



Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems¹

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1. Scope*

1.1 This specification establishes requirements for polypropylene (PP) piping system components made to metric sizes and IPS schedule 80 sizes, and pressure rated for water service and distribution supply (see [Appendix X1](#)). Included are criteria for materials, workmanship, dimensions and tolerances, product tests, and marking for polypropylene (PP) piping system components such as pipe, fittings, valves, and manifolds.

1.2 The components governed by this specification shall be permitted for use in water service lines, hot-and-cold water distribution, hydronic heating, and irrigation systems.

1.3 The pipe and fittings produced under this specification shall be permitted to be used to transport industrial process fluids, effluents, slurries, municipal sewage, etc. The user shall consult the manufacturer to determine whether the material being transported is compatible with the polypropylene piping system and will not affect the service life beyond limits acceptable to the user.

1.4 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

[D792](#) Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

[D1238](#) Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
[D1505](#) Test Method for Density of Plastics by the Density-Gradient Technique
[D1598](#) Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
[D1600](#) Terminology for Abbreviated Terms Relating to Plastics
[D2122](#) Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
[D2749](#) Symbols for Dimensions of Plastic Pipe Fittings
[D3895](#) Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
[D4101](#) Specification for Polypropylene Injection and Extrusion Materials
[F412](#) Terminology Relating to Plastic Piping Systems
[F2023](#) Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Pipe, Tubing and Systems to Hot Chlorinated Water

2.2 International Organization for Standardization (ISO) Standards:

[ISO 3127](#) Thermoplastic Pipes—Determination of Resistance to External Blows—Round the Clock Method³
[ISO 4065](#) Thermoplastics Pipes—Universal Wall Thickness Table³
[ISO 9080](#) Plastics Piping and Ducting Systems—Determination of the Long-Term Hydrostatic Strength of Thermoplastics Materials in Pipe Form by Extrapolation³
[ISO 9393-2](#) Thermoplastics valves for industrial applications - Pressure test methods and requirements - Part 2: Test conditions and basic requirements³
[ISO 15874](#) Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)³
[ISO 15874-2](#) Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)—Part 2: Pipes³
[ISO 15874-3](#) Plastics Piping Systems for Hot and Cold Water Installations—Polypropylene (PP)—Part 3: Fittings³
[ISO 15874-5](#) Plastics piping systems for hot and cold water installations — Polypropylene (PP) —Part 5: Fitness for

¹ This specification is under the jurisdiction of ASTM Committee [F17](#) on Plastic Piping Systems and is the direct responsibility of Subcommittee [F17.61](#) on Water. Current edition approved Jan. 15, 2017. Published January 2017. Originally approved in 2004. Last previous edition approved in 2015 as F2389-15. DOI: 10.1520/F2389-17.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.

*A Summary of Changes section appears at the end of this standard