

Polyvinyl Chloride (PVC) Schedule 80 Industrial Pipe and Fittings

Scope:

This specification establishes the manufacturing requirements for PVC Schedule 80 piping components intended for use in industrial, pressure-rated, fluid-handling systems for applications at 140° F or less, where resistance to corrosion is of prime importance.

Materials:

Pipe and fittings shall be manufactured from a PVC compound that meets the requirements of Cell Classification 12454 polyvinyl chloride as outlined in ASTM D1784. PVC shall be gray in color. Pipe and fitting materials shall be specifically formulated with sufficient UV stabilizers to provide for long-term outdoor exposure with no deleterious effects.

Materials from which pipe and fittings are manufactured shall have been tested and approved for conveying potable water by NSF International.

Dimensions/Design (IPS Size):

Socket-end connections shall have diameters, lengths, and wall thicknesses as required by ASTM D 2467; taper pipe threaded-end connections shall have thread lengths, diameters, and configurations in conformance with ASTM D 2467.

Fittings shall be industrial, heavy-duty, hub style.

Flanges shall be either a one-piece solid or a two-piece Van Stone design that utilizes the tapered, serrated-face and full-face gasket technique for joining and are compatible with ASME B16.5 Class 150 metal flanges.

Unions shall have an O-ring seal and components interchangeable with true union valves for maximum system versatility.

Transition unions, unions intended for joining dissimilar materials, shall utilize components of the two dissimilar materials, joined with an O-ring to absorb the thermal-expansion coefficient differential.

Pipe shall be as prescribed by ASTM D 1785 for pressure-rated piping systems.

Pressure Ratings:

Socket fittings shall be rated at the same pressure as the corresponding size pipe prescribed by ASTM D 1785. Threaded fittings shall be rated at 50% of the pressure rating of the corresponding size pipe prescribed by ASTM D 1785.

Valves, unions, and flanges shall be rated at 150 psi for non-shock water service at 73° F and have a minimum burst requirement of 3.3 times the rated pressure.

Markings:

Fittings and pipe shall be clearly marked with the manufacturer's name or trademark, material designation, ASTM number or equivalent symbol indicating compliance with applicable standards, NSF International certification mark, NSF-pw, (verifying approval for the conveyance of potable water), and the country of manufacture.

Installation/Maintenance:

At the specifying engineer's option, the manufacturer shall provide, at no additional cost, on-site training for installation/maintenance personnel. Otherwise, installation shall be as specified by the manufacturer's printed instructions.

Chlorinated Polyvinyl Chloride (CPVC) Schedule 80 Industrial Pipe and Fittings

Scope:

This specification establishes the manufacturing requirements for CPVC Schedule 80 piping components intended for use in industrial, pressure-rated, fluid-handling systems for applications at 210° F or less, where resistance to corrosion at elevated temperatures is of prime importance.

Materials:

Rigid CPVC (chlorinated polyvinyl chloride) used in the manufacture of Schedule 80 piping components shall be Cell Classification 23447 as identified in ASTM D 1784. CPVC materials shall be light gray in color. Pipe and fitting materials shall be specifically formulated with sufficient UV stabilizers to provide for long-term outdoor exposure with no deleterious effects. CPVC material used to manufacture pipe and fittings shall be approved for the conveyance of potable water by a third-party certification agency.

Dimensions/Design (IPS Size):

Socket-end connections shall have diameters, lengths, and wall thicknesses as required by ASTM F 439; taper pipe threaded-end connections shall have thread lengths, diameters, and configurations in conformance with ASTM F 437.

Pipe shall have diameters and wall thicknesses in conformance with the requirements of ASTM F 441.

Fittings shall be industrial, heavy-duty, hub style.

Flanges shall be either a one-piece design or a two-piece Van Stone design that utilizes the tapered, serrated-face and full-face gasket technique for joining and are compatible with ASME B16.5 Class 150 metal flanges.

Unions shall have an O-ring seal and components interchangeable with true union valves for maximum system versatility.

Transition unions, unions intended for joining dissimilar materials, shall utilize components of the two dissimilar materials, joined with an elastomeric seal to absorb the thermal-expansion coefficient differential.

Pressure Ratings:

Socket fittings shall be rated at the same pressure as the corresponding size pipe prescribed by ASTM F 441. Threaded fittings shall be rated at 50% of the pressure rating as the corresponding size pipe prescribed by ASTM F 441.

Valves, unions, and flanges shall be rated at 150 psi for non-shock water service at 73° F, and have a minimum burst requirement of 3.3 times the rated pressure.

Markings:

Fittings and pipe shall be clearly marked with the manufacturer's name or trademark, material designation, ASTM number or equivalent symbol indicating compliance with applicable standards, NSF International certification mark, NSF-pw, (verifying approval for the conveyance of potable water), and the country of manufacture.

Installation/Maintenance:

At the specifying engineer's option, the manufacturer shall provide, at no additional cost, on-site training for installation/maintenance personnel. Otherwise, installation shall be as specified by the manufacturer's printed instructions.