round use, embodying walls, floors, and ceilings that are similar to the rest of the house.

FINISHED CONDITIONED FLOOR AREA (FCFA). The floor area in square feet of a home that is within the conditioned space of the building, and also is finished area, as measured in accordance with ANSI Standard Z765-2003 (with the exception that floor areas with ceiling heights of less than 5 feet will be included in finished square footage).

FURNACE DUCT. A furnace normally installed in distribution ducts of air-conditioning systems to supply warm air for heating and which depends on a blower not furnished as part of the duct furnace for air circulation.

FURNACE, WARM AIR. A self-contained, indirect-fired or electrically heated furnace that supplies heated air through ducts to spaces that require it.

GROSS AREA OF EXTERIOR WALLS. The normal projection of all exterior walls, including the area of all windows and doors installed therein (see “Exterior wall”).

HEAT. The form of energy that is transferred by virtue of a temperature difference or a change in state of a material.

HEAT CAPACITY (HC). The amount of heat necessary to raise the temperature of a given mass by 1°F (0.6°C). The heat capacity of a building element is the sum of the heat capacities of each of its components.

HEAT PUMP. A refrigeration system that extracts heat from one substance and transfers it to another portion of the same substance or to a second substance at a higher temperature for a beneficial purpose.

HEAT RECOVERY VENTILATION SYSTEM (HRV). A factory-assembled device or combination of devices, including fans or blowers, designed to provide outdoor air for ventilation in which heat or heat and moisture is transferred between two isolated intake and exhaust air streams.

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.

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

HEATING SEASONAL PERFORMANCE FACTOR (HSPF). The total heating output of a heat pump during its normal annual usage period for heating, in Btu’s, divided by the total electric energy input during the same period, in watt hours, as determined by DOE 10 CFR Part 430, Subpart B, Test Procedures, and based on Region 4.

HIGH-EFFICACY LAMPS. Compact fluorescent lamps, T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of:

1. 60 lumens per watt for lamps over 40 watts;
2. 50 lumens per watt for lamps over 15 watts to 40 watts; and
3. 40 lumens per watt for lamps 15 watts or less.

DEFINITIONS

HOME ENERGY RATING SYSTEM (HERS). A home energy rating system accredited by the Vermont DPS that provides a numerical rating in compliance with 21 V.S.A. § 267(a). The purpose of this procedure is to ensure that accurate and consistent home energy ratings are performed by accredited HERS providers in Vermont and to promote an objective, cost-effective, sustainable home energy rating process as a compliance method for residential building energy codes; as qualification for energy programs designed to reach specific energy-saving goals; and as a way to provide Vermont's housing market the ability to differentiate residences based on their energy efficiency.

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

HVAC. Heating, ventilating and air conditioning.

HVAC SYSTEM. The equipment, distribution network and terminals that provide either collectively or individually the processes of heating, ventilating or air conditioning to a building.

HVAC SYSTEM COMPONENTS. HVAC system components provide, in one or more factory-assembled packages, means for chilling or heating water, or both, with controlled temperature for delivery to terminal units serving the conditioned spaces of the building. Types of HVAC system components include, but are not limited to, water chiller packages, reciprocating condensing units and water source (hydronic) heat pumps (see "HVAC system equipment").

HVAC SYSTEM EQUIPMENT. HVAC system equipment provides, in one (single package) or more (split system) factory-assembled packages, means for air circulation, air cleaning, air cooling with controlled temperature and dehumidification and, optionally, either alone or in combination with a heating plant, the functions of heating and humidifying. The cooling function is either electrically or heat operated and the refrigerant condenser is air, water or evaporatively cooled. Where the equipment is provided in more than one package, the separate packages shall be designed by the manufacturer to be used together. The equipment shall be permitted to provide the heating function as a heat pump or by the use of electric or fossil-fuel-fired elements. (The word "equipment" used without a modifying adjective, in accordance with common industry usage, applies either to HVAC system equipment or HVAC system components.)

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.

INSULATING SHEATHING. An insulating board with a core material having a minimum *R*-value of *R*-2.

LABELED. Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection 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.

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.

LOCAL VENTILATION. A mechanical ventilation system including fans, controls and ducts, dedicated to exhausting moisture-laden air to the outside of the building from the room or space in which the moisture is generated.

LOW-VOLTAGE LIGHTING. Lighting equipment powered through a transformer such as a cable conductor, a rail conductor and track lighting.

MANUAL. Capable of being operated by personal intervention (see "Automatic").

MECHANICAL VENTILATION. The mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space by powered fans. For purposes of this standard, mechanical ventilation does not include processes driven by wind, such as turbine ventilators.

MULTIFAMILY DWELLING. A building containing three or more dwelling units.

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

OCCUPANCY. The purpose for which a building, or portion thereof, is utilized or occupied.

OPAQUE AREAS. All exposed areas of a building envelope which enclose conditioned space, except openings for windows, skylights, doors and building service systems.

OUTDOOR AIR. Air taken from the outdoors and, therefore, not previously circulated through the building.

PACKAGED TERMINAL AIR CONDITIONER (PTAC). A factory-selected wall sleeve and separate unencased combination of heating and cooling components, assemblies or sections (intended for mounting through the wall to serve a single room or zone). It includes heating capability by hot water, steam or electricity. (For the complete technical definition, see ARI 310/380.)

PACKAGED TERMINAL HEAT PUMP. A PTAC capable of using the refrigeration system in a reverse cycle or heat pump mode to provide heat. (For the complete technical definition, see ARI 310/380.)

POSITIVE COOLING SUPPLY. Mechanical cooling deliberately supplied to a space, such as through a supply register.

Additionally, mechanical cooling indirectly supplied to a space through uninsulated surfaces of space-cooling components, such as evaporator coil cases and cooling distribution systems which continually maintain air temperatures within the space of 85°F (29°C) or lower during normal operation. To be considered exempt from inclusion in this definition, such surfaces shall comply with the insulation requirements of this code.

POSITIVE HEAT SUPPLY. Heat deliberately supplied to a space by design, such as a supply register, radiator or heating element. Additionally, heat indirectly supplied to a space through uninsulated surfaces of service water heaters and space-heating components, such as furnaces, boilers and heating and cooling distribution systems which continually maintain air temperature within the space of 50°F (10°C) or higher during normal operation. To be considered exempt from inclusion in this definition, such surfaces shall comply with the insulation requirements of this code.

POWER-VENTED APPLIANCE. Appliances that operate with a positive vent static pressure (Category III) and utilize a mechanical fan to exhaust combustion gases from the appliance to the outside atmosphere.

PROPOSED DESIGN. A description of the proposed building used to estimate annual energy use for determining compliance based on total building performance.

RATED CAPACITY. In terms of ventilation, the volume of air (in cfm) that the fan can move against a given static pressure (in inches or water gage). Prescriptive compliance with the *Vermont Residential Building Energy Standards* requires that all fan capacities be rated at 0.1 inch (25 Pa) of water gage.

RBES. *Vermont Residential Building Energy Standards.*

READILY ACCESSIBLE. Capable of being reached quickly for operation, renewal or inspection without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders or access equipment (see “*Accessible*”).

REFRIGERANT. A substance utilized to produce refrigeration by its expansion or vaporization or absorption.

RENEWABLE ENERGY SOURCES. Sources of energy (excluding minerals) derived from incoming solar radiation, including natural daylighting and photosynthetic processes; from phenomena resulting therefrom, including wind, waves and tides, lake or pond thermal differences; and from the internal heat of the earth, including nocturnal thermal exchanges.

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

RESIDENTIAL BUILDING. For this code, includes R-3 buildings, as well as R-2 and R-4 buildings three stories or less in height above grade.

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. The gross area of a roof assembly consists of the total interior surface of all roof/ceiling components, including opaque surfaces, dormer and bay window roofs, treyed ceilings, overhead portions of an interior stairway to an unconditioned attic, doors and hatches, glazing and skylights exposed to conditioned space, that are horizontal or sloped at an angle less than 60 degrees (1.1 rad) from the horizontal (see “*Exterior wall*”). A roof assembly, or portions thereof, having a slope of 60 degrees (1.1 rad) or greater from horizontal shall be considered in the

gross area of exterior walls and thereby excluded from consideration in the roof assembly. Skylight shaft walls 12 inches (305 mm) in depth or greater (as measured from the ceiling plane to the roof deck) shall be considered in the gross area of exterior walls and are thereby excluded from consideration in the roof assembly.

ROOM AIR CONDITIONER. An encased assembly designed as a unit for mounting in a window or through a wall, or as a console. It is designed primarily to provide free delivery of conditioned air to an enclosed space, room or zone. It includes a prime source of refrigeration for cooling and dehumidification and means for circulating and cleaning air, and shall be permitted to also include means for ventilating and heating.

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 ($\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}/\text{Btu}$) [$\text{m}^2 \cdot \text{K}/\text{W}$].

SASH CRACK. The sum of all perimeters of all window sashes, based on overall dimensions of such parts, expressed in feet. If a portion of one sash perimeter overlaps a portion of another sash perimeter, only count the length of the overlapping portions once.

SCREW LAMP HOLDERS. A lamp base that requires a screw-in-type lamp, such as a compact-fluorescent, incandescent, or tungsten-halogen bulb.

SEALED COMBUSTION VENTING SYSTEM. A venting system designed so that all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged directly to the outside atmosphere. (See also “*Direct-vent Appliances*.”)

SEASONAL ENERGY EFFICIENCY RATIO (SEER). The total cooling output of an air conditioner during its normal annual usage period for cooling, in Btu/h, divided by the total electric energy input during the same period, in watt-hours, as determined by DOE 10 CFR Part 430, Subpart B, Test Procedures.

SERVICE SYSTEMS. All energy-using systems in a building that are operated to provide services for the occupants or processes housed therein, including HVAC, service water heating, illumination, transportation, cooking or food preparation, laundering and similar functions.

SERVICE WATER HEATING. Supply of hot water for purposes other than comfort heating.

SKYLIGHT. Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Glazing material in skylights, including unit skylights, solariums, sunrooms, roofs and sloped walls is included in this definition.

SIMULATION TOOL. An approved software program or calculation-based methodology that projects the hour-by-hour loads and annual energy use of a building.

SLAB-ON-GRADE EDGE INSULATION. Insulation around, or underneath, the perimeter of the floor slab when

DEFINITIONS

the top edge of the floor perimeter slab is above the finished grade or 12 inches (305 mm) or less below the finished 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*.

SOLAR ENERGY SOURCE. Source of natural daylighting and of thermal, chemical or electrical energy derived directly from conversion of incident solar radiation.

SONE. A subjective unit of loudness for an average listener equal to the loudness of a 1,000-hertz (cycles per second) sound that has an intensity 40 decibels above the listener's own threshold of hearing.

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 for compliance based on total building performance.

STANDARD TRUSS. Any construction that does not permit the roof/ceiling insulation to achieve the required *R*-value over the exterior walls.

STOREFRONT. A nonresidential 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.

SUNROOM. A one-story structure attached to a dwelling with a glazing area in excess of 40 percent of the gross area of the structure's exterior walls and roof.

SYSTEM. A combination of central or terminal equipment or components or controls, accessories, interconnecting means and terminal devices by which energy is transformed so as to perform a specific function, such as HVAC, service water heating or illumination.

THERMAL CONDUCTANCE. Time rate of heat flow through a body (frequently per unit area) from one of its bounding surfaces to the other for a unit temperature difference between surfaces, under steady conditions ($\text{Btu/h} \cdot \text{ft}^2 \cdot \text{F}$) [$\text{W}/(\text{m}^2 \cdot \text{K})$].

THERMAL ISOLATION. Physical and space conditioning separation from *conditioned space(s)*. The *conditioned space(s)* shall be controlled as separate zones for heating and cooling or conditioned by separate equipment.

THERMAL RESISTANCE (*R*). The reciprocal of thermal conductance ($\text{h} \cdot \text{ft}^2 \cdot \text{°F/Btu}$) [$(\text{m}^2 \cdot \text{K})/\text{W}$].

THERMAL RESISTANCE, OVERALL (*Ro*). The reciprocal of overall thermal conductance ($\text{h} \cdot \text{ft}^2 \cdot \text{°F/Btu}$) [$(\text{m}^2 \cdot \text{K})/\text{W}$]. The overall thermal resistance of the gross area or individual component of the exterior building envelope (such as roof/ceiling, exterior wall, floor, crawl space wall, foundation, window, skylight, door, opaque wall, etc.), which includes the area-weighted *R*-values of the specific component assemblies (such as air film, insulation, drywall, framing, glazing, etc.).

THERMAL TRANSMITTANCE (*U*). The coefficient of heat transmission (air to air). It is the time rate of heat flow per unit area and unit temperature difference between the warm-side and cold-side air films ($\text{Btu/hr} \cdot \text{ft}^2 \cdot \text{°F}$) [$\text{W}/(\text{m}^2 \cdot \text{K})$].

The *U*-factor applies to combinations of different materials used in series along the heat flow path, single materials that comprise a building section, cavity airspaces and surface air films on both sides of a building element.

THERMAL TRANSMITTANCE, OVERALL (*U_o*). The overall (average) heat transmission of a gross area of the exterior building envelope ($\text{Btu/h} \cdot \text{ft}^2 \cdot \text{°F}$) [$\text{W}/(\text{m}^2 \cdot \text{K})$].

The *U_o*-factor applies to the combined effect of the time rate of heat flow through the various parallel paths, such as windows, doors and opaque construction areas, comprising the gross area of one or more exterior building components, such as walls, floors or roof/ceilings.

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

TOILET ROOM. A room containing a water closet and, frequently, a lavatory, but not a bathtub, shower, spa or similar bathing fixture.

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 ($\text{Btu/h} \cdot \text{ft}^2 \cdot \text{°F}$) [$\text{W}/(\text{m}^2 \cdot \text{K})$].

UNITARY COOLING AND HEATING EQUIPMENT. One or more factory-made assemblies which include an evaporator or cooling coil, a compressor and condenser combination, and which shall be permitted to include a heating function as well. When heating and cooling equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together.

UNITARY HEAT PUMP. One or more factory-made assemblies which include an indoor conditioning coil, compressor(s) and outdoor coil or refrigerant-to-water heat exchanger, including means to provide both heating and cooling functions. When heat pump equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together.

UNUSUALLY TIGHT CONSTRUCTION. Construction meeting the following requirements:

1. Storm windows or weatherstripping on openable windows and doors; and
2. Caulking or sealants applied to areas, such as joints around window and door frames, between sole plates and floors, between wall-ceiling joints, between wall panels, at penetrations for plumbing, electrical and gas lines, and at other openings.
3. Buildings constructed in compliance with the RBES shall be considered built of unusually tight construction.

VAPOR PERMEABLE MEMBRANE. A material or covering having a permeance rating of 5 perms ($2.9 \cdot 1040 \text{ kg}/\text{Pa} \cdot \text{s} \cdot \text{m}^2$) or greater, when tested in accordance with the desic-

cant method using Procedure A of ASTM E 96. A vapor permeable material permits the passage of moisture vapor.

VAPOR RETARDER CLASS. A measure of the ability of a material or assembly to limit the amount of moisture that passes through that material or assembly. Vapor retarder class shall be defined using the desiccant method with Procedure A of ASTM E 96 as follows:

Class 1: 0.1 perm or less

Class 2: $0.1 < \text{perm} < 1.0$ perm

Class 3: $1.0 < \text{perm} < 10$ perm

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.

VENTING SYSTEM. A continuous open passageway from the flue collar or draft hood of a solid fuel, gas-burning, kerosene or oil-burning appliance to the outside atmosphere for the purpose of removing flue or vent gases. A venting system is usually composed of a vent or a chimney and vent connector, if used, assembled to form the open passageway.

Mechanical draft venting system. A venting system designed to remove flue or vent gases by mechanical means, that consists of an induced draft portion under nonpositive static pressure or a forced draft portion under positive static pressure.

1. Forced-draft or power venting system. A portion of a venting system using a fan or other mechanical means to cause the removal of flue or vent gases under positive static vent pressure.
2. Induced draft venting system. A portion of a venting system using a fan or other mechanical means to cause the removal of flue or vent gases under non-positive static vent pressure.

Natural draft venting system. A venting system designed to remove flue or vent gases under nonpositive static vent pressure entirely by natural draft.

Sealed combustion venting system. A venting system designed so that all air for combustion is derived directly from the outside atmosphere and all flue gases are discharged directly to the outside atmosphere.

WHOLE HOUSE VENTILATION SYSTEM. A mechanical ventilation system including fans, controls and ducts, which is installed for the express purpose of providing, directly or indirectly, all or a portion of the occupant's fresh-air ventilation needs for the entire dwelling unit.

WHOLE HOUSE VENTILATION SYSTEM, BALANCED. Balanced systems provide outdoor air for ventilation such that supply and exhaust air quantities are of equal capacity to achieve pressure equalization, such as heat recovery ventilator, an air-to-air heat exchanger or any other system that is designed to provide mechanical supply as well as mechanical exhaust.

WHOLE HOUSE VENTILATION SYSTEM, EXHAUST ONLY. Exhaust only systems exhaust stale indoor air via a single fan, multiple fans or the installation of dual-purpose fans (i.e., serving both localized and whole house ventilation functions). Fresh incoming air may be provided by installed inlet ports or from typical leaks in the building envelope. Exhaust only systems may depressurize the indoor environment.

WHOLE HOUSE VENTILATION SYSTEM, MULTI-PORT. A whole house ventilation system that has more than one exhaust or supply port inside the house.

WHOLE HOUSE VENTILATION SYSTEM, SINGLE-PORT. A whole house ventilation system that has only one connection to the conditioned space and one connection to outdoor air.

WINDOW PROJECTION FACTOR. A measure of the portion of glazing that is shaded by an eave or overhang.

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.

