



Standard Specification for Corrugated Polyethylene Pipe and Fittings for Mine Leachate Applications¹

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1. Scope

1.1 This specification covers requirements and test methods for materials, workmanship, dimensions, perforations, pipe stiffness, elongation, joint separation resistance, quality of extruded polyethylene, brittleness, testing, and marking of corrugated polyethylene (PE) pipe and fittings for mine drainage and leachate collection and transmission pipe. It covers nominal sizes 3 in. (75 mm), 4 in. (100 mm), 6 in. (150 mm), 8 in. (200 mm), 10 in. (250 mm), 12 in. (300 mm), 15 in. (375 mm), 18 in. (450 mm) and 24 in. (600 mm) diameter.

1.2 This specification covers single profile wall, annular extruded corrugated polyethylene pipe as depicted in Fig. 1, and double wall, annular extruded corrugated polyethylene pipe as depicted in Fig. 2.

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 9, 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 limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D618 Practice for Conditioning Plastics for Testing
- D1600 Terminology for Abbreviated Terms Relating to Plastics
- D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

2.2 Federal Standards:³

- 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)
- D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials
- D3895 Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
- F412 Terminology Relating to Plastic Piping Systems
- F2136 Test Method for Notched, Constant Ligament-Stress (NCLS) Test to Determine Slow-Crack-Growth Resistance of HDPE Resins or HDPE Corrugated Pipe
- Fed. Std. No. 123 Marking for Shipment (Civil Agencies)
- Federal Emergency Management Agency (FEMA) Practices for Design, Construction, Problem Identification and Evaluation, Inspection, Maintenance, Renovation, and Repair

2.3 Military Standard:³

- MIL-STD-129 Marking for Shipment and Storage

3. Terminology

3.1 **Definitions**—Definitions used in this specification are in accordance with Terminology F412 and abbreviations are in accordance with Terminology D1600, unless otherwise specified. The abbreviation for polyethylene is PE.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *crease*—a deformation that cannot be removed like a dent: generally associated with wall buckling.

3.2.2 *leaching*—minerals are removed (leached) from ores that have been mined, crushed, and placed on impervious pads for removal (by chemical leaching) by percolation of the solution through the ore, and collection of that solution at the bottom of the heap leach pile.

3.2.3 *split*—any break or crack that extends through the wall.

¹ This test method is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.65 on Land Drainage.

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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 Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.