

# AERONAUTICAL MATERIAL SPECIFICATIONS

## AMS 3816

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

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Revised

BRAID, FLAT, NYLON  
Electrical Tying, Wax Coated

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily 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 from high tenacity nylon continuous filament yarn, free from weighting materials, twisted 3/4 to 1 turn per inch.
  - 3.2 Impregnation: Finished braid shall contain 22 - 32% by weight of a nonflaking, nontoxic, fungistatic wax dispersion. No fungicide containing mercury or copper shall be used.
4. TECHNICAL REQUIREMENTS:
  - 4.1 General:
    - 4.1.1 Color: Unless otherwise specified, color shall be natural.
    - 4.1.2 Construction: Unless otherwise specified, the finished braid shall conform to the following requirements, when tested in accordance with ASTM D259-44:

	Size Designation		
	30	50	80
Nominal Width, in.	0.050	0.090	0.160
Nominal Thickness, in.	0.014	0.014	0.014
Yards per lb, min	1200	750	550

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4.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with ASTM D259-44, insofar as practicable.

	Size Designation		
	30	50	80
4.2.1 Breaking Strength, lb, min	30	50	80
4.2.2 Ultimate Elongation, %, max	25	40	40

4.2.3 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  $\pm 15\%$  and thickness tolerance shall be  $\pm 0.003$  inch.

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

## 8. IDENTIFICATION:

8.1 Each spool or tube of braid shall be marked with the manufacturer's name or trade mark, AMS 3816, size designation, and number of yards.

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

NYLON FLAT BRAID, ELECTRICAL TYING, WAX COATED  
AMS 3816  
SIZE DESIGNATION \_\_\_\_\_  
LENGTH \_\_\_\_\_  
MANUFACTURER'S NAME \_\_\_\_\_  
MANUFACTURER'S DESIGNATION \_\_\_\_\_

## 9. PACKAGING:

9.1 Unless otherwise specified, the braid shall be wound on spools or tubes approximately 1-1/2 in. in OD, in such a manner as to prevent the braid from becoming unwound during ordinary use. The number of pieces per spool or roll shall not exceed 4, and no piece shall be shorter than 50 yards. Each spool shall have the following length and contain the following quantity of braid:

Size Designation	Spool or Tube Length, in.	Yards per Spool or Tube, min
30	2-1/4 to 6-1/4	250 or 500
50, 80	4 to 6-1/4	500