



Standard Specification for Steel Reinforced Polyethylene (PE) Corrugated Pipe¹

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1. Scope

1.1 This specification covers requirements and test methods for materials, dimensions, workmanship, elongation, impact resistance, pipe stiffness, perforations, and markings for steel reinforced corrugated polyethylene (PE) piping systems of nominal sizes 8 in. (200 mm), through 80 in. (2000 mm). The steel reinforced polyethylene pipes governed by this standard are intended for use in underground applications where soil provides support for their flexible walls. These pipes will be used to collect or convey stormwater runoff for storm sewers and drainage pipes, or both.

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 There is no similar or equivalent ISO 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

A591/A591M Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Weight [Mass] Applications (Withdrawn 2005)³

A653/A653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

A1008/A1008M Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-

Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

D618 Practice for Conditioning Plastics for Testing

D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings

D2321 Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

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

D3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials

F412 Terminology Relating to Plastic Piping Systems

F449 Practice for Subsurface Installation of Corrugated Polyethylene Pipe for Agricultural Drainage or Water Table Control

F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

F2136 Test Method for Notched, Constant Ligament-Stress (NCLS) Test to Determine Slow-Crack-Growth Resistance of HDPE Resins or HDPE Corrugated Pipe

2.2 *AASHTO Standard*⁴

Standard Specification for Highway Bridges, Division II, Section 30, "Metal Culverts."

2.3 *Federal Standards:*⁵

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)

2.4 *Military Standards:*⁵

MIL-STD-129 Marking for Shipment and Storage

3. Terminology

3.1 *Definitions*—Definitions used in this specification are in accordance with Terminology **F412**, unless otherwise noted.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *double-wall steel reinforced polyethylene corrugated pipe, n*—polyethylene corrugated pipe with steel reinforcing helical V-shaped encapsulated within the corrugations and with a closed channel on the inside of the pipe (See **Fig. 2**).

¹ This specification is under the jurisdiction of ASTM Committee **F17** on Plastic Piping Systems and is the direct responsibility of Subcommittee **F17.11** on Composite.

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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 The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001.

⁵ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.