



Designation: D 885 – 98

Standard Test Methods for Tire Cords, Tire Cord Fabrics, and Industrial Filament Yarns Made from Manufactured Organic-Base Fibers¹

This standard is issued under the fixed designation D 885; 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 testing of industrial filament yarns made wholly of manufactured organic-base fibers, cords twisted from such yarns, fabrics woven from such cords, and products that are made specifically for use in the manufacture of pneumatic tires. They may be applied to similar yarns and cords used for reinforcing other rubber goods and for other industrial applications. The test methods apply to nylon, polyester, rayon, and aramid yarns and tire cords twisted from such yarns and to fabrics made 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 No procedure is included for the determination of fatigue resistance of cord, but several commonly used procedures for the measurement of fatigue resistance of cords in rubber were published in the appendix of these test methods in the 1967 *Annual Book of ASTM Standards*, Part 24, and in earlier issues of Test Methods D 885.

1.3 The sections on “Growth of Conditioned Yarns and Cords,” “Properties of Yarns and Cords at Elevated Temperature,” and “Properties of Wet Yarns and Cords” have been moved to Appendix X1-Appendix X3 as non-mandatory informational items because of their very limited use by the industry and because precision and bias statements are not included.

1.4 This standard includes the following sections:

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Adhesion of Cord to Elastomers	34
Bibliography of Tire Cord Test Methods	X4
Breaking Strength (Force) of Yarns and Cords at Elevated Temperature	X2.3
Breaking Strength (Force) of Conditioned Yarns and Cords	16
Breaking Strength (Force) of Oven-Dried Rayon Yarns and Cords	23
Breaking Strength (Force) of Rayon Yarns and Cords at Specified Moisture Regain Level, Adjustment of	17
Breaking Tenacity of Conditioned Yarns and Cords	18
Breaking Tenacity of Oven-Dried Rayon Yarns and Cords	24
Breaking Toughness of Yarns and Cords	28
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Contraction of Wet Yarns and Cords	X3
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Dip (Adhesive) Solids Pickup on Yarns and Cords	33
Elongation at Break of Conditioned Yarns and Cords	19
Elongation at Break of Oven-Dried Rayon Yarns and Cords	25
Elongation of Rayon Yarns and Cords at a Specified Moisture Regain Level, Adjustment of	20
Extractable Matter in Yarns and Cords	32
Force at Specified Elongation (FASE) of Conditioned Yarns and Cords	21
Force at Specified Elongation (FASE) of Oven-Dried Rayon Yarns and Cords	26
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Mass of per Unit Area of Tire Cord Fabric	36
Modulus of Conditioned Yarns and Cords	22
Moisture Regain, Actual	10
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Properties of Tire Cord Fabric	35 to 37
Sampling	6
Shrinkage Force of Conditioned Yarns and Cords at Elevated Temperature	X2.5
Shrinkage of Conditioned Yarns and Cords at Elevated Temperature	X2.4
Significance and Use, General	5
Significance and Use, Tensile Properties	14
SI Calculations (examples for work-to-break, specific work-to-break, and breaking toughness)	X5
Stiffness of Fabric	38
Tensile Properties of Yarns and Cords	12 to 28
Terminology	3
Thickness of Cords	31
Twist in Yarns and Cords	30
Width of Tire Cord Fabric	35
Work-to-Break of Yarns and Cords	27

1.5 These test methods show the values in both SI and inch-pound units. SI units is the technically correct name for the system of metric units known as the International System of Units. Inch-pound units is the technically correct name for the customary units used in the United States. The values stated in either acceptable metric units or other units shall be regarded separately as standard. The values expressed in each system may not be exact equivalents; therefore, each system must be used independently of each other, without combining values in any way.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

¹ These test methods are under the jurisdiction of ASTM Committee D-13 on Textiles and are the direct responsibility of Subcommittee D13.19 on Tire Cord Fabrics.

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