



Standard Specification for Polyethylene Plastics Pipe and Fittings Materials¹

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1. Scope*

1.1 This specification covers the identification of polyethylene plastic pipe and fittings materials in accordance with a cell classification system. It is not the function of this specification to provide specific engineering data for design purposes, to specify manufacturing tolerances, or to determine suitability for use for a specific application.

1.2 Polyethylene plastic materials, being thermoplastic, are reprocessible and recyclable (Note 2). This specification allows for the use of those polyethylene materials, provided that all specific requirements of this specification are met.

NOTE 1—The notes in this specification are for information only and shall not be considered part of this specification.

NOTE 2—See Guide D 5033 for information and definitions related to recycled plastics.

1.3 The values stated in SI units are to be regarded as the 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.*

NOTE 3—There is no similar or equivalent ISO standard.

1.5 For information regarding Molding and Extrusion Materials see Specification D 4976. For information regarding Wire and Cable Materials see Specification D 1248.

2. Referenced Documents

2.1 ASTM Standards:

- D 618 Practice for Conditioning Plastics for Testing²
- D 638 Test Method for Tensile Properties of Plastics³
- D 746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact²
- D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials²

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials.

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² Annual Book of ASTM Standards, Vol 08.01.

³ Discontinued; see 1996 Annual Book of ASTM Standards, Vol 08.01.

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement²

D 883 Terminology Relating to Plastics²

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

D 1248 Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable²

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

D 1603 Test Method for Carbon Black in Olefin Plastics²

D 1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics²

D 1898 Practice for Sampling of Plastics³

D 2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials⁴

D 3892 Practice for Packaging/Packing of Plastics⁵

D 4703 Practice for Compression Molding Thermoplastic Materials into Test Specimens, Plaques, or Sheets⁶

D 4976 Specification for Polyethylene Plastics Molding and Extrusion Materials⁶

D 5033 Guide for the Development of ASTM Standards Relating to Recycling and Use of Recycled Plastics⁶

F 1473 Test Method for Notch Tensile Test to Measure the Resistance to Slow Crack Growth of Polyethylene Pipes and Resins⁴

2.2 ISO Standard:

ISO 12162 Thermoplastic Materials for Pipes and Fittings for Pressure Applications— Classification and Designation— Overall Service (Design) Coefficient

3. Terminology

3.1 *Definitions*—Terms as described in Terminology D 883 shall apply in this specification.

3.1.1 *polyethylene plastics*—as defined by this specification, plastics or resins prepared by the polymerization of no less than 85 % ethylene and no less than 95 % of total olefins with additional compounding ingredients.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *materials*—polyethylene (PE) resins with the added compounding ingredients.

⁴ Annual Book of ASTM Standards, Vol 08.04.

⁵ Annual Book of ASTM Standards, Vol 08.02.

⁶ Annual Book of ASTM Standards, Vol 08.03.

*A Summary of Changes section appears at the end of this standard.

