



Designation: D3218 – 07 (Reapproved 2018)

Standard Specification for Polyolefin Monofilaments¹

This standard is issued under the fixed designation D3218; 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 polyolefin monofilament yarn materials, and test methods for standard polyolefin monofilaments. While designed primarily for testing standard polyolefin monofilaments, many of the procedures can be used, with little or no modification, for other polyolefin monofilaments. However, testing on non-standard polyolefin monofilaments should be conducted with caution. See 3.1 for a definition of standard polyolefin monofilament.

1.2 Only on condition that interlaboratory precision data are available for the specific procedure is any test method described, or referenced in this specification, recommended for acceptance testing of commercial shipments of polyolefin monofilaments.

1.3 The specification for polyolefin raw materials appears in Section 4.

1.4 The test methods for individual properties appear in the following sections:

Property	Section
Breaking Force	10
Breaking Tenacity	10
Elongation	10
Gloss	13
Hot Water Shrinkage	14
Initial Modulus	10
Polyolefin-Material Cleanliness	17
Resistance to Ultraviolet Radiation	15
Stability to Thermal Oxidation	16
Tensile Properties	10
Thickness	12
Width	11
Yarn Number	9

NOTE 1—In most instances, the suitability of these procedures for polymeric yarns in general, and polyolefin monofilaments in particular, is already accepted in commercial transactions (see 6.1).

1.5 The values stated in SI units are to be regarded as standard; the values in English units are provided as information only and are not exact equivalents.

¹ This specification is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.58 on Yarns and Fibers.

Current edition approved July 1, 2018. Published August 2018. Originally approved in 1973. Last previous edition approved in 2012 as D3218 – 07(2012). DOI: 10.1520/D3218-07R18.

1.6 The following safety hazards caveat pertains only to the test methods described in this specification: *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems, 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.*

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

2. Referenced Documents

2.1 ASTM Standards:²

- D123 Terminology Relating to Textiles
- D374 Test Methods for Thickness of Solid Electrical Insulation (Metric) D0374_D0374M
- D1248 Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
- D1776 Practice for Conditioning and Testing Textiles
- D1907 Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method
- D1921 Test Methods for Particle Size (Sieve Analysis) of Plastic Materials
- D2146 Specification for Propylene Plastic Molding and Extrusion Materials (Withdrawn 1986)³
- D2256 Test Method for Tensile Properties of Yarns by the Single-Strand Method
- D2258 Practice for Sampling Yarn for Testing
- D2259 Test Method for Shrinkage of Yarns
- D2565 Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
- D4101 Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials
- D4849 Terminology Related to Yarns and Fibers

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.

³ The last approved version of this historical standard is referenced on www.astm.org.