

## CHAPTER 2

# DEFINITIONS

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**User note:**

*About this chapter: Codes, by their very nature, are technical documents. Every word, term and punctuation mark can add to or change the meaning of a technical requirement. It is necessary to maintain a consensus on the specific meaning of each term contained in the code. Chapter 2 performs this function by stating clearly what specific terms mean for the purposes of the code.*

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### 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.

**[S] 201.3 Terms defined in other codes.** Where terms are not defined in this code and are defined in the *International Building Code*, *International Fire Code*, *Seattle Electrical Code*, *International Fuel Gas Code* or the (~~International~~) *Uniform 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 can 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 or similar obstruction [see also "Ready access (to)"].

**AIR.** Air supplied to mechanical *equipment* and appliances for *combustion*, ventilation, cooling and similar purposes. 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 DISPERSION SYSTEM.** Any diffuser system designed to both convey air within a room, space or area and diffuse air into that space while operating under positive pressure. Systems are commonly constructed of, but not limited to, fabric or plastic film.

**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.** Any combination of outdoor and transfer air intended to replace exhaust air and exfiltration.

**AIR, OUTDOOR.** Ambient air that enters a building through a ventilation system, through intentional openings for natural ventilation, or by infiltration.

**AIR, TRANSFER.** Air moved from one indoor space to another.

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

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**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 that 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 outdoor atmosphere through an *approved chimney* or vent system.

[A] **APPROVED.** Acceptable to the code official.

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

[S] ~~(AUTOMATIC BOILER. Any class of boiler that is equipped with the controls and limit devices specified in Chapter 10.)~~

[W] **BALANCED WHOLE HOUSE VENTILATION.** Any combination of concurrently operating residential unit mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate is within 10 percent or 5 cfm, whichever is greater, of the total mechanical supply airflow rate. Intermittent dryer exhaust, intermittent range hood exhaust, and intermittent toilet room exhaust airflow rates above the residential dwelling or sleeping unit minimum ventilation rate are exempt from the balanced airflow calculation.

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

[S] ~~**BOILER.** A closed ((heating appliance intended to supply hot water or steam for space heating, processing or power purposes)) vessel in which water is heated, steam is generated, steam is superheated, or any combination thereof, under pressure or vacuum by the direct application of heat. ((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.)) The term "boiler" shall also include fired units for heating or vaporizing liquids other than water where these systems are complete within themselves.~~

[S] **BOILER CODE.** The *Seattle Boiler and Pressure Vessel Code*.

**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 that 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.

**BREATHING ZONE.** The region within an occupied space between planes 3 and 72 inches (76 and 1829 mm) above the floor and more than 2 feet (610 mm) from the walls of the space or from fixed air-conditioning *equipment*.

**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).

[A] **BUILDING.** Any structure utilized or intended for supporting or sheltering any *occupancy*.

[BF] **CEILING RADIATION DAMPER.** A *listed* device installed in a ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly to limit automatically the radiative heat transfer through an air inlet/outlet opening.

**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 outdoor 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 does not have 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.

**[S][A] CODE.** These regulations, subsequent amendments thereto, or any emergency rule or regulation that ((the administrative authority having jurisdiction)) has been lawfully adopted.

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

**[BF] COMBINATION FIRE/SMOKE DAMPER.** A *listed* device installed in ducts and air transfer openings designed to close automatically upon the detection of heat and resist the passage of flame and smoke. The device is installed to operate automatically, be controlled by a smoke detection system, and where required, is capable of being positioned from a fire command center.

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

**[F] COMBUSTIBLE LIQUID.** A liquid having a closed cup flash point at or above 100°F (38°C). Combustible liquids shall be subdivided as follows:

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

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

**Class IIIB.** Liquids having a closed cup flash point at or above 200°F (93°C).

The category of combustible liquids does not include compressed gases or cryogenic fluids.

**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 APPLIANCES.** Appliances used in a commercial food service establishment for heating or cooking food. For the purpose of this definition, a commercial food service establishment is where food is prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking.

**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 KITCHEN HOODS.

**Backshelf hood.** A backshelf hood is also referred to as a low-proximity hood, or as a sidewall hood where wall mounted. Its 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.

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**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 and, where required, liquid receivers, and the regularly furnished accessories.

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

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

**[A] CONSTRUCTION DOCUMENTS.** 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.

**[S] CONTAINER (REFRIGERANT).** A cylinder for the transportation of refrigerant.

**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.*”

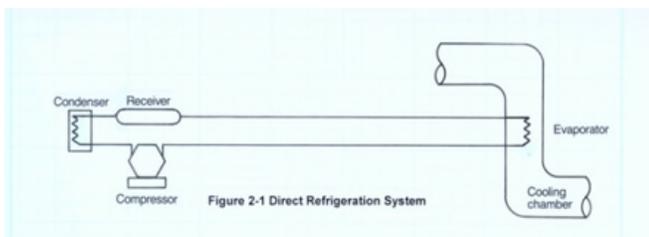
**DAMPER.** A manually or automatically controlled device to regulate draft or the rate of flow of air or *combustion* gases.

**Volume damper.** A device that, where 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.

**[BS] 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. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the building’s perimeter plus the depth number, in feet, specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

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

**[S] 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. See Figure 2-1 for a diagram of a type of direct refrigeration system.



**DIRECT SOLAR SYSTEM.** A solar thermal system in which the gas or liquid in the solar collector loop is not separated from the load.

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

**DISCRETE PRODUCT.** Products that are noncontinuous, individual, distinct pieces such as, but not limited to, electrical, plumbing and mechanical products and duct straps, duct fittings, duct registers and pipe hangers.

**[W] DISTRIBUTED WHOLE HOUSE VENTILATION.** A whole house ventilation system shall be considered distributed when it supplies outdoor air directly (not transfer air) to each dwelling or sleeping unit habitable space, (living room, den, office, interior adjoining spaces or bedroom), and exhausts air from all kitchens and bathrooms directly outside.

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

**DRAIN-BACK SYSTEM.** A solar thermal system in which the fluid in the solar collector loop is gravity drained from the collector into a holding tank under prescribed circumstances.

**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.

**DUCTLESS MINI-SPLIT SYSTEM.** A heating and cooling system that is comprised of one or multiple indoor evaporator/air-handling units and an outdoor condensing unit that is connected by refrigerant piping and electrical wiring. A ductless mini-split system is capable of cooling or heating one or more rooms without the use of a traditional ductwork system.

**[BG] DWELLING.** A building or portion thereof that contains not more than two *dwelling* units.

**[A] 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.

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**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, precooling, humidifying or dehumidifying outdoor *ventilation air* prior to supplying such air to a space, either directly or as part of an HVAC system.

[S] **ENVIRONMENTAL AIR.** Air that is, at temperatures not exceeding 250°F (121°C), conveyed to or from occupied areas through ducts that are not part of the heating or air-conditioning system, such as ventilation for human usage, *relief air*, domestic kitchen range exhaust, bathroom exhaust, domestic clothes dryer exhaust, transformer vault exhaust, elevator exhaust, and parking garage exhaust.

**EQUIPMENT.** Piping, ducts, vents, control devices and other components of systems other than appliances that are permanently installed and integrated to provide control of environmental 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*.

**EXFILTRATION.** Uncontrolled outward air leakage from conditioned spaces through unintentional openings in ceilings, floors and walls to unconditioned spaces or the outdoors caused by pressure differences across these openings resulting from wind, the stack effect created by temperature differences between indoors and outdoors, and imbalances between supply and exhaust airflow rates.

**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 outdoor atmosphere.

[S] **EXIT PASSAGEWAY.** An exit component that provides a protected path of egress travel in a horizontal direction to an exit or to the exit discharge.

**Note:** The exit passageway definition is repeated verbatim from the 2018 Seattle Building Code.

**EXTRA-HEAVY-DUTY COOKING APPLIANCE.** Extra-heavy-duty cooking appliances are those utilizing open flame combustion of solid fuel at any time.

[S] **FIRE AREA.** The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls or horizontal assemblies of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above.

[BF] **FIRE DAMPER.** A *listed* device installed in ducts and air transfer openings designed to close automatically upon detection of heat and to restrict the passage of flame. Fire dampers are classified for use in either static systems that will automatically shut down in the event of a fire, or in dynamic systems that continue to operate during a fire. A dynamic fire damper is tested and rated for closure under elevated temperature airflow.

**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.

[FG] **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.

[BF] **FLAME SPREAD INDEX.** The numerical value assigned to a material tested in accordance with ASTM E 84 or UL 723.

**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 140°F (60°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 140°F (60°C) and 14.7 psia (101 kPa) and a heat of combustion of less than 8169 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 140°F (60°C) and 14.7 psia (101 kPa) or a heat of combustion greater than or equal to 8169 Btu/lb (19 000 kJ/kg).

**[F] 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).

**[F] 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).

**[F] FLASH POINT.** 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.

**FLEXIBLE AIR CONNECTOR.** A conduit for transferring air between an air duct or plenum and an air terminal unit or between an air duct or plenum and an air inlet or air outlet. Such conduit is limited in its use, length and location.

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

**[FG] 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*”).

**[FG] 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.

**FOOD-GRADE FLUID.** Potable water or a fluid containing additives listed in accordance with the Code of Federal Regulations, Title 21, Food and Drugs, Chapter 1, Food and Drug Administration, Parts 174-186.

**[FG] 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.

**ISIF1 GAS ROOM.** A separately ventilated, fully enclosed room in which only compressed gases and associated *equipment* and supplies are stored or used.

**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.

## DEFINITIONS

**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, smokers, smoker ovens, 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*.

**[S][B] HIGH-RISE BUILDING.** A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

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

**HIGH-VOLUME, LARGE-DIAMETER FAN.** A low-speed ceiling fan that circulates large volumes of air and that is greater than 7 feet (2134 mm) in diameter.

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

**Type I.** A kitchen hood for collecting and removing grease vapors and smoke generated from medium-duty, heavy-duty, extra-heavy-duty, and some light-duty cooking appliances. Such hoods are equipped with a fire suppression system.

**Type II.** A general kitchen hood for collecting and removing steam, vapor, heat, odors and products of *combustion* generated from some light-duty cooking appliances.

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

**[F] 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>).

**[S] 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. See Figure 2-2. Indirect systems are distinguished by the following methods of application:

**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.

[S]

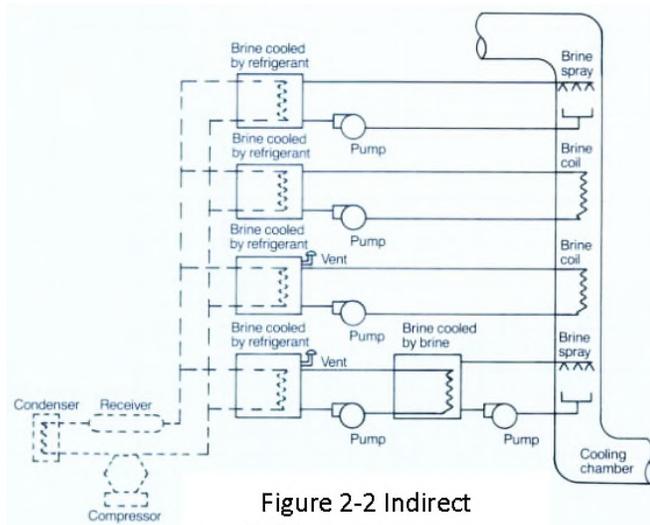


Figure 2-2 Indirect Refrigeration System

**INDIRECT SOLAR SYSTEM.** A solar thermal system in which the gas or liquid in the solar collector loop circulates between the solar collector and a heat exchanger and such gas or liquid is not drained from the system or supplied to the load during normal operation.

**INFILTRATION.** Uncontrolled inward air leakage to conditioned spaces through unintentional openings in ceilings, floors and walls from unconditioned spaces or the outdoors caused by pressure differences across these openings resulting from wind, the stack effect created by temperature differences between indoors and outdoors, and imbalances between supply and exhaust air-flow rates.

**[S] INTERIOR EXIT STAIRWAY.** An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and provides for a protected path of egress travel to the exit discharge or public way.

**Note:** The interior exit stairway definition is repeated verbatim from the 2018 Seattle Building Code.

**INTERLOCK.** A device actuated by another device with which it is directly associated, to govern succeeding operations of the same or allied devices. A circuit in which a given action cannot occur until after one or more other actions have taken place.

**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, PLASTIC ADHESIVE.** A joint made in thermoset plastic piping by the use of an adhesive substance that 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 that 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 that 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.

**[A] LABELED.** *Equipment*, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the 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.

**[S] LIGHT-DUTY COOKING APPLIANCE.** Light-duty cooking *appliances* include gas and electric ovens of a maximum 6 kW or 20,000 Btu/h capacity (including standard, bake, roasting, revolving, retherm, convection, combination convection/steamer, countertop conveyORIZED baking/finishing, deck and pastry), electric and gas steam-jacketed kettles, electric and gas pasta cookers, electric and gas compartment steamers (both pressure and atmospheric) and electric and gas cheesemelters.

## DEFINITIONS

**[FG] 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.

**[A] 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.

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

**[W] LOCAL EXHAUST.** An exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a residential dwelling or *sleeping unit*.

**LOW-PROBABILITY PUMP.** A pump that is designed to prevent atmospheric release of the pumped fluid by one of the following methods: 1. The pump is permanently sealed; 2. The pump incorporates a static seal; 3. The pump incorporates not less than two sequential dynamic shaft seals to isolate the pumped fluid from atmosphere at shaft penetrations and automatically shuts down upon failure of any seal.

**LOWER EXPLOSIVE LIMIT (LEL).** See “LFL.”

**LOWER FLAMMABLE LIMIT (REFRIGERANT)**

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

**[F] LOWER FLAMMABLE LIMIT (LFL).** The minimum concentration of vapor in air at which propagation of flame will occur in the presence of an ignition source. The LFL is sometimes referred to as LEL or lower explosive limit.

**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.** An enclosed space that is required by Chapter 11 to contain refrigeration equipment and to comply with 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.**

1. A connection between pipes, fittings, or pipes and fittings that is not welded, brazed, caulked, soldered, solvent cemented or heat fused.
2. A general form of gas or liquid-tight connections obtained by the joining of parts through a positive holding mechanical construction such as, but not limited to, flanged, screwed, clamped or flared connections.

**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 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 without 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.

**NET OCCUPIABLE FLOOR AREA.** The floor area of an *occupiable space* defined by the inside surfaces of its walls but excluding shafts, column enclosures and other permanently enclosed, inaccessible and unoccupiable areas. Obstructions in the space such as furnishings, display or storage racks and other obstructions, whether temporary or permanent, shall not be deducted from the space area.

**NO-FLOW CONDITION (SOLAR).** A condition where thermal energy is not transferred from a solar thermal collector by means of flow of a heat transfer fluid.

**NONFOOD-GRADE FLUID.** Any fluid that is not designated as a food-grade fluid.

**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 not fewer than 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.

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

**OCCUPATIONAL EXPOSURE LIMIT (OEL).** The time-weighted average (TWA) concentration for a normal 8-hour work-day and a 40-hour workweek to which nearly all workers can be repeatedly exposed without adverse effect, based on the OSHA PEL, ACGIH TLV-TWA, TERA OARS WEEL, or consistent value.

**OCCUPIABLE SPACE.** An enclosed space intended for human activities, excluding those spaces intended primarily for other purposes, such as storage rooms and *equipment* rooms, that are only intended to be occupied occasionally and for short periods of time.

**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 outdoor 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.

**[W] PERMANENT CONSTRUCTION.** Construction that if removed would disturb the structural integrity of the building or the fire resistance rating of a building assembly.

**[S] PERSON.** Any individual, receiver, administrator, executor, assignee, trustee in bankruptcy, trust, estate, firm, partnership, joint venture, club, company, joint stock company, business trust, municipal corporation, political subdivision of the State of Washington, corporation, limited liability company, association, society or any group of individuals acting as a unit, whether mutual, cooperative, fraternal, nonprofit or otherwise, and the United States or any instrumentality thereof.

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

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

**Tubing.** Semirigid conduit of copper, copper-alloy, 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.

**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.

**POLLUTION-CONTROL UNIT (PCU).** Manufactured equipment that is installed in a grease exhaust duct system for the purpose of extracting smoke, grease particles and odors from the exhaust flow by means of a series of filters.

**PORTABLE FUEL CELL APPLIANCE.** A fuel cell generator of electricity that 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.

[S] (~~(POWER BOILER.~~ See “Boiler.”))

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

**PRESS-CONNECT JOINT.** A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion-resistant grip ring. The joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer.

**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.

[S] (~~(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.

[S] **PRODUCT-CONVEYING.** Conveying solid particulates, such as refuse, dust, fumes and smoke; liquid particulate matter, such as spray residue, mists and fogs; vapors, such as vapors from flammable or corrosive liquids; noxious and toxic gases; and air at temperatures exceeding 250°F (121°C). Examples include, but are not limited to, combustion engine, industrial vacuum system, chemical booth, paint booth, paint enclosure and photo lab exhaust.

**PROTECTIVE ASSEMBLY (REDUCED CLEARANCE).** Any noncombustible assembly that is *labeled* or constructed in accordance with Table 308.4.2 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.

**PUSH-FIT JOINTS.** A type of mechanical joint consisting of elastomeric seals and corrosion-resistant tube grippers. Such joints are permanent or removable depending on the design.

**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 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 non-condensable 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.** See “Flammability classification.”

**Toxicity.** See “Toxicity classification.”

**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 that does not have refrigerant-containing parts that are joined in the field by other than companion or block valves.

**[A] 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.

**[W] RELIEF AIR.** Exhausted return air from a system that provides ventilation for human usage.

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

**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”).

**[FG] 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.

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

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

**[A] 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.

**[BF] SMOKE DAMPER.** A *listed* device installed in ducts and air transfer openings designed to resist the passage of smoke. The device is installed to operate automatically, controlled by a smoke detection system, and where required, is capable of being positioned from a fire command center.

**[BF] SMOKE-DEVELOPED INDEX.** A numerical value assigned to a material tested in accordance with ASTM E84.

## DEFINITIONS

**SOLAR THERMAL SYSTEM.** A system that converts solar radiation to thermal energy for use in heating or cooling.

**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.

**[FG] STATIONARY FUEL CELL POWER PLANT.** A self-contained package or factory-matched packages that 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.

**[S] (~~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.

**[BG] 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.

**[S] THIMBLE.** A listed fitting designed to be installed in the opening in a masonry chimney through which the chimney connector passes.

**[P] THIRD-PARTY CERTIFICATION AGENCY.** An approved agency operating a product or material certification system that incorporates initial product testing, assessment and surveillance of a manufacturer's quality control system.

**[P] THIRD-PARTY CERTIFIED.** Certification obtained by the manufacturer indicating that the function and performance characteristics of a product or material have been determined by testing and ongoing surveillance by an approved third-party certification agency. Assertion of certification is in the form of identification in accordance with the requirements of the third-party certification agency.

**[P] THIRD-PARTY TESTED.** Procedure by which an approved testing laboratory provides documentation that a product, material or system conforms to specified requirements.

**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.

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

**Class A.** Refrigerants that have an occupational exposure limit (OEL) of 400 parts per million (ppm) or greater.

**Class B.** Refrigerants that have an OEL of less than 400 ppm.

**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 that cannot be joined directly one to another.

**[S] UNCONFINED SPACE.** A space having a volume not less than 50 cubic feet per 1,000 Btu/h (4.8m<sup>3</sup>/kW) of the aggregate input rating of all fuel-burning 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.

**[FG] 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.

**[S] UNSAFE.** Constituting a fire or health hazard or otherwise dangerous to human life, constituting a hazard to safety, health or public welfare.

**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.

**[W] VENTILATION ZONE.** Any indoor area that requires ventilation and comprises one or more spaces with the same occupancy category (see Table 403.3.1.1), occupant density, zone air distribution effectiveness (see Section 403.3.1.1.2), and design zone primary airflow per unit area.

**[FG] VENTING SYSTEM.** A continuous open passageway from the flue collar of an *appliance* to the outdoor 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, and includes only those appliances that do not exceed pressure of 160 pounds per square inch (1103 kPa), volume of 120 gallons (454 L) and a heat input of 200,000 Btu/hr (58.6 kW). Appliances and equipment that exceed these values are classified as boilers.

**[W] WHOLE HOUSE VENTILATION SYSTEM.** A mechanical ventilation system, including fans, controls, and ducts, which replaces by direct means, air from the habitable rooms with outdoor air.

**ZONE.** One *occupiable space* or several occupiable spaces with similar *occupancy* classification (see Table 403.3.1.1), occupant density, zone air distribution effectiveness and zone primary airflow rate per unit area.

