



Designation: F1365 – 91 (Reapproved 2023)

Standard Test Method for Water Infiltration Resistance of Plastic Underground Conduit Joints Which Use Flexible Elastomeric Seals¹

This standard is issued under the fixed designation F1365; 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 test method covers the determination of the water infiltration resistance of gasketed plastic underground conduit joints using a pressurized water bladder apparatus.

1.2 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.

1.3 *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.*

1.4 *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

- D618 Practice for Conditioning Plastics for Testing
- D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
- F512 Specification for Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation

2.2 *Underwriter's Laboratories (UL) Standard:*³
UL 651 Schedule 40 and 80 Rigid PVC Conduit

¹ This test method is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.40 on Test Methods.

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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 Underwriters Laboratories (UL), UL Headquarters, 333 Pfingsten Road, Northbrook, IL, 60062, http://www.ul.com.

2.3 *National Electrical Manufacturers Association (NEMA) Standards:*⁴

- TC-2 Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80)
- TC-6 PVC and ABS Plastic Utilities Duct for Underground Installation
- TC-8 Extra-Strength PVC Plastic Utilities Duct for Underground Installation

3. Significance and Use

3.1 Underground electrical and communication conduit should be impervious to groundwater in order to prevent damage to conductors and utility vaults. The bladder test described in this test method may be used to qualify potential gasketed conduit systems by indicating whether the joint system will prevent water infiltration.

3.2 This test method can be used to qualify joints for plastic underground conduits using flexible elastomeric seals. However, it should not be assumed that a joint system that passes this test method will be able to seal under cases of misinstallation or abuse, or both.

3.3 This test method covers all of the following gasketed conduit types: encased burial (EB) excluding EB20, direct burial (DB), telecommunications, cable television, and Schedule 40 conduit and Schedule 80 conduit. Trade sizes covered are 2-in. nominal size and larger. (See UL 651; NEMA TC-2, TC-6, and TC 8; and Specification F512.)

3.4 This test method also covers fittings that are intended for use with the conduit types described in 3.3 and which use flexible elastomeric seals.

4. Apparatus

4.1 *General*—One type of bladder joint tester is shown in Fig. 1.

4.2 *Bladder:*

4.2.1 The bladder shall be similar to that shown in Fig. 1. The bladder shall be comprised of a reinforced elastomeric

⁴ Available from National Electrical Manufacturers Association (NEMA), 1300 N. 17th St., Suite 900, Arlington, VA 22209, http://www.nema.org.