



Standard Specification for Polyamide 11 Gas Pressure Pipe, Tubing, and Fittings¹

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1. Scope*

1.1 This specification covers requirements and test methods for the characterization of polyamide 11 pipe, tubing, and fittings for use in fuel gas pipelines. The pipe and fittings covered by this specification are intended for use in the distribution and transmission of fuel gases.

1.1.1 This specification does not cover threaded pipe. Generic fusion guidelines are given in [Appendix X1](#). Design considerations are discussed in [Appendix X2](#). In-plant quality control programs are specified in [Annex A1](#).

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

1.3 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.

1.4 The following is an index of the annexes and appendixes in this specification:

Annexes	Subject
Annex A1	In-Plant Quality Control for sizes up to 12 in.
Annex A2	PA-11 Butt Fusion Fittings
Appendixes	Subject
Appendix X1	Butt Fusion Guidelines for PA-11 Piping
Appendix X2	Design Consideration

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 limitations prior to use.*

NOTE 1—Heat fusion joining of PA11 pipe and fittings meeting the requirements of this standard is limited to PA11 pipe and fittings meeting the requirements of this Standard. Heat Fusion joining of PA11 pipe and fittings meeting the requirements of this standard is not allowed to pipes and fittings made from any other thermoplastic materials (for example, PA12, PEs, PVCs, etc.).

2. Referenced Documents

2.1 ASTM Standards:²

- [D543 Practices for Evaluating the Resistance of Plastics to Chemical Reagents](#)
- [D618 Practice for Conditioning Plastics for Testing](#)
- [D638 Test Method for Tensile Properties of Plastics](#)
- [D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position](#)
- [D789 Test Methods for Determination of Solution Viscosities of Polyamide \(PA\)](#)
- [D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials](#)
- [D792 Test Methods for Density and Specific Gravity \(Relative Density\) of Plastics by Displacement](#)
- [D1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure](#)
- [D1599 Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings](#)
- [D1600 Terminology for Abbreviated Terms Relating to Plastics](#)
- [D1898 Practice for Sampling of Plastics \(Withdrawn 1998\)³](#)
- [D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings](#)
- [D2290 Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe](#)
- [D2774 Practice for Underground Installation of Thermoplastic Pressure Piping](#)
- [D2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products](#)
- [D3418 Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry](#)
- [D4066 Classification System for Nylon Injection and Extrusion Materials \(PA\)](#)
- [F412 Terminology Relating to Plastic Piping Systems](#)

¹ This test method 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 The last approved version of this historical standard is referenced on www.astm.org.