
Standard Specification for Poly(Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter

AASHTO Designation: M 304-11 (2019)

Technical Subcommittee: 4b, Flexible and Metallic Pipe

Release: Group 2 (June)



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1. SCOPE

- 1.1. This specification covers poly(vinyl chloride) (PVC) profile wall perforated and nonperforated pipe and fittings, 100 to 1200 mm (4 to 48 in.) nominal inside diameter, for use in nonpressure storm drains, culverts, underdrains, and other subsurface drainage systems providing either soiltight or watertight joints.
- 1.2. Industrial waste disposal lines should be installed only with the specific approval of the governing code authority since chemicals not commonly found in drains and temperatures in excess of 60°C (140°F) may be encountered.
- 1.3. Pipe and fittings produced to this specification should be installed in accordance with ASTM D2321 and the manufacturer's recommendation.
- 1.4. *Units*—The values stated in SI units are to be regarded as standard. Within the text, the U.S. Customary units are shown in parentheses for informational purposes, and may not be exact equivalents.
- 1.5. The following precautionary caveat pertains only to the test method portion, Section 8, of this specification. *This standard does not purport to address the safety concerns associated with its use. It is the responsibility of whoever uses this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
 - T 341, Determination of Compression Capacity for Profile Wall Plastic Pipe by Stub Compression Loading
 - *AASHTO LRFD Bridge Construction Specifications*
- 2.2. *ASTM Standards:*
 - D618, Standard Practice for Conditioning Plastics for Testing
 - D883, Standard Terminology Relating to Plastics

- D1600, Standard Terminology for Abbreviated Terms Relating to Plastics
- D1784, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
- D2122, Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
- D2152, Standard Test Method for Adequacy of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
- D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
- D2412, Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
- D2444, Standard Practice for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
- D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- F412, Standard Terminology Relating to Plastic Piping Systems
- F477, Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- F1057, Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique

2.3. *Federal Standard:*

- Fed. Std. No. 29, CFR 1910.1200 OSHA Hazard Communication Standard; see also Permissible Exposure Limits—Annotated Tables, available at <https://www.osha.gov/dsg/annotated-pels/>

3. TERMINOLOGY

- 3.1. *General*—Definitions used in this specification are in accordance with definitions given in ASTM D883 and ASTM F412 unless otherwise indicated.
- 3.2. *profile wall pipe*—a pipe product consisting of an essentially smooth wall waterway braced with annular or helical projections or ribs on the outside of the pipe, or with annular or helical bracing between essentially smooth outer and inner walls (see Figure 1).