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CHAPTER 67

TERMINOLOGY

Glossary of Physical and Heating, Ventilating, Refrigerating and Air Conditioning Terms Used in the Text

absolute zero: the zero point on the absolute temperature scale, 459.69 degrees below the zero of the Fahrenheit scale, 273.16 degrees below the zero on the Centigrade scale.

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 is in contact, 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 the ethylene glycols are examples of liquid absorbents.

absorber: a device containing liquid for absorbing refrigerant vapor or other vapors. In an absorption system, that part of the low side used for absorbing refrigerant vapor.

absorption: a process whereby a material extracts one or more substances present in an atmosphere or mixture of gases or liquids; accompanied by physical change, chemical change, or both, of the material.

acceleration: the time rate of change of velocity, i.e., the derivative of velocity with respect to time.

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 deg latitude is 980.665 cm per second per second or 32.174 ft per second per second.

access door: door provided in a unit to permit inspection of the inside, as of plenum chambers.

accumulator: a storage chamber for low-side liquid refrigerant, also known as *surge drum, surge header*. Also, a pressure vessel whose volume is used in a refrigerant circuit to reduce pulsation.

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: an adjective descriptive of a process such that no heat is added to, or taken from, a substance or system undergoing the process.

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, activated carbon and activated alumina have this property.

adsorption: the action, associated with 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. Commercial adsorbent materials have enormous internal surfaces.

aeration: exposing a substance, or area, to air circulation.

aerosol: an assemblage of small particles, solid or liquid, suspended in air. The diameters of the particles may vary from 100 microns down 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 speaking, the air surrounding an object.

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 circulation: natural or imparted motion of air.

air cleaner: a device designed for the purpose of removing airborne impurities such a dusts, gases, vapors, fumes, and smokes. (Air cleaners include air washers, air filters, electrostatic precipitators, and charcoal filters.)

air conditioner: an assembly of equipment for the control of at least the first three items enumerated in the definition of *air conditioning*.

air conditioner, room: a room air conditioner is a factory-made encased assembly designed as a unit for mounting in a window, through a wall, or as a console. It is designed for free delivery of conditioned air to an enclosed space without ducts.

air conditioner, unitary: a unitary air conditioner consists of one or more factory-made assemblies which normally include an evaporator or cooling coil, a compressor and condenser combination, and may include a heating function as well; where such equipment is provided in more than one assembly, the separated assemblies are designed to be used together.

air conditioning: the process of treating air so as to control simultaneously its temperature, humidity, cleanliness, and distribution to meet the requirements of the conditioned space.

air-conditioning 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 means of a fan and a system of distributing ducts.

air-conditioning system, year-round: one which ventilates, heats and humidifies in winter and cools and dehumidifies in summer the spaces under consideration, and provides the desired degree of air motion and cleanliness. The system includes the following equipment, whether it is located within the structure served or external to it: the refrigerating system and the heat generating system; any piping systems used to convey the heating and cooling media to suitable heat transfer surfaces; pumps, accessories, automatic controls, and interrelated electrical work. The heat transfer portions of the system generally include, as required, preheaters, fans systems of distributing ducts, piping, and necessary means of manual or automatic control.

air cooler: a factory-encased assembly of elements whereby the temperature of air passing through the device is reduced.

air cooler, dry type: a forced circulation air cooler wherein heat transfer is not implemented by a liquid spray during the operating period.

air cooler, forced circulation: a cooler which includes a fan or a blower for positive air circulation.

air cooler, free delivery type: a cooler taking air from and discharging it directly to the space to be treated without any element external to the cooler imposing air resistance.

air cooler, natural convection: an air cooler depending upon natural convection for air circulation.

air cooler, pressure type: a cooler for use with one or more external elements which impose air resistance.

air cooler, spray type: a forced circulation air cooler wherein the coil surface capacity is augmented by a liquid spray during the period of operation.

air cooling: reduction in air temperature due to the abstraction of heat as a result of contact with a medium held at a temperature lower than that of the air. Cooling may be accompanied by moisture addition (evaporation), by moisture extraction (dehumidification), or by no change whatever of moisture content.

air diffuser: 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.

air, dry: air without contained water vapor; air only.

air, outdoor: air taken from outdoors and, therefore, not previously circulated through the system.

air, recirculated: return air passed through the conditioner before being again supplied to the conditioned space.

The general responsibility for this chapter is assigned to TC 1.16, Definition and Nomenclature.