

Grille: A perforated covering for an air inlet or outlet usually made of wire screen, pressed steel, cast-iron or plaster. (Grilles may be plain or ornamental.)

Heat: A form of energy generated by the transformation of some other form of energy, as by combustion, chemical action, or friction. [According to the molecular theory, heat consists of the kinetic and potential energy of the molecules of a substance. The addition of heat energy to a body increases the temperature or the kinetic energy of motion of its molecules (*sensible heat*) or increases their potential energy of position but does not increase the temperature, as when melting or boiling occurs (*latent heat*).]

Heat Capacity: The amount of heat (Btu or calories) required to raise the temperature of a body (of any mass and variety of parts) one degree (Fahrenheit or centigrade) at the mean temperature.

Heat Unit: In the foot-pound-second system, the British thermal unit (Btu); in the centimeter-gram-second system, the calorie (cal).

Heating Medium: A substance such as water, steam, air, electricity or furnace gas used to convey heat from the boiler, furnace or other source of heat or energy to the heating unit from which the heat is dissipated.

Heating Surface: The exterior surface of a heating unit. *Extended heating surface (or extended surface):* Heating surface having air on both sides and heated 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.

Heating Unit: A device which transmits heat from the heating medium to the air and surrounding objects having a temperature lower than its exterior surface temperature. (See Chapters 6 and 7.)

Horsepower: A unit to indicate the time rate of doing work equal to 550 ft-lb per second or 33,000 ft-lb per minute. (One horsepower = 745.8 watts.)

Hot Water Supply Boiler: A closed vessel in which water is heated, usually for domestic use.

Hot Water Heating System: A heating system in which water is used as the medium by which heat is carried through pipes from the boiler to the heating units.

Humidity: The water vapor (steam or moisture) mixed with the air. *Relative Humidity:* The ratio of the weight of moisture contained in a given volume of the mixture to the weight of moisture which the same volume of the mixture would hold at the same temperature, if saturated. Relative humidity is expressed as a percentage. Air is said to be saturated or to have a relative humidity of 100 per cent when it is mixed with the maximum possible amount of vapor at the given temperature. *Absolute Humidity:* The actual weight of water vapor contained in a given volume of a mixture of air and water vapor at the observed temperature.

Humidostat: A regulator which controls an operating medium such as air, electricity or water and which medium opens or closes a valve for controlling the humidity.

Hygrostat: Same as humidostat.

Insulation (heat): A material having a relatively high heat resistance per unit of thickness.

Latent Heat: See *heat*.

Mil-Inch: One one-thousandth of an inch.

Neutral Zone: The level within a room or building at which the pressure is exactly equal to the outside barometric pressure.

Oil Burner: A combination of devices for the preparation and combustion of oil fuel and air.

One-Pipe Supply Riser (Steam): A pipe which carries steam upward to a heating unit and which also carries the condensation from the heating unit in a direction opposite to the steam flow.

One-Pipe System (Hot water): A hot water system in which the water flows through more than one heating unit before it returns to the boiler, and consequently the heating units farthest from the boiler are supplied with cooler water than those near the boiler in the same circuit.

One-Pipe System (Steam): A steam heating system consisting of a main circuit in which the steam and condensate flow in the same pipe and usually in opposite directions. Ordinarily there is but one connection to each heating unit which must serve as both the supply and the return, although separate supply and return connections may be used.

Overhead System: Any steam or hot water system in which the supply main is above the heating units. (With a steam system the return must be below the heating units; with a water system, the return may be above the heating units.)

Panel Radiator: A heating unit placed on or flush with a flat wall surface and intended to function essentially as a radiator.

Panel Warming: A method of heating involving the installation of the heating units (pipe coils) within the wall, floor or ceiling of the room, so that the heating process takes place mainly by radiation from the wall, floor or ceiling surfaces to the objects in the room.

Plenum Chamber: An air compartment maintained under pressure and connected to one or more distributing ducts.

Prime Surface: See *heating surface*.

Pyrometer: A high temperature thermometer.

Radiation: The transmission of heat in a straight line through space.

Radiator: A heating unit located within the room or space to be heated and exposed to view. (A radiator transfers heat by radiation to objects "it can see" and by conduction to the surrounding air which in turn is circulated by natural convection; a so-called *radiator* is also a *convector* but the single term *radiator* has been established by long usage.) *Concealed Radiator:* See *convector*. *Indirect Radiator:* Obsolete.

Recessed Radiator: A heating unit set back into a wall recess but not enclosed.

Register: A grille with a built-in damper or shutter.

Return Mains: The pipes which return the heating medium from the heating units to the source of heat supply.

Reversed-Return System (Hot Water): A hot water heating system in which the water from several heating units is returned along paths