
APPENDIX C

GLOSSARY AND ABBREVIATIONS

- AA (arithmetic average)** A numerical measure of metal surface roughness.
- ABS** Acrylonitrile butadiene styrene.
- absorption** The soaking up of a gas or liquid into a solid substance.
- ac** Alternating current.
- acfm** Actual cubic feet per minute for compressed or vacuum air.
- actuator** A movable component of a valve that when operated, causes the closure element to open or close.
- adsorption** The condensation of gas or liquid onto the surface of a solid.
- AEC** Architect, engineer, and constructor.
- aerobic** Bacteria requiring free oxygen for their growth.
- aerosol** Particles, solid or liquid, suspended in air.
- aftercooler** In compressed-air service, the aftercooler is a device used to lower the temperature of the compressed air immediately after the compression process.
- AI** Aggressiveness index (a guideline parameter to find the corrosive tendency of potable water).
- air gap** An unobstructed separation between a source of potable water and any source of contamination.
- AISI** American Iron and Steel Institute.
- anaerobic** Bacteria living in the absence of free oxygen, deriving it instead from breaking down complex substances. Bacteria requiring no free oxygen for their growth.
- anchor** A pipe support that restrains a pipe against all movement.
- anion** A negatively charged atom attracted to an anode electrode.
- ANSI** American National Standards Institute.
- API** American Petroleum Institute.
- approach** A term, expressed in degrees Fahrenheit (°F), used for fluid system dryers to indicate how close the outlet temperature of the water being heated comes to, or approaches the fluid heating medium to the cooling medium.
- approved** Accepted for the intended purpose, as an appropriate design or for installation into a piping system, by a responsible code official or other agency having jurisdiction for a specific project.

APTE American pipe thread external.

APTI American pipe thread internal.

aquifer A water-bearing formation or stratum capable of storing or transmitting water in sufficient quantities to permit development.

areaway An enclosed excavated area below grade level open to the weather.

ASME American Society of Mechanical Engineers.

AST Above ground storage tank.

ASTM American Society for Testing and Materials.

ATC Automatic temperature control.

autoignition temperature The lowest temperature at which a material will ignite and sustain combustion in the absence of a spark or flame. This value is influenced by such factors as the size, shape, and material of the heated surface.

backfill Material placed from the pipe haunch up to grade.

backflow Any reversal of the flow of water from its intended direction.

back pressure Backflow caused by an increase of normal pressure.

backseating A part of a valve, the backseat is a second seat in the bonnet used in the fully open position to seal the valve stem against leakage into the packing. A bushing on the stem provides the mating surface.

back siphonage Backflow caused by a lowering of normal pressure.

backwater valve A commonly used term for a type of check valve used in a drainage system.

bearings Machine parts placed at various locations on the shaft of a pump to reduce friction and carry radial and thrust loads.

bedding That material in contact with the pipe that is beneath and up the haunches of a pipe.

BFP Backflow preventer.

bituminous Of or containing bitumen; as asphalt or tar.

block valve A commonly used term for a shut-off valve.

bonnet A valve component that provides a leakproof closure for the body through which the stem passes and is sealed.

booster hot water system A secondary water heating system used to heat water to a temperature higher than that of the primary water heating system.

branch A horizontal run of pipe not considered a house drain or stack.

branch interval The distance measured along the stack, within which horizontal drainage branches are connected to a drain stack. This distance is usually one story high, but never less than 8 ft.

branch vent A vent that connects one or more individual or common vents to a vent stack or a stack vent.

brazing A means of joining pipe where the filler metal holding the pipe together melts at a temperature higher than 940°F.

BT Bath tub.

Btu British thermal unit, which is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

building drain The lowest horizontal part of the drainage piping system, considered the principal pipe conveying sanitary effluent by gravity to a point outside the building.

building sewer The continuation of the house drain from a point outside the building wall to the actual connection to an adequate and approved point of disposal, such as a public sewer or private sewage disposal system.

building trap A trap installed on the house sewer to prevent the circulation of sewer gas between the building sewer and the building drain.

CAB Cellulose acetate butyrate (Celcon).

CAD Computer-aided design and/or drafting.

CAE Computer-aided engineering.

CAM Computer-aided manufacturing.

canopy A small roof protecting a window or entrance.

CAP College of American Pathologists.

carryover Water droplets in steam immediately downstream of a boiler.

casing (1) The stationary covering around the impeller of a pump that gives direction to the discharge and converts velocity energy into pressure energy. (2) When used in water wells, the casing is a thin-walled cylinder placed in the borehole of the well.

catch basin A receptacle designed to collect wastewater from the floor surface of an open structure unit.

cation A positively charged atom attracted to a cathode electrode.

cavitation A phenomenon of flowing water caused by the rapid formation and collapse of air cavities, which results in the pitting of surfaces on which they occur.

CB Catch basin (a site structure that admits storm water into the piping system with an integral storage space for catching and holding debris).

CDI Continuous deionization.

cf Cubic foot.

CFC Chlorofluorocarbon.

cfh Cubic feet per hour.

cfm Cubic feet per minute.

CFR Code of Federal Regulations.

cfs Cubic feet per second.

CGA Compressed Gas Association.

chemical waste Any substance that may cause harm to the sanitary piping system, treatment facility, or environment without being treated or neutralized prior to discharge into the sanitary drainage system.

cGMP Current good manufacturing practice.

CI Cast iron.

CII Chlorinated isobutene isoprene.

CIP Clean in place.

circuit vent A branch vent that serves two or more traps and extends from a connection to a drainage line in front of the last fixture to a connection with a vent stack.

city water A commonly used term for potable water.

CLA Centerline average.

class Designation given to pipe, flanges, and fittings to replace psi rating, e.g., class 150 instead of 150 psi.

cleanout A gas-tight, water-tight pipe fitting with a removable plug that is used to obtain access to the inside of a drainage pipe for cleaning or maintenance.

clean steam Steam that has been generated using additive-free feedwater or uncondensed WFI steam.

closure element A valve component that when moved, opens or closes to allow the passage of fluid through the valve.

CO Clean out.

CODP Clean out deck plate.

colloid A very small, electrically charged particle suspended in water.

combined drainage system A drainage system that combines sanitary effluent and storm water runoff in a single piped system.

common vent A single vent line serving two fixtures.

conductor Storm water piping inside of a building.

connected load The sum of the rated input of every device connected to the entire fuel gas system, expressed in either British thermal units or cubic feet per hour.

contaminant Any impurity or toxic substance that, when introduced into a potable water supply, will create a health hazard or threaten the well-being of a consumer.

continuous vent A vertical vent that is a continuation of the waste line from a fixture to which it is connected.

counter current A term used in heat exchanger design to indicate that the heating medium flows in the opposite direction to the fluid being heated.

coupling When referring to pumps, any device used to connect the driver to the shaft of a pump. When referring to a pipe, a coupling is a fitting that joins two pieces of pipe when continuing in a straight line.

CPE Chlorinated polyethylene.

CPI Chemical and petroleum industry.

CPVC Chlorinated polyvinyl chloride.

CR Chloroprene rubber (neoprene).

cross connection Any physical connection between a potable water system and any potential source of contamination not protected by an approved device specifically designed to prevent flow between the two.

cryogenic liquid A refrigerated liquid gas having a boiling point below -130°F (-90°C) at atmospheric pressure.

CS Carbon steel.

CSA Canadian Standards Institute.

CSP Chlorine sulphonyl polyethylene (Hypalon).

cu ft Cubic foot.

cycles of concentration In water treatment, this term indicates the number of times the dissolved solids concentration has increased as a result of evaporation comparing makeup water to condenser water.

dc Direct current.

DCV Double check valve (a means of backflow prevention).

deliquescent A material that changes state in the presence of water.

demand Estimated flow rate expected under specific operating conditions.

demand respirator An atmosphere-supplying respirator that admits respirable gas to the face piece only when a negative pressure is created by inhalation.

density The ratio of the weight of a substance to its volume.

desiccant material A material that easily adsorbs water vapor.

design point The specific point in the piping network where pipe size is calculated.

developed length The total length of a vent pipe measured along the centerline of that pipe, from point to point.

device Any appliance or piece of equipment utilizing fuel gas to produce light, heat, or heat energy.

dewpoint The temperature at which water in the air will start to condense on a surface.

DF Drinking fountain.

DFU Drainage fixture unit (used in plumbing systems to size sanitary drainage and vent lines).

DI Deionized, ductile iron.

D.I. Drainage inlet (a site structure that allows the entrance of storm water).

DIN Deutsches Institute für Normung (German Institute for Standardization).

direct fired A water heater whose primary heat source is an integral part of the water heater assembly.

disk The closure element of some types of valves.

dissociation The separation of compounds dissolved in water into ions.

dissolved gases Oxygen, carbon dioxide, and hydrogen sulfide that are released upon heating or pressure reduction within a water supply system.

dissolved mineral salts Commonly used as a measure of hardness, dissolved mineral salts are bicarbonates, sulfates, chlorides, and nitrates that form ion components when in solution. Positively charged ions are called cations; negatively charged ions are called anions.

dissolved organic materials Nonionic solids that form covalent bonds with water molecules.

diversity factor An estimate of the maximum probable simultaneous use of the connected devices, outlets, or equipment; expressed either as a decimal or percentage.

DN Nominal dimension used for conversion of inch/pound system to SI units.

domestic water Potable water primarily intended for direct human use, such as that supplied to plumbing fixtures.

DOT Department of Transportation.

downspout A vertical pipe attached to gutters installed on the outside of a building.

DR Dimensional ratio.

drain A receptacle for the collection and removal of storm water that accumulates on surfaces exposed to the weather and flows into the storm water drainage piping network.

drawdown The distance between the static level and the dynamic level in a water well.

dry gas When used in reference to fuel gas, it is a gas having a moisture and hydrocarbon dewpoint below any normal temperature to which the gas piping will be exposed.

dry return A condensate return that has the piping above the waterline of the boiler.

duration A commonly used term for time of concentration in storm water drainage.

dust An aerosol consisting of mechanically produced solid particles derived from the breaking up of larger particles. Dusts generally have a larger particle size when compared to fumes.

duty cycle The actual amount of time that a device is in use during a measured period of time; generally expressed as a percent.

dynamic water level The elevation to which water in a well falls during pumping at a given flow rate.

earth load The weight of all earth backfill over the pipe.

ECTFE Ethylenechlorotrifluoroethylene.

EDR Equivalent direct radiation; expressed in square feet [the heat output of 240 Btu/h (70.3 W) from a device when filled with steam at 215°F (102°C) (1 psig) and surrounded with air at 70°F (21°C)].

effluent A general term describing any substance entering, or carried in, a drainage system.

elastomer An elastic rubberlike substance that stretches at low stress to at least twice its length at ambient temperature and returns to its approximate original shape upon release.

electrolyte A dissolved impurity in water.

electropolishing An electrochemical process that removes surface atoms from a metal surface for the purpose of producing a smooth finish.

enthalpy The total heat content above some base temperature.

EP Epoxide.

EPA Environmental Protection Agency.

EPDM Ethylene propylene-diene monomer.

EPM (1) Ethylene propylene terpolymer. (2) Equivalent parts per million.

equivalent run The actual measured length of a pipe including an additional allowance for resistance to fluid flow resulting from valves, fittings, devices, etc.

equivalent weight The weight, in pounds, of any element that could combine with one pound of hydrogen.

erosion The gradual destruction of material by abrasive action of liquids and/or solids.

ERW Electric resistance welded for manufacture of pipe.

ET Evapotranspiration.

evacuation type plumbing fixtures Plumbing fixtures, such as water closets and urinals, used to receive and discharge waterborne human bodily waste.

exchange capacity Expressed as kilograms of ions removed per cubic foot of resin before breakthrough.

exfiltration Liquid leaking out of a sewer.

exhaustion Depletion of ion exchange capacity to the point that an acceptable purity of product water can no longer be obtained, and regeneration becomes necessary.

exposure limit The maximum allowable concentration of a contaminant in the air to which an individual may be exposed. These allowable concentrations may be time-weighted averages, short-term limits, or ceiling limits.

FAD Free compressed air delivered.

FD Floor drain.

FDA Food and Drug Administration.

feedwater Water received directly from the supply source. A generic term used to describe the water intake into any device, system, or treatment process.

FH Fire hydrant.

filling density The percent ratio of the weight of gas in a container to the weight of water that the container will hold at 60°F (15.6°C).

filter A component used in respirators to remove solid or liquid aerosols from the inspired air.

filtration The use of a porous medium to retain solids while allowing a fluid to pass through the medium.

fitting A device used to connect one or more pipes together and/or to change the direction of a straight run of pipe.

fixture battery Any group of two or more fixtures that discharge into a common horizontal waste or soil branch.

flammable gas Any gas that will ignite easily and burn rapidly in the presence of air or an oxidizer.

flammable limits The minimum concentration of vapor in air or oxygen below which propagation of a flame does not occur on contact with a source of ignition, and the maximum proportion of vapor or gas in air above which propagation of a flame does not occur; usually expressed in terms of percentage by volume of gas or vapor in air. A change in temperature or pressure may vary the flammable limits of a gas.

flash arrestor A device that prevents any flame from going back into a storage tank or supply source.

flashback A phenomenon characterized by vapor ignition and flame travel back to the vapor source.

flash point The lowest temperature at which a liquid will give off enough flammable vapor at or near its surface to form an ignitable mixture with air.

floor drain A plumbing fixture that removes liquid effluent from the surface of floors and other areas.

flow rate The measurement of a volume of water over time, such as cubic feet per second.

fluid A substance, such as air or water, that takes the shape of its container.

FM Factory mutual.

FMA Free mineral acidity (the total amount of strong acid in effluent from a hydrogen exchanger).

FNPT Female national pipe thread.

force main A pumped sanitary line under pressure.

fpm Feet per minute.

fps Feet per second.

FPT Female pipe thread.

frame Any external part of a pump that assists in the mounting and support of the pump to the structure.

frequency The estimated number of years that elapse between the reoccurrence of storms with a specific intensity.

ft Foot.

FTU Formazin turbidity unit.

FU Fixture units (used for plumbing systems to size sanitary and potable water systems).

FV Flush valve.

fume Solid aerosols formed by condensation of a gas or vapor. Fumes generally have a smaller particle size when compared to dusts.

GAC Granulated activated charcoal.

gas A fluid that has neither independent shape nor volume and tends to expand indefinitely.

GC Gas chromatograph.

GLP Good laboratory practices.

GMAW Gas metal arc welding.

GMP Good manufacturing practices.

gpd Gallons per day.

gpg Grains per gallon.

gpm Gallons per minute.

grade The surface elevation of the ground.

granular material Coarse-grained noncohesive soil usually well graded. Consists mainly of sands and gravels. Compacts best by vibration.

gravel Coarse-grained soil of sizes $\frac{3}{8}$ to 3 in.

groundwater Water found below the water table. Groundwater is obtained from wells or other aquifers originating underground. This term also applies to streams that intercept an aquifer and are found on the surface of the ground.

grout A fluid mixture of cement, sand, and water that can be easily placed or pumped.

GTAW Gas tungsten arc welding.

guide A pipe support attachment that allows axial pipe movement only.

gutter An open horizontal channel used to collect storm water; usually made of sheet metal or wood and attached to the lowest point of a pitched roof.

hanger A pipe support consisting of an attachment to a structure, connection rod, or support and pipe; a device to secure the pipe to the connection.

haunch The portion of a sewer pipe below the spring line.

hazardous atmosphere An atmosphere that contains a contaminant(s) in excess of the exposure limit or is oxygen deficient.

HDPE High-density polyethylene.

header A pipe that does not diminish in size.

heat exchanger A device specifically designed and constructed to efficiently transfer heat energy from a hot fluid to a cooler fluid.

hood A respiratory inlet covering that completely covers the head and neck and that may also cover portions of the shoulders.

hot water Water at a temperature higher than ambient; established by generally accepted practice or code as being suitable for a specific application.

house drain A commonly used term for a building drain.

house sewer A commonly used term for a building sewer.

house trap A commonly used term for a building trap.

HVAC Heating, ventilating, and air-conditioning.

hydraulically remote Farthest from the source of supply in terms of total pressure lost through the entire water supply piping system.

hydrologic soil group Groups of soils that have the same runoff potential under similar storm conditions.

icfm Inlet cubic feet per minute for compressed air.

I.D. Inside diameter.

IE Invert elevation (an elevation taken at the inside bottom of a pipe).

IEEE Institute of Electrical and Electronic Engineers.

IIR Isobutene isoprene (butyl) rubber (an elastomer).

immiscible A liquid incapable of being dissolved in water, such as oil.

impeller A rotating part of a pump that imparts velocity to the liquid being pumped by means of centrifugal force.

imperviousness factor A number indicating the percent of rainfall available as runoff and not absorbed into the ground, absorbed by plants, left as puddles, or lost to evaporation during the rainstorm; expressed as a decimal.

impurity Any physical, chemical, or biological substance found in water making it undesirable for a specific use or degrading it as a source of potable water.

indirect fired A water heater whose primary heat source is generated remotely from the water heater.

indirect waste Any waste pipe not connected directly into the drainage system, that discharges through an air gap into a fixture, interceptor, trap, or drain.

individual vent A vent that connects directly to only one fixture and extends to either a branch vent or vent stack.

inert Materials that do not react with other materials at normal pressure and temperature.

infiltration When used in reference to gravity piping systems, it is groundwater leaking into a sewer. It is also a term used to describe the rate at which water travels deeper into soil.

inflow Surface water flowing into a manhole or collecting device.

influent Sewage flowing into a pipe, basin, or waste treatment plant.

initial backfill That material from the top bedding to 12 in above the pipe.

inlet filter For compressed-air service, an inlet filter is any filter installed on the inlet, or intake, to the air compressor.

inlet time A frequently used term for overland flow time.

inorganic Chemical substances of mineral origin.

intensity The rate at which rain falls as considered for design purposes; measured in inches per hour.

interceptor A device that separates, retains, and allows removal of specific harmful material suspended in the waste stream, while permitting the remaining acceptable liquid effluent to be discharged into the drainage system.

input The total amount of fuel gas required for proper operation at the inlet to a device.

invert The elevation of the inside bottom of a drainage pipe.

ion An atom or group of atoms that has an electrical charge.

ion exchange capacity A measure of the mass of ionic impurities that can be removed by a demineralizer before exhaustion occurs and regeneration becomes necessary. Ion exchange capacity is typically given as grains of calcium carbonate or grains of sodium chloride.

IP Inch pound, a reference to units of measurement where inches and pounds are used.

IPS Iron pipe size.

IQ (Installation qualification) Documented verification that all key aspects of equipment installation adhere to appropriate codes and approved design intentions, and that recommendations of the manufacturer have been considered.

ISA (1) Instrument Society of America. (2) Industry Standard Architecture.

ISO International Organization for Standardization.

JTU Jackson turbidity unit.

latent heat of vaporization The amount of heat required to change state from liquid to vapor or vice versa.

lav Lavatory.

lb Pound.

LDR A single labor, delivery, and recovery room in a hospital.

LDRP A single labor, delivery, recovery, and postpartum room in a hospital.

leader A vertical pipe carrying storm water either inside or outside the building.

leakage When used in reference to water treatment systems, *leakage* is the presence of undesired ions in the final treated water.

LEL Lower explosive limit. The lowest percent of a gas mixture in air that will allow an explosion to occur under normal temperature and pressure conditions.

LFL Lower flammability limit. The lowest percent of a gas mixture in air that will support combustion under normal temperature and pressure conditions.

liquefied compressed gas A gas that, under the charged pressure, is partially liquid at a temperature of 70°F (21.1°C).

loop vent A branch vent that serves two or more traps and extends from a point in front of the last fixture connection to a stack vent.

LPG Liquefied petroleum gas.

Lpm Liters per minute.

Lps Liters per second.

LSI Langelier saturation index (a measure of the tendency of water to form deposits of mineral scale and to corrode substances).

main vent A main vent is the principal vent of a building, remaining undiminished in size from the connection with the drainage system to its terminal.

manifold An assembly used to connect multiple supplies together.

maximum acceptable pressure The highest pressure that will not cause a nuisance or produce premature and accelerated damage to any component.

maximum building demand The estimated flow of water from the maximum fixture demand plus the highest water demand from various equipment throughout a building.

maximum fixture demand The greatest estimated flow of water resulting from the probable maximum simultaneous use of intermittently operated plumbing fixtures.

maximum LPG liquid tank capacity To allow space for propane vaporization, 85 percent is the maximum permitted filling level.

maximum probable demand The estimated maximum amount of fuel gas per unit of time that is expected to be in simultaneous use; expressed as either Btu or cubic feet per hour. This is the connected load multiplied by the diversity factor.

mechanical seal Used in place of a pump's stuffing box, this provides a mechanical assembly capable of preventing leakage around the shaft by means of very close tolerances of mating parts.

mg/L Milligrams per liter.

mgd Millions of gallons per day.

MH Manhole.

microorganisms Bacteria, algae, and other similar living microscopic organisms.

mill coated pipe Factory applied plastic coating for underground steel piping.

minimum acceptable pressure The lowest pressure permitting safe, efficient, and satisfactory operation of the most remote fixture, device, or component.

minimum LPG liquid tank capacity To allow time for resupply, 10 to 15 percent is recommended. Absolute low level is 5 percent.

mist An aerosol composed of liquid particles.

monitor A permanently mounted fire protection nozzle assembly, connected to a water main or FH and capable of being rotated and elevated.

monomer A chemical compound capable of reacting to form a polymer.

mpm Meters per minute.

mps Meters per second.

MPT Male pipe thread.

MSDS Material safety and data sheet.

MTBF Mean time between failures.

MW Molecular weight.

NACE National Association of Corrosion Engineers.

NBS National Bureau of Standards.

NC Normally closed.

NCCLS National Committee for Clinical Laboratory Standards.

NEMA National Electrical Manufacturers Association.

NF National Formulary.

NFPA National Fire Protection Association.

NG Natural gas.

NO Normally open.

normal pressure The design or expected force per unit area at any point in a water system; usually expressed as pounds per square inch.

NTP Normal temperature and pressure [68°F (20°C) and 14.7 psia (760 torr)].

NTU Nephelometric turbidity unit (a measure of turbidity in water).

NPS Nominal pipe size.

NPT National pipe thread.

O.C. On center.

O.D. Outside diameter.

OEM Original equipment manufacturer.

offset Any change in direction of a stack from vertical, or any change in direction of a horizontal drainage line.

operational qualification (OQ) Documented verification that systems and equipment perform as intended throughout the design or anticipated operating range.

OSHA Occupational Safety and Health Administration.

O.S. & Y. Outside screw and yoke.

output When used in reference to a gas appliance, the actual number of Btu's available to perform the intended function of the device; usually expressed as a percent of the input and taking into consideration the efficiency.

overflow A positive and fail-safe outlet for removal of liquids that have reached a predetermined height above a normally expected level.

overland flow time The time rainwater takes to travel on the ground from the farthest point of an outside area to a drain; measured in minutes.

oxidant A substance that can remove electrons from another substance (oxidize it) and is itself reduced (gains electrons).

oxidizers A nonflammable gas that supports combustion.

P & ID Piping and instrumentation diagram.

PA Polyamide.

packing Material inserted into a pump's stuffing box that surrounds the shaft and prevents liquid from forcing its way past the shaft. For a valve, it is the material that surrounds the stem and prevents liquid from forcing its way past the stem to the outside of the valve.

PAEK Polyaryl etherketone.

PB Polybutylene.

PC Polycarbonate.

PCTFE Polychlorotrifluoroethylene (Halar).

PCU Platinum cobalt unit.

PE Polyethylene.

PEEK Polyether etherketone.

PET Potential evapotranspiration.

Percolation The rate at which water travels deeper into soil. Also known as infiltration.

perm An abbreviation for permeance, the transmission of water vapor through insulation.

PF Phenol-formaldehyde.

PFA Perfluoroalkoxy.

Ph A measurement of the hydrogen ion concentration of a solution.

pig A flexible device propelled through pipelines to clean the interior.

piping network The entire piping system, including all pipe, valves, and appurtenances from the source of supply or connection to the farthest fixture, device, or point of disposal.

PIR Polyisopropene (an elastomer).

pitch The distance that one end of a pipe is lower than the other end; expressed as a percent of the total length of run or as a dimension, in inches or feet per foot of run.

PIV Poat indicator valve.

plastic A material whose essential ingredient is an organic substance of large molecular weight, which at some stage in its manufacture can be shaped by flow and becomes solid in its finished state.

plug The closure element for some types of valves.

plumbing fixture Any approved receptacle or device specifically designed to receive human or other waterborne waste and discharge that waste directly into the sanitary drainage system, often with the addition of water.

POE Point of entry.

point-of-use heater Locations immediately adjacent to the fixtures and/or equipment requiring hot water, as compared to a remote, centralized location serving an entire building, area, or project.

polishing The process by which the purity of water pretreated by reverse osmosis, deionization, or distillation, is increased by the addition of posttreatment equipment either immediately after the central system or at the points of use. When referring to metal finishing, it is a process that produces a smooth surface.

pollutant Any nontoxic impurity that may create a moderate or minor hazard to the water supply.

polymer A material consisting of molecules with a high molecular weight.

polymerization A chemical reaction by which a large number of monomer molecules are linked together to form a chainlike molecule or polymer. When two or more monomers are used, the process is called *copolymerization*.

por The space between individual particles of a soil.

positive pressure respirator A respirator in which the pressure inside the respiratory inlet covering is normally positive with respect to the ambient air pressure.

potable water Water of sufficient purity to meet standards established as being fit for human consumption.

powered air purifying respirator An air purifying respirator that uses a blower to force the ambient atmosphere through air purifying elements to the inlet covering.

PP Polypropylene.

ppb Parts per billion.

PPH Pounds per hour.

ppm Parts per million.

PPS Polyphenylene sulfide.

ppt Parts per thousand.

PQ (Performance qualification) Replacing the term validation, PQ is documented testing confirming that a system or equipment will achieve the desired and intended results.

P.R. Pressure rated.

pressure demand respirator A positive pressure, atmosphere supplying respirator that admits respirable gas when the positive pressure is reduced inside the face piece by inhalation.

pressure zone A water distribution system within any area of a building having a common source of water supply or pressure origin.

product water Purified water obtained with any one of several treatment technologies or obtained from a system employing a combination of treatment techniques.

PRV Pressure reducing valve, pressure regulating valve, pressure relief valve.

psi Pounds per square inch.

psia Pounds per square inch, absolute.

psig Pounds per square inch, gauge.

PSM An arbitrary designation for plastic piping products having certain dimensional characteristics unique to a very specific product.

PTFE Polytetrafluoroethylene (Teflon).

pure steam Pyrogen-free steam that is generated from additive-free feedwater.

PVC Polyvinyl chloride.

PVDC Polyvinylidene chloride.

PVDF Polyvinylidene fluoride.

pyrophoric A substance that will spontaneously ignite upon contact with air under normal pressure and temperature.

QC Quality control.

R & D Research and development.

RA Roughness average (a numerical measure of pipe wall roughness).

rainfall intensity The rate of rainfall measured in inches per hour.

rate of rainfall A commonly used term for rainfall intensity.

raw water Water used as the intake to any device, equipment, or treatment process. This term is generally used to describe water obtained from a natural source such as a river, lake, or well; it is also used to describe water received directly from the supply source.

recovery rate The amount of water capable of being heated to the design temperature per unit of time in a water heater.

RD Roof drain.

regenerable deionizer A water-purification system including ion-exchange resin, piping, valving, and controls to permit chemical flush of the resin bed for the purpose of reactivating the resin upon exhaustion.

regeneration The process by which the cation resin is reactivated with acid and the anion resin reactivated with a caustic substance, thereby permitting reuse of ion-exchange resin for water purification.

regulator A device used to reduce a variable inlet pressure to a constant outlet pressure under variable flow conditions.

relative humidity The amount of water vapor actually present in air; expressed as a percent of the amount of water capable of being present when the air is saturated.

relief vent An auxiliary vent that connects the vent stack to the soil or waste stack in multistory buildings and that is used to equalize pressure between them. This connection will occur at offsets and at set vertical intervals determined by code.

required pressure The minimum pressure necessary for satisfactory operation of any device.

residual water pressure The pressure of water available in a piping system when water is flowing at a referenced flow rate.

resin, anion A beaded, insoluble polymer, normally of styrene, chemically activated to exchange negatively charged ions.

resin, cation A beaded, insoluble polymer, normally of styrene, chemically activated to exchange positively charged ions.

resin, scavenger A highly porous (macroreticular) resin that is used for removing organic or colloidal material. An anion resin, which can be chemically regenerated, is most often used for organic removal in a pretreatment application or for post-DI colloid removal in ultrapure system applications. In addition to its unique adsorptive properties, the resin retains ion exchange capability.

respirator A personal device designed to protect the wearer from the inhalation of hazardous atmospheres.

return period A commonly used term for frequency. The statistical period of years that must elapse to produce the most severe design storm once in that period of time.

revent Another name for an individual vent.

RH Relative humidity.

RI (Ryzner stability index) An empirical description of the scale-forming tendencies of water.

riprap Rough stone of various sizes placed irregularly to prevent scouring or erosion by water or debris.

RMS Root mean square (a numerical measure of pipe wall roughness).

RO Reverse osmosis.

RPZ BFP Reduced pressure zone backflow preventer.

RQ Roughness quotient (a numerical measure of pipe wall roughness).

runout A commonly used term for the horizontal portion of a line directly connected to a vertical pipe at its lowest level.

safe yield In a water well, safe yield is the quantity of water that can be withdrawn annually without the ultimate depletion of the aquifer.

sanitary When used for plumbing, denotes a system or component intended to convey any effluent containing bodily waste. When used for pharmaceutical work, denotes a clean or sterile system or component.

sanitization The removal of contaminants and the inhibiting of the agents that cause infection or disease.

scfm Standard cubic feet per minute for compressed and vacuum air.

scupper A penetration through a parapet above the roof level serving as an overflow.

SDI Silt density index (a measure of the fouling potential of a feedwater source).

SDR Standard dimensional ratio (used to find wall thickness for plastic pipe).

seat A valve component that provides a surface capable of sealing against the flow of fluids in a valve when contacted by a mating surface on the disk. The seat is attached to the valve body.

secondary containment tank A tank having an inner and an outer wall with an interstitial space (annulus) between the walls and having means for monitoring the interstitial space for a leak. Underground secondary containment tanks are of either Type I or Type II construction:

Type I. A primary tank wrapped by an exterior shell that is in direct contact with it. The exterior shell might or might not wrap the 360° circumference of the primary tank.

Type II. A primary tank wrapped by an exterior shell that is physically separated from it by stand-offs and that wraps the full 360° circumference of the primary tank.

self-extinguishing The ability of a material to resist burning when the source of heat or flame that ignited it is removed.

separator Any filter intended to remove large volumes of a contaminant. Separates individual components of a soil such as sand, silt, and clay.

separates A term used to describe individual components of a soil.

service hot water Hot water intended for commercial, industrial, or domestic use within a facility.

SH Shower.

shaft A rotating pump member connecting the driver to the impeller that transmits power from one to the other.

shaft sleeve A cylindrical protection around the shaft of a pump where it passes through the stuffing box. It is not required when mechanical seals are used.

SI (International System of Units) System of metric units recommended for universal use.

sidewall area Vertical surfaces that contribute runoff to the storm water drainage system.

slope A commonly used term for pitch.

SMAW Shielded metal arc welding.

soil line Any drainage pipe that conveys human waste.

solder A filler metal for jointing pipe that melts at a temperature of less than 940°F.

solvent cement An adhesive that contains a chemical that dissolves or softens the surface being bonded so that the assembly, upon drying, becomes essentially one piece of the same plastic.

sorbent A material that is contained in a cartridge or canister and that removes specific gases and vapors from the inhaled air.

source water Water used as the intake to any device, equipment, or treatment process. Water received directly from the supply source.

specific conductance A measurement of the ability of a solution to allow the free flow of an electric current.

specific gravity As applied to fuel gas, it is the ratio of the weight of a given volume of gas to the same volume of air under the same conditions.

specific resistance A measure of the amount of electrolytes in water.

springline The horizontal centerline of a sewer pipe.

SS Stainless steel.

stack A vertical drainage line, usually more than three floors in height.

stack vent The extension of a soil or waste stack above the highest horizontal drainage connection to that stack. It is also the name of a method of venting using the stack as a branch vent connection.

standard proctor test A test for measuring the degree of compaction (density) of soil.

static water level The level to which water exists in a well under atmospheric conditions when the well is not being pumped.

static water pressure The pressure of water in a piping system during the time that no water is flowing.

stel Short term exposure limit, generally 15 minutes or less.

stem A movable component of a valve that connects the actuator to the closure element.

storm water Liquid effluent resulting from any form of precipitation, such as rain, snow, hail, or sleet.

stp Standard temperature and pressure.

street pressure system Used in water systems, a piping system supplied from a public water main, using only the pressure available in that main.

stuffing box The interior area of the valve between the stem and the bonnet that contains the packing.

sublimination The direct passage of a substance from solid to vapor without having an intermediate state, such as dry ice vaporizing into gaseous carbon dioxide.

suds pressure zone An area of a waste stack where the formation of soap suds could create a pressure higher than atmospheric pressure.

suds vent A method of venting where there is a suds pressure zone.

suspended solids Commonly called *turbidity*, it consists of insoluble particulate material, soluble material exceeding its solubility limits, and immiscible liquids such as oil and grease.

sustained yield In a water well, sustained yield is the maximum rate at which water can be withdrawn from an aquifer on a continuing basis for beneficial use without developing undesired results.

SWP Steam working pressure.

SWRO Spiral wound reverse osmosis membranes.

TDS Total dissolved solids.

TE Top elevation.

tee A fitting with the branch at a 90° angle to the run.

temperature cross When a liquid being heated has an outlet temperature that falls between the inlet and outlet temperature of the heating medium.

thermoplastic A plastic that is capable of repeated physical change and softening by heat and hardened by cooling and that while in the softened state, can be extruded or shaped by flow.

thermoset A plastic material that is cured by application of heat or chemical means into a substantially infusible and insoluble product that is not repeatable.

time in pipe The length of time storm water will take to reach one design point from another design point while inside the piping network.

time of concentration The length of time a rainstorm will persist for design purposes, calculated by adding the site storm water overland flow time to the time in pipe.

TLV Threshold limit value (the airborne concentration of substances that should never be exceeded, not even instantaneously).

TOC Total organic carbon.

total exchangeable ions Those ions capable of being removed from water by ion exchange.

toxic substance A commonly used term for a substance that will harm human tissue by contact or ingestion.

trap A device that maintains a water seal, preventing the passage of sewer gas, vermin, air, and odors originating from inside the drainage system while permitting the unrestricted passage of liquid waste into the drainage system.

trap arm That portion of the drain pipe between the trap and the vent.

TWA Time weighted average, usually an 8 hour day or 40 hour week.

two-bed A deionizer consisting of two vessels, one containing cation resin, the other containing anion resin.

UL Underwriters Laboratories.

ULF Ultra low flush [water closets requiring a low volume of water (1.6 gpm) for discharge into the sanitary drainage system in lieu of the 3.5 gpm currently the standard].

underground piping Piping in contact with the earth below grade.

UNS Unified Numbering System.

UR Urinal.

use factor The number of devices that may be used at the same time.

UST Underground storage tank.

UV Ultraviolet.

valence A measure of the chemical combining power of an atom or compound compared to that of a hydrogen atom.

validation *See* PQ.

valve body The housing for all of the internal working components of a valve; contains the mechanism for joining the valve to the piping system.

vapor The gaseous phase of matter that normally exists in a liquid or solid state at room temperature.

vapor pressure The pressure exerted by the vapor above a pure liquid when the two phases are in equilibrium. The value depends on the temperature of the system, but at any temperature it is independent of the amount of liquid present.

vent extension The height of the vent above the roof at its terminal.

vent header A single pipe at the highest level of a building connecting the top of vent stacks in order to penetrate the roof only once.

vent stack A vertical pipe, extending one or more stories and terminating in the outside air.

vent terminal The open air location where the end of the vent stack is placed, generally above the roof.

VOC Volatile organic compound.

V/V Volume per volume.

WAGD Waste anesthetic gas disposal.

WC Water closet.

wearing rings An easily replaceable component found on the interior of a pump casing, opposite the impeller.

well development The process that removes finer material from the natural formation around the well intake, enlarging it and having only larger gravel and stones around the well screen.

well points Devices used to remove groundwater from an excavation or trench.

well pump A pump used to bring well water in an aquifer to the surface.

wet return A condensate return that has the piping below the waterline of the boiler.

wet vent A vent line that may also serve as a drain pipe.

WFI Water for injection.

WFU Water fixture units (used in plumbing systems to size the potable water system).

WOG Water, oil, and gas working pressure.

working pressure The maximum allowable pressure for which a pipe or system is designed. Also referred to as maximum operating pressure.

W/W Weight per weight.

WWP Water working pressure.

wye Wye branch (a sewer fitting with the branch at a 30°, 45°, or 60° angle to the run).

yield In water wells, the yield is the minimum desired output of the well and the conditions under which the flow is desired.

zeolites Processed natural green-sand minerals with ion-exchange properties. In common usage, an outmoded word used to describe all ion-exchange materials used for water-softening purposes.