



Standard Specification for Thermoplastic Polyester (TPES) Materials¹

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1. Scope

1.1 This specification covers thermoplastic polyester materials suitable for molding or extrusion.

1.2 This specification is intended to be a means of calling out plastic materials used in the fabrication of end use items or parts. It is not intended for the selection of materials. Material selection should be made by those having expertise in the plastics field after careful consideration of the design and performance required of the part, the environment to which it will be exposed, the fabrication process to be employed, the inherent properties of the material other than those covered by this specification, and the economics.

1.3 The properties included in this specification are those required to identify the compositions covered. There may be other requirements necessary to identify particular characteristics important to specialized applications. These will be agreed upon between the user and the supplier, by using the suffixes as given in Section 5.

1.4 The values stated in SI units, as detailed in Practice E 380, are to be regarded as the standard.

1.5 *This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.*

NOTE 1—This specification is similar to ISO 7792/1-1985 (E), although the technical content is significantly different.

2. Referenced Documents

2.1 ASTM Standards:

- D 256 Test Methods for Impact Resistance of Plastics and Electrical Insulating Materials²
- D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing²
- D 635 Test Method for Rate of Burning and/or Extent and

Time of Burning of Self-Supporting Plastics in a Horizontal Position²

D 638 Test Method for Tensile Properties of Plastics²

D 648 Test Method for Deflection Temperature of Plastics Under Flexural Load²

D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials²

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

D 883 Terminology Relating to Plastics²

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

D 1929 Test Method for Ignition Properties of Plastics²

D 2843 Test Method for Density of Smoke from the Burning or Decomposition of Plastics³

D 2863 Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)³

D 3418 Test Method for Transition Temperatures of Polymers by Thermal Analysis³

D 3713 Test Method for Measuring Response of Solid Plastics to Ignition by a Small Flame³

D 3801 Test Method for Measuring the Comparative Extinguishing Characteristics of Solid Plastics in a Vertical Position³

D 3892 Practice for Packaging/Packing of Plastics³

D 4000 Classification System for Specifying Plastic Materials³

D 4019 Test Method for Moisture in Plastics by Coulometry³

D 4603 Test Method for Determining Inherent Viscosity of Poly(Ethylene Terephthalate (PET))⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

E 84 Test Method for Surface Burning Characteristics of Building Materials⁶

E 162 Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source⁶

E 380 Practice for Use of the International System of Units (SI) (the Modernized Metric System)⁵

¹ This specification is under the jurisdiction of ASTM Committee D-20 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 Annual Book of ASTM Standards, Vol 08.02.

⁴ Annual Book of ASTM Standards, Vol 08.03.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Annual Book of ASTM Standards, Vol 04.07.