

## CHAPTER 2

# DEFINITIONS

### SECTION 201 GENERAL

**201.1 Scope.** Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, 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, the singular.

**201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in the *International Building Code*, *ICC Electrical Code*, *International Fire Code*, *International Fuel Gas Code* or the *International Plumbing Code*, such terms shall have meanings ascribed to them as in those codes.

**201.4 Terms not defined.** Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

### SECTION 202 GENERAL DEFINITIONS

**ABRASIVE MATERIALS.** Moderately abrasive particulate in high concentrations, and highly abrasive particulate in moderate and high concentrations, such as alumina, bauxite, iron silicate, sand and slag.

**ABSORPTION SYSTEM.** A refrigerating system in which refrigerant is pressurized by pumping a chemical solution of refrigerant in absorbent, and then separated by the addition of heat in a generator, condensed (to reject heat), expanded, evaporated (to provide refrigeration), and reabsorbed in an absorber to repeat the cycle; the system may be single or multiple effect, the latter using multiple stages or internally cascaded use of heat to improve efficiency.

**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, door or similar obstruction [see also “Ready access (to)”].

**AIR.** All air supplied to mechanical equipment and appliances for combustion, ventilation, cooling, etc. Standard air is air at standard temperature and pressure, namely, 70°F (21°C) and 29.92 inches of mercury (101.3 kPa).

**AIR CONDITIONING.** The treatment of air so as to control simultaneously the temperature, humidity, cleanness and distribution of the air to meet the requirements of a conditioned space.

**AIR-CONDITIONING SYSTEM.** A system that consists of heat exchangers, blowers, filters, supply, exhaust and return ducts, and shall include any apparatus installed in connection therewith.

**AIR DISTRIBUTION SYSTEM.** Any system of ducts, plenums and air-handling equipment that circulates air within a space or spaces and includes systems made up of one or more air-handling units.

**AIR, EXHAUST.** Air being removed from any space, appliance or piece of equipment and conveyed directly to the atmosphere by means of openings or ducts.

**AIR-HANDLING UNIT.** A blower or fan used for the purpose of distributing supply air to a room, space or area.

**AIR, MAKEUP.** Air that is provided to replace air being exhausted.

**ALTERATION.** A change in a mechanical system that involves an extension, addition or change to the arrangement, type or purpose of the original installation.

**APPLIANCE.** A device or apparatus that is manufactured and designed to utilize energy and for which this code provides specific requirements.

**APPLIANCE, EXISTING.** Any appliance regulated by this code which was legally installed prior to the effective date of this code, or for which a permit to install has been issued.

#### APPLIANCE TYPE.

**High-heat appliance.** Any appliance in which the products of combustion at the point of entrance to the flue under normal operating conditions have a temperature greater than 2,000°F (1093°C).

**Low-heat appliance (residential appliance).** Any appliance in which the products of combustion at the point of entrance to the flue under normal operating conditions have a temperature of 1,000°F (538°C) or less.

**Medium-heat appliance.** Any appliance in which the products of combustion at the point of entrance to the flue under normal operating conditions have a temperature of more than 1,000°F (538°C), but not greater than 2,000°F (1093°C).

**APPLIANCE, VENTED.** An appliance designed and installed in such a manner that all of the products of combustion are conveyed directly from the appliance to the outside atmosphere through an approved chimney or vent system.

**APPROVED.** Acceptable to the mechanical official for compliance with the provisions of the applicable code or referenced standard.

**APPROVED AGENCY.** An established and recognized agency that is approved by the code official and regularly engaged in conducting tests or furnishing inspection services.

**AUTOMATIC BOILER.** Any class of boiler that is equipped with the controls and limit devices specified in Chapter 10.

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

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**BOILER.** A closed heating appliance intended to supply hot water or steam for space heating, processing or power purposes. Low-pressure boilers operate at pressures less than or equal to 15 pounds per square inch (psi) (103 kPa) for steam and 160 psi (1103 kPa) for water. High-pressure boilers operate at pressures exceeding those pressures.

**BOILER ROOM.** A room primarily utilized for the installation of a boiler.

**BRAZED JOINT.** A gas-tight joint obtained by the joining of metal parts with metallic mixtures or alloys which melt at a temperature above 1,000°F (538°C), but lower than the melting temperature of the parts to be joined.

**BRAZING.** A metal joining process wherein coalescence is produced by the use of a nonferrous filler metal having a melting point above 1,000°F (538°C), but lower than that of the base metal being joined. The filler material is distributed between the closely fitted surfaces of the joint by capillary attraction.

**BTU.** Abbreviation for British thermal unit, which is the quantity of heat required to raise the temperature of 1 pound (454 g) of water 1°F (0.56°C) (1 Btu = 1055 J).

**BUILDING.** Any structure occupied or intended for supporting or sheltering any occupancy.

**CHIMNEY.** A primarily vertical structure containing one or more flues, for the purpose of carrying gaseous products of combustion and air from a fuel-burning appliance to the outside atmosphere.

**Factory-built chimney.** A listed and labeled chimney composed of factory-made components, assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.

**Masonry chimney.** A field-constructed chimney composed of solid masonry units, bricks, stones or concrete.

**Metal chimney.** A field-constructed chimney of metal.

**CHIMNEY CONNECTOR.** A pipe that connects a fuel-burning appliance to a chimney.

**CLEARANCE.** The minimum distance through air measured between the heat-producing surface of the mechanical appliance, device or equipment and the surface of the combustible material or assembly.

**CLOSED COMBUSTION SOLID-FUEL-BURNING APPLIANCE.** A heat-producing appliance that employs a combustion chamber that has no openings other than the flue collar, fuel charging door and adjustable openings provided to control the amount of combustion air that enters the combustion chamber.

**CLOTHES DRYER.** An appliance used to dry wet laundry by means of heat. Dryer classifications are as follows:

**Type 1.** Factory-built package, multiple production. Primarily used in family living environment. Usually the smallest unit physically and in function output.

**Type 2.** Factory-built package, multiple production. Used in business with direct intercourse of the function with the public. Not designed for use in individual family living environment.

**CODE.** These regulations, subsequent amendments thereto, or any emergency rule or regulation that the administrative authority having jurisdiction has lawfully adopted.

**CODE OFFICIAL.** The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

**COMBUSTIBLE ASSEMBLY.** Wall, floor, ceiling or other assembly constructed of one or more component materials that are not defined as noncombustible.

**COMBUSTIBLE LIQUIDS.** Any liquids having a flash point at or above 100°F (38°C), and that are divided into the following classifications:

**Class II.** Liquids having flash points at or above 100°F (38°C) and below 140°F (60°C).

**Class IIIA.** Liquids having flash points at or above 140°F (60°C) and below 200°F (93°C).

**Class IIIB.** Liquids having flash points at or above 200°F (93°C).

**COMBUSTIBLE MATERIAL.** Any material not defined as noncombustible.

**COMBUSTION.** In the context of this code, refers to the rapid oxidation of fuel accompanied by the production of heat or heat and light.

**COMBUSTION AIR.** Air necessary for complete combustion of a fuel, including theoretical air and excess air.

**COMBUSTION CHAMBER.** The portion of an appliance within which combustion occurs.

**COMBUSTION PRODUCTS.** Constituents resulting from the combustion of a fuel with the oxygen of the air, including the inert gases, but excluding excess air.

**COMMERCIAL COOKING RECIRCULATING SYSTEM.** Self-contained system consisting of the exhaust hood, the cooking equipment, the filters, and the fire suppression system. The system is designed to capture cooking vapors and residues generated from commercial cooking equipment. The system removes contaminants from the exhaust air and recirculates the air to the space from which it was withdrawn.

**COMMERCIAL COOKING APPLIANCES.** Appliances used in a commercial food service establishment for heating or cooking food and which produce grease vapors, steam, fumes, smoke or odors that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers; upright broilers; griddles; broilers; steam-jacketed kettles; hot-top ranges; under-fired broilers (charbroilers); ovens; barbecues; rotisseries; and similar appliances. For the purpose of this definition, a food service establishment shall include any building or a portion thereof used for the preparation and serving of food.

**COMMERCIAL KITCHEN HOODS.**

**Backshelf hood.** A backshelf hood is also referred to as a low-proximity hood, or as a sidewall hood where wall mounted. It's front lower lip is low over the appliance(s) and is "set back" from the front of the appliance(s). It is always closed to the rear of the appliances by a panel where free-standing, or by a panel or wall where wall mounted, and

its height above the cooking surface varies. (This style of hood can be constructed with partial end panels to increase its effectiveness in capturing the effluent generated by the cooking operation).

**Double island canopy hood.** A double island canopy hood is placed over back-to-back appliances or appliance lines. It is open on all sides and overhangs both fronts and the sides of the appliance(s). It could have a wall panel between the backs of the appliances. (The fact that exhaust air is drawn from both sides of the double canopy to meet in the center causes each side of this hood to emulate a wall canopy hood, and thus it functions much the same with or without an actual wall panel between the backs of the appliances).

**Eyebrow hood.** An eyebrow hood is mounted directly to the face of an appliance, such as an oven and dishwasher, above the opening(s) or door(s) from which effluent is emitted, extending past the sides and overhanging the front of the opening to capture the effluent.

**Pass-over hood.** A pass-over hood is a free-standing form of a backshelf hood constructed low enough to pass food over the top.

**Single island canopy hood.** A single island canopy hood is placed over a single appliance or appliance line. 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 air flow than an equivalent sized wall-mounted canopy to capture and contain effluent generated by the cooking operation(s).

**Wall canopy hood.** A wall canopy exhaust hood is mounted against a wall above a single appliance or line of appliance(s), or it could be free-standing with a back panel from the rear of the appliances to the hood. It overhangs the front and sides of the appliance(s) on all open sides.

(The wall acts as a back panel, forcing the makeup air to be drawn across the front of the cooking equipment, thus increasing the effectiveness of the hood to capture and contain effluent generated by the cooking operation(s).

**COMPENSATING HOODS.** Compensating hoods are those having integral (built-in) makeup air supply. The makeup air supply for such hoods is generally supplied from: short-circuit flow from inside the hood, air curtain flow from the bottom of the front face, and front face discharge from the outside front wall of the hood. The compensating makeup airflow can also be supplied from the rear or side of the hood, or the rear, front, or sides of the cooking equipment. The makeup airflow can be one or a combination of methods.

**COMPRESSOR.** A specific machine, with or without accessories, for compressing a gas.

**COMPRESSOR, POSITIVE DISPLACEMENT.** A compressor in which increase in pressure is attained by changing the internal volume of the compression chamber.

**COMPRESSOR UNIT.** A compressor with its prime mover and accessories.

**CONCEALED LOCATION.** A location that cannot be accessed without damaging permanent parts of the building structure or finish surface. Spaces above, below or behind

readily removable panels or doors shall not be considered as concealed.

**CONDENSATE.** The liquid that condenses from a gas (including flue gas) caused by a reduction in temperature.

**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 SPACE.** An area, room or space being heated or cooled by any equipment or appliance.

**CONFINED SPACES.** A space having a volume less than 50 cubic feet per 1,000 British thermal units per hour (Btu/h) (4.8 m<sup>3</sup>/kW) of the aggregate input rating of all appliances installed in that space.

**CONSTRUCTION DOCUMENTS.** All of the written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of the project necessary for obtaining a building permit. The construction drawings shall be drawn to an appropriate scale.

**CONTROL.** A manual or automatic device designed to regulate the gas, air, water or electrical supply to, or operation of, a mechanical system.

**CONVERSION BURNER.** A burner designed to supply gaseous fuel to an appliance originally designed to utilize another fuel.

**COOKING APPLIANCE.** See "Commercial cooking appliances."

**DAMPER.** A manually or automatically controlled device to regulate draft or the rate of flow of air or combustion gases.

**Volume damper.** A device that, when installed, will restrict, retard or direct the flow of air in a duct, or the products of combustion in a heat-producing appliance, its vent connector, vent or chimney therefrom.

**DESIGN FLOOD ELEVATION.** The elevation of the "design flood," including wave height, relative to the datum specified on the community's legally designated flood hazard area map.

**DESIGN WORKING PRESSURE.** The maximum allowable working pressure for which a specific part of a system is designed.

**DIRECT REFRIGERATION SYSTEM.** A system in which the evaporator or condenser of the refrigerating system is in direct contact with the air or other substances to be cooled or heated.

**DIRECT-VENT APPLIANCES.** Appliances that are constructed and installed so that all air for combustion is derived from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

**DRAFT.** The pressure difference existing between the appliance or any component part and the atmosphere, that causes a

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continuous flow of air and products of combustion through the gas passages of the appliance to the atmosphere.

**Induced draft.** The pressure difference created by the action of a fan, blower or ejector, that is located between the appliance and the chimney or vent termination.

**Natural draft.** The pressure difference created by a vent or chimney because of its height, and the temperature difference between the flue gases and the atmosphere.

**DRIP.** The container placed at a low point in a system of piping to collect condensate and from which the condensate is removable.

**DRY CLEANING SYSTEMS.** Dry cleaning plants or systems are classified as follows:

**Type I.** Those systems using Class I flammable liquid solvents having a flash point below 100°F (38°C).

**Type II.** Those systems using Class II combustible liquid solvents having a flash point at or above 100°F (38°C) and below 140°F (60°C).

**Type III.** Those systems using Class III combustible liquid solvents having a flash point at or above 140°F (60°C).

**Types IV and V.** Those systems using Class IV nonflammable liquid solvents.

**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 FURNACE.** A warm-air furnace normally installed in an air distribution duct to supply warm air for heating. This definition shall apply only to a warm-air heating appliance that, for air circulation, depends on a blower not furnished as part of the furnace.

**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.** A building or portion thereof that contains not more than two dwelling units.

**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.

**ELECTRIC HEATING APPLIANCE.** An appliance that produces heat energy to create a warm environment by the application of electric power to resistance elements, refrigerant compressors or dissimilar material junctions.

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

**EQUIPMENT.** All piping, ducts, vents, control devices and other components of systems other than appliances which are permanently installed and integrated to provide control of envi-

ronmental conditions for buildings. This definition shall also include other systems specifically regulated in this code.

**EQUIPMENT, EXISTING .** Any equipment regulated by this code which was legally installed prior to the effective date of this code, or for which a permit to install has been issued.

**EVAPORATIVE COOLER.** A device used for reducing the sensible heat of air for cooling by the process of evaporation of water into an airstream.

**EVAPORATIVE COOLING SYSTEM.** The equipment and appliances intended or installed for the purpose of environmental cooling by an evaporative cooler from which the conditioned air is distributed through ducts or plenums to the conditioned area.

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

**EXCESS AIR.** The amount of air provided in addition to theoretical air to achieve complete combustion of a fuel, thereby preventing the formation of dangerous products of combustion.

**EXHAUST SYSTEM.** An assembly of connected ducts, plenums, fittings, registers, grilles and hoods through which air is conducted from the space or spaces and exhausted to the outside atmosphere.

**EXTRA-HEAVY-DUTY COOKING APPLIANCE.** Extra-heavy-duty cooking appliances include appliances utilizing solid fuel such as wood, charcoal, briquettes, and mesquite as the primary source of heat for cooking.

**FIREPLACE.** An assembly consisting of a hearth and fire chamber of noncombustible material and provided with a chimney, for use with solid fuels.

**Factory-built fireplace.** A listed and labeled fireplace and chimney system composed of factory-made components, and assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.

**Masonry fireplace.** A field-constructed fireplace composed of solid masonry units, bricks, stones or concrete.

**FIREPLACE STOVE.** A free-standing chimney-connected solid-fuel-burning heater, designed to be operated with the fire chamber doors in either the open or closed position.

**FLAME SAFEGUARD.** A device that will automatically shut off the fuel supply to a main burner or group of burners when the means of ignition of such burners becomes inoperative, and when flame failure occurs on the burner or group of burners.

**FLAME SPREAD INDEX.** The numerical value assigned to a material tested in accordance with ASTM E 84.

**FLAMMABILITY CLASSIFICATION.** Refrigerants shall be assigned to one of the three classes—1, 2 or 3—in accordance with ASHRAE 34. For Classes 2 and 3, the heat of combustion shall be calculated assuming that combustion products are in the gas phase and in their most stable state.

**Class 1.** Refrigerants that do not show flame propagation when tested in air at 14.7 psia (101 kPa) and 70°F (21°C).

**Class 2.** Refrigerants having a lower flammability limit (LFL) of more than 0.00625 pound per cubic foot (0.10

kg/m<sup>3</sup>) at 70°F (21°C) and 14.7 psia (101 kPa) and a heat of combustion of less than 8,174 Btu/lb (19 000 kJ/kg).

**Class 3.** Refrigerants that are highly flammable, having a LFL of less than or equal to 0.00625 pound per cubic foot (0.10 kg/m<sup>3</sup>) at 70°F (21°C) and 14.7 psia (101 kPa) or a heat of combustion greater than or equal to 8,174 Btu/lb (19 000 kJ/kg).

**FLAMMABLE LIQUIDS.** Any liquid that has a flash point below 100°F (38°C), and has a vapor pressure not exceeding 40 psia (276 kPa) at 100°F (38°C). Flammable liquids shall be known as Class I liquids and shall be divided into the following classifications:

**Class IA.** Liquids having a flash point below 73°F (23°C) and a boiling point below 100°F (38°C).

**Class IB.** Liquids having a flash point below 73°F (23°C) and a boiling point at or above 100°F (38°C).

**Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C).

**FLAMMABLE VAPOR OR FUMES.** Mixtures of gases in air at concentrations equal to or greater than the LFL and less than or equal to the upper flammability limit (UFL).

**FLASHPOINT.** The minimum temperature corrected to a pressure of 14.7 psia (101 kPa) at which the application of a test flame causes the vapors of a portion of the sample to ignite under the conditions specified by the test procedures and apparatus. The flash point of a liquid shall be determined in accordance with ASTM D 56, ASTM D 93 or ASTM D 3278.

**FLOOR AREA, NET.** The actual occupied area, not including unoccupied accessory areas or thicknesses of walls.

**FLOOR FURNACE.** A completely self-contained furnace suspended from the floor of the space being heated, taking air for combustion from outside such space and with means for observing flames and lighting the appliance from such space.

**FLUE.** A passageway within a chimney or vent through which gaseous combustion products pass.

**FLUE CONNECTION (BREECHING).** A passage for conducting the products of combustion from a fuel-fired appliance to the vent or chimney (see also “Chimney connector” and “Vent connector”).

**FLUE GASES.** Products of combustion and excess air.

**FLUE LINER (LINING).** A system or material used to form the inside surface of a flue in a chimney or vent, for the purpose of protecting the surrounding structure from the effects of combustion products and conveying combustion products without leakage to the atmosphere.

**FUEL GAS.** A natural gas, manufactured gas, liquefied petroleum gas or a mixture of these.

**FUEL OIL.** Kerosene or any hydrocarbon oil having a flash point not less than 100°F (38°C).

**FUEL-OIL PIPING SYSTEM.** A closed piping system that connects a combustible liquid from a source of supply to a fuel-oil-burning appliance.

**FURNACE.** A completely self-contained heating unit that is designed to supply heated air to spaces remote from or adjacent to the appliance location.

**FURNACE ROOM.** A room primarily utilized for the installation of fuel-burning, space-heating and water-heating appliances other than boilers (see also “Boiler room”).

**FUSIBLE PLUG.** A device arranged to relieve pressure by operation of a fusible member at a predetermined temperature.

**GROUND SOURCE HEAT PUMP LOOP SYSTEM.** Piping buried in horizontal or vertical excavations or placed in a body of water for the purpose of transporting heat transfer liquid to and from a heat pump. Included in this definition are closed loop systems in which the liquid is recirculated and open loop systems in which the liquid is drawn from a well or other source.

**HAZARDOUS LOCATION.** Any location considered to be a fire hazard for flammable vapors, dust, combustible fibers or other highly combustible substances. The location is not necessarily categorized in the *International Building Code* as a high-hazard use group classification.

**HEAT EXCHANGER.** A device that transfers heat from one medium to another.

**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 TRANSFER LIQUID.** The operating or thermal storage liquid in a mechanical system, including water or other liquid base, and additives at the concentration present under operating conditions used to move heat from one location to another. Refrigerants are not included as heat transfer liquids.

**HEAVY-DUTY COOKING APPLIANCE.** Heavy-duty cooking appliances include electric under-fired broilers, electric chain (conveyor) broilers, gas under-fired broilers, gas chain (conveyor) broilers, gas open-burner ranges (with or without oven), electric and gas wok ranges, and electric and gas over-fired (upright) broilers and salamanders.

**HIGH-PROBABILITY SYSTEMS.** A refrigeration system in which the basic design or the location of components is such that a leakage of refrigerant from a failed connection, seal or component will enter an occupancy classified area, other than the machinery room.

**HIGH-SIDE PRESSURE.** The parts of a refrigerating system subject to condenser pressure.

**HOOD.** An air-intake device used to capture by entrapment, impingement, adhesion or similar means, grease and similar contaminants before they enter a duct system.

**Type I.** A kitchen hood for collecting and removing grease vapors and smoke.

**Type II.** A general kitchen hood for collecting and removing steam, vapor, heat and odors.

**HYDROGEN GENERATING APPLIANCE.** A self-contained package or factory-matched packages of integrated systems for generating gaseous hydrogen. Hydrogen generating

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appliances utilize electrolysis, reformation, chemical, or other processes to generate hydrogen.

**IGNITION SOURCE.** A flame, spark or hot surface capable of igniting flammable vapors or fumes. Such sources include appliance burners, burner ignitors and electrical switching devices.

**IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH).** The concentration of airborne contaminants that poses a threat of death, immediate or delayed permanent adverse health effects, or effects that could prevent escape from such an environment. This contaminant concentration level is established by the National Institute of Occupational Safety and Health (NIOSH) based on both toxicity and flammability. It is generally expressed in parts per million by volume (ppm v/v) or milligrams per cubic meter (mg/m<sup>3</sup>).

**INDIRECT REFRIGERATION SYSTEM.** A system in which a secondary coolant cooled or heated by the refrigerating system is circulated to the air or other substance to be cooled or heated. Indirect systems are distinguished by the method of application shown below:

**Closed system.** A system in which a secondary fluid is either cooled or heated by the refrigerating system and then circulated within a closed circuit in indirect contact with the air or other substance to be cooled or heated.

**Double-indirect open-spray system.** A system in which the secondary substance for an indirect open-spray system is heated or cooled by an intermediate coolant circulated from a second enclosure.

**Open-spray system.** A system in which a secondary coolant is cooled or heated by the refrigerating system and then circulated in direct contact with the air or other substance to be cooled or heated.

**Vented closed system.** A system in which a secondary coolant is cooled or heated by the refrigerating system and then passed through a closed circuit in the air or other substance to be cooled or heated, except that the evaporator or condenser is placed in an open or appropriately vented tank.

**JOINT, FLANGED.** A joint made by bolting together a pair of flanged ends.

**JOINT, FLARED.** A metal-to-metal compression joint in which a conical spread is made on the end of a tube that is compressed by a flare nut against a mating flare.

**JOINT, MECHANICAL.** A general form of gas-tight joints obtained by the joining of metal parts through a positive-holding mechanical construction, such as flanged joint, screwed joint or flared joint.

**JOINT, PLASTIC ADHESIVE.** A joint made in thermoset plastic piping by the use of an adhesive substance which forms a continuous bond between the mating surfaces without dissolving either one of them.

**JOINT, PLASTIC HEAT FUSION.** A joint made in thermoplastic piping by heating the parts sufficiently to permit fusion of the materials when the parts are pressed together.

**JOINT, PLASTIC SOLVENT CEMENT.** A joint made in thermoplastic piping by the use of a solvent or solvent cement which forms a continuous bond between the mating surfaces.

**JOINT, SOLDERED.** A gas-tight joint obtained by the joining of metal parts with metallic mixtures of alloys which melt at temperatures between 400°F (204°C) and 1,000°F (538°C).

**JOINT, WELDED.** A gas-tight joint obtained by the joining of metal parts in molten state.

**LABELED.** Devices, equipment, appliances or materials 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 by whose label the manufacturer attests to compliance with applicable nationally recognized standards.

**LIGHT-DUTY COOKING APPLIANCE.** Light-duty cooking appliances include gas and electric ovens (including standard, bake, roasting, revolving, retherm, convection, combination convection/steamer, conveyor, deck or deck-style pizza, and pastry), electric and gas steam-jacketed kettles, electric and gas compartment steamers (both pressure and atmospheric) and electric and gas cheesemelters.

**LIMIT CONTROL.** A device responsive to changes in pressure, temperature or level for turning on, shutting off or throttling the gas supply to an appliance.

**LIMITED CHARGE SYSTEM.** A system in which, with the compressor idle, the design pressure will not be exceeded when the refrigerant charge has completely evaporated.

**LISTED.** Equipment, appliances or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances or materials, and whose listing states either that the equipment, appliances or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. Not all testing laboratories, inspection agencies and other organizations concerned with product evaluation use the same means for identifying listed equipment, appliances or materials. Some do not recognize equipment, appliances or materials as listed unless they are also labeled. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.

**LIVING SPACE.** Space within a dwelling unit utilized for living, sleeping, eating, cooking, bathing, washing and sanitation purposes.

**LOWER EXPLOSIVE LIMIT (LEL).** See "LFL."

**LOWER FLAMMABLE LIMIT (LFL).** The minimum concentration of refrigerant that is capable of propagating a flame through a homogeneous mixture of refrigerant and air.

**LOW-PRESSURE HOT-WATER-HEATING BOILER.** A boiler furnishing hot water at pressures not exceeding 160 psi (1103 kPa) and at temperatures not exceeding 250°F (121°C).

**LOW-PRESSURE STEAM-HEATING BOILER.** A boiler furnishing steam at pressures not exceeding 15 psi (103 kPa).

**LOW-PROBABILITY SYSTEMS.** A refrigeration system in which the basic design or the location of components is such that a leakage of refrigerant from a failed connection, seal or

component will not enter an occupancy-classified area, other than the machinery room.

**LOW-SIDE PRESSURE.** The parts of a refrigerating system subject to evaporator pressure.

**MACHINERY ROOM.** A room meeting prescribed safety requirements and in which refrigeration systems or components thereof are located (see Sections 1105 and 1106).

**MECHANICAL DRAFT 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.

**Forced-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 positive static pressure.

**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 nonpositive static vent pressure.

**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.

**MECHANICAL EQUIPMENT/APPLIANCE ROOM.** A room or space in which nonfuel-fired mechanical equipment and appliances are located.

**MECHANICAL EXHAUST SYSTEM.** A system for removing air from a room or space by mechanical means.

**MECHANICAL JOINT.** A connection between pipes, fittings, or pipes and fittings, which is neither screwed, caulked, threaded, soldered, solvent cemented, brazed nor welded. Also, a joint in which compression is applied along the centerline of the pieces being joined. Some joints are part of a coupling, fitting or adapter.

**MECHANICAL SYSTEM.** A system specifically addressed and regulated in this code and composed of components, devices, appliances and equipment.

**MEDIUM-DUTY COOKING APPLIANCE.** Medium-duty cooking appliances include electric discrete element ranges (with or without oven), electric and gas hot-top ranges, electric and gas griddles, electric and gas double-sided griddles, electric and gas fryers (including open deep fat fryers, donut fryers, kettle fryers, and pressure fryers), electric and gas pasta cookers, electric and gas conveyor pizza ovens, electric and gas tilting skillets (braising pans) and electric and gas rotisseries.

**MODULAR BOILER.** A steam or hot-water-heating assembly consisting of a group of individual boilers called modules intended to be installed as a unit with no intervening stop valves. Modules are under one jacket or are individually jacketed. The individual modules shall be limited to a maximum input rating of 400,000 Btu/h (117 228 W) gas, 3 gallons per hour (gph) (11.4 L/h) oil, or 115 kW (electric).

**NATURAL DRAFT SYSTEM.** A venting system designed to remove flue or vent gases under nonpositive static vent pressure entirely by natural draft.

**NATURAL VENTILATION.** The movement of air into and out of a space through intentionally provided openings, such as windows and doors, or through nonpowered ventilators.

**NONABRASIVE/ABRASIVE MATERIALS.** Nonabrasive particulate in high concentrations, moderately abrasive particulate in low and moderate concentrations, and highly abrasive particulate in low concentrations, such as alfalfa, asphalt, plaster, gypsum and salt.

**NONCOMBUSTIBLE MATERIALS.** Materials that, when tested in accordance with ASTM E 136, have at least three of four specimens tested meeting all of the following criteria:

1. The recorded temperature of the surface and interior thermocouples shall not at any time during the test rise more than 54°F (30°C) above the furnace temperature at the beginning of the test.
2. There shall not be flaming from the specimen after the first 30 seconds.
3. If the weight loss of the specimen during testing exceeds 50 percent, the recorded temperature of the surface and interior thermocouples shall not at any time during the test rise above the furnace air temperature at the beginning of the test, and there shall not be flaming of the specimen.

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

**OFFSET (VENT).** A combination of approved bends that make two changes in direction bringing one section of the vent out of line but into a line parallel with the other section.

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

**OUTDOOR OPENING.** A door, window, louver or skylight openable to the outside atmosphere.

**OUTLET.** A threaded connection or bolted flange in a piping system to which a gas-burning appliance is attached.

**PANEL HEATING.** A method of radiant space heating in which heat is supplied by large heated areas of room surfaces. The heating element usually consists of warm water piping, warm air ducts, or electrical resistance elements embedded in or located behind ceiling, wall or floor surfaces.

**PELLET FUEL-BURNING APPLIANCE.** A closed-combustion, vented appliance equipped with a fuel-feed mechanism for burning processed pellets of solid fuel of a specified size and composition.

**PIPING.** Where used in this code, "piping" refers to either pipe or tubing, or both.

**Pipe.** A rigid conduit of iron, steel, copper, brass or plastic.

**Tubing.** Semirigid conduit of copper, aluminum, plastic or steel.

**PLASTIC, THERMOPLASTIC.** A plastic that is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature.

**PLASTIC, THERMOSETTING.** A plastic that is capable of being changed into a substantially infusible or insoluble product when cured under application of heat or chemical means.

## DEFINITIONS

**PLENUM.** An enclosed portion of the building structure, other than an occupiable space being conditioned, that is designed to allow air movement, and thereby serve as part of an air distribution system.

**PORTABLE FUEL CELL APPLIANCE.** A fuel cell generator of electricity, which is not fixed in place. A portable fuel cell appliance utilizes a cord and plug connection to a grid-isolated load and has an integral fuel supply.

**POWER BOILER.** See “Boiler.”

**PREMISES.** A lot, plot or parcel of land, including any structure thereon.

**PRESSURE, FIELD TEST.** A test performed in the field to prove system tightness.

**PRESSURE-LIMITING DEVICE.** A pressure-responsive mechanism designed to stop automatically the operation of the pressure-imposing element at a predetermined pressure.

**PRESSURE RELIEF DEVICE.** A pressure-actuated valve or rupture member designed to relieve excessive pressure automatically.

**PRESSURE RELIEF VALVE.** A pressure-actuated valve held closed by a spring or other means and designed to relieve pressure automatically in excess of the device’s setting.

**PRESSURE VESSELS.** Closed containers, tanks or vessels that are designed to contain liquids or gases, or both, under pressure.

**PRESSURE VESSELS—REFRIGERANT.** Any refrigerant-containing receptacle in a refrigerating system. This does not include evaporators where each separate section does not exceed 0.5 cubic foot (0.014 m<sup>3</sup>) of refrigerant-containing volume, regardless of the maximum inside dimensions, evaporator coils, controls, headers, pumps and piping.

**PROTECTIVE ASSEMBLY (REDUCED CLEARANCE).** Any noncombustible assembly that is labeled or constructed in accordance with Table 308.6 and is placed between combustible materials or assemblies and mechanical appliances, devices or equipment, for the purpose of reducing required airspace clearances. Protective assemblies attached directly to a combustible assembly shall not be considered as part of that combustible assembly.

**PURGE.** To clear of air, water or other foreign substances.

**QUICK-OPENING VALVE.** A valve that opens completely by fast action, either manually or automatically controlled. A valve requiring one-quarter round turn or less is considered to be quick opening.

**RADIANT HEATER.** A heater designed to transfer heat primarily by direct 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, door or similar obstruction [see “Access (to)”].

**RECEIVER, LIQUID.** A vessel permanently connected to a refrigeration system by inlet and outlet pipes for storage of liquid refrigerant.

**RECIRCULATED AIR.** Air removed from a conditioned space and intended for reuse as supply air.

**RECLAIMED REFRIGERANTS.** Refrigerants reprocessed to the same specifications as for new refrigerants by means including distillation. Such refrigerants have been chemically analyzed to verify that the specifications have been met. Reclaiming usually implies the use of processes or procedures that are available only at a reprocessing or manufacturing facility.

**RECOVERED REFRIGERANTS.** Refrigerants removed from a system in any condition without necessarily testing or processing them.

**RECYCLED REFRIGERANTS.** Refrigerants from which contaminants have been reduced by oil separation, removal of noncondensable gases, and single or multiple passes through devices that reduce moisture, acidity and particulate matter, such as replaceable core filter driers. These procedures usually are performed at the field job site or in a local service shop.

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

**REFRIGERANT SAFETY CLASSIFICATIONS.** Groupings that indicate the toxicity and flammability classes in accordance with Section 1103.1. The classification group is made up of a letter (A or B) that indicates the toxicity class, followed by a number (1, 2 or 3) that indicates the flammability class. Refrigerant blends are similarly classified, based on the compositions at their worst cases of fractionation, as separately determined for toxicity and flammability. In some cases, the worst case of fractionation is the original formulation.

**Flammability.** Class 1 indicates refrigerants that do not show flame propagation in air when tested by prescribed methods at specified conditions. Classes 2 and 3 signify refrigerants with “lower flammability” and “higher flammability,” respectively; the distinction depends on both the LFL and heat of combustion.

**Toxicity.** Classes A and B signify refrigerants with “lower toxicity” and “higher toxicity,” respectively, based on prescribed measures of chronic (long-term, repeated exposures) toxicity.

**REFRIGERATED ROOM OR SPACE.** A room or space in which an evaporator or brine coil is located for the purpose of reducing or controlling the temperature within the room or space to below 68°F (20°C).

**REFRIGERATING SYSTEM.** A combination of interconnected refrigerant-containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting heat.

**REFRIGERATION CAPACITY RATING.** Expressed as 1 horsepower (0.75 kW), 1 ton or 12,000 Btu/h (3.5 kW), shall all mean the same quantity.

**REFRIGERATION MACHINERY ROOM.** See “Machinery room.”

**REFRIGERATION SYSTEM, ABSORPTION.** A heat-operated, closed-refrigeration cycle in which a secondary fluid (the absorbent) absorbs a primary fluid (the refrigerant) that has been vaporized in the evaporator.



**Direct system.** A system in which the evaporator is in direct contact with the material or space refrigerated, or is located in air-circulating passages communicating with such spaces.

**Indirect system.** A system in which a brine coil cooled by the refrigerant is circulated to the material or space refrigerated, or is utilized to cool the air so circulated. Indirect systems are distinguished by the type or method of application.

**REFRIGERATION SYSTEM CLASSIFICATION.** Refrigeration systems are classified according to the degree of probability that leaked refrigerant from a failed connection, seal or component will enter an occupied area. The distinction is based on the basic design or location of the components.

**REFRIGERATION SYSTEM, MECHANICAL.** A combination of interconnected refrigeration-containing parts constituting one closed refrigerant circuit in which a refrigerant is circulated for the purpose of extracting heat and in which a compressor is used for compressing the refrigerant vapor.

**REFRIGERATION SYSTEM, SELF-CONTAINED.** A complete factory-assembled and tested system that is shipped in one or more sections and has no refrigerant-containing parts that are joined in the field by other than companion or block valves.

**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. Design by a registered design professional is not required where exempt under the registration or licensure laws.

**RETURN AIR.** Air removed from an approved conditioned space or location and recirculated or exhausted.

**RETURN AIR SYSTEM.** An assembly of connected ducts, plenums, fittings, registers and grilles through which air from the space or spaces to be heated or cooled is conducted back to the supply unit (see also "Supply air system").

**ROOM HEATER VENTED.** A free-standing heating unit burning solid or liquid fuel for direct heating of the space in and adjacent to that in which the unit is located.

**SAFETY VALVE.** A valve that relieves pressure in a steam boiler by opening fully at the rated discharge pressure. The valve is of the spring-pop type.

**SELF-CONTAINED EQUIPMENT.** Complete, factory-assembled and tested, heating, air-conditioning or refrigeration equipment installed as a single unit, and having all working parts, complete with motive power, in an enclosed unit of said machinery.

**SHAFT.** An enclosed space extending through one or more stories of a building, connecting vertical openings in successive floors, or floors and the roof.

**SHAFT ENCLOSURE.** The walls or construction forming the boundaries of a shaft.

**SMOKE DAMPER.** A listed device that is designed to resist the passage of air and smoke. The device is arranged to operate automatically, controlled by a smoke detection system, and

when required, is capable of being positioned manually from a remote command station.

**SMOKE-DEVELOPED INDEX.** A numerical value assigned to a material tested in accordance with ASTM E 84.

**SOLID FUEL (COOKING APPLICATIONS).** Applicable to commercial food service operations only, solid fuel is any bulk material such as hardwood, mesquite, charcoal or briquettes that is combusted to produce heat for cooking operations.

**SOURCE CAPTURE SYSTEM.** A mechanical exhaust system designed and constructed to capture air contaminants at their source and to exhaust such contaminants to the outdoor atmosphere.

**STATIONARY FUEL CELL POWER PLANT.** A self-contained package or factory-matched packages which constitute an automatically operated assembly of integrated systems for generating useful electrical energy and recoverable thermal energy that is permanently connected and fixed in place.

**STEAM-HEATING BOILER.** A boiler operated at pressures not exceeding 15 psi (103 kPa) for steam.

**STOP VALVE.** A shutoff valve for controlling the flow of liquid or gases.

**STORY.** That portion of a building included between the upper surface of a floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above.

**STRENGTH, ULTIMATE.** The highest stress level that the component will tolerate without rupture.

**SUPPLY AIR.** That air delivered to each or any space supplied by the air distribution system or the total air delivered to all spaces supplied by the air distribution system, which is provided for ventilating, heating, cooling, humidification, dehumidification and other similar purposes.

**SUPPLY AIR SYSTEM.** An assembly of connected ducts, plenums, fittings, registers and grilles through which air, heated or cooled, is conducted from the supply unit to the space or spaces to be heated or cooled (see also "Return air system").

**THEORETICAL AIR.** The exact amount of air required to supply oxygen for complete combustion of a given quantity of a specific fuel.

**THERMAL RESISTANCE (*R*).** A measure of the ability to retard the flow of heat. The *R*-value is the reciprocal of thermal conductance.

**TLV-TWA (THRESHOLD LIMIT VALUE-TIME-WEIGHTED AVERAGE).** The time-weighted average concentration of a refrigerant or other chemical in air for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers are repeatedly exposed, day after day, without adverse effects, as adopted by the American Conference of Government Industrial Hygienists (ACGIH).

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

## DEFINITIONS

**TOXICITY CLASSIFICATION.** Refrigerants shall be classified for toxicity to one of two classes in accordance with ASHRAE 34:

**Class A.** Refrigerants for which toxicity has not been identified at concentrations less than or equal to 400 parts per million (ppm), based on data used to determine Threshold Limit Value-Time-Weighted Average (TLV-TWA) or consistent indices.

**Class B.** Refrigerants for which there is evidence of toxicity at concentrations below 400 ppm, based on data used to determine TLV-TWA or consistent indices.

**TRANSITION FITTINGS, PLASTIC TO STEEL.** An adapter for joining plastic pipe to steel pipe. The purpose of this fitting is to provide a permanent, pressure-tight connection between two materials which cannot be joined directly one to another.

**UNCONFINED SPACE.** A space having a volume not less than 50 cubic feet per 1,000 Btu/h (4.8 m<sup>3</sup>/kW) of the aggregate input rating of all appliances installed in that space. Rooms communicating directly with the space in which the appliances are installed, through openings not furnished with doors, are considered a part of the unconfined space.

**UNIT HEATER.** A self-contained appliance of the fan type, designed for the delivery of warm air directly into the space in which the appliance is located.

**UNUSUALLY TIGHT CONSTRUCTION.** Construction meeting the following requirements:

1. Walls exposed to the outside atmosphere having a continuous water vapor retarder with a rating of 1 perm (57 ng/s • m<sup>2</sup> • Pa) or less with openings gasketed or sealed;
2. Openable windows and doors meeting the air leakage requirements of the *International Energy Conservation Code*, Section 502.1.4; and
3. Caulking or sealants are 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.

**VENT.** A pipe or other conduit composed of factory-made components, containing a passageway for conveying combustion products and air to the atmosphere, listed and labeled for use with a specific type or class of appliance.

**Pellet vent.** A vent listed and labeled for use with listed pellet-fuel-burning appliances.

**Type L vent.** A vent listed and labeled for use with the following:

1. Oil-burning appliances that are listed for use with Type L vents.
2. Gas-fired appliances that are listed for use with Type B vents.

**VENT CONNECTOR.** The pipe that connects an approved fuel-fired appliance to a vent.

**VENT DAMPER DEVICE, AUTOMATIC.** A device intended for installation in the venting system, in the outlet of an

individual automatically operated fuel-burning appliance that is designed to open the venting system automatically when the appliance is in operation and to close off the venting system automatically when the appliance is in a standby or shutdown condition.

**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 the 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 of an 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.

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