



Standard Practice for Specimens and Testing Conditions for Testing Polyethylene (PE) Pipe Butt Fusions Using Tensile and Hydrostatic Test Methods¹

This standard is issued under the fixed designation F2928; 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 practice provides standardized sample butt fusion preparation, conditioning, and testing conditions for tension testing of specimens prepared from sample butt fusion joints or hydrostatic tests of sample butt fusion joints in accordance with:

1.1.1 Test Method [D638](#), tension testing;

1.1.1.1 The preparation or use of tensile specimens other than Test Method [D638](#) Type I through Type V is beyond the scope of this practice.

1.2 Test Method [D1598](#), constant (sustained) hydraulic pressure testing;

1.3 Test Method [D1599](#), short-term hydraulic pressure testing.

1.4 It is not within the scope of this practice to include plastic materials other than polyethylene or other tests for butt fusions. The exclusion of other plastic materials and other tests does not imply that other plastic materials are suitable or unsuitable for butt fusion, or that the tests cited herein are adequate or inadequate for qualitative characterization and for research and development of butt fusion joints, or that other tests do not have lesser, equal, or greater utility for such purpose.

1.5 The evaluation of test results and the determination of test result evaluation criteria are not within the scope of this practice. This practice is limited to standardized butt fusion test specimens and testing conditions for the comparison of test data from multiple parties.

1.6 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.

1.7 In this standard, text in parentheses, notes in the body of the standard and appendices are informational and non-mandatory. For tables in the body of the standard, table notes are mandatory.

1.8 *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

[D618](#) Practice for Conditioning Plastics for Testing

[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

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

[F2620](#) Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

2.2 *PPI Standards:*³

[PPI2 TR-3](#) Policies and Procedures for Developing Hydrostatic Design Basis (HDB), Pressure Design Basis (PDB), Strength Design Basis (SDB), and Minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe

[PPI TR-33](#) Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe

3. Terminology

3.1 Definitions shall be in accordance with Terminology [F412](#), Test Method [D638](#), Test Method [D1598](#), and Test

¹ This practice is under the jurisdiction of ASTM Committee [F17](#) on Plastic Piping Systems and is the direct responsibility of Subcommittee [F17.40](#) on Test Methods.

Current edition approved Aug. 1, 2013. Published August 2013. DOI: 10.1520/F2928-13

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