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Standard Specification for Polyethylene Terephthalate Film and Sheeting[1]

This standard is issued under the fixed designation D5047; 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 requirements for biaxially oriented polyethylene terephthalate film and sheeting in thicknesses from 1.5 µm (0.06 mil) to 355 µm (14.0 mil). For this specification, polyethylene terephthalate film and sheeting shall be defined as the material derived from terephthalic acid and ethylene glycol and shall consist of at least 90 % polyethylene terephthalate homopolymer. This specification does not apply to coated, coextruded, tinted, pigmented, or metallized film or sheeting.

1.2 Polyethylene terephthalate materials, being thermoplastic, are reprocessable and recyclable.[2] This specification allows for the use of those polyethylene terephthalate plastic materials, provided that any specific requirements as governed by the producer and end user are met.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

NOTE 1—There is no known ISO equivalent to this specification.

NOTE 2—Film is defined as sheeting having a thickness of ≤250 microns (0.010 in.).

2. Referenced Documents

2.1 *ASTM Standards:*[3]

D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

D150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation

D257 Test Methods for DC Resistance or Conductance of Insulating Materials

D774/D774M Test Method for Bursting Strength of Paper (Withdrawn 2010)[4]

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D883 Terminology Relating to Plastics

D1004 Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting

D1505 Test Method for Density of Plastics by the Density-Gradient Technique

D1894 Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting

D1922 Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method

D2176 Test Method for Folding Endurance of Paper and Plastics Film by the M.I.T. Tester

D2275 Test Method for Voltage Endurance of Solid Electrical Insulating Materials Subjected to Partial Discharges (Corona) on the Surface

D2305 Test Methods for Polymeric Films Used for Electrical Insulation

D3417 Test Method for Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry (DSC) (Withdrawn 2004)[4]

D3892 Practice for Packaging/Packing of Plastics

D3985 Test Method for Oxygen Gas Transmission Rate Through Plastic Film and Sheeting Using a Coulometric Sensor

D5947 Test Methods for Physical Dimensions of Solid Plastics Specimens

D6988 Guide for Determination of Thickness of Plastic Film Test Specimens

D7209 Guide for Waste Reduction, Resource Recovery, and Use of Recycled Polymeric Materials and Products (Withdrawn 2015)[4]

E96/E96M Test Methods for Water Vapor Transmission of Materials

3. Terminology

3.1 *Definitions*—Unless otherwise indicated, the terminology used in this specification is in accordance with Terminology D883.

[1] This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.19 on Film, Sheeting, and Molded Products.

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[2] See Guide D7209 for information and definitions related to recycled plastics.

[3] 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.

[4] The last approved version of this historical standard is referenced on www.astm.org.

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