Designation: F2160 – 16

Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD)[1]

This standard is issued under the fixed designation F2160; 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 specification covers material, dimensional, workmanship and performance requirements for polyethylene conduit, duct and innerduct manufactured for use in a non-pressure applications for the protection of fiber optic and power cables. Applications include telecom, SCADA command and control, highway lighting, ITS (Intelligent Transportation Systems) and Underground Utilities with PE conduit installed using methods such as Horizontal Directional Drilling (HDD), plowing and open trench.

1.2 HDPE conduit meeting the requirements of this standard shall be made as OD or ID controlled solid wall, with or without internal or external ribs in IPS types SDR 9, SDR 11, SDR 13.5, DR 15.5, Schedule 40, Schedule 80 and "True-sized" and SIDR dimensions. The internal or external surface may contain a coextruded layer provided the finished conduit meets the product requirements of this specification.

1.3 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 The following precautionary caveat pertains only to the test method portion, Section 6, of this specification. *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 requirements 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

D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement

D1238 Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer

D1505 Test Method for Density of Plastics by the Density-Gradient Technique

D1600 Terminology for Abbreviated Terms Relating to Plastics

D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics

D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

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

D2444 Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)

D2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products

D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials

D4883 Test Method for Density of Polyethylene by the Ultrasound Technique

F412 Terminology Relating to Plastic Piping Systems

F1473 Test Method for Notch Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins

3. Terminology

3.1 *Definitions*—General terms used in this Specification are as defined in Terminology F412, and abbreviations are in accordance with Terminology D1600, unless otherwise specified.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *CATV, n*—cable television.

3.2.2 *conduit (duct), n*—a tubular raceway for carrying power, communications, or other wires and cables

[1] This specification is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.26 on Olefin Based Pipe.

Current edition approved Nov. 1, 2016. Published December 2016. Originally approved in 2001. Last previous edition approved in 2010 as F2160–10. DOI: 10.1520/F2160-16.

[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