



Designation: F2763/F2763M – 16 (Reapproved 2021)^{ε1}

Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications¹

This standard is issued under the fixed designation F2763/F2763M; 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.

^{ε1} NOTE—Designation editorially changed to match the units statement, 1.4 in July 2021.

1. Scope

1.1 This specification covers requirements and test methods for dual and triple profile wall polyethylene pipe and fittings. The nominal inside diameters covered are 12 in. to 60 in. [300 mm to 1500 mm].

1.2 The requirements of this specification are intended to provide pipe and fittings suitable for underground use for non-pressure sanitary sewer systems. Pipe and fittings produced in accordance with this specification shall be installed in compliance with Practice D2321.

1.3 This specification covers pipe and fittings with an essentially smooth interior wall and either an annular corrugation (dual wall) or an essentially smooth and exterior wall using an annular corrugated profile middle wall (triple wall) (Fig. 1).

1.4 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 The following precautionary caveat pertains only to the test method portion, Section 7, 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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 Recom-*

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

- D578/D578M Specification for Glass Fiber Strands
- A666 Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
- 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
- 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
- D2444 Practice for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)
- D3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
- D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials
- D4218 Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
- F412 Terminology Relating to Plastic Piping Systems
- 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

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

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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.

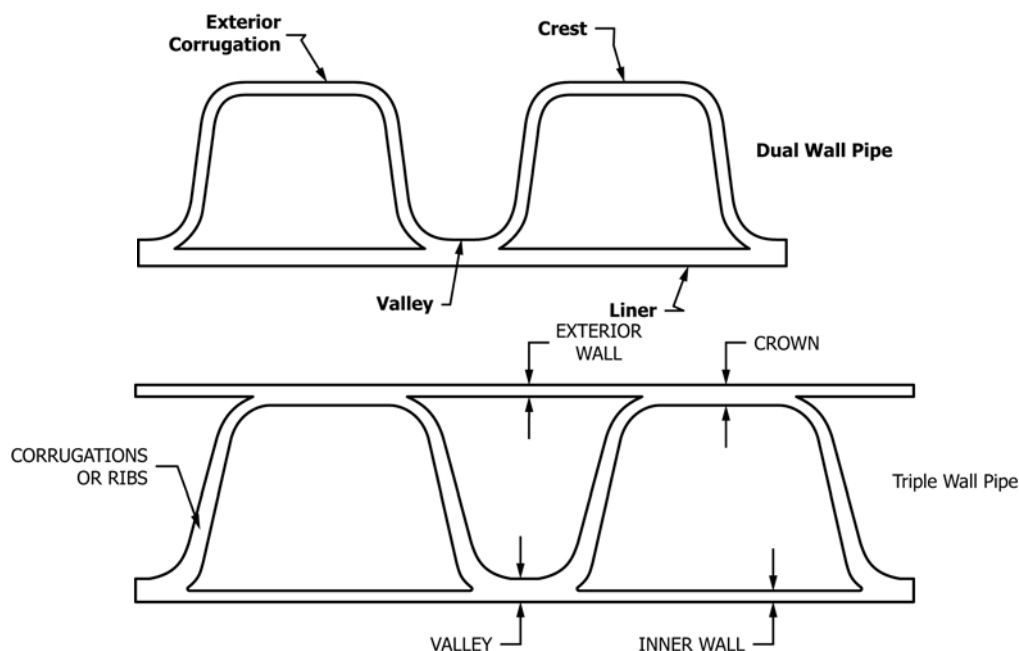


FIG. 1 Typical Dual and Triple Wall Pipe Profile

2.2 AASHTO Standard:³

LRFD, Section 12 AASHTO LRFD Bridge Design Specifications Section 12 – Buried Structures and Tunnel Liners

2.3 Federal Standards:⁴

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)
MIL-STD-129 Marking for Shipment and Storage

2.4 NCHRP (National Cooperative Highway Research Program) Report:⁴

NCHRP Report 631 Updated Test and Design Methods for Thermoplastic Drainage Pipe

3. Terminology

3.1 *Definitions*—Definitions 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 *annular corrugation*—corrugation formed in a circumferential pattern around the pipe as opposed to a helical corrugation, which is formed in a spiral pattern around the pipe.

3.2.2 *dual wall, n*—in this case, the profile pipe wall construction provides an interior liner in the waterway and includes ribs, corrugations, or other shapes, which can be either solid or hollow, that helps brace the pipe against diametrical deformation. The corrugation wall is exposed to the soil side of the pipe and is its exterior wall.

3.2.3 *triple wall, n*—in this case, the profile pipe wall construction provides an interior wall in the waterway, an exterior wall to the soil, and includes ribs, corrugations, or other shapes, which can be either solid or hollow, that helps brace the pipe against diametrical deformation. The corrugation wall is completely encapsulated by the interior and exterior walls.

4. Ordering Information

4.1 Orders for product made to this specification shall include the following information to adequately describe the desired product

4.1.1 This ASTM designation (F2763) and year of issue,

4.1.2 Diameters,

4.1.3 Total footage of each pipe diameter involved,

4.1.4 Pipe laying length,

4.1.5 Fitting type(s):

4.1.5.1 Size and type of fittings, including mainline and branch diameters, and

4.1.5.2 Number of fittings per diameter.

5. Materials and Manufacture

5.1 *Pipe and Fabricated Fittings*—The pipe and fabricated fittings shall be made of virgin PE material meeting the requirements of Specification D3350 with a minimum cell classification of 435400C, except that carbon black content shall equal to or greater than 2.0 % but not exceed 3.0 % when tested in accordance with D4218. Materials that have a higher cell classification in one or more properties shall be permitted provided all other product requirements are met.

5.2 *Rework Material*—Clean rework material generated from the manufacturer's own pipe and fittings production of this product shall be permitted to be used by the same manufacturer. Rework shall be the same cell classification as

³ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.

⁴ DLA Document Services Building 4/D 700 Robbins Avenue Philadelphia, PA 19111-5094 <http://quicksearch.dla.mil/>