



The following commercial specification is an original Parachute Industry Association specification.

CORD, SPECTRA[®], CORELESS

The Parachute Industry Association makes this document available for use by Industry and Government organizations that wish to apply this specification to their products.

1. SCOPE

1.1 Scope. This specification covers braided Spectra[®] coreless Parachute Cord.

1.2 Classification. The cord shall be of the following types as classified according to minimum breaking strength (see 3.5).

Type IA - 300 pounds	Type VIB R - 1,500 pounds
Type IIA - 600 pounds	Type VIIB - 2,000 pounds
Type IIIB - 700 pounds	Type VIIIB - 2,500 pounds
Type IVB - 800 pounds	Type IXB - 4,000 pounds
Type VA - 1,000 pounds	Type XB - 5,250 pounds
Type VB - 1,000 pounds	Type XIB - 10,000 pounds
Type VIB - 1,500 pounds	

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in Sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification nor is it recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of the documents cited in Sections 3 and 4 of this specification, whether they are listed or not.

2.2 Government publications.

2.2.1 Government publications. The following Government publication forms a part of this document.

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FEDERAL TRADE COMMISSION (FTC)

16 CFR 303

- Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies are available online at www.ftc.gov or from the Federal Trade Commission, 600 Pennsylvania Avenue, N.W. Washington, DC 20580-0001. Electronic copies may also be obtained from www.access.gpo.gov/.)

2.3 Non-government publications. The following document(s) form a part of this document.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 20A - Fiber Analysis: Quantitative

AATCC 81 - pH of Water-Extract from Wet Processed Textiles

AATCC 159 Option 3 - Weather Resistance of Textiles: Xenon Lamp Exposure

(Application for copies should be addressed to: AATCC National Headquarters, P.O. Box 12215, Research Triangle Park, NC 27709-2215. Electronic copies may be obtained from www.aatcc.org.)

ASTM INTERNATIONAL (ASTM)

ASTM D 276 - Standard Test Method for Identification of Fibers in Textiles

ASTM D 629 - Standard Test Methods for Quantitative Analysis of Textiles

ASTM D 1423 - Standard Test Method for Twist in Yarns by Direct-Counting

ASTM D 1907 - Standard Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method

(Application for copies should be addressed to the ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. Electronic copies may be obtained from www.astm.org.)

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQ Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Copies are available online at: www.asq.org or from the American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203.)

PARACHUTE INDUSTRY ASSOCIATION

PIA-TEST METHOD-6004 - LENGTH PER UNIT WEIGHT; CORDAGE

PIA-TEST METHOD-6015 - STRENGTH AND ELONGATION BREAKING OF CORDAGE; SPLICED SPECIMEN METHOD

(Electronic copies may be obtained from www.pia.com.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be submitted for first article inspection in accordance with 4.3.

3.2 Government and contractor purchases. The requirements specified in 3.1 apply only to cord purchased directly by the Government. All other requirements apply to cord purchased by a contractor as a component for an end item and to cord purchased directly by the Government.

3.3 Standard. The cord shall match the standard color and appearance, and shall be, unless otherwise indicated, equal to or better than the standard with respect to all characteristics for which the standard is referenced (see 3.5).

3.4 Material. The yarn used in the fabrication of this cord shall be unaltered 100 percent Spectra® 1000 fiber of the denier specified in TABLE I.

3.5 Construction and physical requirements. The cord shall be braided without a core and conform to the requirements specified herein and in TABLE I, when tested as specified in 4.4.5. The cord shall be braided on braiding machines having the number of carriers specified in TABLE I for the applicable type and the machines shall be regulated to produce a braid pattern as specified in TABLE I.

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TABLE I Physical requirements.

Characteristic	Type IA	Type IIA	Type IIIB	Type IVB	Type VA	Type VB	Type VIB	Type VIIB	Type VIII B	Type IXB	Type XB	Type XIB
Braid type ^{1/} , ^{2/}	Regular	Diamond	Regular	Regular	Diamond	Regular	Regular	Regular	Regular	Regular	Regular	Regular
Number of carriers	12	12	16	16	12	16	16	16	16	16	16	16
Ends per carrier	1	2	2	2	3	2	3	2	5	4	6	16
Total ends	12	24	32	32	36	32	48	32	80	64	96	16/256
Basic yarn denier	650	650	650	650	650	650	650	1300	650	1300	1300	650
Yarn twist	0	0	0	0	0	0	0	0	0	0	0	0
Picks per inch	11-13	6.5-8.5	13-14	7.5-9	6.5-8	7.5-9	6.5-8	5.5-7.5	4.5-6.5	4-6	4-5	2-3
Length per pound, feet (minimum)	1832	916	562	695	550	556	370	278	221	138	92	32
Breaking strength, pounds (minimum)	300	600	700	800	1,000	1,000	1,500	2,000	2,500	4,000	5,250	10,000
Elongation percentage (at 75 percent of the specified breaking strength)	-	-	-	-	-	6	6	6	-	6	6	6
Synthetic finished	No-UNT ^{3/}	Yes	No-UNT ^{3/}	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cord is pre-stretched	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes:

^{1/} Braid type is defined as:

- Diamond: 1 up, 1down
- Regular: 2 up, 2 down.

^{2/} Spectra® Cord:

- Type A has 12 carriers in braid
- Type B has 16 carriers in braid.

^{3/} Cords without finish are labeled “UNT”.