

- ACCEPTANCE TEST:** An investigation performed on an individual lot of a previously qualified product, by, or under the observation of, the purchaser to establish conformity with a purchase agreement. (PPI)
- ACETAL PLASTICS:** Plastics based on resins having a predominance of acetal linkages in the main chain. (PPI)
- ACRYLONITRILE-BUTADIENE-STYRENE (ABS) PIPE AND FITTING PLASTICS:** Plastics containing polymers and/or blends of polymers, in which the minimum butadiene content is 6 percent, the minimum acrylonitrile content is 15 percent, the minimum styrene and/or substituted styrene content is 15 percent, and the maximum content of all other monomers is not more than 5 percent, and lubricants, stabilizers and colorants. (PPI)
- ADHESIVE:** A substance capable of holding materials together by surface attachment. (PPI)
- ADHESIVE, SOLVENT:** An adhesive having a volatile organic liquid as a vehicle. See "Solvent Cement". (PPI)
- AGING:** (1) The effect on materials of exposure to an environment for an interval of time. (2) The process of exposing materials to an environment for an interval of time. (PPI)
- ANTI-OXIDANT:** A compounding ingredient added to a plastic composition to retard possible degradation from contact with oxygen (air), particularly in processing at or exposures to high temperatures. (PPI)
- ARTIFICIAL WEATHERING:** The exposure of plastics to cyclic laboratory conditions involving changes in temperature, relative humidity, and ultraviolet radiant energy, with or without direct water spray, in an attempt to produce changes in the material similar to those observed after long-term continuous outdoor exposure. (PPI)
- Note:** The laboratory exposure conditions are usually intensified beyond those encountered in actual outdoor exposure in an attempt to achieve an accelerated effect. This definition does not involve exposure to special conditions such as ozone, salt spray, industrial gases, etc. (PPI)
- BELL END:** The enlarged portion of a pipe that resembles the socket portion of a fitting and that is intended to be used to make a joint by inserting a piece of pipe into it. Joining may be accomplished by solvent cements, adhesives, or mechanical techniques. (PPI)
- BEAM LOADING:** The application of a load to a pipe between two points of support, usually expressed in pounds and the distance between the centers of the supports. (PPI)
- BURST STRENGTH:** The internal pressure required to break a pipe or fitting. This pressure will vary with the rate of build-up of the pressure and the time during which the pressure is held. (PPI)
- BUTYLENE PLASTICS:** Plastics based on resins made by the polymerization of butene or copolymerization of butene with one or more unsaturated compounds, the butene being in greatest amount by weight. (PPI)
- CELLULOSE ACETATE BUTYRATE PLASTICS:** Plastic made by compounding a cellulose acetate-butyrate ester with plasticizers and other ingredients. Cellulose acetate butyrate ester is a derivative of cellulose (obtained from cotton and/or wood pulp) made by converting some of the hydroxyl groups in cellulose to acetate and butyrate groups with chemicals. (PPI)
- CEMENT:** See adhesive and solvents, cement. (PPI)
- CHEMICAL RESISTANCE:** (1) The effect of specific chemicals on the properties of plastic piping with respect to concentration, temperature and time of exposure. (2) The ability of a specific plastic pipe to render service for a useful period in the transport of a specific chemical at a specified concentration and temperature. (PPI)
- COLD FLOW:** See "Creep". (PPI)
- COMPOUND:** The intimate admixture of a polymer or polymers with other ingredients such as fillers, softeners, plasticizers, catalysts, pigments, dyes, curing agents, stabilizers, anti-oxidants, etc. (PPI)
- COPOLYMER:** See "Polymer". (PPI)
- CREEP:** The time-dependent part of strain resulting from stress, that is, the dimensional change caused by the application of load over and above the elastic deformation and with respect to time. (PPI)
- CURE:** To change the properties of a polymeric system into a final, more stable, usable condition by the use of heat, radiation, or reaction with chemical additives. (PPI)
- DEFLECTION TEMPERATURE:** The temperature at which a specimen will deflect a given distance at a given load under prescribed conditions of test. See ASTM D648. Formerly called heat distortion. (PPI)
- DEGRADATION:** A deleterious change in the chemical structure of a plastic. See also "deterioration". (PPI)
- DETERIORATION:** A permanent change in the physical properties of a plastic evidenced by impairment of these properties. (PPI)

DIFFUSION: The movement of a material, such as a gas or liquid, in the body of a plastic. If the gas or liquid is absorbed on one side of a piece of plastic and given off on the other side, the phenomenon is called permeability. Diffusion and permeability are not due to holes or pores in the plastic but are caused and controlled by chemical mechanisms. (PPI)

DIMENSION RATIO: The diameter of a pipe divided by the wall thickness. Each pipe can have two dimension ratios depending on whether the outside or inside diameter is used. In practice, the outside diameter is used if the standard requirement and manufacturing control are based on this diameter. The inside diameter is used when this measurement is the controlling one. (PPI)

DRY-BLEND: A free-flowing dry compound prepared without fluxing or addition of solvent. (PPI)

ELASTICITY: That property of plastics materials by virtue of which they tend to recover their original size and shape after deformation. (PPI)

Note: If the strain is proportional to the applied stress, the material is said to exhibit Hookean or ideal elasticity. (PPI)

ELASTOMER: A material which at room temperature can be stretched repeatedly to at least twice its original length and, upon immediate release of the stress, will return with force to its approximate original length. (PPI)

ELEVATED TEMPERATURE TESTING: Tests on plastic pipe above 23C (73F). (PPI)

ENVIRONMENTAL STRESS CRACKING: Cracks that develop when the material is subjected to stress in the presence of specific chemicals. (PPI)

ETHYLENE PLASTICS. Plastics based on resins made by the polymerization of ethylene or copolymerization of ethylene with one or more other unsaturated compounds, the ethylene being in greatest amount by weight. (PPI)

EXTRUSION: A method whereby heated or unheated plastic forced through a shaping orifice becomes one continuously formed piece. (PPI)

FAILURE, ADHESIVE: Rupture of an adhesive bond, such that the plane of separation appears to be at the adhesive-adherend interface. (PPI)

FIBER STRESS: The unit stress, usually in pounds per square inch (psi), in a piece of material that is subjected to an external load. (PPI)

FILLER: A relatively inert material added to a plastic to modify its strength, permanence, working properties, or other qualities, or to lower costs. See also "Reinforced Plastic". (PPI)

FORMING: A process in which the shape of plastic pieces such as sheets, rods or tubes is changed to a desired configuration. See also "Thermoforming." (PPI)

Note: The use of the term "forming" in plastics technology does not include such operations as molding, casting or extrusion, in which shapes or pieces are made from molding materials or liquids. (PPI)

FUNGI RESISTANCE: The ability of plastic pipe to withstand fungi growth and/or their metabolic products under normal conditions of service or laboratory tests simulating such conditions. (PPI)

HEAT DISTORTION: See "Deflection temperature". (PPI)

HEAT FORMING: See "Thermoforming". (PPI)

HEAT JOINING: Making a pipe joint by heating the edges of the parts to be joined so that they fuse and become essentially one piece with or without the addition of additional material. (PPI)

HOOP STRESS: The tensile stress, usually in pounds per square inch (psi), in the circumferential orientation in the wall of the pipe when the pipe contains a gas or liquid under pressure. (PPI)

HYDROSTATIC DESIGN STRESS: The estimated maximum tensile stress in the wall of the pipe in the circumferential orientation due to internal hydrostatic pressure that can be applied continuously with a high degree of certainty that failure of the pipe will not occur. (PPI)

HYDROSTATIC STRENGTH (QUICK): The hoop stress calculated by means of the ISO equation at which the pipe breaks due to an internal pressure build-up, usually within 60 to 90 seconds. (PPI)

LONG-TERM BURST: The internal pressure at which a pipe or fitting will break due to a constant internal pressure held for 100,000 hours (11.43 years). (PPI)

IMPACT, IZOD: A specific type of impact test made with a pendulum type machine. The specimens are molded or extruded with a machined notch in the center. See ASTM D256. (PPI)

IMPACT, TUP: A falling weight (tup) impact test developed specifically for pipe and fittings. There are several variables that can be selected. See ASTM D2444. (PPI)

ISO EQUATION: An equation showing the interrelations between stress, pressure and dimensions in pipe, namely:

$$S = \frac{P(ID + t)}{2t} \quad \text{or} \quad \frac{P(OD - t)}{2t}$$

where S = stress
P = pressure
ID = average inside diameter
OD = average outside diameter
t = minimum wall thickness. (PPI)

Reference: ISO R161-1960 Pipes of Plastics Materials for the Transport of Fluids (Outside Diameters and Nominal Pressures) Part I, Metric Series. (PPI)

JOINT: The location at which two pieces of pipe or a pipe and a fitting are connected together. The joint may be made by an adhesive, a solvent-cement or a mechanical device such as threads or a ring seal. (PPI)

LONG-TERM HYDROSTATIC STRENGTH: The estimated tensile stress in the wall of the pipe in the circumferential orientation (hoop stress) that when applied continuously will cause failure of the pipe at 100,000 hours (11.43 years). These strengths are usually obtained by extrapolation of log-log regression equations or plots. (PPI)

MOLDING, COMPRESSION: A method of forming objects from plastics by placing the material in a confining mold cavity and applying pressure and usually heat. (PPI)

MOLDING, INJECTION: A method of forming plastic objects from granular or powdered plastics by the fusing of plastic in a chamber with heat and pressure and then forcing part of the mass into a cooler chamber where it solidifies. (PPI)

Note: This method is commonly used to form objects from thermoplastics. (PPI)

MONOMER: A relatively simple chemical which can react to form a polymer. See also "Polymer". (PPI)

NYLON PLASTICS: Plastics based on resins composed principally of a long-chain synthetic polymeric amide which has recurring amide groups as an integral part of the main polymer chain. (PPI)

OLEFIN PLASTICS: Plastics based on resins made by the polymerization of olefins or copolymerization of olefins with other unsaturated compounds, the olefins being in greatest amount by weight. Polyethylene, polypropylene and polybutylene are the most common olefin plastics encountered in pipe. (PPI)

OUTDOOR EXPOSURE: Plastic pipe placed in service or stored so that it is not protected from the elements of normal weather conditions, i.e., the sun's rays, rain, air and wind. Exposure to industrial and waste gases, chemicals, engine exhausts, etc., are not considered normal "outdoor exposure." (PPI)

PERMANENCE: The property of a plastic which describes its resistance to appreciable changes in characteristics with time and environment. (PPI)

PERMEABILITY: See "Diffusion". (PPI)

PLASTIC: A material that contains as an essential ingredient an organic substance of large molecular weight, is solid in its finished state, and, at some stage in its manufacture or in its processing into finished articles, can be shaped by flow. (PPI)

The adjective plastic indicates that the noun modified is made of, consists of, or pertains to plastic. (PPI)

Note (1): The above definition may be used as a separate meaning to the definitions contained in the dictionary for the adjective "plastic". (PPI)

Note (2): The plural form may be used to refer to two or more plastic materials, for example, plastics industry. However, when the intent is to distinguish "plastic products" from "wood products" or "glass products", the singular form should be used. As a general rule, if the adjective is to restrict the noun modified, with respect to type of material, "plastic" should be used; if the adjective is to indicate that more than one type of plastic material is or may be involved, "plastics" is permissible. (PPI)

PLASTICIZER: A material incorporated in a plastic to increase its workability and its flexibility or distensibility.

Note: The addition of the plasticizer may lower the melt viscosity, the temperature of the second-order transition, or the elastic modulus of the plastic. (PPI)

PLASTICS CONDUIT: Plastic pipe or tubing used as an enclosure for electrical wiring. (PPI)

PLASTICS PIPE: A hollow cylinder of a plastic material in which the wall thicknesses are usually small when compared to the diameter and in which the inside and outside walls are essentially concentric. See plastics tubing. (PPI)

PLASTICS TUBING: A particular size of plastics pipe in which the outside diameter is essentially the same as that of copper tubing. See "plastics pipe". (PPI)

POLYBUTYLENE: A polymer prepared by the polymerization of butene-1 as the sole monomer. See "Polybutylene Plastics" and "Butylene Plastics." (PPI)

POLYBUTYLENE PLASTICS: Plastics based on polymers made with butene-1 as essentially the sole monomer. (PPI)

POLYETHYLENE: A polymer prepared by the polymerization of ethylene as the sole monomer. See "Polyethylene Plastics" and "Ethylene Plastics." (PPI)

POLYETHYLENE PLASTICS: Plastics based on polymers made with ethylene as essentially the sole monomer. Note: In common usage

for this plastic, essentially means no less than 85% ethylene and no less than 95% total olefins. (PPI)

POLYMER: A compound formed by the reaction of simple molecules having functional groups that permit their combination to proceed to high molecular weights under suitable conditions. Polymers may be formed by polymerization (addition polymer) or polycondensation (condensation polymer). When two or more monomers are involved, the product is called a copolymer. (PPI)

POLYMERIZATION: A chemical reaction in which the molecules of a monomer are linked together to form large molecules whose molecular weight is a multiple of that of the original substance. When two or more monomers are involved, the process is called copolymerization or heteropolymerization. (PPI)

POLYOLEFIN: A polymer prepared by the polymerization of an olefin(s) as the sole monomer(s). See "Polyolefin plastics" and "Olefin plastics." (PPI)

POLYOLEFIN PLASTICS: Plastics based on polymers made with an olefin(s) as essentially the sole monomer(s). (PPI)

POLYPROPYLENE: A polymer prepared by the polymerization of propylene as the sole monomer. See "Polypropylene plastics" and "Propylene plastics". (PPI)

POLYPROPYLENE PLASTICS: Plastics based on polymers made with propylene as essentially the sole monomer. (PPI)

POLYSTYRENE: A plastic based on a resin made by polymerization of styrene as the sole monomer. See "Styrene plastics". (PPI)

Note: Polystyrene may contain minor proportions of lubricants, stabilizers, fillers, pigments and dyes. (PPI)

POLY (VINYL CHLORIDE): A resin prepared by the polymerization of vinyl chloride with or without the addition of small amounts of other monomers. (PPI)

POLY (VINYL CHLORIDE) PLASTICS: Plastics made by combining poly (vinyl chloride) with colorants, fillers, plasticizers, stabilizers, lubricants, other polymers and other compounding ingredients. Not all of these modifiers are used in pipe compounds. (PPI)

POWDER BLEND: See "Dry-Blend". (PPI)

PRESSURE: When expressed with reference to pipe the force per unit area exerted by the medium in the pipe. (PPI)

PRESSURE RATING: The estimated maximum pressure that the medium in the pipe can exert continuously with a high degree of certainty that failure of the pipe will not occur. (PPI)

PROPYLENE PLASTICS: Plastics based on resins made by the polymerization of propylene or copolymerization of propylene with one or more other unsaturated compounds, the propylene being in greatest amount by weight. (PPI)

QUALIFICATION TEST: An investigation, independent of a procurement action, performed on a product to determine whether or not the product conforms to all requirements of the applicable specification. (PPI)

Note: The examination is usually conducted by the agency responsible for the specification, the purchaser, or by a facility approved by the purchaser, at the request of the supplier seeking inclusion of his product on a qualified products list. (PPI)

QUICK BURST: The internal pressure required to burst a pipe or fitting due to an internal pressure build-up, usually within 60 to 90 seconds. (PPI)

REINFORCED PLASTIC: A plastic with some strength properties greatly superior to those of the base resin, resulting from the presence of high strength fillers embedded in the composition. See also "Filler". (PPI)

RESIN: A solid, semisolid or pseudosolid organic material which has an indefinite and often high molecular weight, exhibits a tendency to flow when subjected to stress, usually has a softening or melting range, and usually fractures conchoidally. (PPI)

REWORKED MATERIAL (THERMOPLASTIC): A plastic material that has been reprocessed, after having been previously processed by molding, extrusion, etc., in a fabricator's plant. (PPI)

RUBBER: A material that is capable of recovering from large deformations quickly and forcibly. See "Elastomer". (PPI)

SAMPLE: A small part or portion of a plastic material or product intended to be representative of the whole. (PPI)

SARAN PLASTICS: Plastics based on resins made by the polymerization of vinylidene chloride or copolymerization of vinylidene chloride with other unsaturated compounds, the vinylidene chloride being in greatest amount of weight. (PPI)

SCHEDULE: A pipe size system (outside diameters and wall thicknesses) originated by the iron pipe industry. (PPI)

SELF-EXTINGUISHING: The ability of a plastic to resist burning when the source of heat or flame that ignited it is removed. (PPI)

- SERVICE FACTOR:** A factor which is used to reduce a strength value to obtain an engineering design stress. The factor may vary depending on the service conditions, the hazard, the length of service desired and the properties of the pipe. (PPI)
- SET:** To convert an adhesive into a fixed or hardened state by chemical or physical action, such as condensation, polymerization, oxidation, vulcanization, gelation, hydration, or evaporation of volatile constituents. See also "Cure". (PPI)
- SOFTENING RANGE:** The range of temperature in which a plastic changes from a rigid to a soft state. (PPI)
- Note: Actual values will depend on the method of test. Sometimes referred to as softening point. (PPI)
- SOLVENT CEMENT:** In the plastic piping field, a solvent adhesive that contains a solvent that dissolves or softens the surfaces being bonded so that the bonded assembly becomes essentially one piece of the same type of plastic. (PPI)
- SOLVENT CEMENTING:** Making a pipe joint with a solvent cement. See "Solvent cement". (PPI)
- SPECIMEN:** An individual piece or portion of a sample used to make a specific test. Specific tests usually require specimens of specific shape and dimensions. (PPI)
- STABILIZER:** A compounding ingredient added to a plastic composition to retard possible degradation on exposure to high temperatures, particularly in processing. An anti-oxidant is a specific kind of stabilizer. (PPI)
- STANDARD DIMENSION RATIO:** A selected series of numbers in which the dimensions ratios are constants for all sizes of pipe for each standard dimension ratio and which are the USASI Preferred Number Series 10 modified by +1 or -1. If the outside diameter (OD) is used, the modifier is +1. If the inside diameter (ID) is used, the modifier is -1. Some of the numbers are as follows:

<u>USASI Preferred Number Series 10</u>	<u>OD Control</u>	<u>ID Control</u>
5.	6.	4.
6.3	7.3	5.3
8.	9.	7.
10.	11.	9.
12.5	13.5	11.5
16.	17.	15.
20.	21.	19.
25.	26.	24.
31.5	32.5	30.5
40.	41.	39.
50.	51.	49.
63.	64.	62.

Reference: USASI Preferred Numbers, Z17.1-1958, UDS 389.17. (PPI)

STANDARD THERMOPLASTIC PIPE MATERIALS DESIGNATION CODE: A means for easily identifying a thermoplastic pipe material by means of three elements. The first element is the abbreviation for the chemical type of the plastic in accordance with ASTM D1600. The second is the type and grade (based on properties in accordance with the ASTM materials specification); in the case of ASTM specifications which have no types and grades or those in the cell structure system, two digit numbers are assigned by the PPI that are used in place of the larger numbers. The third is the recommended hydrostatic design stress (RHDS) for water at 23C (73F) in pounds per square inch divided by 100 and with decimals dropped, e.g., PVC 1120 indicates that the plastic is poly (vinyl chloride), Type I, Grade 1 according to ASTM D1784 with a RHDS of 2000 psi for water at 73F. PE 3306 indicates that the plastic is polyethylene Type III Grade 3 according to ASTM D1248 with a RHDS of 630 psi for water at 73F. PP 1208 is polypropylene, Class I-19509 in accordance with ASTM D2146 with a RHDS of 800 psi for water at 73F; the designation of PP12 for polypropylene class I-19509 will be covered in the ASTM and Product Standards for polypropylene pipe when they are issued. (PPI)

STIFFNESS FACTOR: A physical property of plastic pipe that indicates the degree of flexibility of the pipe when subjected to external loads. See ASTM D2412. (PPI)

STRAIN: The ratio of the amount of deformation to the length being deformed caused by the application of a load on a piece of material. (PPI)

STRENGTH: The stress required to break, rupture or cause a failure. (PPI)

STRESS: When expressed with reference to pipe, the force per unit area in the wall of the pipe in the circumferential orientation due to internal hydrostatic pressure. (PPI)

STRESS-CRACK: External or internal cracks in a plastic caused by tensile stresses less than that of its short-time mechanical strength. (PPI)

Note: The development of such cracks is frequently accelerated by the environment to which the plastic is exposed. The stresses which cause cracking may be present internally or externally or may be combinations of these stresses. The appearance of a network of fine cracks is called crazing. (PPI)

STRESS RELAXATION: The decrease of stress with respect to time in a piece of plastic that is subject to an external load. (PPI)

STYRENE PLASTICS: Plastics based on resins made by the polymerization of styrene or copolymerization of styrene with other unsaturated compounds, the styrene being in greatest amount by weight. (PPI)

STYRENE-RUBBER PLASTICS: Compositions based on rubbers and styrene plastics, the styrene plastics being in greatest amount by weight. (PPI)

STYRENE-RUBBER (SR) PIPE AND FITTING PLASTICS: Plastics containing at least 50 percent styrene plastics combined with rubbers and other compounding materials, but not more than 15 percent acrylonitrile. (PPI)

SUSTAINED PRESSURE TEST: A constant internal pressure test for 1000 hours. (PPI)

THERMOFORMING: Forming with the aid of heat. See also "Forming". (PPI)

THERMOPLASTIC: A plastic which is thermoplastic in behavior. (PPI)

Capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature. (PPI)

Note: Thermoplastic applies to those materials whose change upon heating is substantially physical. (PPI)

THERMOSET: A plastic which, when cured by application of heat or chemical means, changes into a substantially infusible and insoluble product. (PPI)

Pertaining to the state of a resin in which it is relatively infusible. (PPI)

THERMOSETTING: Capable of being changed into a substantially infusible or insoluble product when cured under application of heat or chemical means. (PPI)

VINYL CHLORIDE PLASTICS: Plastics based on resins made by the polymerization of vinyl chloride or copolymerization of vinyl chloride with other unsaturated compounds, the vinyl chloride being in greatest amount by weight. (PPI)

VIRGIN MATERIAL: A plastic material in the form of pellets, granules, powder, floc or liquid that has not been subjected to use or processing other than that required for its original manufacture. (PPI)

WELD-or KNIT-LINE: A mark on a molded plastic formed by the union of two or more streams of plastic flowing together. (PPI)

(Plumbing, Heating, Refrigerating, Ventilating and Air Conditioning)

- ABSORBENT:** A material which, due to an affinity for certain substances, extracts one or more such substances from a liquid or gaseous medium with which it contacts and which changes physically or chemically, or both, during the process. Calcium chloride is an example of a solid absorbent, while solutions of lithium chloride, lithium bromide and ethylene glycols are liquid absorbents.
- ABSORPTION:** A process whereby a material extracts one or more substances present in an atmosphere or mixture of gases or liquids accompanied by the material's physical and/or chemical changes.
- ACCELERATION DUE TO GRAVITY:** The rate of increase in velocity of a body falling freely in a vacuum. Its value varies with latitude and elevation. The International Standard taken at sea level and 45 degrees latitude is 980.665 cm/s(32.174 ft/s).
- ACCUMULATOR:** A storage chamber for low-side liquid refrigerant, also known as "surge drum" or "surge header"; also, a pressure vessel whose volume is used in a refrigerant circuit to reduce pulsation, also a pressure vessel connected to more than one circuit of a pneumatic system to obtain the average pressure of the connected circuits.
- ACTIVATED ALUMINA:** A form of aluminum oxide which adsorbs moisture readily and is used as a drying agent.
- ACTIVATED CARBON:** A form of carbon made porous by special treatment by which it is capable of adsorbing various odors, anesthetics and other vapors.
- ADIABATIC PROCESS:** A thermodynamic process during which no heat is extracted from or added to the system.
- ADSORBENT:** A material which has the ability to cause molecules of gases, liquids or solids to adhere to its internal surfaces without changing the adsorbent physically or chemically. Certain solid materials, such as silica gel and activated alumina, have this property.
- ADSORPTION:** The action, associated with the surface adherence, of a material in extracting one or more substances present in an atmosphere or mixture of gases and liquids, unaccompanied by physical or chemical change.
- AERATION:** Exposing a substance or area to air circulation.
- AEROSOL:** An assemblage of small particles, solid or liquid, suspended in air. The diameters of particles may vary from 100 microns to 0.01 micron or less, e.g., dust, fog, smoke.
- AGITATOR:** A device causing turbulent motion in a fluid confined in a tank.
- AIR, AMBIENT:** Generally, the air surrounding an object.
- AIR, OUTSIDE:** External air; atmosphere exterior to refrigerated or conditioned space; ambient (surrounding) air.
- AIR, RECIRCULATED:** Return air passed through the conditioner before being resupplied to the conditioned space.
- AIR, REHEATING OF:** In an air conditioning system, the final step in treatment in the event the temperature is too low.
- AIR, RETURN:** See "air recirculated".
- AIR, SATURATED:** Moist air in which the partial pressure of water vapor equals the vapor pressure of water at the existing temperature. This occurs when dry air and saturated water vapor coexist at the same dry-bulb temperature.
- AIR, SECONDARY:** Air for combustion supplied to the furnace to supplement the primary air.
- AIR, STANDARD:** Dry air at a pressure of 760 mm (29.92 in.) Hg at 21 degrees centigrade (69.8 degrees Fahrenheit) temperature and with a specific volume of 0.833 m³/kg (13.33 ft³/lb).
- AIR BLAST:** Forced air circulation.
- AIR CHANGE:** Introducing new, cleansed, or recirculated air to conditioned space, measured by the number of complete changes per unit time.
- AIR CHANGES:** A method of expressing the amount of air leakage into or out of a building or room in terms of the number of building volumes or room volumes exchanged.
- AIR CLEANER:** A device used to remove airborne impurities.
- AIR CONDITIONER, ROOM:** A factory-made, encased assembly designed as a unit primarily to provide free delivery of conditioned air to an enclosed space, room, or zone. It includes a prime source of refrigeration for cooling and dehumidification and means for circulating and cleaning air; also means for ventilating and heating.
- AIR CONDITIONING, COMFORT:** The process of treating air to control simultaneously its temperature, humidity, cleanliness and distribution to meet the comfort requirements of the occupants of the conditioned space.
- AIR CONDITIONING, INDUSTRIAL:** Air conditioning for uses other than comfort.

AIR CONDITIONING, SUMMER: Comfort air conditioning used primarily when outside temperature and humidity are above those to be maintained in the conditioned space.

AIR CONDITIONING, WINTER: Heating, humidification, air distribution, and air cleaning, where outside temperature is below inside room temperature.

AIR-CONDITIONING UNIT: An assembly of equipment for the air treatment to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of a conditioned space.

AIR-CONDITIONING UNIT, COOLING (HEATING): A specific air-treating combination, consisting of means for ventilation, air circulation, air cleaning and heat transfer, with control means for cooling (or heating).

AIR-CONDITIONING (COOLING) UNIT, SELF-CONTAINED: An air-conditioning unit having the means for ventilation, air circulation, air cleaning, and air cooling, and the controls thereof, in the same cabinet with the condensing unit. Self-contained air-conditioning units are classified by the following methods: (1) rejecting condenser heat (water-cooled and evaporatively cooled); (2) introducing ventilation air (no ventilation, ventilation by drawing air from outside, ventilation by a combination of the two methods); and (3) discharging air to the room (free delivery or pressure type).

AIR COOLER: A factory-encased assembly of elements whereby the temperature of air passing through the device is reduced.

AIR COOLER, DRY: Removes sensible heat from the dehydrated air, whenever it leaves the dehydrator at an elevated temperature.

AIR COOLER, DRY-TYPE: A forced circulation air cooler wherein heat transfer is not implemented by a liquid spray while in operation.

AIR COOLER, FORCED CIRCULATION: A cooler including a fan or a blower for positive air circulation.

AIR COOLER, FREE DELIVERY: A cooler taking air from and discharging it directly to the space to be treated without an element external to the cooler to impose air resistance.

AIR COOLER, NATURAL CONVECTION: An air cooler depending on natural convection for air circulation.

AIR COOLER, PRESSURE-TYPE: A cooler for use with one or more external elements which impose air resistance.

AIR TUNNEL: A refrigerated tunnel with rapid air circulation through which the product to be frozen is passed.

AIR WASHER: A washer spray system or device for cleaning, humidifying or dehumidifying the air.

ALGAE: A minute fresh water plant growth which forms a scum on the surfaces of recirculated water apparatus, interfering with fluid flow and heat transfer.

ANALYZER: A device in the high side of an absorption system for increasing concentration of refrigerant in the vapor entering the rectifier or condenser.

ANEMOMETER: An instrument for measuring the velocity of a fluid.

ANTICIPATING CONTROL: One which, by artificial means, is actuated sooner than it would be without such means to produce a smaller differential of the controlled property.

APPROACH: In an evaporative cooling device, the difference between the average temperature of the circulating water leaving the device and the average wet-bulb temperature of the entering air. In a conduction heat exchanger device, the temperature difference between the leaving treated fluid and the entering working fluid.

AREA, CORE: The total plane area of the portion of a grille, face or register bounded by a line tangent to the outer edges of the outer openings through which air can pass.

AREA, FREE: The total minimum opening area in an air inlet or outlet through which air can pass.

ASPECT RATIO: In air distribution outlets, the ratio of the length of the core of a grille, face or register to width. In rectangular ducts, the ratio of width to depth.

ASPIRATION: Production of movement in a fluid by suction created by fluid velocity.

ATOMIZE: Reduce to fine spray.

BAFFLE: A surface used for deflecting fluids, usually in the form of a plate or wall.

BALLING: A term applied to the hydrometric scale used in measuring the strength of worts. This scale provides directly the amount of extract dissolved in the wort as the weight percentage of sugar in water.

BAROMETER: Instrument for measuring atmospheric pressure.

BELT DRIVEN: Driver and driven, as motor and compressor, equipped with suitable sheaves or pulleys and connected by one or more belts to operate at a speed ratio established by the relative diameters of the pulley.

- BIMETALLIC ELEMENT:** An element formed of two metals having different coefficients of thermal expansion, used as a temperature control device.
- BLAST HEATER:** A set of heat transfer coils or sections used to heat air which is drawn or forced through it by a fan.
- BLEEDER:** Pipe attached, as to a condenser, to bleed off liquid refrigerant parallel to main flow.
- BLOWER:** A fan used to force air under pressure.
- BOILER:** A closed vessel in which a liquid is heated or vaporized.
- BOILER, FIRETUBE:** A boiler with straight tubes, which are surrounded by water and steam and through which the combusted products pass.
- BOILER, PACKAGED:** A boiler equipped and shipped complete with fuel burning equipment, mechanical draft equipment, automatic controls and accessories. Usually shipped in one or more major sections.
- BOILER, WATERTUBE:** A boiler in which the tubes contain water and steam, the heat being applied to the outside surface.
- BOILING POINT:** The temperature at which the vapor pressure of a liquid equals the absolute external pressure at the liquid-vapor interface.
- BORE:** Inside diameter of a cylinder.
- BRAZED:** Jointed by fusion using a spelter on the order of brass; considered equivalent to hard soldering.
- BREAKER STRIP, REFRIGERATOR CABINET:** A separate insulating element or integral insulating extension of the cabinet interior surfaces around the periphery of the cabinet door or drawer opening(s), which functions as a thermal barrier to minimize heat flow to the cabinet interior.
- BREATHING PLUG:** A removable plug, cap or other means of venting a space containing insulating material through vaportight sheathing to the interior of a refrigerated compartment.
- BRINE:** Any liquid cooled by the refrigerant and used for the heat transmission without a change in its state, having no flash point or a flash point above 65.6 degrees Centigrade (150 degrees Fahrenheit).
- BRINE, ELECTROLYTIC:** Any brine capable of causing chemical decomposition of one or two dissimilar metals by electrolysis.
- BRITISH THERMAL UNIT (Btu):** Btu is defined as 778.177 (foot)(pound) if related to the IT calorie so that 1 IT cal/(kilogram)(degrees Centigrade) = 1 Btu/(pound)(Fahrenheit), with 1 lb = 453.5924 grams. Approximately, it is the heat required to raise the temperature of a pound of water from 59 degrees Fahrenheit to 60 degrees Fahrenheit.
- BUNKER:** Space in refrigerator given to ice or cooling element.
- BURNER, AIR ATOMIZING:** A burner in which the oil is atomized by compressed air which is forced into and through one or more streams of oil, breaking the oil into a fine spray.
- BURNER ATMOSPHERIC:** A gas burner in which air for combustion is entirely supplied by natural draft and the inspirating force created by gas velocity through orifices.
- BURNER, MECHANICAL ATOMIZING:** A burner which uses the pressure of the oil for atomizing.
- BURNER, PRESSURE ATOMIZING:** (See "burner, mechanical atomizing").
- BURNER, REGISTER:** A burner which contains a series of air-directing vanes (usually adjustable) that are used to direct and/or control the combustion air flow through the burner.
- BURNER, ROTARY ATOMIZING:** A burner in which atomization is accomplished by feeding oil to the inside of a rapidly rotating cup.
- BURNER, STEAM ATOMIZING:** A burner for firing oil which is atomized by steam.
- BURNER, THROAT:** A sleeve, usually formed of refractory, located at the burner exit, within which combustion starts.
- BURNER, VAPORIZING:** A burner designed to utilize the temperature of the heated combustion chamber to vaporize the liquid fuel fed into such chamber.
- BURNER, WINDBOX:** A plenum chamber around a burner in which an air pressure is maintained to insure proper distribution and discharge of secondary air.
- CALORIMETER:** (1) a device for measuring heat quantities, such as machine capacity, combustion heat, specific heat, vital heat, heat leakage; (2) a device for measuring quality (or moisture content) of steam or other vapor).
- CAPACITY:** Usable output of a system or system component in which only losses occurring in the system or component are charged against it.
- CAPACITY, AIR-CONDITIONER, USEFUL LATENT (DEHUMIDIFYING):** Available refrigerating capacity of an air conditioner for removing "latent heat from space to be conditioned.

CAPACITY, AIR-CONDITIONER, USEFUL SENSIBLE: Available refrigerating capacity of an air conditioner for removing "sensible heat" from the space to be conditioned.

CAPACITY, AIR-CONDITIONER, USEFUL TOTAL: Available refrigerating capacity of an air conditioner for removing sensible and latent heat from the space to be conditioned.

CAPACITY, CONDENSING UNIT: Refrigerating effect in Btuh produced by the difference in total enthalpy between refrigerant liquid leaving the unit and the total enthalpy of the refrigerant vapor entering it. Generally measured in ton or Btuh.

CAPACITY, COOLER REFRIGERANT, NET: The rate of heat removal from a fluid flowing through a cooler (air, water, brine) at stated conditions: the difference in specific enthalpies of the cooling fluid entering and leaving the cooler. In case frosting occurs within the cooler, the latent heat of fusion and the sub-cooling heat of the ice (frost) must be added in determining the net cooler refrigerating capacity.

CAPACITY, EXPANSION VALVE: The refrigerating effect in joule (btuh or tons, each of 12,000 Btuh), produced by the evaporation of refrigerant passed by the valve under specified conditions.

CAPACITY, ICE-MAKING: Actual productive ability of a system making ice. This is less than the rated (ice-making) capacity because refrigeration is used in cooling the water to freezing point, cooling the ice below the freezing point and overcoming heat leakage.

CAPACITY, ICE-MELTING: Refrigeration equal to the latent heat of fusion of a stated weight of ice at 334.94j/kg (144Btu/lb).

CAPACITY, ICE-MELTING EQUIVALENT: The amount of heat absorbed by one 0.4536 kg (1 lb.) of ice at 0 degrees Centigrade (32 degrees Fahrenheit) in liquefying to water at 0 degrees Centigrade (32 degrees Fahrenheit), 334.94j/kg (144 Btu/lb).

CAPACITY, REFRIGERATING: The term "refrigerating capacity" is used to denote the rate of heat removal from a medium or space to be cooled at stated conditions; "refrigerating effect" is used to denote heat transfer to or from the refrigerant itself in a refrigerating system.

CAPACITY, REFRIGERATING, GROSS: The total rate of heat removal from all sources by the evaporator of a refrigerating system at stated conditions. It is numerically equal to the system refrigerating effect.

CAPACITY, REFRIGERATING, NET: The remaining rate of heat removal from all sources by the evaporator of a refrigerating system, at stated conditions, after deducting internal and external heat transfers to the evaporator that occurs before distribution of refrigerating medium and after its return.

CAPACITY, REFRIGERATION, USEFUL: The refrigerating capacity available for the specific ultimate cooling function for which the system was designed.

CAPACITY, REFRIGERATING, VOLUMETRIC: The refrigerating capacity of a system per unit volume of refrigerant circulated at the compressor suction.

CAPACITY, REFRIGERATING COMPRESSOR: The rate of heat removal by the refrigerant assigned to the compressor in a refrigerating system. This equals the product of the mass rate of refrigerant flow produced by the compressor and the difference in specific enthalpies of the refrigerant vapor at its thermodynamic state entering the compressor and the refrigerant liquid at saturation temperature corresponding to the pressure of vapor leaving the compressor.

CAPACITY, REFRIGERATING SYSTEM: Cooling effect produced by change in total enthalpy (formerly called heat content) between the refrigerant entering the evaporator and the refrigerant leaving the evaporator.

CAPACITY, REDUCER: In a compressor, a device, such as a clearance pocket, movable cylinder head, or suction bypass, by which compressor capacity can be adjusted without otherwise changing the operating conditions.

CAPILLARITY: The action by which the surface of a liquid, where it contacts a solid (as in a slender tube), is raised or lowered.

CAPILLARY TUBE: In refrigeration practice a tube of small internal diameter used as a liquid refrigerant flow control or expansion device between high and low sides; also used to transmit pressure from the sensitive bulb of some temperature controls to the operating element.

CARBON DIOXIDE ICE: Solid CO₂; dry ice.

CARBONIZATION: Formation of carbonaceous deposits which may be produced by decomposition of lubricating oil or other organic materials.

CARGO BATTEN: Protection member applied permanently to the interior of a refrigerated compartment to provide air space between the stowed cargo and the sides of the compartment.

CARGO, CHILLED: Cargo maintained at an assigned temperature above its freezing point.

CARGO, REFRIGERATED: Cargo maintained at an assigned temperature by means of mechanical refrigeration.

- CEILING OUTLET:** A round, square, rectangular or linear air diffuser in the ceiling which provides a horizontal distribution pattern of primary and secondary air over the occupied zone and induces low velocity secondary air motion through it.
- CELSIUS (CENTIGRADE):** A thermometric scale in which the freezing point of water is 0 degrees and its boiling point 100 degrees at normal atmospheric pressure (14.696 psi).
- CHAMBER, COMBUSTION:** the space in which combustion takes place.
- CHANGE OF STATE:** Change from one phase, such as solid, liquid or gas, to another.
- CHILLER (DRIP TRAY):** A drawer located directly beneath the refrigerated surfaces of a manual or semi-automatic defrosting refrigerator for food chilling and water collecting during defrosting. It may also serve as a baffle to regulate compartment temperature.
- CHILLER (DRIP TRAY) VOLUME:** Product of the mean inside width and length of the tray and the mean height between the inside bottom of the tray and the outside bottom of the surface of the refrigerated plate or coil when the tray is in its lowest position.
- CHILLING (COOLING):** Lowering the temperature of a substance by removing heat in the temperature range above freezing.
- CHILLING ROOM:** A room where products are cooled prior to cold storage.
- CHIMNEY EFFECT:** The tendency of air or gas in a duct or other vertical passage to rise when heated due to its lower density in comparison with that of the surrounding air or gas; in buildings, the tendency toward displacement (caused by the difference in temperature) of internal heated air by unheated outside air due to the difference in density of outside and inside air.
- CIRCUIT REFRIGERATING:** Assembly of refrigerant-containing parts and their connections used in a refrigerating cycle.
- CLASS OF REFRIGERATING SYSTEM:** Formerly in extensive use but now becoming obsolete due to code change to classification rather than weight, which refers to the total weight of refrigerant contained, Class A system is one containing 1000 lb or more of refrigerant; Class B is one containing more than 100 lb but less than 1000 lb; Class C is one containing more than 20 lb but not more than 100 lb; Class D is one containing more than 6 lb but not more than 20 lb; and Class E is one containing 6 lb or less.
- CLEARANCE:** Space in cylinder not occupied by piston at the end of the compression stroke or volume of gas remaining in cylinder at the same point measured in percentage of piston displacement.
- CLEARANCE POCKET:** See "capacity reducer".
- CLO:** A unit measuring the insulating effect of clothing on a human subject. 1 clo=0.155 (K.m²)/W.
- COEFFICIENT OF PERFORMANCE, COMPRESSOR, HEAT PUMP:** Ratio of the compressor heating effect (heat pump) to the rate of energy input to the shaft of the compressor, in consistent units, in a complete heat pump, under designated operating conditions.
- COEFFICIENT OF PERFORMANCE (HEAT PUMP):** Ratio of the rate of heat delivered to the rate of energy input, in consistent units, for a complete operating heat pump plant or some specific portion of that plant, under designated operating conditions.
- COEFFICIENT OF PERFORMANCE, COMPRESSOR, REFRIGERATING:** Ratio of the compressor refrigerating effect to the rate of energy input to the shaft of the compressor, in consistent units, in a complete refrigerating plant, under designated operating conditions.
- COEFFICIENT OF PERFORMANCE (REFRIGERATING):** Ratio of the rate of heat removal to the rate of energy input, in consistent units, for a complete refrigerating plant or some specific portion of that plant, under designated operating conditions.
- COIL:** A cooling or heating element made of pipe or tubing.
- COIL, DIRECT EXPANSION:** Coil using the direct refrigeration method.
- COIL, EXPANSION:** An evaporator constructed of pipe or tubing.
- COIL DECK:** Insulated horizontal partition between refrigerated space and bunker.
- COLD STORAGE:** A trade or process of preserving perishables by refrigeration on a large scale.
- COMFORT CHART:** A chart showing effective temperatures with dry-bulb temperatures and humidities (and sometimes air motion), by which the effects of various air conditions on human comfort may be compared.
- COMFORT COOLING:** Refrigeration for comfort as opposed to refrigeration for storage or manufacture.
- COMFORT LINE:** A line on the comfort chart showing relation between the effective temperature and the percentage of adults feeling comfortable.
- COMFORT ZONE:** AVERAGE--the range of effective temperatures over which the majority (50 percent or more) of adults feels comfortable; EXTREME--the range of effective temperatures over which one or more adults feel comfortable.

- COMPARTMENT, FREEZER:** The compartment in a household refrigerator designed for short-term storage of food at temperatures below 0 degrees Centigrade (32 degrees Fahrenheit). In a household combination refrigerator-freezer, it is that compartment(s) for storage of foods at average temperatures of -13.3 degrees Centigrade (8 degrees Fahrenheit) or lower. In a household freezer, it is that compartment(s) for extended storage of frozen foods at a recommended rating temperature of -17.8 degrees Centigrade (0 degrees Fahrenheit) having inherent capability for freezing of food.
- COMPARTMENT, GENERAL REFRIGERATED:** General refrigerated compartment(s) in a household refrigerator, all-refrigerator or combination refrigerator-freezer is that compartment(s) designed for the refrigerated storage of food at an average temperature above 0 degrees Centigrade (32 degrees Fahrenheit). Special compartments designed for the storage of fresh foods at temperatures near 0 degrees Centigrade (32 degrees Fahrenheit) shall be considered part of the general refrigerator-freezers operating at average temperatures between -13.3 degrees Centigrade (8 degrees Fahrenheit) and 0 degrees Centigrade (32 degrees Fahrenheit) considered part of the general refrigerated compartment.
- COMPRESSION:** In a compression refrigeration system, a process by which the pressure of the refrigerant is increased.
- COMPRESSION, COMPOUND:** Compression by stages in two or more cylinders.
- COMPRESSION, DUAL:** Split suction valving arrangement on compressor for carrying two suction pressures.
- COMPRESSION, MULTISTAGE:** Compression in two or more steps, as where the discharge of one compressor is connected with the suction of another.
- COMPRESSION, RATIO OF:** Ratio of absolute pressures after and before compression.
- COMPRESSION, SINGLE-STAGE:** Compression in one stage.
- COMPRESSION, WET:** A refrigeration system in which some liquid refrigerant is mixed with vapor entering the compressor to cause discharge vapors from the compressor to be saturated rather than superheated.
- COMPRESSION EFFICIENCY:** Ratio of work required to compress adiabatically and reversibly all vapor delivered by a compressor (per stage) to the actual work delivered to the vapor by the piston of blades of the compressor.
- COMPRESSION SYSTEM:** Refrigerating system which operates pressure-imposing element mechanically.
- COMPRESSOR, BOOSTER:** A compressor for very low pressures, usually discharging into the suction line of another compressor.
- COMPRESSOR, CENTRIFUGAL:** A nonpositive displacement compressor which depends for pressure rise, at least in part, on centrifugal effect.
- COMPRESSOR, COMPOUND:** A compressor in which compression is accomplished by stages, as in two or more cylinders.
- COMPRESSOR, DOUBLE-ACTING:** Compressor which has two compression strokes per revolution of crankshaft per cylinder, i. e., both faces of the piston are working faces.
- COMPRESSOR DOUBLE-SUCTION:** Split suction valving arrangement on compressor for carrying two suction pressures.
- COMPRESSOR, HORIZONTAL:** Compressor with horizontal cylinder or, in small sizes, with horizontal crankshaft.
- COMPRESSOR, MOTOR, SEALED (HERMETIC TYPE):** See "condensing unit, hermetically sealed".
- COMPRESSOR, OPEN-TYPE:** A refrigerant compressor with a shaft or other moving part extending through its casing to be driven by an outside source of power, thus requiring a shaft seal or equivalent rubbing contact between fixed and moving part.
- COMPRESSOR POSITIVE DISPLACEMENT:** Refrigerant compressor which increases refrigerant gas or vapor pressure by changing internal volume of the compression chamber.
- COMPRESSOR, RECIPROCATING:** Positive displacement compressor which changes internal volume of the compression chamber(s) by reciprocating motion of one or more pistons.
- COMPRESSOR, REFRIGERANT:** That component of a refrigerating system which increases the pressure of a compressible refrigerant fluid and simultaneously reduces its volume, while moving the fluid through the device.
- COMPRESSOR, REFRIGERANT, ACCESSIBLE HERMETIC (SEMIHERMETIC):** A hermetic refrigerant compressor whose housing is sealed by one or more gasketed joints and is provided with means of access for servicing internal parts in the field.
- COMPRESSOR REFRIGERANT, WELDED HERMETIC:** A hermetic refrigerant compressor whose housing is permanently sealed by welding or brazing and is not provided with means of access for servicing internal parts in the field.
- COMPRESSOR, ROTARY:** A positive displacement compressor which changes internal volume of the compression chamber(s) by the rotary motion of a positive displacement member(s).

- COMPRESSOR, SEALED UNIT:** See "condensing unit, hermetically sealed".
- COMPRESSOR, SINGLE-ACTING:** A compressor having one compression stroke per revolution of the crank for each cylinder.
- COMPRESSOR, VERTICAL:** Compressor with a vertical cylinder or, in small sizes, with a vertical crankshaft.
- COMPRESSOR UNIT, REFRIGERANT:** A refrigerating component designed to compress a specific refrigerant vapor, consisting of compressor, prime mover and regularly furnished accessories.
- CONCENTRATION:** A number specifying composition of a solution with respect to the constituent names, such as unit (mass) of salt per unit (volume) of brine.
- CONDENSATE:** Liquid formed by condensation of a vapor. In steam heating, water condensed from steam; in air conditioning, water extracted from air, as by condensation on the cooling coil of a refrigeration machine.
- CONDENSATION:** Process of changing a vapor into liquid by extracting heat. Condensation of steam or water vapor is effected in either steam condensers or dehumidifying coils, and the resulting water is called condensate.
- CONDENSER (REFRIGERANT):** A heat exchanger in which the refrigerant, compressed to a suitable pressure, is condensed by rejecting heat to an appropriate external cooling medium.
- CONDENSER, AIR-COOLED REFRIGERANT:** A refrigerant condenser in which heat rejection is accomplished entirely by raising the temperature of the air used as a cooling medium.
- CONDENSER, ATMOSPHERIC REFRIGERANT:** A condenser cooled with water which is exposed to the atmosphere.
- CONDENSER, EVAPORATIVE REFRIGERANT:** A refrigerant condenser in which part of the heat rejection may be accomplished by raising the temperature of an air stream passing over a heat exchange surface and the remainder by evaporating water sprayed or otherwise distributed over the heat exchange surface.
- CONDENSER, OPEN-SHELL-AND-TUBE:** One in which the water passes in a film over the inner surfaces of the tubes, which are open to the atmosphere.
- CONDENSER, SECONDARY:** The condenser of a secondary system; also, a condenser and a secondary system where the condenser is cooled by the evaporator of the secondary system.
- CONDENSER, SUBMERGED:** Condenser piping submerged in a bath of condenser water.
- CONDENSER, WATER-COOLED REFRIGERANT:** A refrigerant condenser in which heat rejection is accomplished entirely by raising the temperature of the water used as a cooling medium.
- CONDENSING REFRIGERATING EFFECT:** Condensing heat added to the refrigerant vapor in refrigerant compressor unit.
- CONDENSING UNIT, REFRIGERANT:** An assembly of refrigerating components designed to compress and liquefy a specific refrigerant, consisting of one or more refrigerant compressors, refrigerant condensers, liquid receivers (when required), and regularly furnished accessories.
- CONDENSING UNIT, HERMETICALLY SEALED:** A sealed condensing unit in which the housing is permanently sealed by welding or brazing and is not provided with means of access for servicing internal parts in the field.
- CONDENSING UNIT, MECHANICAL:** A complete high side of a refrigeration system including the motor in a unit assembly.
- CONDENSING UNIT, MECHANICAL PERFORMANCE FACTOR:** The ratio of its capacity to its energy input, expressed in Btu per Whr or in tons per kw.
- CONDENSING UNIT, SEALED:** A mechanical condensing unit in which the compressor and compressor motor are enclosed in the same housing, with no external shaft or shaft seal, and the compressor motor operating in the refrigerant atmosphere.
- CONDENSING UNIT, SERVICE-SEALED:** A sealed condensing unit in which the housing is sealed by one or more gaskets, and means of access are provided for servicing internal parts in the field.
- CONDITIONS, STANDARD:** A set of physical, chemical or other parameters of a substance or system which defines an accepted reference state or forms a basis for comparison.
- CONDITIONS, STEADY:** An operating state of a system, including its surroundings, in which the extent of change with the time of all the significant parameters is so small as to have no important effect on the performance being observed or measured.
- CONDUCTANCE, SURFACE FILM:** Time rate of heat flow per unit area under steady conditions between a surface and a fluid for unit temperature difference between the two surfaces, under steady conditions.
- CONDUCTANCE, THERMAL:** Time rate of heat flow through a body (frequently per unit area) from one of its bounding surfaces to the other for a unit temperature difference between the two surfaces, under steady conditions.

- CONDUCTION, THERMAL:** Process of heat transfer through a material medium in which kinetic energy is transmitted by the particles of the material from particle to particle without gross displacement of the particles.
- CONDUCTIVITY, THERMAL:** Time rate of heat flow through unit area and unit thickness of a homogeneous material under steady conditions when a unit temperature gradient is maintained in the direction perpendicular to area. Materials are considered homogeneous when the value of the thermal conductivity is not affected by variation in thickness or in size of the sample within the range normally used in construction
- CONDUCTOR, THERMAL:** A material which readily transmits heat by means of conduction.
- CONDUIT:** (1) A tube or pipe used for conveying fluid; (2) a tube or pipe in which wires may be enclosed for protection.
- CONNECTING ROD:** A device connecting the piston to a crank and used to change rotating motion into reciprocating motion, or vice versa as from rotating crankshaft to reciprocating piston.
- CONNECTION IN PARALLEL:** System whereby flow is divided among two or more channels from a common starting point or header.
- CONTROL:** Any device for regulating a system or component in normal operation, manual or automatic. If automatic, implication is that it is responsive to changes of pressure, temperature or any other property whose magnitude is to be regulated.
- CONTROL, COMBUSTION:** A device or series of devices that control the flow of fuel and combustion air in the desired ratio to provide for efficient combustion.
- CONTROL, DUAL EFFECT:** One responsive to temperature of two zones or to two variable conditions.
- CONTROL, FLAME SAFEGUARD:** A system for sensing the presence or absence of flame indicating, alarming or initiating control action.
- CONTROL, LIMIT:** An automatic safety control responsive to changes in liquid level, pressure or temperature or position for limiting operation of the controlled equipment.
- CONTROL, PROGRAMMING:** A combustion safety control that provides for various operations at definite periods of time in predetermined sequences.
- CONTROLLED ATMOSPHERE STORAGE (GAS STORAGE):** Artificial addition of carbon dioxide to the atmosphere, particularly in large concentration, with no attempt to regulate the amount of oxygen.
- CONTROLLER, DIFFERENTIAL:** A device used, to maintain a given difference in pressure or temperature between two pipe lines or spaces.
- CONTROLLER, HIGH-PRESSURE:** A pressure controller designed to control the pressure at a selected point on the high pressure side of a refrigerating system.
- CONTROLLER LOW-PRESSURE:** A pressure controller designed to control the pressure at a selected point on the low pressure side of a refrigerating system.
- CONVECTION:** Heat transfer by the movement of fluid.
- CONVECTION, FORCED:** Convection resulting from forced circulation of a fluid, as by a fan, jet or pump.
- CONVECTION, NATURAL:** Circulation of gas or liquid (usually air or water) due to differences in density resulting from temperature changes.
- CONVECTOR:** An agency of convection. In heat transfer, a surface designed to transfer its heat to a surrounding fluid largely or wholly by convection. The heated fluid may be removed mechanically or by gravity (gravity convector). Such a surface may or may not be enclosed or concealed.
- CONVERSION BURNER:** A burner intended for field installation onto an existing furnace or boiler.
- COOLER, BRINE (WATER):** Evaporator for cooling brine in an indirect system.
- COOLER, COLD STORAGE:** An insulated room maintained at -1.1 degrees Centigrade (30 degrees Fahrenheit) or above.
- COOLER, NONPRIMING:** Tubes are omitted from the top segment of the shell leaving a gas space above the tubes equal to about one-fourth of the inside shell diameter.
- COOLER, OIL:** A heat exchanger for cooling oil in a lubrication system.
- COOLER, SENSIBLE HEAT:** In the form of cooling surface using water, brine or direct expansion refrigerant. It is always located on the leaving side of the dehydrator but frequently treats in addition a large volume of room air which is not circulated through the dehydrator for moisture reduction.
- COOLING, DIRECT METHOD OF:** 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 space.

- COOLING, EVAPORATIVE:** Involves adiabatic heat exchange between air and a water spray or wetted surface. The water assumes the wetbulb temperature of the air, which remains constant during its traverse of the exchanger.
- COOLING, INDIRECT METHOD OF:** A system in which a liquid, such as brine or water, cooled by the refrigerant, is circulated to the material or space refrigerated or is used to cool air so circulated.
- COOLING, REGENERATIVE:** Process of utilizing heat which must be rejected or absorbed in one part of the cycle to function usefully in another part of the cycle by heat transfer.
- COOLING, SURFACE:** A method of cooling air or other gas by passing it over cold surfaces.
- COOLING OIL:** An arrangement of pipe or tubing which transfers heat from air to a refrigerant or brine.
- COOLING, EFFECT, SENSIBLE:** Difference between the total cooling effect and the dehumidifying effect, usually in watts (Btuh).
- COOLING EFFECT, TOTAL:** Difference between the total enthalpy of the dry air and water vapor mixture entering the cooler per hour and the total enthalpy of the dry air and water vapor mixture leaving the cooler per hour, expressed in watts (Btuh).
- COOLING ELEMENT:** Heat transfer surface containing refrigerating fluid where refrigerating effect is desired.
- COOLING MEDIUM:** Any substance whose temperature is such that it is used, with or without a change of state, to lower the temperature of other bodies or substances.
- COOLING RANGE:** In a water cooling device, the difference between the average temperatures of the water entering and leaving the device.
- COOLING WATER:** Water for condensation of refrigerant; condenser water.
- CORE SUCKING AND FILLING SYSTEM:** A combination of a pump, distributing piping, hose, and device by which impure water may be withdrawn from the unfrozen core of an ice block; and connecting the source of water supply, the core may be refilled with pure water.
- CORKBOARD (INSULATION):** Cork granules, cleaned, compressed, and bonded by heat used for thermal insulation.
- CORRESPONDING VALUES:** Simultaneous values of various properties of a fluid, such as pressure, volume and temperature for a given condition of fluid.
- CORROSIVE:** Having a rusting or chemically destructive effect on metals (occasionally on other materials).
- COUNTERFLOW:** In heat exchange between two fluids, opposite directions of flow; the coldest portion of one meeting the coldest portion of the other.
- CRITICAL VELOCITY:** Velocity above which fluid flow is turbulent.
- CRYOGENICS:** A study of the production of very low temperatures and their effect on the properties of matter.
- CRYOHYDRATE:** A frozen mixture of water and a salt; a brine mixed in eutectic proportions to give the lowest freezing point.
- CRYSTAL FORMATION, ZONE OF MAXIMUM:** Temperature range in freezing in which most freezing takes place, i.e., about -3.9 to -1.1 degrees centigrade (25 to 30 fahrenheit) for water.
- CYCLE, BINARY VAPOR:** A refrigerating cycle in which two separate refrigerants are used, one superimposed on and augmenting the cycle of the other.
- CYCLE, CARNOT:** A sequence of reversible processes forming the reversible working cycle of an ideal heat engine of maximum thermal efficiency. It consists of isothermal expansion, adiabatic expansion, isothermal compression, and adiabatic compression to the initial state.
- CYCLE, CLOSED:** Any cycle in which the primary medium is always enclosed and repeats the same sequence of events.
- CYCLE, DEFROSTING:** A refrigeration cycle which permits the cooling unit to defrost during off period.
- CYCLE, REFRIGERATING, IDEAL BASIC VAPOR COMPRESSION:** A closed refrigerating cycle in which the refrigerant vapor is compressed reversibly and isentropically; desuperheated irreversibly and condensed reversibly at constant pressure; expanded irreversibly and adiabatically; and evaporated reversibly at constant pressure.
- CYCLE, REFRIGERATING:** A sequence of thermodynamic processes through which a refrigerant passes, in a closed or open system, to absorb heat at a relatively low temperature level and reject heat at a higher temperature level.
- CYCLE REVERSIBLE:** Theoretical thermodynamic cycle, composed of a series of reversible processes, which can be completely reversed; e.g., Carnot cycle.

DAMPER: A valve or plate regulating the flow of air or other fluid.

DAMPER, BAROMETRIC: A device that controls draft by a balanced damper which bleeds air into the breeching on changes of pressure to maintain a steady draft.

DAMPER, MULTIPLE LOUVER: A damper having a number of adjustable blades.

DECIBEL: A unit used in acoustics for expressing the relation between two amounts of power. By definition, the difference in decibels between two powers (P_1 and P_2), P_2 being the larger, is: db difference equals $10 \log_{10} P_2/P_1$.

DECLINATION OF SUN: The angle above or below the equatorial plane. It is plus if north of the plane and minus if below. Celestial objects are located by declination.

DECOMPOSITION: A process of chemical change; breaking up of structures; spoilage.

DEFROST, AUTOMATIC: A defrost system in which the defrost cycle starts and ends automatically, with automatic resumption of normal refrigeration at the end of defrost operation. The defrost water is disposed of automatically.

DEFROST, MANUAL: One in which refrigerated surface is defrosted by natural or manual means with manual initiation and termination of overall defrost operation.

DEFROST, SEMI-AUTOMATIC: A defrost system in which defrost cycle starts manually and ends automatically with automatic resumption of normal refrigeration at the end of defrost operation. Defrost water is disposed of automatically or collected in a container for subsequent manual removal.

DEFROST, SEMI-AUTOMATIC, FAST: Same as a semi-automatic defrost, except that a means of accelerating defrosting is provided.

DEFROSTING: Process of removing unwanted ice or frost from a cooling surface.

DEFROSTING, HOT GAS: Use of high pressure or condenser gas in the evaporator or low side to effect removal of frost.

DEGREE, ELECTRICAL: 360th part of the angle subtended at the axis of the machine by two consecutive field poles of like polarity. One mechanical degree thus equals as many electrical degrees as there are pairs of poles in the machine.

DEGREE DAY: A unit, based on temperature difference and time; used in estimating fuel consumption and specifying nominal heating load of a building in winter. For any one day, when the mean temperature is less than 18.3 degrees centigrade (65 fahrenheit), there are as many degree

days as deg Celsius times 1.8 (deg fahrenheit) difference in temperature between the mean temperature for the day and 18.3 degrees centigrade (65 fahrenheit).

DEHUMIDIFICATION: (1) condensation of water vapor from air by cooling below the dew point (2) removal of water vapor from air by chemical or physical methods.

DEHUMIDIFIER: (1) An air cooler or washer used for lowering moisture content of the air passing through it; (2) an absorption or adsorption device for removing moisture from air.

DEHUMIDIFIER, SURFACE: An air-conditioning unit, designed primarily for cooling and dehumidifying air through the action of passing the air over wet cooling coils.

DEHUMIDIFYING EFFECT, AIR COOLER: Product of the weight of moisture condensed in the cooler by the constant 1060.

DEHYDRATION: (1) Removal of water vapor from air by the use of absorbing or adsorbing materials; (2) removal of water from stored goods.

DENSITY: Ratio of the mass of a specimen of a substance to the volume of the specimen; the mass of a unit volume of a substance. When weight can be used without confusion, as synonymous with mass, density is the weight per unit volume.

DESICCANT: Any absorbent or adsorbent, liquid or solid, that removes water or water vapor from a material. In a refrigeration circuit, the desiccant should be insoluble in the refrigerant.

DESICCATION: Any process for evaporating water or removing water vapor from a material.

DESIGN WORKING PRESSURE: Maximum allowable working pressure for which a specific part of a system is designed.

DEW POINT, APPARATUS: That temperature which would result if the psychrometric process occurring in a dehumidifier, humidifier, or surface cooler were carried to the saturation condition of the leaving air while maintaining the same ratio of sensible to total heat load in the process.

DEW POINT RISE: Increase in moisture content (specific humidity) of air, expressed in terms of rise in dew point temperature.

- DEW POINT TEMPERATURE:** the temperature at which condensation of water vapor in a space begins for a given state of humidity and pressure as the vapor temperature is reduced; the temperature corresponding to saturation (100% relative humidity) for a given absolute humidity at constant pressure.
- DIAGRAM, INDICATOR:** Pressure-volume diagram tracing condition of gas in a compressor or engine cycle in terms of pressure and volume displaced.
- DIELECTRIC:** An insulator.
- DIELECTRIC CONSTANT:** Ratio of the electrical capacity of a condenser containing the material to the capacity of the same condenser with the material replaced by a vacuum.
- DIELECTRIC STRENGTH:** Maximum electric field that an insulator can withstand without breakdown.
- DIFFERENTIAL:** Of a control, difference between cut-in and cut-out temperatures or pressures.
- DIFFUSER, AIR:** A circular, square, or rectangular air distribution outlet, generally located in the ceiling and comprised of deflecting members discharging supply air in various directions and planes and arranged to promote mixing of primary air with secondary room air.
- DIRECT CONNECTED:** Driver and driven, as motor and compressor, positively connected in line to operate at same speed.
- DISPLACEMENT, ACTUAL:** Actual volume of gas or vapor at compressor inlet conditions moved by a compressor per revolution or per unit of time.
- DISPLACEMENT, PISTON:** Volume swept by a piston during its working strokes or stroke per revolution.
- DISPLACEMENT, THEORETICAL:** Total volume displaced by the working strokes of all the pistons of a compressor per revolution or per unit of time.
- DISTRIBUTOR:** A device for dividing flow of liquid fluid between parallel paths in an evaporator or in other types of heat transfer apparatus.
- DOOR DIKE:** A projection on the door which extends into the refrigerated compartment(s) and which functions primarily as a barrier to minimize heat flow to the interior of the cabinet.
- DRAFT:** A current of air, when referring to the pressure difference which causes a current of air or gases to flow through a flue, chimney, heater, or space; or when referring to a localized effect caused by one or more factors of high air velocity, low ambient temperature, or direction of air flow, whereby more heat is withdrawn from a person's skin than is normally dissipated.
- DRAFT, FORCED:** Combustion air supplied under pressure to the fuel burning equipment.
- DRAFT, INDUCED:** A fan exhausting hot gases from the heat absorbing equipment.
- DRAFT, NATURAL:** Difference between atmospheric pressure and some lower pressure existing in the furnace or gas passages of heat generating unit, chimney effect.
- DRIER:** A manufactured device containing a desiccant, placed in the refrigerant circuit. Its primary purpose is to collect and hold within the desiccant all excessive water in the system which can be tolerated in the circulating refrigerant.
- DRIFT:** In a water spray device, the entrained unevaporated water carried from the device by air movement through it.
- DRINKING WATER COOLER:** An assembly which either employs or is used in conjunction with a mechanical condensing unit for cooling drinking water.
- DRINKING WATER COOLER CAPACITY:** The amount of water a cooler will cool in a given ambient temperature with a given ingoing water temperature and a given outgoing water temperature, under steady state conditions.
- DRIP:** (1) A pipe, or a steam trap and a pipe considered as a unit, which conducts condensation from the steam side of a piping system to the water or return side of the system; (2) water melting from evaporator, or water dropping from a cooling surface.
- DRY:** To separate or remove a liquid or vapor from another substance. The liquid may be water, but the term is also used for removal of liquid or vapor forms of other substances.
- DRY ICE:** Solid carbon dioxide, CO₂, (a proprietary term).
- DUCT:** A passageway made of sheet metal or other suitable material, not necessarily leaktight, used for conveying air or other gas at low pressures.
- DUNNAGE:** Strips of wood used in stowing cargo to provide air space between pieces or packages.

DUST: An air suspension (aerosol) of particles of any solid material, usually with particle size less than 100 microns.

DYNAMOMETER: A device for applying and measuring power developed by an engine or motor.

EBULLATOR: A device inserted in flooded evaporator tubes to prevent the evaporator from becoming oil bound or the refrigerant liquid from becoming quiescent at a pressure lower than its boiling point.

EFFECT, CHIMNEY: Tendency of air or gas in a duct or other vertical passage to rise when heated due to its lower density compared to that of the surrounding air or gas; in buildings, tendency toward displacement (caused by the difference in temperature) of internal heated air by unheated outside air due to the difference in density of outside and inside air.

EFFECT, COOLING, TOTAL: See effect, total cooling.

EFFECT, DEHUMIDIFYING: Heat removed in reducing the moisture content of air, passing through a dehumidifier, from its entering to its leaving condition.

EFFECT, HEATING, COMPRESSOR (HEAT PUMP): Rate of heat delivery by the refrigerant assigned to the compressor in a heat pump system. This equals the product of the mass rate of refrigerant flow produced by the compressor and the difference in specific enthalpies of the refrigerant vapor at thermodynamic state leaving the compressor and saturated liquid refrigerant at the pressure of vapor leaving the compressor.

EFFECT, HUMIDIFYING: Latent heat of water vaporization at the average evaporating temperature times the number of pounds of water evaporated per hour in Btuh.

EFFECT, REFRIGERATING: Rate of heat removal by a refrigerant in a refrigerating system. This equals the product of the mass rate of refrigerant flow in the system and the difference in specific enthalpies of the refrigerant at two designated points in the system or two designated thermodynamic states of the refrigerant. The term refrigerating effect is used to denote heat transfer to or from the refrigerant itself in a refrigeration system, whereas refrigerating capacity denotes the rate of heat removal from a medium or space to be cooled.

EFFECT, REFRIGERATING, COMPRESSOR: Rate of heat removal by the refrigerant assigned to the compressor in a refrigerating system. This equals the product of the mass rate of refrigerant flow produced by the compressor and the difference in specific enthalpies of the refrigerant vapor at its thermodynamic state entering the compressor and refrigerant liquid at saturation temperature

corresponding to the pressure of the vapor leaving the compressor.

EFFECT, REFRIGERATING, CONDENSING UNIT: Rate of heat removal by the refrigerant assigned to the condensing unit in a refrigerating system. This equals the product of the mass rate of refrigerant flow produced by the condensing unit and the difference in the specific enthalpies of the refrigerant vapor entering the unit and the refrigerant liquid leaving the unit.

EFFECT, STACK: See effect, chimney.

EFFECT, SUN: Solar energy transmitted into interior spaces through windows and building materials.

EFFECT, TOTAL COOLING: Difference between the total enthalpy of the dry air and water vapor mixture entering a unit per hour and the total enthalpy of the dry air and water vapor (and water) mixture leaving the unit per hour, in watt (Btuh).

EFFICIENCY, COMPRESSION: Ratio of work required to compress adiabatically and reversibly all vapor delivered by a compressor (per stage) to the actual work delivered to the vapor by the piston or blades of the compressor.

EFFICIENCY, MECHANICAL: Ratio of the compression energy or work of a compressor to the energy or work input.

EFFICIENCY, VOLUMETRIC, APPARENT: Ratio of suction line length on indicator card to stroke.

EFFICIENCY, VOLUMETRIC, DUE TO CYLINDER HEATING: Ratio of the total to the apparent volumetric efficiency. Also called real or no-clearance volumetric efficiency.

EFFICIENCY, VOLUMETRIC, TOTAL: Ratio of the actual volume of gas moved by the compressor or pump to actual displacement of the compressor or pump.

EJECTOR: A device which builds up a high fluid velocity in a restricted area to obtain a lower static pressure at that point so that fluid from another source may be drawn in.

ELEMENT, ELECTRIC HEATING: A unit assembly consisting of a resistor, insulated supports, and terminals for connecting the resistor to electric power.

ELEMENT, PRESSURE-IMPOSING: Any device or part of the equipment used for increasing pressure on the refrigerant.

- EMISSIVITY:** The capacity of a material to emit radiant energy. Emittance is the ratio of the total radiant flux emitted by a body to that emitted by an ideal blackbody at the same temperature.
- EMULSION:** A relatively stable suspension of small but not colloidal particles of a substance in a liquid, the suspended particles being undissolved.
- ENERGY, AVAILABLE:** The portion of the total energy which can be converted to work in a perfect engine.
- ENERGY, INTERNAL:** The sum of all kinetic and potential energies contained in a substance due to the states of motion and separation of its several molecules, atoms, and electrons. It includes sensible heat (vibration energy) and that part of the latent heat that is represented by the increase in energy during evaporation.
- ENGINE:** Prime mover; a device for transforming fuel or heat energy into mechanical energy.
- ENTHALPY:** A thermodynamic property of a substance defined as the sum of its internal energy plus the quantity Pv/J ; where P equals pressure of the substance, v equals its volume, and J equals the mechanical equivalent of heat; formerly called total heat and heat content.
- ENTHALPY, SPECIFIC:** Enthalpy per unit mass of a substance.
- ENTROPY:** The ratio of the heat added to a substance to the absolute temperature at which it was added.
- ENTROPY, SPECIFIC:** Entropy per unit of mass of a substance.
- ENZYME:** Complex organic substances (such as diastase, pepsin, etc.), capable of transforming some other compounds by catalytic action; a soluble ferment.
- EQUALIZER:** A piping arrangement to maintain a common liquid level or pressure between two or more chambers.
- EQUALIZER, EXTERNAL:** In a thermostatic expansion valve, a tube connection from a selected control point in the low-side circuit to the pressure sensing side of the control element so that the control-point pressure is transmitted to the actuating element (diaphragm or bellows). This connection provides a means for compensating for the pressure drop through accessories and the evaporator.
- EQUALIZER, INTERNAL:** In a thermostatic expansion valve, an integral internal part or passage whereby the actuating element (diaphragm or bellows) is exposed to pressure leaving the valve.
- EQUIVALENT EVAPORATION:** The amount of water a boiler would evaporate, in kilogram per second (pound per hour), if it received and vaporized feed water at 100 degrees centigrade (212 Fahrenheit) and atmospheric pressure.
- EVAPORATION:** Change of state from liquid to vapor.
- EVAPORATIVE EQUILIBRIUM (OF A WET-BULB INSTRUMENT):** The condition attained when the wetted wick has reached a stable and constant temperature. When the instrument is exposed to air at velocities over 4.6m/s (900 fpm), this temperature may be considered to approach the true wet-bulb temperature.
- EVAPORATOR (REFRIGERANT):** A heat exchanger in which liquid refrigerant, after reducing its pressure (expansion), is evaporated by absorbing heat from the medium to be cooled.
- EVAPORATOR, DRY-TYPE:** An evaporator of the continuous tube type where refrigerant from a pressure-reducing device is fed into one end and the suction line connects to the outlet end.
- EXFILTRATION:** Air flow outward through a wall, leak membrane, etc.
- EXHAUSTER:** A fan used to withdraw air under suction.
- EXPANSION, COEFFICIENT OF:** The change in length per unit length or the change in volume per unit volume, per degree change in temperature.
- EXPANSION, DRY (DIRECT):** A process of heat removal by a refrigerant in an evaporator fed by a flow control, responsive to temperature or pressure, or both, at some point in the evaporator or to the difference between high- and low-side pressures and not to the liquid level in the evaporator. All entering refrigerant is evaporated before being recirculated.
- EXPANSION, MULTISTAGE:** Passing volatile refrigerant through two or more pressure reducing devices, connected in series, usually with an evaporator between them, operating at one pressure, and a second evaporator fed through both devices at a lower pressure.
- EXPANSION VALVE PRESSURE CHANGE OF:** Change in outlet pressure of a constant pressure expansion valve required to open the valve a predetermined amount.
- EXPANSION VALVE CAPACITY:** Refrigerating effect in watt (Btuh) or kilogram (ton) produced by evaporating refrigerant passed by the valve under specific conditions.

- EXPANSION VALVE STATIC SUPERHEAT:** The superheat at which the valve begins to open.
- EXPANSION VALVE SUPERHEAT:** Difference between the temperature of the thermal bulb and the temperature corresponding to the pressure at the outlet or at the equalizer connection, when provided, of a thermostatic expansion valve.
- EXTENDED SURFACE:** Heat transfer surface, one side of which is increased in area by adding fins, discs, or other means.
- EXTRUDED:** Pushed out through a die. Bars of ice, metal rods, shapes, and tubes are made by this method.
- FACTOR OF SAFETY:** Ratio of ultimate stress to design working stress.
- FAHRENHEIT:** A thermometric scale in which 32 degrees denotes freezing and 212 degrees the boiling point of water under normal pressure at sea level (14.696psi).
- FAN:** An air-moving device comprising a wheel or blade, and housing or orifice plate.
- FAN, ATTIC:** An exhaust fan to discharge air near the top of a building while cooler air is forced (drawn) in at a lower level.
- FAN, CENTRIFUGAL:** A fan rotor or wheel within a scroll-type housing and including driving mechanism supports for either belt drive or direct connection.
- FAN, EXHAUST:** See exhauster.
- FAN, PROPELLER:** A propeller or disc-type wheel within a mounting ring or plate and including driving mechanism supports for either belt drive or direct connection.
- FAN, TUBEAXIAL:** A propeller or disc-type wheel within a cylinder and including driving mechanism supports for either belt drive or direct connection.
- FAN, VANEAXIAL:** A disc-type wheel within a cylinder, a set of air guide vanes located either before or after the wheel, and including driving mechanism supports either for belt drive or direct connection.
- FAN SHROUD:** A protective housing which surrounds the fan and which may also direct the flow of air.
- FILTER:** A device to remove solid material from a fluid.
- FILTER PRESS:** A device for separating solid and liquid matter under pressure so that the solid residue is compressed into briquettes to facilitate removal.
- FIN:** An extended surface to increase the heat transfer area, as metal sheets attached to tubes.
- FLAMMABILITY:** The ability of a material to burn.
- FLARE FITTING:** A type of soft-tube connector which requires the flaring of the tube to provide a mechanical seal.
- FLASH CHAMBER:** Separating tank placed between the expansion valve and evaporator in a refrigeration system to separate and by-pass any flash gas formed in the expansion valve.
- FLASH POINT:** Temperature of combustible material, as oil, at which there is a sufficient vaporization to support combustion of the material.
- FLOODBACK:** See frost back.
- FLOTATION:** A method of treating materials by floating in a liquid. An ice-making method in which ice floats away from the surface on which it has been frozen.
- FLOW, TURBULENT:** Fluid flow in which the fluid moves transversely as well as in the direction of the tube or pipe axis, as opposed to streamline or viscous flow.
- FLUID:** Gas, vapor, or liquid.
- FLUID, HEAT TRANSFER:** Any gas, vapor, or liquid used to absorb heat from a source at a high temperature and reject it to a lower temperature substance.
- FLUID, PRIMARY:** The refrigerant, to distinguish from secondary fluid or brine.
- FLUID, REFRIGERATING:** Any fluid used to transfer heat between cold refrigerant and the substance or bodies to be cooled, by circulation of the fluid without change of state or by an evaporation-condensation process at essentially equal pressures.
- FOAMING:** Formation of a foam or froth of oil-refrigerant due to rapid boiling out of the refrigerant dissolved in the oil when pressure is suddenly reduced. This occurs when the compressor starts operating, and if large amounts of refrigerant have been dissolved, large amounts of oil may boil out and be carried through refrigerant lines.
- FORECOOLER:** In an ice plant, a water-cooling device for ice making before water enters cans; precooler.

- FREEZE-UP:** Failure of a refrigerating unit to operate normally due to formation of ice at the expansion device. A valve may freeze shut or open, causing improper refrigeration in either case. On a coil, frost formation to the extent that air flow stops or is severely restricted.
- FREEZER:** In cold storage, an insulated room kept below -1.1 degrees Centigrade (30 Fahrenheit) (see carrying freezer and sharp freezer); any device for freezing perishables.
- FREEZER, CARRYING:** Cold storage freeze room, generally kept between -28.9 and -6.7 degrees Centigrade (-20 and 20 Fahrenheit) to receive and hold frozen goods.
- FREEZER, HOUSEHOLD:** A cabinet designed for extended storage of frozen food at a recommended temperature of -17.8 degrees Centigrade (0 Fahrenheit) in a 32.2 degrees Centigrade (90 Fahrenheit) ambient, with inherent capability for freezing of food and a source of refrigeration; and it is intended for household use.
- FREEZER, SHARP:** Cold storage freezer room, generally kept at -34.4 to -23.3 degrees Centigrade (-30 to -10 Fahrenheit), to receive unfrozen goods and freeze them.
- FREEZING:** Process of changing a liquid substance or the liquid content of a food or other commodity to a solid state by removing heat.
- FREEZING, QUICK:** Freezing of a food or other commodity at a rapid rate of temperature reduction to produce a desired crystalline structure in the frozen product.
- FREEZING METHOD, REFRIGERATED PLATE:** Heat transfer by means of the direct contact of refrigerated plates with the packaged product.
- FREEZING METHOD, SPRAY:** Refrigerated liquid is sprayed into an insulated enclosure containing the product to be frozen.
- FREEZING METHOD, TRAY:** A method of freezing food by subjecting it to moving refrigerated air. The food is arranged on shallow trays which are placed in portable racks and put in an insulated chamber through which the air is blown.
- FREEZING POINT:** Temperature at which a given liquid substance will solidify or freeze on removal of heat. Freezing point for water is 0 degrees Centigrade (32 Fahrenheit).
- FROST BACK:** Flooding of liquid from an evaporator into the suction line, accompanied by frost formation on the suction line in most cases.
- FUMES:** Solid particles commonly formed by condensing vapors from normally solid materials such as molten metals. Fumes may also be formed by sublimation, distillation, calcination, or chemical reaction wherever such processes create airborne particles predominantly below one micron in size. Such solid particles sometimes serve as condensation nuclei for water vapor to form smog.
- FUSIBLE PLUG:** A device having a predetermined melting temperature member for relief of pressure.
- GAGE (GAUGE);** (1) an instrument for measuring pressure or liquid level; (2) also, an arbitrary scale of measurement for sheet metal thickness, wire, and drill diameters.
- GAS:** A usually highly superheated vapor which, within acceptable limits of accuracy, satisfies the perfect gas laws.
- GAS, FLASH:** The gas resulting from instantaneous evaporation of refrigerant in a pressure reducing device to cool the refrigerant to the evaporation temperature at a reduced pressure.
- GAS, FOUL:** See gas, noncondensable.
- GAS, INERT:** A gas that neither experiences nor causes chemical reaction nor undergoes a change of state in a system or process; e. g., nitrogen or helium mixed with a volatile refrigerant.
- GAS, NONCONDENSIBLE (FOUL GAS):** Gas in a refrigerating system which does not condense at the temperature and partial pressure at which it exists in the condenser, therefore imposing a higher head pressure on the system.
- GAS CONSTANT:** The coefficient R in the perfect gas equation pV equals RT .
- GAS STORAGE:** Artificial addition of carbon dioxide to the atmosphere, particularly in large concentration, with no attempt to regulate the amount of oxygen.
- GENERATOR:** Basic part of an absorption system. A still provided with means of heating, used to drive refrigerant out of solution.
- GLASS, GAGE:** Device for showing a liquid level.
- GLASS, SIGHT:** Glass tube used to indicate the liquid level in tanks, bearings and similar equipment.
- GRADUATED ACTING:** Term applied to a control instrument or device which functions to give throttling control; permitting operation between full on and full off position.
- GRAVITY, SPECIFIC:** Density compared to density of standard material; it usually refers to water or to air.

- GRILLE:** A louvered or perforated covering for an air passage opening which can be located in the sidewall, ceiling, or floor.
- HEAD, DYNAMIC OR TOTAL:** In flowing fluid, the sum of static and velocity pressures at the point of measurement.
- HEAD, STATIC:** The static pressure of a fluid expressed in terms of the height of a column of the fluid, or of some manometric fluid, when it would support.
- HEAD, VELOCITY:** In a moving fluid, the height of the fluid or of some manometric fluid equivalent to its velocity pressure.
- HEAT:** Form of energy that is transferred by virtue of a temperature difference.
- HEAT, HUMID:** The ratio of increase of enthalpy per kg (pound) of dry air, with its associated moisture, to the rise of temperature under conditions of constant pressure and specific humidity.
- HEAT, LATENT:** Change of enthalpy during a change of state, usually expressed in j/kg (Btu per pound). With pure substances, latent heat is absorbed or rejected at constant temperature at any pressure.
- HEAT, LATENT, OF CONDENSATION OR EVAPORATION (SPECIFIC):** Thermodynamically, difference in the specific enthalpies of a pure condensible fluid between its dry saturated vapor state and its saturated (not subcooled) liquid state at the same pressure.
- HEAT, SENSIBLE:** Heat which is associated with a change in temperature; specific heat exchange of temperature; in contrast to a heat interchange of state (latent heat) occurs.
- HEAT, SPECIFIC:** Ratio of the amount of heat required to raise the temperature of a given mass of any substance one degree to the quantity required to raise the temperature of an equal mass of a standard substance; usually water at 15 degrees Centigrade (59 Fahrenheit) one degree.
- HEAT, VITAL:** Heat generated by fruits and vegetable; in storage, due to ripening.
- HEAT CAPACITY:** The amount of heat necessary to raise the temperature of a given mass one degree. Numerically, the mass multiplied by the specific heat.
- HEAT CONDUCTOR:** A material capable of readily conducting heat; opposite of an insulator or insulation.
- HEAT EXCHANGER:** A device specifically designed to transfer heat between two physically separated fluids.
- HEAT EXCHANGER, HEAT PIPE:** A bundle of separate tubes each containing a two-phase working fluid. A heat source at one end evaporates the fluid, the gas is then condensed by a heat sink at the other end. The liquid is returned by gravity or by wick capillary action to the tube's heated portion.
- HEAT EXCHANGER, PLATE:** Fixed plates which segment and keep separate the hot and cold fluids.
- HEAT EXCHANGER, ROTARY:** A cylindrical wheel or drum packed with fluid conducting heat transfer medium which is rotated through one fluid and then through a counter-flowing second fluid.
- HEAT EXCHANGER, RUN-AROUND:** Finned tube coils (closed system) or spray chambers (open system) in which a liquid is circulated by gravity or pump action through a heat source and then through a heat sink. Antifreeze may be used in the coil loop, and a desiccant, in the spray system.
- HEAT INTERCHANGER:** See heat exchanger.
- HEAT, LATENT, OF CONDENSATION:** Difference in specific enthalpy of a condensible fluid between its dry saturated vapor state and its saturated liquid state at the same pressure.
- HEAT OF FUSION:** Latent involved in changing between the solid and the liquid states.
- HEAT OF REACTION:** Heat per unit mass or per mole of reagents of products of reaction in a chemical reaction; exothermal if given off, endothermal if absorbed.
- HEAT OF THE LIQUID:** Enthalpy of a mass of liquid above an arbitrary zero.
- HEAT PUMP, COOLING AND HEATING:** A refrigerating system designed to utilize alternately or simultaneously the heat extracted at a low temperature and the heat rejected at a higher temperature for cooling and heating functions respectively.
- HEAT PUMP, HEATING:** A refrigerating system designed primarily to utilize the heat rejection from the system for a desired heating function.
- HEAT REJECTION EFFECT, CONDENSING:** That portion of the total refrigerant heat rejecting effect of a condenser which is used for condensing the entering refrigerant vapor to a saturated liquid at the entering refrigerant pressure.

- HEAT REJECTION EFFECT, SUBCOOLING:** The total refrigerant heat rejection effect less the condensing heat rejection effect.
- HEAT REJECTION EFFECT, TOTAL REFRIGERANT:** The total useful capacity of a refrigerant condenser for removing heat from the refrigerant circulated through it.
- HEAT TRANSMISSION:** Any time rate of heat flow; usually refers to conduction, convection, and radiation combined.
- HEAT TRANSMISSION COEFFICIENT:** Any one of a number of coefficients used in calculating heat transmission by conduction, convection, and radiation, through various materials and structures.
- HEATING, EFFECT COMPRESSOR (HEAT PUMP):** The rate of heat delivery by the refrigerant assigned to the compressor in a heat pump system. This is equal to the product of the mass rate of refrigerant flow produced by the compressor and the difference in specific enthalpies of the refrigerant vapor at thermodynamic state leaving the compressor and saturated liquid refrigerant at the pressure of the vapor leaving the compressor.
- HEATING, REGENERATIVE (OR COOLING):** Process of utilizing heat, which must be rejected or absorbed in one part of the cycle, to perform a useful function in another part of the cycle by heat transfer.
- HIGH PRESSURE SIDE (HIGH SIDE):** That portion of a refrigerating system operating at approximately the condenser pressure.
- HOLD-OVER:** In an evaporator, the ability to stay cold after heat removal from the evaporator stops; a material used to store heat in latent or sensible form.
- HOOD DRAFT:** A device installed on gas-fired appliances designed to protect the appliance from chimney draft disturbances.
- HORSEPOWER:** Unit of power in the foot-pound-second system; work done at the rate of 745.7W (550 feet pound per second).
- HOT GAS LINE:** A line used to convey discharge gas from the compressor to the evaporator for defrosting.
- HUMIDIFIER:** A device to add moisture to air.
- HUMIDIFY:** To add water vapor to the atmosphere; to add water vapor or moisture to any material.
- HUMIDISTAT:** A regulatory device, actuated by changes in humidity, used for automatic control of relative humidity.
- HUMIDITY:** Water vapor within a given space.
- HUMIDITY, ABSOLUTE:** The weight of water vapor per unit volume.
- HUMIDITY, PERCENTAGE:** The ratio of the specific humidity of humid air to that of saturated air at the same temperature and pressure, usually expressed as a percentage (degree of saturation; saturation ratio).
- HUMIDITY, RELATIVE:** The ratio of the mole fraction of water vapor present in the air to the mole fraction of water vapor present in saturated air at the same temperature and barometric pressure. Approximately, it equals the ratio of the partial pressure or density of the water vapor in the air to the saturation pressure or density, respectively, of water vapor at the same temperature.
- HUMIDITY RATIO (OR ALTERNATIVELY, THE MIXING RATIO):** The ratio of the mass of the water vapor to the mass of dry air contained in the sample.
- HUMIDITY SPECIFIC:** Is the mass of water vapor to the total mass of the moist air sample.
- HYDROMETER:** An instrument which, by the extent of its submergence, indicates the specific gravity of the liquid in which it floats.
- HYGROMETER:** An instrument responsive to humidity conditions (usually relative humidity) of the atmosphere.
- HYGROSCOPIC:** Absorptive of moisture; readily absorbs and retains moisture.
- HYGROSTAT:** See humidistat.
- ICE BANK:** A thermal accumulator in which, during off-peak periods of refrigeration demand, ice is formed, and during peak periods of refrigeration demand, compressor capacity is supplemented by melting ice.
- ICE MAKER, CYCLIC:** A cyclic-type automatic ice maker has separate and sequential water fill, freezing and harvesting phases of the ice-making operation.
- ICE MAKER, NONCYCLIC:** A noncyclic-type (continuous), automatic ice maker has simultaneous water supply, freezing, and/or harvesting phases in the ice making operation.
- ICE POINT:** Temperature at which water freezes under normal atmospheric pressure, 0 degrees Centigrade (32 Fahrenheit).
- ICE TRAY CAPACITY RATING:** The weight of water with the tray filled to within 3mm (0.13 in.) of the top and with the grids in place.

- IGNITION, INTERMITTENT:** An igniter which burns during light off and while the main burner is firing and which is shut off with the main burner.
- IGNITION, INTERRUPTED:** An igniter which burns during light off and which is shut off (interrupted) during normal operation of the main burner.
- INCH OF WATER:** A unit pressure equal to the pressure exerted by a column of 1-inch high liquid water at temperature of 4 degrees Centigrade (39.2 Fahrenheit).
- INDUCTION UNIT, ROOM AIR:** A factory-made assembly consisting of a cooling coil (or cooling and heating coil) and means for delivering preconditioned air--received under pressure from an external source mixed with recirculated air by air-induction process--to the space being conditioned. This device is normally designed for free delivery of air into the space.
- INFILTRATION:** Air flowing inward as through a wall and leakage of air not restrained.
- INSULATION, FILL:** Granulated, shredded, or powdered material prepared from vegetable, animal, or mineral origin.
- INSULATION, SOUND:** Acoustical treatment of fan housings, supply ducts, space enclosures, and other parts of system and equipment to isolate vibration or to reduce noise transmission.
- INSULATION, THERMAL:** A material having a relatively high resistance to heat flow and used principally to retard heat flow.
- INTERCOOLING:** Removal of heat from compressed gas between compression stages.
- INTERLOCKS, SAFETY:** A device to prove the physical state of a required condition and to furnish that proof to the primary safety control circuit.
- IRRADIATION:** Subjecting foods, and similar products to radiations of special wavelengths to kill certain bacteria; the amount of radiant energy incident on a surface per unit time and unit area.
- IS-, ISO-:** (1) prefix meaning constant: as isothermal, constant temperature; isentropic, constant entropy; isobaric, constant pressure; and (2) in chemicals, one having different characteristics but with the same number and kind of atoms.
- ISENTROPIC:** An adjective describing a reversible adiabatic process; a change taking place at constant entropy.
- ISOBARIC:** An adjective used to indicate a change taking place at constant pressure.
- ISOMER:** One of a group of substances having the same ultimate chemical composition but different molecular structure.
- ISOTHERMAL:** An adjective used to indicate a change taking place at constant temperature.
- JACKETING:** Surrounding by a confined bath or stream of fluid for temperature control or heat absorption.
- JOINT, BRAZED, HIGH-TEMPERATURE:** A gas-tight joint obtained by the joining of metal parts with alloys which melt at temperatures higher than 816 degrees Centigrade (1500 Fahrenheit) but less than the melting temperatures of the joined parts.
- JOINT, BRAZED, LOW-TEMPERATURE:** A gas-tight joint obtained by the joining of metal parts with metallic mixtures or alloys which melt at temperatures below 816 degrees Centigrade (1500 Fahrenheit) but above 538 degrees Centigrade (1000 Fahrenheit).
- JOINT, MECHANICAL:** A gas-tight joint obtained by joining of metal parts through a positive holding mechanical construction (such as flanged joint, screwed joint, flared joint).
- JOINT, PITTSBURGH LOCK:** Longitudinal joint used for rectangular sheet metal duct construction.
- JOINT, POCKET LOCK:** Transverse joint used in rectangular sheet metal duct construction.
- JOINT, SLIP:** A method of constructing transverse seams in rectangular sheet metal ducts.
- JOINT, SNAPLOOK:** Longitudinal joint used for rectangular sheet metal duct construction in which the seam is "snapped" together.
- JOINT, SOLDERED:** A gas-tight joint obtained by joining metal parts with metallic mixtures or alloys which melt at temperatures not exceeding 430 degrees Centigrade (800 Fahrenheit) and above 204 degrees Centigrade (400 Fahrenheit).
- JOINT, STANDING SEAM:** Joint used for transverse joints in rectangular sheet metal duct construction and for apparatus casing seams.
- JOINT, WELDED:** A gas-tight joint obtained by joining of metal parts in the plastic or molten state.
- JOULE-THOMPSON EFFECT:** The ratio of temperature change to pressure change (dT/dp) of an actual gas in a process of throttling or expansion without working or interchanging heat.

- LAG:** Delay in action of the sensing element of a control device due to the time required for the sensing element to reach equilibrium with the property being controlled.
- LAW OF PARTIAL PRESSURE, DALTON'S:** Each constituent of a mixture of gases behaves thermodynamically as if it alone occupied the space. The sum of the individual pressures of the constituents equals the total pressure of the mixture.
- LEVEL, NEUTRAL PRESSURE:** Level at which there is no pressure difference between inside and outside a building under stack effect.
- LINEAR SWELL:** The percentage increase in the length of a test specimen, usually an elastomer, as a result of exposure to refrigerants and/or oils.
- LINER:** The enclosure forming the interior of the general refrigerated compartment and/or some freezer compartment(s).
- LIQUEFACTION:** A change of state to liquid; generally used instead of condensation in case of substances ordinarily gaseous.
- LIQUID, VOLATILE:** A liquid which evaporates readily at atmospheric pressure and room temperatures.
- LIQUID INDICATOR:** A device, frequently combined with a strainer, located in the liquid line and having a sight port by which liquid flow may be observed for the presence of bubbles.
- LIQUID LINE:** Tube or pipe carrying the refrigerant liquid from the condenser or receiver of a refrigerating system to a pressure-reducing device.
- LIQUID REFRIGERANT RECEIVER:** A vessel in a refrigerating system designed to insure availability of adequate liquid refrigerant for proper functioning of the system and to store the liquid refrigerant when the system is pumped down.
- LIQUOR:** A solution used in absorption refrigeration.
- LIQUOR, STRONG (RICH):** Solvent with relatively high concentration of solute.
- LIQUOR, WEAK:** Solvent with relatively low concentration of solute.
- LOAD, REFRIGERATION:** The amount of heat per unit time imposed on a refrigerating system or the required rate of heat removal.
- LOAD, USAGE:** The sum of the air change, product, and miscellaneous loads on a refrigerator; the sum of the loads exclusive of wall heat gains.
- LOAD FACTOR:** The ratio of actual mean load to a maximum load of maximum production capacity in a given period.
- LOUVER:** An assembly of sloping vanes intended to permit air to pass through and can be designed to inhibit transfer of water droplets.
- LOW-PRESSURE SIDE (LOW SIDE):** That portion of a refrigerating system operating at approximately the evaporator pressure.
- LYOPHILIZATION:** The process of dehydrating a frozen substance under conditions of sublimation; e.g., vacuum freeze-drying.
- MACHINERY:** The refrigerating equipment forming a part of the refrigerating system including any or all of the following: compressor, condenser, generator, absorber (adsorber), liquid receiver, connecting piping, and evaporator.
- MACHINERY, REFRIGERATING:** The equipment comprising the refrigerating system including its associated prime movers.
- MAIN:** Pipe or duct for distributing to or collecting from various branches.
- MANIFOLD:** Portion of main in which several branches are close together. Also, single-piece in which there are several fluid paths.
- MANOMETER:** An instrument for measuring pressures; essentially a U-tube partially filled with a liquid, usually water, mercury, or a light oil, so constructed that the amount of displacement of the liquid indicates the pressure being exerted on the instrument.
- MATERIAL, HOMOGENEOUS:** See conductivity, thermal.
- MEDIA:** The heat transfer material used in rotary heat exchangers, also referred to as matrix.
- MELTING:** Change of state from solid to liquid.
- MELTING POINT:** For a given pressure, the temperature at which the solid and liquid phases of the substance are in equilibrium.
- METER:** An instrument for measuring rates or integrating rates over a period of time.
- MIXTURE, EUTECTIC:** A mixture which melts or freezes normally at constant temperature and with constant composition. Its melting point is usually the lowest possible for mixtures of the given substances.

- MODULATING:** Of a control, tending to adjust by increments and decrements; also one modified by variation of a second condition.
- MOLE (MOL):** The amount of substance of a system that contains as many elementary entities as the number of atoms in 0.012 kilogram of carbon-12.
- MOLECULAR, SIEVE:** An adsorbent composed of porous aluminosilicates with pores of uniform molecular dimensions which selectively adsorb molecules of the substance to be gathered.
- MOTIVE POWER:** Used to express the source from which a device obtains its power (electric or fluid).
- MOTOR, AIR:** An air-operated device which is used primarily for opening or closing dampers.
- MOTOR, CAPACITOR:** A single-phase induction motor with a main winding arranged for direct connection to a source of power and an auxiliary winding connected in series with a capacitor.
- NOZZLE, RETURN FLOW:** A mechanical atomizing oil burner in which part of the oil supplied to the atomizer is withdrawn and returned to storage or the oil line supplying the atomizer.
- OIL DISTILLATE:** Light fraction of oil, separated from crude oil by fractional distillation.
- OIL, RESIDUAL:** Products remaining from crude petroleum by removing some of the water and an appreciable percentage of the more volatile hydrocarbons.
- OIL SEPARATOR:** A device for separating oil and oil vapor from the refrigerant, usually installed in the compressor discharge line.
- OIL STILL:** A device to separate oil from refrigerant by a distillation process.
- ORGANIC COMPOUND:** Originally a chemical compound produced by a life process. Now generally understood to include all compounds containing carbon.
- OUTLET, CEILING:** See diffuser, air.
- OUTLET, SLOTTED:** A long, narrow air distribution outlet, comprised of deflecting members, located in the ceiling, sidewall, or sill, with an aspect ratio greater than 10, designed to distribute supply air in varying directions and planes, and arranged to promote mixing of primary air and secondary room air.
- OUTLET, VANED:** A register, or grill, equipped with vertical and/or horizontal adjustable vanes.
- OUTPUT:** Capacity; duty, performance; net refrigeration produced by a system.
- OZONE:** Triatomic oxygen (O_3) sometimes used in air conditioning or cold storage as an odor eliminator; can be toxic in certain concentrations.
- PACKING:** See stuffing box.
- PERFORMANCE FACTOR:** The ratio of the useful output capacity of a system to the input required to obtain it. Units of capacity and input need not be consistent.
- PERMEABILITY:** Water vapor permeability is a property of a substance which permits passage of water vapor, and equals permeance of a 1 inch thickness of the substance. When permeability varies with psychrometric conditions, the "spot" or "specific permeability" defines the property at a specific condition. Permeability is measured in perm-inches.
- PHASE:** In thermodynamics, one of the states of matter, as solid, liquid, or gaseous.
- PLAQUE AND/OR SUMP:** The volume generated by embossed areas on the interior surfaces of the general refrigerated and freezer compartment(s).
- PLUMBING-PLUMBING SYSTEM:** Works that include the water supply and distribution pipes, plumbing fixtures and traps; soil, waste and vent pipes; sanitary and storm drains and building sewers, including their respective connections, devices and appurtenances to an approved point of disposal. See Section 15400 Plumbing for exclusive expance of definitions.
- POINT, CRITICAL:** Of a substance, state point at which liquid and vapor have identical properties; critical temperature, critical pressure, and critical volume are the terms given to the temperature, pressure, and volume at the critical point. Above the critical temperature or pressure, there is no demarcation line between liquid and gaseous phases.
- POINT, TRIPLE:** State point at which three phases of a given substance (i.e., solid, liquid, and gas) exist in equilibrium.
- POLYTROPIC CHANGE:** Any set of changes in a gas represented by the equation, $P^{v/n}$ equals constant.
- POND, SPRAY:** Arrangement for lowering the temperature of water in contact with outside air by evaporative cooling of the water. The water to be cooled is sprayed by nozzles into the space above a body of previously cooled water and allowed to fall by gravity into it.

- POWER:** The rate of performing work; common units are watt (horsepower and Btuh).
- POWER CONSUMPTION:** The power used, multiplied by time, measured in watt (hp/hr).
- PRECIPITATOR, ELECTRIC:** A device for removing dust from the air by means of electric charges induced on the dust particles.
- PRECOOLER:** (1) A cooler for removing sensible heat before shipping, storing, or processing; (2) a device for cooling a fluid before it enters some piece of apparatus.
- PREHEATING:** In air conditioning, to heat the air ahead of other processes.
- PRESSURE:** The normal force exerted by a homogeneous liquid or gas, per unit of area, on the wall of the container.
- PRESSURE, ABSOLUTE:** Pressure referred to a perfect vacuum. It is the sum of gage pressure and atmospheric pressure.
- PRESSURE, CRITICAL:** Vapor pressure corresponding to the substance's critical state at which the liquid and vapor have identical properties.
- PRESSURE, DISCHARGE:** An operating pressure in a refrigerating system measured in the discharge line at the compressor outlet.
- PRESSURE, DYNAMIC:** The pressure of a fluid resulting from its motion.
- PRESSURE, GAGE:** Pressure above atmospheric.
- PRESSURE, HYDROSTATIC:** The normal force per unit area that would be exerted by a moving fluid on an infinitesimally small body immersed in it if the body were carried along with the fluid.
- PRESSURE, OPERATING:** The pressure occurring at a reference point in a refrigerating system when the system is in operation.
- PRESSURE, PARTIAL:** Portion of total gas pressure of a mixture attributable to one component.
- PRESSURE, SATURATION:** The saturation pressure for a pure substance for any given temperature is that pressure at which vapor and liquid, or vapor and solid, can coexist in stable equilibrium.
- PRESSURE, STATIC:** (1) The pressure with respect to a stationary surface tangent to the mass flow velocity vector; (2) the pressure with respect to a surface at rest in relation to the surrounding fluid.
- PRESSURE SUCTION:** An operating pressure in a refrigerating system measured in the suction line at the compressor inlet.
- PRESSURE TOTAL:** The sum of the static pressure and the velocity pressure at the point of measurement.
- PRESSURE, VAPOR:** The pressure exerted by the molecules at a given vapor.
- PRESSURE, VELOCITY:** In a moving fluid, the pressure capable of causing an equivalent velocity, if applied to move the same fluid through an orifice, such that all pressure energy expended is converted into kinetic energy.
- PRESSURE CHANGE OF AN EXPANSION VALVE:** The change in outlet pressure of a constant pressure expansion valve required to open the valve a predetermined amount.
- PRESSURE DROP:** Static pressure loss in fluid pressure, as from one end of duct to the other, due to friction.
- PRESSURE EQUALIZING:** Allowing high- and low-side pressures to equalize or nearly equalize during idle periods as by use of an unloading valve or by a vapor lock liquid control, or nearly equalizing inlet and discharge pressures on the compressors. In either case, to reduce starting torque load.
- PRESSURE-IMPOSING ELEMENT:** Any device or portion of the equipment used for increasing the pressure on the refrigerant.
- PRESSURE-LIMITING DEVICE:** A pressure-actuated mechanism designed to automatically stop the operation of a compressor or other pressure-producing component at a predetermined maximum or minimum pressure.
- PRESSURE RELIEF DEVICE:** A valve or rupture member designed to relieve excessive pressure automatically.
- PRESSURE VESSEL:** Any refrigerant-containing receptacle of a refrigerating system, other than evaporators (each separate section of which does not exceed 0.5 feet³ of refrigerant-containing volume), evaporator coils, compressors, condenser coils, controls, headers, and piping.
- PROPERTIES, THERMODYNAMIC:** Basic qualities used in defining the condition of a substance, such as temperature, pressure, volume, enthalpy, entropy.
- PSYCHROMETER:** Instrument for measuring relative humidities by means of wet- and dry-bulb temperatures.

- PSYCHROMETRY:** The branch of physics relating to the measurement or determination of atmospheric conditions, particularly regarding the moisture mixed with the air.
- PURGER (AIR VENT):** A device for removing noncondensable gas from refrigerant condensers, for removing low-concentration liquor from absorption system evaporators, or air from hot water or steam systems.
- PYROMETER:** An instrument for measuring high temperature.
- QUALITY OF WET VAPOR:** Fraction by weight of vapor in a mixture of liquid and vapor.
- RADIATION, THERMAL:** Transmission of heat through space by wave motion; passage of heat from one object to another without warming the space between.
- RECTIFIER:** In refrigeration, an externally cooled heat exchanger in the high side of an absorption system for condensing absorbent and separating it from the refrigerant before passing it to the condenser.
- REDUCER, PRESSURE, LIQUID REFRIGERANT:** A device or devices, in a refrigerating system, in which the pressure of the fluid is reduced from that of condensed liquid to that of the evaporator.
- RE-EXPANSION LINE:** The curve on an indicator card, representing the pressure; the total volume relationship of clearance fluid during the initial portion of the return stroke of the piston prior to the suction valve's opening.
- REFRIGERANT:** The fluid used for heat transfer in a refrigerating system, which absorbs heat at a low temperature and a low pressure of the fluid and rejects heat at a higher temperature and a higher pressure of the fluid, usually involving changes of state of the fluid.
- REFRIGERANT, FLAMMABLE:** Any refrigerant which burns when mixed with air, e.g., ethylchloride, methylchloride, and the hydrocarbons.
- REFRIGERANT, SECONDARY:** Any volatile or non-volatile substance in an indirect refrigerating system that absorbs heat from a substance or space to be refrigerated and rejects this heat to the evaporator of the refrigerating system.
- REFRIGERANT CHARGE:** The designated amount of refrigerant required for proper functioning of a closed refrigerating system.
- REFRIGERATING COMPRESSOR PERFORMANCE FACTOR:** The ratio of its capacity to its power input.
- REFRIGERATING EFFECT, COMPRESSOR:** The rate of heat removal by the refrigerant assigned to the compressor in a refrigerating system. This is equal to the product of the mass rate of refrigerant flow produced by the compressor and the difference in specific enthalpies of the refrigerant vapor at its thermodynamic state entering the compressor and refrigerant liquid at saturation temperature corresponding to the pressure of the vapor leaving the compressor.
- REFRIGERATING EFFECT, CONDENSING UNIT:** The rate of heat removal by the refrigerant assigned to the condensing unit in a refrigerating system. This is equal to the product of the mass rate of refrigerant flow produced by the condensing unit and the difference in the specific enthalpies of the refrigerant vapor entering the unit and the refrigerant liquid leaving the unit.
- REFRIGERATING EFFECT, NET WATER (BRINE) COOLER:** The product of the weight rate of water or brine flow and the difference in enthalpy of the entering and leaving water or brine expressed in heat units per unit of time. It is expressed also by the total refrigeration effect less the heat leakage losses.
- REFRIGERATING EFFECT, SUBCOOLING:** The additional refrigeration effect made available by subcooling the refrigerant liquid in the condenser.
- REFRIGERATING EFFECT, TOTAL, WATER (BRINE) COOLER:** The product of the weight rate of refrigerant flow and the difference in enthalpy of the entering and leaving refrigerant fluid, expressed in heat units per unit of time.
- REFRIGERATING MEDIUM:** Any substance whose temperature is such that it is used, with or without a change of state, to lower the temperature of other bodies or substances below the ambient temperature.
- REFRIGERATING SYSTEM PERFORMANCE FACTOR:** The ratio of the useful refrigerating effect of the system to the power input.
- REFRIGERATION (COOLING), DIRECT METHOD OF:** See system, direct.
- REFRIGERATION (COOLING), INDIRECT METHOD OF:** See system, indirect.

REFRIGERATION, PIPE LINE: Service to a group of buildings with a refrigerant supply from a central refrigerating plant.

REGAIN: Of moisture, the amount absorbed by any material in percent of weight of that material.

REGISTER: A combination grill and damper assembly covering an air opening.

REGULATION: Refreezing of water that resulted from melting of ice under pressure. Refrigeration is not required.

REGULATOR, DRAFT: A device sometimes installed in the breeching between a fired appliance and the chimney; it is intended to control chimney draft effect on inducing gas flow through the appliance.

RESISTANCE, THERMAL: The reciprocal of conductance thermal.

RESISTIVITY, ELECTRICAL, VOLUME: The electrical resistance of a substance contained between flat, parallel electrodes multiplied by the area of the electrodes and divided by the electrode gap.

RESISTIVITY, THERMAL: The reciprocal of conductivity, thermal.

RESPIRATION: Production of carbon dioxide and heat by ripening of perishables in storage; also the breathing process of animals.

RETURN, DRY: A return pipe in a steam heating system which carries both water of condensation and air. It is always above the level of the water line in the boiler in a gravity system. (Also see return, wet).

RETURN, WET: That part of a return main of a steam heating system which is filled with water of condensation. It usually is below the level of the water line in the boiler, although not necessarily so. (Also see return, dry).

RUPTURE, MEMBER: A device which automatically ruptures at a predetermined pressure.

SAFETY HEAD: In a compressor, a cylinder head held in place by a spring of such strength that, during normal operation, it will not be compressed but moved by solid or liquid matter or abnormal gas pressure between this and the piston; thus, protecting the compressor.

SALINOMETER: Hydrometer calibrated in salt concentration.

SAPONIFY: To turn to soap, as oil contacting an alkali or alkaline refrigerant. Chemically, to cause an ester to react with an inorganic base, the products being an alcohol and an acid (either free or in the form of a salt). By extension, to hydrolyze compounds other than esters.

SATURATION: The condition for coexistence in stable equilibrium of a vapor and liquid or a vapor and solid phase of the same substance. As an example, steam over the water from which it is being generated.

SATURATION, DEGREE OF (SATURATION RATIO): The ratio of the specific humidity of humid air to that of saturated air at the same temperature and pressure, usually expressed as a percentage.

SEAL, BELLOWS: Metal bellows, used in a shaft seal or in place of a packing for valves; also used in long pipe lines instead of gaskets to compensate for expansion of the line with temperature.

SEAL, SHAFT: A rubbing seal or stuffing box used to prevent fluid leakage between the shaft and bearing of a compressor or other fluid-moving device.

SENSIBLE HEAT RATIO, AIR COOLER: The ratio of sensible cooling effect to total cooling effect of an air cooler.

SHELL AND TUBE: Pertaining to heat exchangers in which a nest of tubes or pipes, or a coil of tube or pipe, is contained in a shell or container. The pipe (or pipes) carries a fluid through it, while the shell is also provided with an inlet and outlet for fluid flow.

SHELL-TYPE APPARATUS: A refrigerant-containing pressure vessel having tubes for the passage of a refrigerating fluid or one to be cooled.

SILICA GEL: A form of silicon dioxide which adsorbs moisture readily and is used as a drying agent.

SLUDGE: A product of decomposition of oil resulting from impurities, moisture, or chemical reactions, and favored by excessive temperature. Sludge may be mushy, gummy, or hard.

SOLAR CONSTANT: The solar radiation intensity incident on a surface normal to the sun's rays outside the earth's atmosphere at a distance from the sun equal to the mean distance between the earth and the sun.

SOLUTION, EUTECTIC: A mixture which melts or freezes, normally at constant temperature and with constant composition. Its melting point is usually the lowest possible for mixtures of the given substances.

- SORPTION:** Adsorption or absorption.
- SPRAY DECK:** An overhead bunker where air is cooled and circulated by brine sprays.
- SPRAY-TYPE AIR COOLER:** A forced-circulation air cooler, where the coil surface capacity is augmented by a liquid spray during operation.
- STANDARD RATING:** A rating based on tests performed at Standard Rating Conditions.
- STANDARD RATING CONDITIONS:** Rating conditions used as the basis for comparing performance characteristics.
- STATE, GASEOUS:** One of three states of matter characterized by the greatest freedom of molecules and lack of any inherent fixed shape or volume.
- STATE, LIQUID:** One of three states of matter characterized by limited freedom of molecules and by substantial incompressibility.
- STATE, SOLID:** One of three states or phases of matter, characterized by stability of dimensions, relative incompressibility, and molecular motion held to limited oscillation.
- STEAM, DRY SATURATED:** Steam at the saturation temperature corresponding to the pressure and containing no water in suspension.
- STEAM, SUPERHEATED:** Steam at a temperature higher than the saturation temperature corresponding to the pressure.
- STEAM, WET SATURATED:** Steam at the saturation temperature corresponding to the pressure and containing water particles in suspension.
- STROKE:** Of piston, the length of travel (twice its crank radius).
- STUFFING BOX:** A packing gland surrounding a shaft, stem, or rod to prevent leakage.
- SUBCOOLING:** Process of cooling refrigerant below condensing temperature for a given pressure; also, cooling a liquid below its freezing point where it can exist only in a state of unstable equilibrium.
- SUBCOOLING, HEAT OF (SPECIFIC):** Difference in specific enthalpies of a pure condensable fluid between the saturated (not subcooled) liquid state and the cooled liquid at a given temperature below its condensation temperature at the same pressure.
- SUBLIMATION:** A change of state directly from solid to gas without appearance of liquid.
- SUCTION INLET:** The port through which as enters.
- SUCTION LINE:** The tube or pipe which carries the refrigerant vapor from the evaporator to the compressor inlet.
- SUN EFFECT:** Solar energy transmitted into interior spaces through windows and building materials.
- SUPERHEAT, (SPECIFIC):** Difference in specific enthalpies of a pure condensable fluid between vapor at a given temperature above saturation and vapor at the dry saturated state at the same pressure.
- SUPERHEATER:** A heat exchanger used on flooded evaporators, where hot liquid on its way to enter the evaporator is cooled by supplying heat to dry and superheat the wet vapor leaving the evaporator.
- SURFACE COOLING:** See cooling, surface.
- SURFACE, HEATING:** The exterior surface of a heating unit. Extended heating surface (or extended surface), consisting of fins, pins, or ribs which receive heat by conduction from the prime surface. Prime surface: heating surface having the heating medium on one side and air (or extended surface) on the other.
- SURGE DRUM:** See accumulator.
- SWEATING:** Condensation of moisture from air on a surface which is below the dew-point temperature.
- SWITCH, FLOAT:** A device in which a float ball, through variation on the level of liquid, operates one or more sets of electrical contacts to activate or deactivate other controls or alarms.
- SYSTEM:** A heating or refrigerating scheme or machine usually confined to those parts contacting heating or refrigerating medium.
- SYSTEM, ABSORPTION:** A refrigerating system in which the refrigerant gas evolved in the evaporator is taken up in an absorber and released in a generator on heat application.
- SYSTEM, AIR AGITATION:** A combination consisting of a power-driven blower, distributing piping, and flexibly connected fittings for delivering air to the water in ice cans to agitate the water and promote production of clear ice.
- SYSTEM, BRINE SPRAY:** A refrigerating scheme for cooling by a mist or spray of brine.
- SYSTEM, CASCADE:** One having two or more refrigerating circuits, each with a pressure imposing element, condenser, and evaporator, where the evaporator of one circuit cools the condenser of another (lower temperature) circuit.

- SYSTEM, CENTRAL FAN:** A mechanical indirect system of heating, ventilating, or air conditioning, in which the air is treated or handled by equipment located outside the rooms served, usually at a central location, and conveyed to and from the rooms by a fan and a system of distributing ducts.
- SYSTEM, CENTRAL PLANT:** A system with two or more low sides connected to a single, central high side; a multiple system.
- SYSTEM, CLOSED:** A heating or refrigerating piping system in which circulating water or brine is completed enclosed, under pressure above atmospheric, and shut off from the atmosphere except for an expansion tank.
- SYSTEM, COMMERCIAL:** A heating, cooling or refrigerating system used in a commercial and/or a business place, such as meat market, store, florist shop, hotel, office building, restaurant, candy shop, bakery, or other place of similar commercial enterprise, assembled and installed in the manufacturing and business portion of any building.
- SYSTEM, CYCLE DEFROST:** In household refrigerators and combination refrigerator-freezers only, a system in which refrigerated surfaces of the general refrigerated compartment are defrosted by an automatic defrost system.
- SYSTEM, DENSE AIR:** A cold air system maintained under pressure greater than atmospheric in which air is compressed, heat of compression dissipated, and the air, chilled by expansion and performance of work, can create useful refrigeration.
- SYSTEM, DIRECT:** A heating, air-conditioning, or refrigerating system in which electric heating elements or products of combustion, or the refrigerant, exchange heat directly with the material or space heated or cooled, or with the air in a passageway communicating with such space.
- SYSTEM, DIRECT EXPANSION:** A refrigerating system in which the evaporator is in direct contact with refrigerated material or space, or is located in air circulating passages communicating with such space.
- SYSTEM, DOWN-FEED:** A piping arrangement for a heating, air-conditioning or refrigerating system, in which heating or cooling fluid is circulated through supply mains which are above the levels of the heating or cooling units which they serve.
- SYSTEM, DUAL TEMPERATURE BRINE:** In chilling beef, the use of an initial brine temperature, followed by a lower brine temperature.
- SYSTEM, DUCT:** A series of ducts, elbows, and connectors to convey air from one location to another.
- SYSTEM, FLOODED:** A system in which only part of the refrigerant passing over the heat transfer surface is evaporated, and the portion not evaporated is separated from the vapor and recirculated.
- SYSTEM FORCED CIRCULATION:** A heating, air-conditioning or refrigerating system in which heating or cooling fluid is circulated by a fan or pump.
- SYSTEM, GRAVITY CIRCULATION:** A heating or refrigerating system in which heating or cooling fluid is circulated by the motive head due to the difference in densities of cooler and warmer fluids in two sides of the system.
- SYSTEM, INDIRECT:** A heating, air-conditioning or refrigerating system in which a fluid, such as air (water or brine, heated or cooled by electric heating elements or products of combustion or by a refrigerant) is circulated to the material or space to be heated or cooled, or is used to heat or cool air so circulated.
- SYSTEM, INDUSTRIAL:** A system used in the manufacture or processing of materials, such as ice-making plants, cold storage warehouses, ice cream plants, dairy plants, packing houses, chemical plants, and other places of similar industrial enterprise.
- SYSTEM, LOW PRESSURE:** In air conditioning, a distributing system delivering air to ordinary ventilating grills at low velocities with static losses through the supply grills.
- SYSTEM, MULTIPLE:** A system using the direct method in which refrigerant is delivered to two or more evaporators in separate rooms or refrigerators.
- SYSTEM, NO-FROST:** A system in which all refrigerated surfaces in the cabinet are defrosted by an automatic defrost system.
- SYSTEM, OFF-PEAK:** A system with control which normally avoids use of power during peak load periods, usually having eutectic or water-ice hold-over means.
- SYSTEM, ONE-PIPE:** A piping system in which the fluid withdrawn from the supply main passes through a heating or cooling unit and returns to the same supply main.
- SYSTEM, OPEN:** A heating or refrigerating piping system in which circulating water or brine return main is connected to an open-vented elevated tank which serves as a reservoir to accommodate expansion and contraction of the fluid, and as an inspection point for the fluid's condition.

- SYSTEM, OVERHEAD:** A heating, air-conditioning or refrigerating piping system in which the supply main is above the heating or cooling units supplied.
- SYSTEM, REFRIGERATING:** Any system which, in operation between a heat source and a heat sink (in the thermodynamic sense) at two different temperatures, can absorb heat from the heat source at the lower temperature and reject heat to the heat sink at the higher temperature.
- SYSTEM, REFRIGERATING, ABSORPTION-TYPE:** A refrigerating system in which refrigeration is effected by evaporating a refrigerant in a heat exchanger (evaporator), resulting vapor then being absorbed by an absorbent medium from which it is subsequently expelled by heating at a higher partial vapor pressure and condensed by cooling in another heat exchanger (condenser).
- SYSTEM, REFRIGERATING, COMPRESSION-TYPE:** A refrigerating system in which the temperature and pressure of gaseous refrigerant are increased by a mechanically operated component. In most cases, the refrigerant undergoes changes of state in the system.
- SYSTEM, REMOVABLE UNIT:** A refrigerating system, readily removable as one unit from the cabinet or space which it cools and from the building in which it is used without disconnecting any refrigerant containing part of the system.
- SYSTEM, RUN-AROUND:** A regenerative-type closed secondary system in which a continuously circulated fluid abstracts heat from the primary system fluid at one place, returning this heat to the primary system fluid at another place.
- SYSTEM, SELF-CONTAINED (SINGLE PACKAGED) REFRIGERATING:** A completely factory-assembled and tested refrigerating system in a suitable frame or enclosure, in which all refrigerant-containing parts are permanently connected at the factory.
- SYSTEM, STEAM JET:** A refrigerating system in which high pressure steam, supplied through a nozzle and acting to eject vapor from the evaporator, maintains the requisite low pressure on one side and produces a high pressure on the other by virtue of compression in a following diffusion passage.
- SYSTEM, TWO-PIPE:** A piping system in which the fluid withdrawn from the supply can passes through a heating or cooling unit to a separate return main.
- SYSTEM, UNITARY REFRIGERATING:** A complete factory-assembled and tested refrigerating system comprising one or more assemblies which may be shipped as one unit or separately but which are designed to be used together.
- SYSTEM, UPFEED:** A piping arrangement for a heating, air-conditioning, or refrigerating system, in which cooling fluid is circulated through supply mains which are below the levels of heating or cooling units they serve.
- SYSTEM, VAPOR:** A refrigerating system employing a condensable vapor as the refrigerant.
- SYSTEM, WATER VACUUM:** In refrigeration, one which employs a vacuum to boil water at the temperature desired; one which employs evaporating water vapor as the refrigerant.
- SYSTEM, YEAR-ROUND AIR-CONDITIONING:** An air-conditioning system which ventilates, heats, and humidifies in winter, cools and dehumidifies in summer the spaces under consideration, and provides the desired degrees of air motion and cleanliness.
- TANK, BRINE:** (1) In ice plant, main freezing tank, in which cans are immersed while ice is being produced; (2) in brine-circulating system, a storage or balance tank for brine; (3) in domestic and commercial fields, a container surrounding the evaporator and filled with brine for storing refrigerant or equalizing temperature at various points of the evaporator, especially in ice-cream cabinets.
- TANK, BRINE RETURN:** A reservoir in an open circulating brine system for storing brine at the pump suction and for inspecting condition and flow of brine.
- TANK, ICE-MAKING:** A tank arranged with proper accessories to hold an evaporator and antifreeze solution and ice cans, the cans being immersed in the solution which usually is in circulation around the evaporator and cans.
- TEMPERATURE:** The thermal state of matter with reference to its tendency to communicate heat to matter in contact with it.
- TEMPERATURE, ABSOLUTE:** Temperature expressed in degrees kelvin.
- TEMPERATURE, CRITICAL:** The saturation temperature corresponding to the critical state of the substance at which the properties of the liquid and vapor are identical.
- TEMPERATURE, ABSOLUTE ZERO:** The zero point on the kelvin temperature scale, -273.16 degrees Centigrade (-459.69 Fahrenheit).
- TEMPERATURE, COLOR:** The temperature of a perfect radiator (blackbody) that would emit the same relative intensity at two wavelengths (usually red and green lights) as the relative intensity radiated by the subject surface.

TEMPERATURE, DEW-POINT: See dew-point temperature.

TEMPERATURE, DRY-BULB: The temperature of a gas or mixture of gases indicated by an accurate thermometer after correction for radiation.

TEMPERATURE, EFFECTIVE: The dry-bulb temperature of a black enclosure at 50% relative humidity (sea level), in which a solid body or occupant would exchange the same heat by radiation, convection, and evaporation as in the existing nonuniform environment.

TEMPERATURE, MEAN RADIANT (MRT): The temperature of a uniform black enclosure in which a solid body or occupant would exchange the same amount of radiant heat as in the existing nonuniform environment.

TEMPERATURE, ROOM: The temperature of any room, e.g.: (1) a room in which a refrigerator is being operated or tested; (2) a room being conditioned for the occupant's comfort. Room temperature used colloquially to mean the ordinary temperature one is accustomed to find in dwellings.

TEMPERATURE, SATURATION: Of a fluid, the boiling point corresponding to a given pressure; evaporation temperature, condensation temperature.

TEMPERATURE, WET-BULB: Thermodynamic wet-bulb temperature is the temperature at which liquid or solid water, by evaporating into air can bring the air to saturation adiabatically at the same temperature. Wet-bulb temperature (without qualification) is the temperature indicated by a wet-bulb psychrometer constructed and used according to specifications.

TEMPERATURE, WET-BULB DEPRESSION: Difference between dry-bulb and wet-bulb temperatures.

TEMPERATURE DIFFERENCE, DIFFUSION: Temperature difference between the air temperature at supply opening and design outdoor temperature.

TEMPERATURE DIFFERENCE, EFFECTIVE: Difference between the room air temperature and the supply air temperature at the outlet to the room.

TEMPERATURE DIFFERENCE, MEAN: Mean of difference between temperatures of a fluid receiving and a fluid yielding heat.

TEMPERATURE, LOW: Temperature below ordinary refrigerating plant requirements; e.g., from -34.4 degrees Centigrade (-30 Fahrenheit) down; also, any part of a system below another parallel refrigerating level of temperature.

THAW NEEDLE: A small tube with valved head, connected by hose to a source of warm water or steam, which may be inserted in the air agitation tube in an ice can for the purpose of thawing the air agitation tube loose from the ice block.

THERMOCOUPLE: A device for measuring temperature, utilizing the fact that an electromotive force is generated whenever two junctions of two dissimilar metals in an electric circuit are at different temperature levels.

THERMODYNAMICS: The science of heat energy and its transformation to and from other forms of energy.

THERMOMETER: An instrument for measuring temperature.

THERMOSTAT: An automatic control device actuated by temperature and designed to be responsive to temperature.

THERMOSTAT, DIRECT-ACTING: An instrument for activating a control circuit on sensing a predetermined low temperature.

THERMOSTAT, REVERSE-ACTING: An instrument for activating a control circuit on sensing a predetermined high temperature.

THROTTLING: Of a fluid, an irreversible adiabatic process which consists of lowering pressure of an expansion without work.

THROW: The horizontal or vertical axial distance an air stream travels after leaving an air outlet before the maximum stream velocity is reduced to a specified terminal level.

TON OF REFRIGERATION: A useful refrigerating effect equal to 3516 watts (12,000 Btuh).

TON-DAY OF REFRIGERATION: The heat removed by a ton of refrigeration operating for a day.

TONS, DRY: The sensible heat load expressed in tons of refrigeration.

TONS, MOISTURE: Latent heat load expressed in tons of refrigeration.

TONS, TOTAL: The total heat load expressed in tons of refrigeration; the sum of the dry tons and the moisture tons.

TOTAL HEAT: See enthalpy.

TOWER, WATER-COOLING: An enclosed device for evaporatively cooling water by contact with air.

TOWER, WATER-COOLING, FORCED-DRAFT: A mechanical draft water-cooling tower having one or more fans located in the air entering the tower.

- TOWER, WATER-COOLING, INDUCED-DRAFT:** A mechanical draft water-cooling tower having one or more fans located in the air leaving the tower.
- TOWER, WATER-COOLING, MECHANICAL-DRAFT:** A water-cooling tower utilizing one or more fans to move the air through the tower, the fans being an integral part of the tower.
- TRANSMISSION:** In thermodynamics, a general term for heat travel; properly, heat transferred per unit of time.
- TRANSMITTANCE, THERMAL (U factor):** The time rate of heat flow per unit area under steady conditions from the fluid on the warm side of a barrier to the fluid on the cold side, per unit temperature difference between the two fluids.
- TRAP, STEAM:** A device for allowing the passage of condensate, or air and condensate, and preventing the passage of steam.
- TUBE, CAPILLARY:** In refrigeration practice, a tube of small internal diameter used as a liquid refrigerant flow control or expansion device between high and low sides; also used to transmit pressure from the sensitive bulb of some temperature controls to the operating element.
- UNLOADER:** A device on or in a compressor for equalizing the high- and low-side pressures for a brief period during starting in order to decrease the starting load on the motor; also a device for controlling compressor capacity by rendering one or more cylinders ineffective.
- VALVE, BACK PRESSURE (EVAPORATOR PRESSURE REGULATOR):** An automatic valve located between the evaporator outlet and compressor inlet that is responsive to its own inlet pressure or to the vapor flow when necessary to prevent the evaporator pressure from falling below a selected value.
- VALVE, CHARGING:** A valve used to charge or add refrigerant to the system or add oil to the compressor crankcase.
- VALVE, CHECK:** A valve allowing fluid flow in one direction only.
- VALVE, CONSTANT PRESSURE EXPANSION:** See valve, expansion.
- VALVE, DIAPHRAGM:** A form or packless valve, manually or mechanically actuated; also a valve actuated by pressure of a motivating fluid on one side of the diaphragm which seals the motivating fluid from the fluid controlled by the valve.
- VALVE, DIRECT-ACTING DIAPHRAGM:** One which closes with admission of fluid pressure to a diaphragm and opens when pressure is released.
- VALVE, DISCHARGE:** On a compressor, the valve which allows compressed refrigerant to flow from the cylinder to the discharge main.
- VALVE, EMERGENCY RELIEF:** A manually operated valve for discharge of refrigerant in case of fire or other emergency.
- VALVE, EXPANSION, AUTOMATIC:** A device which regulates refrigerant flow from the liquid line into the evaporator to maintain a constant evaporator pressure.
- VALVE, EXPANSION, HAND:** A manually operated needle-type valve for controlling flow of liquid refrigerant to an evaporator.
- VALVE, EXPANSION, THERMOSTATIC:** A controlling device for regulating flow of volatile refrigerant into a cooling unit, actuated by changes in evaporator pressure and superheat of the refrigerant leaving the cooling unit. The basic response is to superheat.
- VALVE, FLOAT.** (1) Refrigerating valve controlled by liquid level; (2) valve actuated by float in a liquid container.
- VALVE, KING.** (1) Stop valve between receiver and liquid main; (2) stop valve on boiler header.
- VALVE, PACKLESS:** A valve which does not use packing to prevent leaks around the valve stem. Flexible material is generally used to seal against leaks and still permit valve movement.
- VALVE, PRESSURE REDUCING:** A valve which maintains a uniform pressure on its outlet side irrespective of how the pressure on its inlet side may vary above the pressure to be maintained.
- VALVE, PRESSURE RELIEF:** A valve held closely by a spring or other means and designed to automatically relieve pressure in excess of its setting; also called a safety valve.
- VALVE, PURGE:** A device to allow fluid to flow out of a system, particularly non-condensable gases; also called a drain valve.
- VALVE, PRESSURE REDUCING:** A valve which maintains a uniform pressure on its outlet side irrespective of how the pressure on its inlet side may vary above the pressure to be maintained.
- VALVE, REVERSE-ACTING DIAPHRAGM:** A valve which opens with admission of fluid pressure to a diaphragm and closes when pressure is released.
- VALVE, SERVICE:** A valve intended to help isolate an apparatus from the rest of the system; may be a stop valve.

VALVE SOLENOID: A valve which is closed by gravity, pressure, or spring action and opened by the movement of a plunger due to the magnetic action of an electrically energized coil, or vice versa.

VALVE, STOP: A shutoff valve, other than a valve for controlling the flow.

VALVE, SUCTION: In a compressor, the valve which allows refrigerant to enter the cylinder from the suction line and prevents return flow.

VALVE, SUCTION PRESSURE REGULATING: An automatic valve located between the evaporator outlet and the compressor inlet that is responsive to its own outlet pressure and functions to throttle the vapor flow so as to prevent the suction pressure at the compressor inlet from exceeding a selected value. It is used primarily to prevent overload on compressor motors.

VALVE, THERMAL: A valve controlled by a thermally responsive element, e.g., a thermostatic expansion valve which is usually responsive to suction or evaporator temperature.

VALVE, WATER REGULATOR: An automatic valve to control the flow of cooling water through a condenser.

VANE, RATIO: In air distributing devices, the ratio of depth of vane to shortest opening width between two adjacent grill bars.

VAPOR: A gas, particularly one near to equilibrium with the liquid phase of the substance and which does not follow the gas laws. It is usually used instead of gas for a refrigerant and, in general, for any gas below the critical temperature.

VAPOR, SATURATED: Vapor in equilibrium with its liquid: i.e., when the numbers per unit time of molecules passing in two directions through the surface dividing the two phases are equal.

VAPOR, SUPERHEATED: Vapor at a temperature which is higher than the saturation temperature (i.e., boiling point) at the existing pressure.

VAPOR, WATER: Used commonly in air conditioning parlance to refer to steam in the atmosphere.

VAPOR, WET, QUALITY OF: The fraction by weight of vapor in a mixture of liquid and vapor.

VAPOR BARRIER: A moisture impervious layer applied to the surfaces enclosing a humid space to prevent moisture travel to a point where it may condense due to lower temperature.

VAPOR LOCK: The formation of some vapor or all vapor in a liquid line reducing weight flow as compared to weight flow in liquid phase with the same pressure differential.

VAPOR LOCK DEVICE: An orifice, capillary tube, or other device having a restricted passage of fixed size for liquid refrigerant. It restricts flow of vapor of that same liquid to a lower rate of flow with the same pressure difference.

VENTILATION: The process of supplying or removing air by natural or mechanical means to or from any space. Such air may or may not have been conditioned.

VISCOSITY: That property of semifluids, fluids, and gases by virtue of which they resist an instantaneous change of shape or arrangement of parts. It is the cause of fluid friction whenever adjacent layers of fluid move with relation to each other.

VISCOSITY, ABSOLUTE: The force per unit area required to produce unit relative velocity between two parallel areas of fluid distance apart; also called coefficient of viscosity.

VISCOSITY, KINEMATIC: The ratio of absolute viscosity to density of a fluid.

VOLUME, SPECIFIC: The volume of a substance per unit mass; the reciprocal of density.

WALL SECTION: A cross section of wall arranged chiefly to reveal conductivity characteristics.

WATER, COOLING: Water used for condensation of refrigerant; condenser water.

WATER, JACKET: In a compressor, the water used for cooling the cylinder head and/or walls.

WATER, MAKE-UP: Water supplied to replenish, as water replacing that lost by evaporation.

WATER, RAW: (1) Any water used for ice making except distilled water; (2) untreated water.

WAX: A solid material which may separate on cooling of oil-refrigerant mixtures.

WEEP: See drip.

WHITE ROOM: A room that is free of any form of measureable dust or bacteria.

WIREDRAWING: Restriction of area for a flowing fluid, causing a loss in pressure by (internal and external) friction without loss of heat or performance of work; throttling.

WORK, EFFECTIVE: The net mechanical energy required by, or load imparted to, the piston of a compressor.

WORK, INDICATED: Work equivalent of indicator card area for a reciprocating compressor or engine.

- ABSORPTION:** This term applies to immersion in a fluid for a definite period of time. It is usually expressed as a percent of the weight of the dry pipe. (CISPI)
- ANAEROBIC:** Bacteria living without air. (CISPI)
- ANCHOR:** An anchor is usually pieces of metal used to fasten or secure pipes to the building or structure. (CISPI)
- AREA OF CIRCLE:** To find the area of a circle, multiply the square of the radius by pi. Area = πr^2 . (CISPI)
- BACK FILL:** That portion of the trench excavation which is replaced after the sewer line has been laid is called the backfill. It is the material above the pipe up to the original earth line. (CISPI)
- BACKFLOW:** Backflow is the flow of water or other liquids, mixtures or substances into the distributing pipe of a potable supply of water from any source other than that intended. (CISPI)
- BACKFLOW PREVENTER:** This is a device or assembly designed to prevent backflow into the potable water system. (CISPI)
- BACK-SIPHONAGE:** This is the term applied to the flow of used water, wastes and/or contamination into the potable water supply piping, due to vacuums being established in the distribution system, building service, water main or parts thereof. (CISPI)
- BASE:** The lowest portion or lowest point of a stack of vertical pipe. (CISPI)
- BRANCH:** A branch is any part of the piping system other than a main riser, or stack. (CISPI)
- CAULKING:** Caulking is the operation or method of rendering a joint tight against water or gas by means of plastic substances such as lead and oakum. (CISPI)
- CIRCUMFERENCE OF A CIRCLE:** To find the perimeter or circumference of a circle, multiply the diameter of the circle by pi. Circumference = πD . (CISPI)
- CLARIFIED SEWAGE:** This is a term used for sewage from which suspended matter has been partly or completely removed. (CISPI)
- CODE:** The word code, as related to plumbing work, usually means an ordinance with any subsequent amendments thereto, or any emergency rules and regulations which a city or governing body may adopt to control the plumbing work within their jurisdiction. (CISPI)
- COLIFORM GROUP OF BACTERIA:** This is defined as including all organisms considered in the coli aerogenes group as set forth in the American Water Works Association and the American Public Health Association literature. (CISPI)
- COMPRESSION:** Stress which resists the tendency of two forces acting toward each other. (CISPI)
- CONDUCTOR:** A conductor is that part of the vertical piping which carries the water from the roof to the storm drain, which starts either 6 inches above grade if outside the building, or at the roof sump or gutter if inside the building. (CISPI)
- CROSS CONNECTION:** A cross connection or interconnection is any physical connection between a city water supply and any waste pipe, soil pipe, sewer, drain, or any private or uncertified water supply. Furthermore, it is any potable water supply outlet which is submerged or can be submerged in waste water and/or any other source of contamination. (CISPI)
- CRUDE OR RAW SEWAGE:** This terminology applies to untreated sewage. (CISPI)
- DEAD END:** A dead end is a branch leading from any soil, waste or vent pipe, building drain, or building sewer, which is terminated at a developed distance of two (2) feet or more by means of a cap, plug or other fitting not used for admitting water or air to the pipe, except branches serving as cleanout extensions. (CISPI)
- DEVELOPED LENGTHS:** The term developed length of a pipe refers to the length measured along the centerline of the pipe and fittings. (CISPI)
- DIAMETER:** Unless specifically stated, the term diameter is the nominal diameter as designed commercially. (CISPI)
- DIGESTER AND DIGESTION:** That portion of the sewage treatment process where biochemical decomposition of organic matter takes place, resulting in the formation of simple organic and mineral substances. (CISPI)
- DOMESTIC SEWAGE:** Sewage originating principally from dwellings, business buildings, institutions and usually thought of as not containing storm water. However, in some localities it may include industrial wastes and rain water from combination sewers. (CISPI)
- DRAIN:** A drain is any pipe which carries waste water or water-borne wastes in a building drainage system. (CISPI)
- DRAIN, BUILDING OR HOUSE:** That part of the lowest horizontal piping of a building drainage system which receives and conveys the discharge from soil, waste and drainage pipes, other than storm drains, from within the walls or footings of any building to the building sewer. (CISPI)

- DRAINS, COMBINED:** The combined drain is that portion of the drainage system within a building which carries storm water and sanitary sewage. (CISPI)
- DRAINS, STORM:** Part of the horizontal piping and its branches which convert sub-soil and/or surface drainage from areas, courts, roofs or yards to the building or storm sewer. (CISPI)
- DRAINS, SUBSOIL:** Part of the drainage system which conveys the subsoil ground or seepage water from the footings of walls, or from under buildings, to the building drain, storm water drain or building sewer. (CISPI)
- DRY WEATHER FLOW:** This term refers to sewage collected during the summer which contains little or no ground water by infiltration and no storm water at the time. (CISPI)
- DUCTILITY:** This is the property of elongation, above the elastic limit, but under the tensile strength. (CISPI)
- EFFLUENT:** Sewage, treated or partially treated, flowing out of sewage treatment equipment. (CISPI)
- ELASTIC LIMIT:** The greatest stress which a material can withstand without a permanent deformation after release of the stress. (CISPI)
- EROSION:** The gradual destruction of metal or other material by the abrasive action of liquids, gases, solids or mixtures of these materials. (CISPI)
- EXISTING WORK:** This applies to that portion of a plumbing system which has been installed prior to the current or contemplated addition, alteration or correction. (CISPI)
- FIXTURES, BATTERY OF:** A battery of fixtures is any group of two or more similar adjacent fixtures which discharge into a common horizontal waste or soil branch. (CISPI)
- FIXTURES, COMBINATION:** A combination fixture is an integral unit such as a kitchen sink and a laundry unit. (CISPI)
- FIXTURES, PLUMBING:** Installed receptacles, devices or appliances which are supplied with water, or which receive liquids and/or discharge liquids, or liquid-borne wastes, either directly or indirectly into the drainage system. (CISPI)
- FIXTURE UNIT:** A fixture unit is that amount of fixture discharge equivalent to seven and one-half (7-1/2) gallons or more; one (1) cubic foot of water per minute. (CISPI)
- FLOOD LEVEL RIM:** The top edge of the receptacle from which water overflows. (CISPI)
- FLUSH VALVE:** Device located at the bottom of the tank for the purpose of flushing water closets and similar fixtures. (CISPI)
- FLUSHOMETER VALVE:** A device which discharges a predetermined quantity of water to a fixture for flushing purposes and is actuated by direct water pressure. (CISPI)
- FOOTING:** The part of a foundation wall resting on the bearing soil, rock or piling which transmits the superimposed load to the bearing material. (CISPI)
- FRESH SEWAGE:** This applies to sewage of recent origin still containing free dissolved oxygen. (CISPI)
- LATERAL SEWER:** A sewer which does not receive sewage from any other common sewer except house connections. (CISPI)
- LEACHING WELL OR CESSPOOL:** Any pit or receptacle having porous walls which permit the contents to seep into the ground. (CISPI)
- LEADER:** The piping from the roof which carries roof water. (CISPI)
- MAIN SEWER:** Also called the Trunk Sewer; the main stem or principal artery of the system or sewage network to which branches may be connected. (CISPI)
- MASTER PLUMBER:** The master plumber's license grants him the authority to install and to assume responsibility for contractual agreements pertaining to plumbing and to secure any required permits. The journeyman plumber properly licensed is allowed to install plumbing only under the supervision of a master plumber. (CISPI)
- OFFSET:** A combination of pipe, pipes and/or fittings which join two approximately parallel sections of the line of pipes. (CISPI)
- OUTFALL SEWERS:** Those receiving sewage from the collection system and carrying it to the point of final discharge or treatment. It is usually the largest sewer of the entire system. (CISPI)
- OXIDIZED SEWAGE:** Sewage in which the organic matter has been combined with oxygen and has become stable in nature. (CISPI)
- PIPE, HORIZONTAL:** Any pipe or part thereof which is installed in a horizontal position or which makes an angle of less than 45° with the horizontal. (CISPI)
- PIPE, INDIRECT WASTE:** A pipe that does not connect directly with the drainage system but conveys liquid wastes by discharging into a plumbing fixture or receptacle which is directly connected to the drainage system. (CISPI)

PIPE, LOCAL VENTILATING: A pipe on the fixture side of the trap through which pipe vapors or foul air can be removed from a room or fixture. (CISPI)

PIPE, SOIL: Any pipe which conveys to the building drain or building sewer the discharge of one or more water closets and/or the discharge of any other fixture receiving fecal matter, with or without the discharge from other fixtures. (CISPI)

PIPE, SPECIAL WASTE: A drain which receives one or more wastes which require treatment before entry into the normal plumbing system; the special waste pipe terminates at the treatment device on the premises. (CISPI)

PIPE, VERTICAL: Any pipe or part thereof which is installed in a vertical position or which makes an angle of not more than 45° with the vertical. (CISPI)

PIPE, WASTE: A pipe which conveys only liquid or liquid-borne waste, free of fecal matter. (CISPI)

PIPE, WATER RISER: A water supply pipe which extends vertically one full story or more to convey water to branches or fixtures. (CISPI)

PIPES, WATER DISTRIBUTION: Convey water from the service pipe to its points of usage on the premises. (CISPI)

PIPES, WATER SERVICE: That portion of the water piping which supplies one or more structures or premises and which extends from the public or private main in the street, alley or easement to the meter or, if no meter is to be provided, to the first stop cock or valve inside the premises. (CISPI)

PITCH: Used to indicate the amount of slope or grade given to horizontal piping and expressed in inches of vertically projected drop per foot on a horizontally projected run of pipe. (CISPI)

PLUMBING: Includes the practice, materials and fixtures used in the installation, maintenance, extension and alteration of all piping, fixtures, appliances and appurtenances in connection with any of the following: Sanitary drainage or storm drainage facilities; the venting system and the public or private water-supply systems, within or adjacent to any building, structure or conveyance; also the practice and materials used in the installation, maintenance, extension or alteration of water-supply systems and/or the storm water, liquid waste or sewage system of any premises to their connection with any point of public disposal or other acceptable termina. (CISPI)

PLUMBING INSPECTOR: Any person who, under the supervision of the authority having jurisdiction, is authorized to inspect plumbing and drainage as defined in the code for the municipality, and complying with the laws of licensing and/or registration of the State, City or County. (CISPI)

PRECIPITATION: The total measurable supply of water received directly from the clouds as snow, rain, hail and sleet. It is usually expressed in inches per day, month or year. (CISPI)

PRIVATE USE: Applies to a toilet room or bathroom intended specifically for the use of an individual or family and such visitors as they may permit to use such toilet or bathroom. (CISPI)

PUBLIC USE: Applies to toilet rooms and bathrooms used by employees, occupants, visitors or patrons, in or about any premises. This term also applies to locked toilet rooms or bathrooms to which several occupants or employees on the premises possess keys and have access. (CISPI)

PUTREFACTION: Biological decomposition of organic matter with the production of ill-smelling products is known as putrefaction. It usually takes place when there is a deficiency of oxygen. (CISPI)

REVENT (Individual vent): That part of a vent pipe line which connects directly with any individual waste or group of wastes, underneath or back of the fixture, and extends either to the main or branch vent pipe. (CISPI)

ROUGHING IN: A term concerning the installation of all parts of the plumbing system which can be completed prior to the installation of the plumbing fixtures. This includes drainage, water supply, vent piping and the necessary fixture backing. (CISPI)

SANITARY SEWER: The conduit or pipe carrying sanitary sewage. It may include storm water, and also the infiltration of ground water. (CISPI)

SEPTIC SEWAGE: Sanitary sewage undergoing putrefaction. (CISPI)

SEPTIC TANK: A receptacle which receives the discharge of a drainage system or part thereof, and is designed and so constructed to separate the solids from the liquid, digest the organic matter through a period of detention, and allow the liquids to discharge into the soil outside the tank through a system of open-joint or perforated piping, or into a disposal pit. (CISPI)

- SEWAGE:** Any liquid waste containing animal, vegetable or chemical wastes in suspension or solution. (CISPI)
- SEWER, BUILDING:** Also called house sewer. It is that part of the horizontal piping of a drainage system extending from the building drain, storm drain and/or subsoil drain to its connection into the public sewer, private sewer, sewage treatment tank or other point of disposal, and carrying the drainage of but one building or part thereof. (CISPI)
- SEWER, BUILDING STORM:** The extension from the building storm drain to the public storm sewer, combined sewer, or other point of disposal. (CISPI)
- SEWER, PRIVATE:** A sewer located on private property owned and maintained which conveys the drainage of one or more buildings to a public sewer or to a privately owned sewage disposal system. (CISPI)
- SEWER, STORM:** A sewer used to convey rainwater, surface water, condensate, cooling water or similar water wastes, exclusive of sewage and industrial wastes. (CISPI)
- SLICK:** Thin oily film usually present which gives the characteristic appearance to the surface of water into which sewage or oily waste is discharged. (CISPI)
- SLUDGE:** The accumulated suspended solids of sewage deposited in tanks, beds or basins, mixed with more or less water to form a semiliquid mass called sludge. (CISPI)
- STACK:** The vertical main of a system of soil, waste or vent piping. (CISPI)
- STACK VENT:** The extension of a soil or waste stack above the highest horizontal drain connected to the stack. (CISPI)
- STALE SEWAGE:** Contains little or no oxygen and is, as yet, free from putrefaction. (CISPI)
- STRAIN:** Change of shape or size of a body produced by the action of stress. (CISPI)
- STRESS:** When external forces act on a body, they are resisted by reactions within the body which are called stresses. (CISPI)
- SUBMAIN SEWER (Also called Branch Sewer):** A sewer into which the sewage from two or more lateral sewers is discharged. (CISPI)
- SUBSOIL DRAIN:** Drain which receives only subsurface or seepage water and conveys it to a place of disposal. (CISPI)
- SUMP:** A tank or pit which receives the discharge from drains or other wastes, located below the normal grade of the gravity system, and which must be emptied by mechanical means. (CISPI)
- TENSION:** That stress which resists the tendency of two forces acting away from each other to pull apart two adjoining planes of a body. (CISPI)
- TRAP:** A fitting or device so designed and constructed as to provide, when properly vented, a liquid seal which will prevent the back passage of air without materially affecting the flow of sewage or waste water through it. (CISPI)
- TRAP SEAL:** The vertical distance between the crown weir and the top of the dip of the trap. (CISPI)
- TURBULENCE:** Any deviation from parallel flow in a pipe due to rough inner wall surfaces, obstructions or directional changes. (CISPI)
- UNDERGROUND PIPING:** Piping in contact with the earth below grade. Pipe in a tunnel or in a watertight trench is not included within the scope of this term. (CISPI)
- USED:** Plumbing materials, fixtures or equipment which have been removed from a previous installation. (CISPI)
- VACUUM:** Any pressure less than that exerted by the atmosphere and may be termed a negative pressure. (CISPI)
- VELOCITY:** Time rate of motion in a given direction and sense. (CISPI)
- VENT, CIRCUIT:** A branch vent that serves two or more traps and extends from in front of the last fixture connection of a horizontal branch to the vent stack. (CISPI)
- VENT, COMMON:** Also called dual vent, is a vent connecting at the junction of two fixture drains and serving as a vent for both fixtures. (CISPI)
- VENT, CONTINUOUS:** A vent that is a continuation of and in a straight line with the drain to which it connects. A continuous vent is further designed by the angle which the drain and vent make with the horizontal at the point of connection; for example, vertical continuous waste-and-vent, 45° continuous waste-and-vent; and flat (small angle) continuous waste-and-vent. (CISPI)
- VENT, LOOP:** A vent from a single fixture or battery of fixtures which is connected into the same stack into which the fixtures discharge. If the loop vent serves more than one fixture, it is one type of circuit vent. (CISPI)
- VENT STACK:** A vertical vent pipe installed primarily for the purpose of providing circulation of air to and from any part of the drainage system. A vent stack or main vent is that part of a venting system to which circuit vents are connected. Branch vents, revents or individual

vents may be led to and connected with a vent stack. The foot of the vent stack may be connected either into a horizontal drainage branch or into a soil or waste stack. (CISPI)

VENT SYSTEM: A pipe or pipes installed to provide a flow of air to or from a drainage system or to provide a circulation of air within such system to protect trap seals from siphonage and back pressure. (CISPI)

VENT, WET: A vent which receives the discharge of wastes other than from water closets. (CISPI)

VENT, YOKE: A pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in the stacks. (CISPI)

VENTING, STACK: A method of venting a fixture through the soil and waste stack. (CISPI)

VENTS, INDIVIDUAL: Separate vents for each fixture. (CISPI)

WASTE: The discharge from any fixture, appliance or appurtenance in connection with the plumbing system, which does not contain fecal matter. For example, the liquid from a lavatory, a tub, a sink or drinking fountain is referred to as waste. (CISPI)

- ACCESSIBLE:** Having access thereto but which first may require the removal of an access panel, door or similar obstruction. "Readily accessible" means direct access without the necessity of removing or moving any panel, door or similar obstruction. (NSPC)
- AIR BREAK (DRAINAGE SYSTEM):** A piping arrangement in which a drain from a fixture, appliance or device discharges indirectly into a fixture, receptacle or interceptor at a point below the flood level rim of the receptacle so installed as to prevent backflow or siphonage. (NSPC)
- AIR GAP (DRAINAGE SYSTEM):** The unobstructed vertical distance through the free atmosphere between the outlet of waste pipe and the flood level rim of the receptacle into which it is discharging. (NSPC)
- AIR GAP (WATER DISTRIBUTION SYSTEM):** The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture or other device and the flood level rim of the receptacle. (NSPC)
- AREA DRAIN:** A receptacle designed to collect surface or storm water from an open area. (NSPC)
- ASPIRATOR:** A fitting or device supplied with water or other fluid under positive pressure which passes through an integral orifice or "constriction" causing a vacuum. (NSPC)
- AUTOPSY TABLE:** A fixture or table used for the postmortem examination of a body. (NSPC)
- BACKFLOW:** The flow of water or other liquids or mixtures or substances into the distributing pipes of a potable supply of water from any source or sources other than its intended source. Back-siphonage is one type of backflow. (NSPC)
- BACKFLOW CONNECTION:** Any arrangement whereby backflow can occur. (NSPC)
- BACKFLOW PREVENTER:** A device or means to prevent backflow. (NSPC)
- BACKFLOW PREVENTER, REDUCED PRESSURE ZONE TYPE:** An assembly of differential valves and check valves including an automatically opened spillage port to the atmosphere. (NSPC)
- BACK-SIPHONAGE:** The flowing back of used, contaminated or polluted water from a plumbing fixture or vessel or other sources into a potable water supply pipe duct due to a negative pressure in such pipe. (NSPC)
- BACK WATER VALVE:** A device installed in a drain pipe to prevent backflow. (NSPC)
- BAROMETRIC LOOP:** A loop of pipe rising approximately 35 feet, at its topmost point, above the highest fixture it supplies. (NSPC)
- BATTERY OF FIXTURES:** Any group of two or more similar adjacent fixtures which discharge into a common horizontal waste or soil branch. (NSPC)
- BEDPAN STEAMER:** A fixture used for scalding bedpans or urinals by direct application of steam. (NSPC)
- BEDPAN WASHER:** A fixture designed to wash bedpans and to flush the contents into the soil drainage system. It may also provide for steaming the utensils with steam or hot water. (NSPC)
- BEDPAN WASHER HOSE:** A device supplied with hot and cold water and located adjacent to a water closet or clinic sink to be used for cleansing bedpans. (NSPC)
- BOILER BLOW-OFF:** An outlet on a boiler to permit emptying or discharge of sediment. (NSPC)
- BOILER BLOW-OFF TANK:** A vessel designed to receive the discharge from a boiler blow-off outlet and to cool the discharge to a temperature which permits its safe discharge to the drainage system. (NSPC)
- BRANCH:** Any part of the piping system other than a riser, main or stack. (NSPC)
- BRANCH, FIXTURE:** See "Fixture Branch" (NSPC)
- BRANCH, HORIZONTAL:** See "Horizontal Branch" (NSPC)
- BRANCH INTERVAL:** A distance along a soil or waste stack corresponding in general to a story height, but in no case less than 8 feet, within which the horizontal branches from one floor or story of a building are connected to the stack. (NSPC)
- BRANCH VENT:** A vent connecting one or more individual vents with a vent stack or stack vent. (NSPC)
- BUILDING DRAIN:** That part of the lowest piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning 3 feet outside the building wall. (NSPC)
- BUILDING DRAIN - COMBINED:** A building drain which conveys both sewage and storm water or other drainage. (NSPC)
- BUILDING DRAIN - SANITARY:** A building drain which conveys sewage only. (NSPC)
- BUILDING DRAIN - STORM:** A building drain which conveys storm water or other drainage but no sewage. (NSPC)

- BUILDING SEWER:** That part of the drainage system which extends from the end of the building drain and conveys its discharge to a public sewer, private sewer, individual sewage-disposal system, or other point of disposal. (NSPC)
- BUILDING SEWER - COMBINED:** A building sewer which conveys both sewage and storm water or other drainage. (NSPC)
- BUILDING SEWER - SANITARY:** A building sewer which conveys sewage only. (NSPC)
- BUILDING SEWER - STORM:** A building sewer which conveys storm water or other drainage but no sewage. (NSPC)
- BUILDING SUBDRAIN:** That portion of a drainage system which does not drain by gravity into the building sewer. (NSPC)
- BUILDING TRAP:** A device, fitting or assembly of fittings installed in the building drain to prevent circulation of air between the drainage system of the building and the building sewer. (NSPC)
- CESSPOOL:** A lined and covered excavation in the ground which receives the discharge of domestic sewage or other organic wastes from a drainage system, so designed as to retain the organic matter and solids, but permitting the liquids to seep through the bottom and sides. (NSPC)
- CIRCUIT VENT:** A branch vent that serves two or more traps and extends from the downstream side of the highest fixture connection of a horizontal branch to the vent stack. (NSPC)
- CLEAR WATER WASTE:** Cooling water and condensate drainage from refrigeration, and air conditioning equipment; cooled condensate from steam heating systems; cooled boiler blow-down water; waste water drainage from equipment rooms and other areas where water is used without an appreciable addition of oil, gasoline, solvent, acid, etc., and treated effluent in which impurities have been reduced below a minimum concentration considered harmful. (NSPC)
- CLINIC SINK (BEDPAN HOPPER):** A sink designed primarily to receive wastes from bedpans provided with a flush rim, integral trap with a visible trap seal, having the same flushing and cleansing characteristics as a water closet. (NSPC)
- COMBINATION FIXTURE:** A fixture combining one sink and laundry tray or a two or three-compartment sink or laundry tray in one unit. (NSPC)
- COMBINED BUILDING DRAIN:** See "Building Drain - Combined". (NSPC)
- COMBINED BUILDING SEWER:** See "Building Sewer - Combined" (NSPC)
- COMBINATION WASTE AND VENT SYSTEM:** A specially designed system of waste piping embodying the horizontal wet venting of one or more, sinks or floor drains by means of a common waste and vent pipe adequately sized to provide free movement of air above the flow line of the drain. (NSPC)
- COMMON VENT:** A vent connected at a common connection of two fixture drains and serving as a vent for both fixtures. (NSPC)
- CONDUCTOR:** The water conductor from the roof to the building storm drain, combined building sewer, or other means of disposal and located inside of the building. (NSPC)
- CONTINUOUS VENT:** A vertical vent that is a continuation of the drain to which it connects. (NSPC)
- CONTINUOUS WASTE:** A drain from two or more fixtures connected to a single trap. (NSPC)
- CRITICAL LEVEL:** The critical level marking on a backflow prevention device or vacuum breaker is a point established by the manufacturer and usually stamped on the device by the manufacturer which determines the minimum elevation above the flood level rim of the fixture or receptacle served at which the device may be installed. When a backflow prevention device does not bear a critical level marking, the bottom of the vacuum breaker, combination valve, or the bottom of any approved device shall constitute the critical level. (NSPC)
- CROSS CONNECTION:** Any connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other either water of unknown or questionable safety or steam, gas, or chemical whereby there may be a flow from one system to the other, the direction of flow depending on the pressure differential between the two systems. (See Backflow and Back-Siphonage). (NSPC)
- DEAD END:** A branch leading from a soil, waste or vent pipe, building drain, or building sewer, and terminating at a developed length of 2 feet or more by means of a plug, cap or other closed fitting. (NSPC)
- DEVELOPED LENGTH:** The length of a pipe line measured along the centerline of the pipe and fittings. (NSPC)
- DIAMETER:** The nominal diameter as designated commercially. (NSPC)
- DOUBLE OFFSET:** Two changes of direction installed in succession or series in a continuous pipe. (NSPC)

- DOWNSPOUT:** The rainleader from the roof to the building storm drain, combined building sewer, or other means of disposal and located outside the building. (NSPC)
- DOMESTIC SEWAGE:** The water-borne wastes derived from ordinary living processes. (NSPC)
- DRAIN:** Any pipe which carries waste water or water-borne wastes in a building drainage system. (NSPC)
- DRAINAGE PIPE:** See "Drainage System". (NSPC)
- DRAINAGE SYSTEM:** Includes all the piping, within public or private premises, which conveys sewage, rain water or other liquid wastes to a point of disposal. It does not include the mains of a public sewer system or private or public sewage-treatment or disposal plant. (NSPC)
- DRAINAGE SYSTEM, BUILDING GRAVITY:** A drainage system which drains by gravity into the building sewer. (NSPC)
- DRAINAGE SYSTEM, SUB-BUILDING:** See "Building Subdrain". (NSPC)
- DRY WELL:** See "Leaching Well". (NSPC)
- DUAL VENT:** See "Common Vent". (NSPC)
- DWELLING UNIT - MULTIPLE:** A room or group of rooms forming a single habitable unit with facilities which are used or intended to be used for living, sleeping, cooking and eating; and whose sewer connections and water supply within its own premise are shared with one or more other dwelling units. (NSPC)
- DWELLING UNIT - SINGLE:** A room or group of rooms forming a single habitable unit with facilities which are used or intended to be used for living, sleeping, cooking and eating; and whose sewer connections and water supply are within its own premise separate from and completely independent of any other dwelling. (NSPC)
- FIXTURE:** See "Plumbing Fixture". (NSPC)
- FIXTURE BRANCH:** A pipe connecting several fixtures. (NSPC)
- FIXTURE DRAIN:** The drain from the trap of a fixture to the junction of that drain with any other drain pipe. (NSPC)
- FIXTURE SUPPLY:** The water supply pipe connecting a fixture to a branch water supply pipe or directly to a main water supply pipe. (NSPC)
- FIXTURE UNIT (DRAINAGE - d.f.u.):** A measure of the probable discharge into the drainage system by various types of plumbing fixtures. The drainage fixture-unit value for a particular fixture depends on its volume rate of drainage discharge, on the time duration of a single supply operation, and on the average time between successive operations. (NSPC)
- FIXTURE UNIT (SUPPLY - s.f.u.):** A measure of the probable hydraulic demand on the water supply by various types of plumbing fixtures. The supply fixture-unit value for a particular fixture depends on its volume rate of supply, on the time duration of a single supply operation, and on the average time between successive operations. (NSPC)
- FLOOD LEVEL:** See "Flood Level Rim". (NSPC)
- FLOOD LEVEL RIM:** The edge of the receptacle form which water overflows. (NSPC)
- FLOODED:** The condition which results when the liquid in a container or receptacle rises to the flood-level rim. (NSPC)
- FLOW PRESSURE:** The pressure in the water supply pipe near the faucet or water outlet while the faucet or water outlet is wide-open and flowing. (NSPC)
- FLUSHING TYPE FLOOR DRAIN:** A floor drain which is equipped with an integral water supply, enabling flushing of the drain receptor and trap. (NSPC)
- FLUSH VALVE:** A device located at the bottom of a tank for flushing water closets and similar fixtures. (NSPC)
- FLUSHOMETER VALVE:** A device which discharges a predetermined quantity of water to fixtures for flushing purposes and is closed by direct water pressure. (NSPC)
- FROSTPROOF CLOSET:** A hopper with no water in the bowl and with the trap and water supply control valve located below frost line. (NSPC)
- GRADE:** The fall (slope) of a line of pipe in reference to a horizontal plane. In drainage it is usually expressed as the fall in a fraction of an inch per foot length of pipe. (NSPC)
- GREASE INTERCEPTOR:** See "Interceptor". (NSPC)
- GREASE TRAP:** See "Interceptor". (NSPC)
- GROUND WATER:** Subsurface water occupying the zone of saturation.
- A. Confined Ground Water--A body of ground water overlain by material sufficiently impervious to sever free hydraulic connection with overlying ground water.
- B. Free Ground Water--Ground water in the zone of saturation extending down to the first impervious barrier. (NSPC)
- HANGERS:** See "Supports". (NSPC)

- HORIZONTAL BRANCH DRAIN:** A drain branch pipe extending laterally from a soil or waste stack or building drain, with or without vertical sections or branches, which receives the discharge from one or more fixture drains and conducts it to the soil or waste stack or to the building drain. (NSPC)
- HORIZONTAL PIPE:** Any pipe or fitting which makes an angle of less than 45° with the horizontal. (NSPC)
- HOUSE DRAIN:** See "Building Drain". (NSPC)
- HOUSE SEWER:** See "Building Sewer". (NSPC)
- HOUSE TRAP:** See "Building Trap". (NSPC)
- INDIVIDUAL SEWAGE DISPOSAL SYSTEM:** A system for disposal of domestic sewage by means of a septic tank, cesspool or mechanical treatment, designed for use apart from a public sewer to serve a single establishment or building. (NSPC)
- INDIRECT WASTE PIPE:** A waste pipe which does not connect directly with the drainage system, but which discharges into the drainage system through an air break or air gap into a trap, fixture, receptor or interceptor. (NSPC)
- INDIVIDUAL VENT:** A pipe installed to vent a fixture drain. It connects with the vent system above the fixture served or terminates outside the building into the open air. (NSPC)
- INDIVIDUAL WATER SUPPLY:** A supply other than an approved public water supply which serves one or more families. (NSPC)
- INDUSTRIAL WASTES:** Liquid or liquid-borne wastes resulting from the processes employed in industrial and commercial establishments. (NSPC)
- INSANITARY:** Contrary to sanitary principles--injurious to health. (NSPC)
- INTERCEPTOR:** A device designed and installed so as to separate and retain deleterious, hazardous, or undesirable matter from normal wastes while permitting normal sewage or liquid wastes to discharge into the drainage system by gravity. (NSPC)
- INSTALLED:** Altered, changed or a new installation. (NSPC)
- LEACHING WELL or PIT:** A pit or receptacle having porous walls which permit the contents to seep into the ground.. (NSPC)
- LEADER:** An exterior vertical drainage pipe for conveying storm water from roof or gutter drains. (NSPC)
- LIQUID WASTE:** The discharge from any fixture, appliance, area or appurtenance, which does not contain human or animal waste matter. (NSPC)
- LOAD FACTOR:** The percentage of the total connected fixture unit flow which is likely to occur at any point in the drainage system. (NSPC)
- LOCAL VENTILATING PIPE:** A pipe on the fixture side of the trap through which vapor or foul air is removed from a fixture. (NSPC)
- LOOP VENT:** A circuit vent which loops back to connect with a stack vent instead of a vent stack. (NSPC)
- MAIN:** The principal pipe artery to which branches may be connected. (NSPC)
- MAIN SEWER:** See "Public Sewer". (NSPC)
- MAIN VENT:** The principal artery of the venting system to which vent branches may be connected. (NSPC)
- MULTIPLE DWELLING:** Building containing two or more dwelling units. (NSPC)
- NONPOTABLE WATER:** Water not safe for drinking or for personal or culinary use. (NSPC)
- OFFSET:** A combination of elbows or bends which brings one section of the pipe out of line but into a line parallel with the other section. (NSPC)
- OIL INTERCEPTOR:** See "Interceptor". (NSPC)
- PITCH:** See "Grade". (NSPC)
- PLUMBING SYSTEM:** Includes the water supply and distribution pipes, plumbing fixtures and traps; soil, waste and vent pipes, sanitary and storm drains and building sewers including their respective connections, devices and appurtenances to an approved point of disposal. (NSPC)
- POOL:** See "Swimming Pool". (NSPC)
- POTABLE WATER:** Water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming in its bacteriological and chemical quality to the requirements of the Public Health Service Drinking Water Standards or the regulations of the public health authority having jurisdiction. (NSPC)
- PRIVATE SEWER:** A sewer not directly controlled by public authority. (NSPC)
- PUBLIC SEWER:** A common sewer directly controlled by public authority. (NSPC)
- PUBLIC WATER MAIN:** A water supply pipe for public use controlled by public authority. (NSPC)

- RECEPTOR:** A fixture or device which receives the discharge from indirect waste pipes. (NSPC)
- RELIEF VENT:** An auxiliary vent which permits additional circulation of air in or between drainage and vent systems. (NSPC)
- RETURN OFFSET:** A double offset installed so as to return the pipe to its original alignment. (NSPC)
- REVENT PIPE:** See "Individual Vent". (NSPC)
- RIM:** An unobstructed open edge of a fixture. (NSPC)
- RISER:** A water supply pipe which extends vertically one full story or more to convey water to branches or to a group of fixtures. (NSPC)
- ROOF DRAIN:** A drain installed to receive water collecting on the surface of a roof and to discharge it into a leader or a conductor. (NSPC)
- ROUGHING-IN:** The installation of all parts of the plumbing system which can be completed prior to the installation of fixtures. This includes drainage, water supply, and vent piping, and the necessary fixture supports, or any fixtures that are built into the structure. (NSPC)
- SAND FILTER:** A treatment device or structure, constructed above or below the surface of the ground, for removing solid or colloidal material of a type that cannot be removed by sedimentation, from septic tank effluent. (NSPC)
- SAND INTERCEPTOR:** See "Interceptor". (NSPC)
- SAND TRAP:** See "Interceptor". (NSPC)
- SANITARY SEWER:** A sewer which carries sewage and excludes storm, surface and ground water. (NSPC)
- SEEPAGE WELL or PIT:** See "Leaching Well". (NSPC)
- SEPARATOR:** See "Interceptor". (NSPC)
- SEPTIC TANK:** A watertight receptacle which receives the discharge of a building sanitary drainage system or part thereof, and is designed and constructed so as to separate solids from the liquid, digest organic matter through a period of detention, and allow the liquids to discharge into the soil outside the tank through a system of open joint or perforated piping, or a seepage pit. (NSPC)
- SEWAGE:** Any liquid waste containing animal or vegetable matter in suspension or solution, and may include liquids containing chemicals in solution. (NSPC)
- SEWAGE EJECTORS:** A device for lifting sewage by entraining it in a high velocity jet of steam, air or water. (NSPC)
- SEWAGE PUMP:** A permanently installed mechanical device other than an ejector for removing sewage or liquid waste from a sump. (NSPC)
- SIDE VENT:** A vent connecting to the drain pipe through a fitting at an angle not greater than 45° to the vertical. (NSPC)
- SIZE OF PIPE AND TUBING:** See "Diameter". (NSPC)
- SLOPE:** See "Grade". (NSPC)
- SOIL PIPE:** A pipe which conveys sewage containing human or animal waste to the building drain or building sewer. (NSPC)
- SOIL VENT:** See "Stack Vent". (NSPC)
- SPECIAL WASTES:** Wastes which require special treatment before entry into the normal plumbing system. (NSPC)
- SPECIAL WASTE PIPE:** Pipes which convey special wastes. (NSPC)
- STACK:** A general term for any vertical line of soil, waste, vent or inside conductor piping. This does not include vertical fixture and vent branches that do not extend through the roof or that pass through not more than two stories before being reconnected to the vent stack or stack vent. (NSPC)
- STACK GROUP:** A group of fixtures located adjacent to the stack so that by means of proper fittings, vents may be reduced to a minimum. (NSPC)
- STACK VENT:** The extension of a soil or waste stack above the highest horizontal drain connected to the stack. (NSPC)
- STACK VENTING:** A method of venting a fixture or fixtures through the soil or waste stack. (NSPC)
- STERILIZER, BOILING TYPE:** A fixture (non-pressure type) used for boiling instruments, utensils, and/or other equipment (used for disinfection) and may be portable or connected to the plumbing system). (NSPC)
- STERILIZER INSTRUMENT:** See Sterilizer, Boiling Type". (NSPC)
- STERILIZER, PRESSURE, INSTRUMENT WASHER:** A fixture (pressure vessel) designed to both wash and sterilize instruments during the operating cycle of the fixture. (NSPC)
- STERILIZER, PRESSURE (AUTOCLAVE):** A fixture (pressure vessel) designed to use steam under pressure for sterilizing. See "Sterilizer, Boiling Type". (NSPC)

- STERILIZER VENT:** A separate pipe or stack, indirectly connected to the building drainage system at the lower terminal, which receives the vapors from nonpressure sterilizers, or the exhaust vapors from pressure sterilizers, and conducts the vapors directly to the outer air. Sometimes called vapor, steam, atmosphere or exhaust vent. (NSPC)
- STERILIZER, WATER:** Device for sterilizing water and storing sterile water. (NSPC)
- STILL:** Device used in distilling liquids. (NSPC)
- STORM DRAIN:** See "Building Storm Drain". (NSPC)
- STORM SEWER:** A sewer used for conveying rain water, surface water, condensate, cooling water, or similar liquid wastes. (NSPC)
- SUBSOIL DRAIN:** Drain which collects subsurface or seepage water and conveys it to a place of disposal. (NSPC)
- SUMP:** A tank or pit which receives sewage or liquid waste, located below the normal grade of the gravity system and which must be emptied by mechanical means. (NSPC)
- SUMP PUMP:** A permanently installed mechanical device other than an ejector for removing sewage or liquid waste from a sump. (NSPC)
- SUPPORTS:** Devices for supporting and securing pipe, fixtures and equipment. (NSPC)
- SWIMMING POOL:** Any structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing and having a depth of two feet or more at any point. (NSPC)
- TRAP:** A fitting or device which provides a liquid seal to prevent the emission of sewer gases without materially affecting the flow of sewage or waste water through it. (NSPC)
- TRAP ARM:** That portion of a fixture drain between a trap and its vent. (NSPC)
- TRAP PRIMER:** A device or system of piping to maintain a water seal in a trap. (NSPC)
- TRAP SEAL:** The vertical distance between the crown weir and the top of the dip of the trap. (NSPC)
- VACUUM:** Any pressure less than that exerted by the atmosphere. (NSPC)
- VACUUM BREAKER:** See "Backflow Preventer". (NSPC)
- VACUUM BREAKER, NONPRESSURE TYPE (ATMOSPHERIC):** A vacuum breaker which is not designed to be subject to static line pressure. (NSPC)
- VACUUM BREAKER, PRESSURE TYPE:** A vacuum breaker designed to operate under conditions of static line pressure. (NSPC)
- VACUUM RELIEF VALVE:** A device to prevent excessive vacuum in a pressure vessel. (NSPC)
- VENT PIPE:** Part of the vent system. (NSPC)
- VENT STACK:** A vertical vent pipe installed to provide circulation of air to and from the drainage system and which extends through one or more stories. (NSPC)
- VENT SYSTEM:** A pipe or pipes installed to provide a flow of air to or from a drainage system or to provide a circulation of air within such system to protect trap seals from siphonage and back pressure. (NSPC)
- VERTICAL PIPE:** Any pipe or fitting which makes an angle of 45° or less with the vertical. (NSPC)
- WALL HUNG WATER CLOSET:** A water closet installed in such a way that no part of the water closet touches the floor. (NSPC)
- WATER DISTRIBUTING PIPE:** A pipe within the building or on the premises which conveys water from the water-service pipe to the point of usage. (NSPC)
- WATER LIFTS:** See "Sewage Ejector". (NSPC)
- WATER MAIN:** A water supply pipe for public use. (NSPC)
- WATER OUTLET:** A discharge opening through which water is supplied to a fixture, into the atmosphere (except into an open tank which is part of the water supply system), to a boiler or heating system, to any devices or equipment requiring water to operate but which are not part of the plumbing system. (NSPC)
- WATER RISER PIPE:** See "Riser". (NSPC)
- WATER SERVICE PIPE:** The pipe from the water main or other source of potable water supply to the water distributing system of the building served. (NSPC)
- WATER SUPPLY SYSTEM:** The water service pipe, the water-distributing pipes, and the necessary connecting pipes, fittings and control valves and all appurtenances in or adjacent to the building or premises. (NSPC)
- WET VENT:** A vent which receives the discharge of wastes other than from water closets and kitchen sinks. (NSPC)
- YOKE VENT:** A pipe connecting upward from a soil or waste stack to a vent stack for the purpose of preventing pressure changes in the stack. (NSPC)