



Standard Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing¹

This standard is issued under the fixed designation F1948; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This specification covers requirements and test methods for the qualification of metallic mechanical fittings for use with outside diameter controlled thermoplastic gas distribution pipe and tubing as specified in Specification [D2513](#).

1.2 The test methods described are not intended to be routine quality control tests.

1.3 This specification covers the types of mechanical fittings described in [3.3](#).

1.4 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 The following safety hazards caveat pertains only to the test method portion, Section [7](#), of this specification. *This standard may involve hazardous material, operations and equipment. 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 limitations prior to use.*

1.6 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures), shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:²

[D638](#) Test Method for Tensile Properties of Plastics

[D1598](#) Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure

[D1600](#) Terminology for Abbreviated Terms Relating to Plastics

[D2513](#) Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings

[E515](#) Practice for Leaks Using Bubble Emission Techniques

[F412](#) Terminology Relating to Plastic Piping Systems

[F1588](#) Test Method for Constant Tensile Load Joint Test (CTLJT)

[F2785](#) Specification for Polyamide 12 Gas Pressure Pipe, Tubing, and Fittings

[F2897](#) Specification for Tracking and Traceability Encoding System of Natural Gas Distribution Components (Pipe, Tubing, Fittings, Valves, and Appurtenances)

[F2945](#) Specification for Polyamide 11 Gas Pressure Pipe, Tubing, and Fittings

2.2 ASME Standard:

[ASME B 31.8](#) Gas Transmission and Distribution Piping Systems³

2.3 Federal Specification:

[OPS Part 192 Title 49](#), Code of Federal Regulations⁴

2.4 Other Document:

[PPI TR-4](#) Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Pipe and Fitting Compounds⁵

3. Terminology

3.1 Definitions are in accordance with Definitions [F412](#) unless otherwise specified. Abbreviations are in accordance with Abbreviations [D1600](#) unless otherwise specified.

3.1.1 The gas industry terminology used in this specification is in accordance with ASME/ANSI B31.8 or United States CFR 49 Part 192 unless otherwise indicated.

3.1.2 The term “pipe” used herein refers to both pipe and tubing unless specifically stated otherwise. The term “fitting” refers to a mechanical connecting device as described in [3.2.5](#) and [3.2.7](#).

3.2 Definitions:

¹ This specification is under the jurisdiction of ASTM Committee [F17](#) on Plastic Piping Systems, and is the direct responsibility of Subcommittee [F17.60](#) on Gas.

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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 American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

⁴ Available from the Office of Pipeline Safety, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, S.W., Washington, DC, 20006-1301.

⁵ Available from Plastics Pipe Institute (PPI), 105 Decker Court, Suite 825, Irving, TX 75062, <http://www.plasticpipe.org>.