



Standard Specification for Electrofusion Type Polyamide-12 Fittings for Outside Diameter Controlled Polyamide-12 Pipe and Tubing for Gas Distribution¹

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1. Scope*

1.1 This specification covers polyamide- 12 electrofusion fittings for use with outside diameter-controlled polyamide- 12 pipe, covered by Specification [F2785](#). Requirements for materials, workmanship, and testing performance are included. Where applicable in this specification “pipe” shall mean “pipe” or “tubing.”

1.2 Polyamide 12 electrofusion fittings are intended for use in polyamide 12 systems only. As per the manufacturer’s recommendations, no cross fusion between PA12, PA11 and PE is permitted.

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 safety hazards caveat pertains only to the test method portion, Section 9, of this specification: *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.*

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

[D1599](#) Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings

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

[D2122](#) Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

[D4066](#) Classification System for Nylon Injection and Extrusion Materials (PA)

[D6779](#) Classification System for and Basis of Specification for Polyamide Molding and Extrusion Materials (PA)

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

[F905](#) Practice for Qualification of Polyethylene Saddle-Fused Joints

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

3. Terminology

3.1 Definitions are in accordance with Terminology [F412](#), and abbreviations are in accordance with Terminology [D1600](#), unless otherwise specified.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *electrofusion*—a heat fusion joining process where the heat source is an integral part of the fitting, such that when electric current is applied, heat is produced that melts and joins the plastics.

3.2.2 *fusion interface*—surface in the heat fusion process where the plastic materials of the products being joined bond together.

3.2.3 *fusion zone length*—total length of the melted material in the fitting cross-section under evaluation.

4. Materials and Manufacture

4.1 This specification covers fittings made from polyamide 12 (PA12) meeting the requirements for Group 4, Class 2, and Grade 3, (PA423 16) as prescribed in Specification [D6779](#) and [D4066](#).

4.2 *Rework Material*—Clean rework polyamide- 12 material of the same resin, free of any wire or contaminants generated from the fitting manufacturer’s own production, may be used by the same manufacturer, as long as the fittings produced conform to the requirements of this specification.

4.3 *Heating Mechanism*—The heat mechanism shall be of materials not detrimental to the performance of the fitting or the pipe to which it is intended to be joined.

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.