Designation: F905 – 04 (Reapproved 2022)

An American National Standard

Standard Practice for Qualification of Polyethylene Saddle-Fused Joints[1]

This standard is issued under the fixed designation F905; 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 describes test criteria suitable for qualification of polyethylene saddle-fused joints. These tests may be conducted by suppliers or users to qualify saddle-fused joints in accordance with the requirements found in the Department of Transportation (DOT) Code of Federal Regulations (CFR) Title 49, Part 192.283. At the discretion of the end user, these tests may also be conducted by users to qualify personnel making saddle fusion joints per DOT CFR 49, Part 192.285.

1.2 The impact resistance test described is a nonstandard test. This is not the only test that may be used to qualify saddle fusion joints per DOT regulations.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are mathematical conversion to SI units that are provided for information only and are not considered standard.

1.4 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure

D2513 Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings

D2683 Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

D3261 Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

2.2 *DOT Document:*[3]

49 CFR, Part 192, Minimum Federal Safety Standards for Gaslines

2.3 *PPI Technical Report:*[4]

TR-41/2002 Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping

3. Significance and Use

3.1 The tests described in this practice are intended to present a method of satisfying the requirements of DOT CFR Title 49, Parts 192.283 and 192.285.

3.2 The sustained pressure test is intended to meet the burst test requirements of Part 192.283.

3.3 The impact resistance test is intended to meet the force requirements of Part 192.283 as follows:

3.3.1 ". . . For procedures intended for lateral pipe connections, subject a specimen joint made from pipe sections joined at right angles according to the (joining) procedure to a force on the lateral pipe until failure occurs in the specimen. If failure initiates outside the joint area, the (joining) procedure qualifies for use."

4. Materials

4.1 Pipe and fittings shall meet the requirements of Specification D2513.

4.2 The outlet portion of a saddle fitting shall conform to Specification D2683 for socket-fusion outlets or Specification D3261 for butt-fusion outlets.

4.3 The radius of the saddle portion of the fitting shall fit the pipe size to which it is intended to be joined. The surface contact area of the saddle portion of the fitting and the

[1] This practice 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 U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

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