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An American National Standard

Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter¹

This standard is issued under the fixed designation F 714; 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 polyethylene (PE) pipe made in dimensions based on outside diameters of 90 mm (3.500 in.) and larger.

1.2 Three standard outside diameter sizing systems are detailed: one known as the ISO metric system, one known as the IPS system, and the other known as the DIPS system. See 5.2.5 for guidelines for special sizes.

1.3 The piping is intended for new construction and insertion renewal of old piping systems used for the transport of water, municipal sewage, industrial process liquids, effluents, slurries, etc., in both pressure and nonpressure systems.

NOTE 1—The user must consult the manufacturer to ensure that any damage of the polyethylene pipe caused by the material being transported will not affect the service life beyond limits acceptable to the user.

1.4 All pipes produced under this specification are pressure-rated.

1.5 This specification includes criteria for choice of raw material and test methods for evaluation of raw material, together with performance requirements and test methods for determining conformance with the requirements.

1.6 Quality-control measures to be taken by manufacturers, are outlined in the appendix as a nonmandatory part of this specification.

1.7 In referee decisions, the SI units shall be used for metric-sized pipe and inch-pound units for pipe sized in the IPS system (ANSI B36.10) and DIPS system. In all cases, the values given in parentheses are provided for information only.

1.8 The following safety hazards caveat pertains only to the test methods 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.*

2. Referenced Documents

2.1 ASTM Standards:

D 1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer²

D 1248 Specification for Polyethylene Plastics Molding and Extrusion Materials³

D 1505 Test Method for Density of Plastics by the Density-Gradient Technique²

D 1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure³

D 1599 Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings³

D 2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings³

D 2290 Test Method for Apparent Tensile Strength of Ring or Tubular Plastics and Reinforced Plastics by Split Disk Method³

D 2321 Practice for Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications³

D 2412 Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading³

D 2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials³

D 3350 Specification for Polyethylene Plastics Pipe and Fittings Materials⁴

F 412 Terminology Relating to Plastic Piping Systems³

F 585 Practice for Insertion of Flexible Polyethylene Pipe Into Existing Sewers³

2.2 ANSI Standard:

B36.10 Standard Dimensions of Steel Pipe (IPS)⁵

2.3 ISO Standards:

161 Thermoplastic Pipe for the Transport of Fluids Nominal Outside Diameters and Nominal Pressures⁶

3607 Polyethylene Pipe: Tolerances on Outside Diameters and Wall Thicknesses⁶

4427 Polyethylene Pipes and Fittings for Water Supply Specification⁶

2.4 Federal Standard:

Fed. Std. No. 123 Marking for Shipment (Civil Agencies)⁷

2.5 Military Standard:

MIL-STD-129 Marking for Shipment and Storage⁷

2.6 Canadian Standard:

³ Annual Book of ASTM Standards, Vol 08.04.

⁴ Annual Book of ASTM Standards, Vol 08.02.

⁵ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁶ Available from International Organization for Standardization, Central Secretariat, 1, rue de Varembe, Case Postale 56, CH-1211 Geneva 20, Switzerland/Suisse.

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

¹ This specification is under the jurisdiction of ASTM Committee F-17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.26 on Olefin Based Pipe.

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² Annual Book of ASTM Standards, Vol 08.01.