



Standard Specification for Field-assembled Anodeless Riser Kits for Use on Outside Diameter Controlled Polyethylene and Polyamide-11 (PA11) Gas Distribution Pipe and Tubing¹

This standard is issued under the fixed designation F2509; 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^{*Scope}

1.1 This specification covers requirements and test methods for field-assembled anodeless riser kits for use with outside diameter controlled polyethylene and PA11 gas distribution pipe and tubing in sizes through 2 IPS as specified in Specification **D2513** polyethylene and Specification **F2945** for PA11.

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

1.3 This specification covers the types of field-assembled anodeless riser kits described in **3.3.2**.

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 not considered standard.

1.5 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.

1.6 *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 to determine the applicability of regulatory limitations prior to use.*

1.7 *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.*

<https://standards.iteh.ai/catalog/standards/astm/337f499c-c054-49dc-9567-ef4a871dc206/astm-f2509-152019>

2. Referenced Documents

2.1 *ASTM Standards:*²

A513/A513M Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing

A53/A53M Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

D638 Test Method for Tensile Properties of Plastics

D1600 Terminology for Abbreviated Terms Relating to Plastics

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

F412 Terminology Relating to Plastic Piping Systems

F1948 Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing

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

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. Current edition approved Nov. 1, 2015/Aug. 1, 2019. Published December 2015/August 2019. Originally approved in 2006. Last previous edition approved in 2012/2015 as **F2509/F2509 – 15**; ~~12~~. DOI: 10.1520/F2509-15.10.1520/F2509-15R19.

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.

***A Summary of Changes section appears at the end of this standard**



2.2 ASME Standards:³

ASME Boiler and Pressure Vessel Code³

ASME B1.20.1 Pipe Threads, General Purpose (Inch)⁴

B31.8 Gas Transmission and Distribution Piping Systems

2.3 Federal Regulations:⁴

United States CFR, Title 49, Part 192 Pipeline Safety Regulations

2.4 UL Standard:⁵

UL 360 Standard for Liquid-Tight Flexible Steel Conduit

3. Terminology

3.1 The gas industry terminology used in this specification is in accordance with ASME B31.8 or the United States CFR, Title 49, Part 192, unless otherwise indicated.

3.1.1 *pipe*—used herein refers to both “pipe” and “tubing” unless specifically stated otherwise.

3.1.2 *gas*—used herein refers to any fuel gas unless specifically stated otherwise.

3.2 *Definitions*—Definitions are in accordance with Terminology F412 unless otherwise specified. Abbreviations are in accordance with Terminology D1600 unless otherwise specified.

3.3 Definitions:

3.3.1 *anodeless riser, n*—a type of mechanical fitting which is designed to transport gas from underground polyethylene or PA11 piping to above-ground metallic piping. When properly installed, the polyethylene or PA11 piping is the gas carrier in the below ground portion of an anodeless riser and is protected by a metallic riser casing when it extends above ground level.

3.3.2 *field-assembled anodeless riser kit, n*—A kit containing all of the elements required to assemble an anodeless riser at the point of installation with the exception of the gas-carrying polyethylene or PA11 piping. It consists of, at a minimum, a riser casing and a riser adapter. These components may be either integrally combined or include provisions for attachment to one another at the point of installation.

3.3.3 *mechanical fitting, n*—a device for making a connection between piping components that employs physical force to develop a leak-tight seal, produce alignment, and provide resistance to pullout caused by axial loads.

3.3.4 *riser adapter, n*—a type of mechanical fitting used to join polyethylene and PA11 pipe to a metallic piping connection (typically a pipe thread). Riser adapters are sometimes referred to as service head adapters.

3.3.5 *riser casing, n*—the metallic, non-gas carrying portion of an anodeless riser that serves as a protective conduit for the polyethylene or PA11 piping. It may be either rigid, flexible, or a combination of both.

3.3.6 *qualified installation instructions, n*—a written procedure for making a plastic mechanical joint that has been demonstrated will meet the requirements set forth in the United States CFR, Title 49, Part 192.283(b), and this standard.

4. Materials and Manufacture

4.1 General:

4.1.1 All materials of the riser kit shall meet the performance requirements of this specification and applicable referenced specifications. Specific materials referenced in this section are common materials used in these types of products. Alternate materials proven to provide equal or better performance shall be acceptable.

4.1.2 All burrs on metal components which could damage the polyethylene or PA11 piping during assembly shall either be removed or suitably covered with a protective device such as an ID plastic sleeve, to preclude any damage to the polyethylene or PA11 gas piping.

4.2 Riser Casings:

4.2.1 Rigid riser casings shall be constructed of Specification A53/A53M or A513/A513M or equivalent metallic materials with a minimum nominal 0.065 in. (1.65 mm) wall thickness within the allowable tolerance ranges of the applicable metallic piping specification.

4.2.2 Flexible riser casings shall be constructed of plastic coated flexible metallic tubing providing a crush strength of not less than 1000 lbs. when tested in accordance with UL 360, section H.1.1.1. The flexible tubing shall also be capable of withstanding a tensile pull of 300 lbs. force without breaking or unwinding when tested in accordance with UL 360, section 10.5.

4.3 Moisture Seal:

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 Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

⁵ Available from Underwriters Laboratories (UL), 2600 N.W. Lake Rd., Camas, WA 98607-8542, <http://www.ul.com>.