



Standard Specification for Polyethylene (PE) Corrugated Wall Stormwater Collection Chambers¹

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^{ε1} NOTE—5.3.8 and 5.3.9 were editorially corrected in December 2013.

1. Scope*

1.1 This specification covers requirements, test methods, materials, and marking for polyethylene (PE), open bottom, buried arch-shaped chambers of corrugated wall construction used for collection, detention, and retention of stormwater runoff. Applications include commercial, residential, agricultural, and highway drainage, including installation under parking lots and roadways.

1.2 Chambers are produced in arch shapes with dimensions based on chamber rise, chamber span, and wall stiffness. Chambers are manufactured with integral feet that provide base support. Chambers may include perforations to enhance water flow. Chambers must meet test requirements for arch stiffness, flattening, and accelerated weathering.

1.3 Analysis and experience have shown that the successful performance of this product depends upon the type and depth of bedding and backfill, and care in installation. This specification includes requirements for the manufacturer to provide chamber installation instructions to the purchaser.

1.4 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.

1.5 The following safety hazards 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 limitations prior to use.*

¹ This specification 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. 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
- D2412 Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
- D2990 Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
- D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials
- D4329 Practice for Fluorescent Ultraviolet (UV) Lamp Apparatus Exposure of Plastics
- D4703 Practice for Compression Molding Thermoplastic Materials into Test Specimens, Plaques, or Sheets
- D6992 Test Method for Accelerated Tensile Creep and Creep-Rupture of Geosynthetic Materials Based on Time-Temperature Superposition Using the Stepped Isothermal Method
- 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
- F2787 Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers

3. Terminology

3.1 *Definitions*—Definitions used in this specification are in accordance with the definitions in Terminology F412, and abbreviations are in accordance with Terminology D1600, unless otherwise indicated.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *chamber*—an arch-shaped structure manufactured of thermoplastic with an open-bottom that is supported on feet

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