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

WEBBING, TEXTILE, POLYESTER TUBE EDGE

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 one type of untreated tubular edge polyester webbing used in the manufacture of load bearing systems.

1.2 Classification. The polyester tube edge webbing shall be the following type and shall conform to the requirements of TABLES I and II (see 6.2).

Type I - 20,000 lbs. breaking strength

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 or 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 documents cited in Sections 3 and 4 of this specification, whether or not they are listed.

2.2. Government publications. The following Government publication forms a part of this document to the extent specified herein.

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 20580-001 or may be obtained from www.access.gpo.gov/.)

2.3 Non-government publications. The following document(s) form a part of this document to the extent specified herein.

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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 Plankinton Avenue, Milwaukee, WI 53203).

ASTM INTERNATIONAL (ASTM)

ASTM D276	- Standard Test Methods for Identification of Fibers in Textiles
ASTM D1907	- Standard Test Method for liner Density of yarn (Yarn Number) by the Skein Method
ASTM D1423	- Standard Test Method for Twist in Yarns by Direct-Counting
ASTM D1776	- Standard Practice for Conditioning and Testing Textiles
ASTM D1777	- Standard Test Method for Thickness of Textile Materials
ASTM D3774	- Standard Test Method for Width of Textile Fabric
ASTM D3775	- Standard Test Method for Warp (End) and Filling (Pick) Count of Woven Fabrics
ASTM D3776	- Standard Test Method for Mass per Unit Area (Weight) of Fabric

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

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 20 - Fiber Analysis: Qualitative
AATCC Evaluation Procedure: - 9 Visual Assessment of Color Difference Textiles

(Applications for copies of referenced documents should be addressed to the American Association of Textile Chemists and Colorists, PO Box 12215, Research Triangle Park, NC 27709-2215. Electronic copies may be obtained from www.aatcc.org.)

PARACHUTE INDUSTRY ASSOCIATION (PIA)

PIA-TEST METHOD-4108 - Strength and Elongation, Breaking; Textile Webbing, Tape and Braided Items

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

COLOR ASSOCIATION OF THE UNITED STATES (CAUS)

CA # 26081 - Cable Number

(Obtain color standards from www.colorassociation.com or email caus@colorassociation.com or address to The Color Association of the United States, 315 West 39th Street, New York, NY 10018.)

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 takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First Article. When specified (see 6.2), a sample representative of the production quality shall be submitted for first article inspection in accordance with 4.2.

3.2 Standard. The dyed webbing shall match the standard for shade and appearance, unless otherwise indicated, shall be equal to or better than the standard with respect to all characteristics for which the standard is referenced (see 6.1).

3.3 Recycled, Recovered, or Environmentally Preferable Materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Materials.

3.4.1 Polyester Yarns. The polyester yarn used in the manufacture of the webbing shall be bright, high tenacity, multifilament polyester yarn and shall comply with the denier, ply, and twist requirements specified in TABLES I and II when tested as specified in 4.4.

3.5 Weave. The weave of Type I shall be plain weave and as specified in FIGURE 2. There shall be a 1/2 inch tubular edge on edge side of the webbing, measured from the black polyester warp surface marker yarns (pattern identification yarns) located a 1/2 inch from each edge of webbing. The filling yarn shall traverse the full width of the webbing and shall be held at the edge by an extra catch- cord end interlaced with the filling yarn in accordance with the method shown in FIGURE 1.

3.6 Color. The color of the webbing and its referenced standard shall be charcoal gray and shall match the approved shade standard (see 3.2 and 6.1).

3.6.1 Dyeing. The webbing shall be pigment or piece dyed.

3.6.2 Visual Shade Matching. When evaluated in accordance with 4.5.4, the color of the dyed webbing shall match the standard with sources simulating artificial daylight and shall be a good match to the standard under incandescent lamplight.

3.7 Identification Yarns. Colored warp ends shall be woven into the webbing to permanently identify the webbing by type (see 6.2 and TABLE I).

3.7.1 Type Identification.

Type I - Eight minimum ends of orange identification yarns shall be woven in the center of the warp. Sixteen ends of black identification yarns, eight each edge, shall be woven on both ends, 1/2 inch from edge. The size of the marker yarns shall be similar to the natural warp yarn and shall be woven as detailed in 3.8.



3.7.2 Shuttleless Loom Identification. The webbing shall be woven with a knit edge containing a black catch-cord yarn as shown in FIGURE 1.

3.8 Physical Requirements. The construction and physical requirements of the finished webbing shall be specified in TABLE I when tested as specified in TABLE II and 4.4.

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TABLE I Construction and physical properties.

Properties	Type I
Width, inches:	
Full width	4 $\pm$ 3/32
Each edge	1/2 -1/32 +1/16
Thickness, inches	0.070-0.120
Weight, oz./linear yd.	6.0 -7.75
Tensile, lbs. (minimum)	20,000
Yarns:	
Ground (minimum)	352
Pattern identification (minimum)	8 center, orange 16 edge (8 each side), black
Binder (minimum)	51
Fill (picks per inch)	15 $\pm$ 1
Catch-cord	1
Stuffer (minimum)	200
Ply-Denier (nominal) ^{1/} :	
Ground	1/2600 polyester
Pattern identification	1/1000 orange polyester, center 1/1000 black polyester, edge
Binder	1/1000 polyester
Fill	1/1000 polyester
Stuffer	1/2600 polyester
Catch-cord	1/420 black , 6 or 6,6 nylon
Twist, t.p.i. (minimum):	
Ground	No twist
Pattern identification	No twist
Binder	No twist
Fill	No twist
Catch-cord	No twist

Notes:

^{1/} Size stated or approximate equivalent size.