

# AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 3817A

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## BRAID, FLAT, NYLON Electrical Tying, Resin Coated

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for use within the temperature range from -65 F (-55 C) to 165 F (75 C) for tying and lacing electrical wire harness assemblies, especially for miniature devices where fungus resistance is required.
3. **MATERIAL AND FABRICATION:**
  - 3.1 **Yarn:** Braid shall be made of high tenacity No. 210 denier nylon continuous filament  $\emptyset$  yarn, free from weighting materials, twisted 3/4 to 1 turn per inch.
  - 3.2 **Impregnation:** Finished braid shall contain 15 - 25% by weight of a nonflaking, non-toxic, fungistatic resin dispersion. No fungicide containing mercury or copper shall be used.
4. **TECHNICAL REQUIREMENTS:** When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.
  - 4.1 **General:**
    - 4.1.1 **Color:** Shall be natural (off-white), unless otherwise specified.
    - 4.1.2 **Temperature Resistance:** The resin coating shall not harden or drip when exposed  $\emptyset$  temperatures of  $165 F \pm 2$  ( $73.9 C \pm 1.1$ ) and shall not become brittle or flake off when subjected to  $-65 F \pm 2$  ( $-53.9 C \pm 1.1$ ).
  - 4.2 **Properties:** Unless otherwise specified, the finished braid shall conform to the following requirements when tested in accordance with ASTM D259:
    - 4.2.1 **Construction:**

	Size Designation		
	30	50	80
4.2.1.1 Nominal Width, in.	0.055	0.085	0.140
4.2.1.2 Nominal Thickness, in.	0.014	0.014	0.014
4.2.1.3 Yards per lb, min	1200	750	550
4.2.1.4 Thread Count, Carrier Ends, min	11	17	27
4.2.1.5 Picks per in., min	18	18	18

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4.2.2 Tensile Properties:

	Size Designation		
	30	50	80
4.2.2.1 Breaking Strength, lb, min	30	50	80
Ø 4.2.2.2 Ultimate Elongation, %, max	25	35	35

4.2.3 Slip Resistance: Breaking strength test, when applied to a tightened square knot made in the finished braid with the short ends trimmed to 1.0 in.  $\pm$  0.25, shall result in breakage at the knot rather than slippage of the short ends through the knot.

4.2.4 Fray Resistance: A freshly cut end of the material shall not fray open when held 1/4 in. from the end and firmly tamped several times on a hard surface.

5. QUALITY: Material shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from imperfections detrimental to fabrication or to performance of parts.

6. TOLERANCES: Unless otherwise specified, width tolerance shall be  $\pm$  10% and thickness tolerance shall be  $\pm$  0.003 inch.

7. REPORTS: Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, size designation, vendor's number, and number of yards.

8. IDENTIFICATION:

8.1 Each spool or tube of braid shall be marked with the manufacturer's name or trade mark, AMS 3817A, and size designation.

8.2 Each package shall be permanently and legibly marked to give the following information:

NYLON FLAT BRAID, ELECTRICAL TYING, RESIN COATED  
AMS 3817A

SIZE DESIGNATION \_\_\_\_\_

LENGTH \_\_\_\_\_

MANUFACTURER'S NAME \_\_\_\_\_

MANUFACTURER'S DESIGNATION \_\_\_\_\_