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.

Designation: D7269/D7269M – 17

Standard Test Methods for Tensile Testing of Aramid Yarns[1]

This standard is issued under the fixed designation D7269/D7269M; 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 These test methods cover the tensile testing of aramid yarns, cords twisted from such yarns, and fabrics woven from such cords. The yarn or cord may be wound on cones, tubes, bobbins, spools, or beams; may be woven into fabric; or may be in some other form. The methods include testing procedure only and include no specifications or tolerances.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 This standard includes the following test methods:

	Section
Breaking Force	11
Breaking Tenacity	12
Breaking Toughness	17
Elongation at Break	13
Force at Specified Elongation (FASE)	14
Linear Density	10
Modulus	15
Stress at Break	12
Work-to-Break	16

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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]

D76 Specification for Tensile Testing Machines for Textiles
D123 Terminology Relating to Textiles
D1776 Practice for Conditioning and Testing Textiles
D1907 Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method
D2258 Practice for Sampling Yarn for Testing
D3800 Test Method for Density of High-Modulus Fibers
D4848 Terminology Related to Force, Deformation and Related Properties of Textiles
D6587 Test Method for Yarn Number Using Automatic Tester
E23 Test Methods for Notched Bar Impact Testing of Metallic Materials

3. Terminology

3.1 *Definitions:*

3.1.1 *slippage, n—with tensile testing*, insufficient quality of clamping, resulting in movement of the test material through the total clamping surface. This can be visualized by the movement of markers at the clamp exit, or by sudden changes in the strain-modulus curves (1st derivative of the strain-stress curve).

3.2 The following terms are relevant to this standard: aramid, breaking force, breaking tenacity, breaking toughness, chord modulus, elongation, force at specified elongation (FASE), industrial yarn, initial modulus, moisture equilibrium for testing, standard atmosphere for testing textiles, work-to-break.

3.3 For definitions of terms related to force and deformation in textiles, refer to Terminology D4848.

3.4 For definitions of other terms related to textiles, refer to Terminology D123.

[1] These test methods are under the jurisdiction of ASTM Committee D13 on Textiles and are the direct responsibility of Subcommittee D13.19 on Industrial Fibers and Metallic Reinforcements.

Current edition approved July 15, 2017. Published October 2017. Originally approved in 2006. Last previous edition approved in 2011 as D7269/D7269M–11. DOI: 10.1520/D7269_D7269M-17.

[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.

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