opening in proportion to the increase in pressure over the set pressure, depending on application.

safety valve: an automatic pressure-relieving device actuated by the static pressure upstream of the valve and characterized by full-opening pop action. It is used for gas or vapor service.

saturated air: air that contains the maximum amount of water vapor that it can hold at its temperature and pressure.

seal weld: a weld used primarily to prevent leakage. seam: the joint between two plates joined together.

secondary air: air for combustion supplied to the furnace to supplement the primary air.

setting: the construction surrounding the boiler and/or the tubes consisting of refractory, insulation, casing, lagging, or some combination of these.

smoke boxes: a chamber in a boiler where the smoke, etc., from the furnace is collected before going out at the chimney.

spontaneous combustion: ignition of combustible material without apparent cause.

stay: a tensile stress member to hold material or other members rigidly in position.

steam gauge: a gauge for indicating the pressure of steam.

stoichiometric combustion: the complete oxidation of all the combustible constituents of a fuel at zero excess air.

stop valve: a valve that is used to isolate a boiler from the other parts of the system.

stud: a projecting pin serving as a support or means of attachment.

thermal efficiency: the ratio of the heat absorbed by the water and steam in a boiler to the available heat in the fuel fired, expressed as a percent.

titrination: a method for determining volumetrically the concentration of a desired substance in solution by adding a standard solution of known volume and strength until the chemical reaction is completed as shown by a change in color of suitable indicator.

total air: the total quantity of air supplied to the fuel and products of combustion.

trap: a device installed in piping that is designed to prohibit the passage of steam but allow the passage of condensate and gases.

tube hole: a hole in a drum, header, or tubesheet to accommodate a tube.

tubesheet: a plate containing the tube holes.

vent: an opening in a vessel or other enclosed space for the removal of gas or other vapors.

viscosity: the measure of a fluid’s resistance to flow.

water column: a vertical tubular member connected at its top and bottom to the steam and water space, respectively, of a boiler, to which the water gauge, gauge cocks, and high- and low-water-level alarms may be connected.

water gauge: the gauge glass and its fittings for attachment.

water heater: a vessel in which potable water is heated by the combustion of fuel, by electricity, or by any other source, and withdrawn for external use.

water heater, lined: a water heater with a corrosion-resistant lining designed to heat potable water.

water heater, unlined: a water heater made from corrosion-resistant materials designed to heat potable water.

water level: the elevation of the surface of the water in a boiler.

zeolite: originally a group of natural minerals capable of removing calcium and magnesium ions from water and replacing them with sodium. The term has been broadened to include synthetic resins that similarly soften water by ion exchange.

water temperature, maximum: the maximum water temperature permissible in a completed boiler or water heater.