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.

Designation: D2321 – 20

Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications[1]

This standard is issued under the fixed designation D2321; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice provides recommendations for the installation of buried thermoplastic pipe used in sewers and other gravity-flow applications. These recommendations are intended to ensure a stable underground environment for thermoplastic pipe under a wide range of service conditions. However, because of the numerous flexible plastic pipe products available and the inherent variability of natural ground conditions, achieving satisfactory performance of any one product may require modification to provisions contained herein to meet specific project requirements.

1.2 The scope of this practice necessarily excludes product performance criteria such as minimum pipe stiffness, maximum service deflection, or long term strength. Thus, it is incumbent upon the product manufacturer, specifier, or project engineer to verify and assure that the pipe specified for an intended application, when installed according to procedures outlined in this practice, will provide a long term, satisfactory performance according to criteria established for that application. A commentary on factors important in achieving a satisfactory installation is included in Appendix X1.

NOTE 1—Specific paragraphs in the appendix are referenced in the body of this practice for informational purposes.

NOTE 2—The following ASTM standards may be found useful in connection with this practice: Practice D420, Test Method D1556, Method D2216, Specification D2235, Test Method D2412, Specification D2564, Practice D2657, Practice D2855, Test Methods D2922, Test Method D3017, Practice F402, Specification F477, Specification F545, and Specification F913.

NOTE 3—Most Plumbing Codes and some Building Codes have provisions for the installation of underground "building drains and building sewers." See them for plumbing piping applications.

1.3 *Units*—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 *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]

D8 Terminology Relating to Materials for Roads and Pavements

D420 Guide for Site Characterization for Engineering Design and Construction Purposes

D653 Terminology Relating to Soil, Rock, and Contained Fluids

D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3))

D1556 Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method

D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

D2235 Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings

D2412 Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

D2487 Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

D2488 Practice for Description and Identification of Soils (Visual-Manual Procedures)

D2564 Specification for Solvent Cements for Poly(Vinyl

[1] This practice is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.62 on Sewer.

Current edition approved March 15, 2020. Published April 2020. Originally approved in 1989. Last previous edition approved in 2018 as D2321 – 18. DOI: 10.1520/D2321-20.

[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

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States