

AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard



AMS 3813/1A

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Superseding AMS 3813/1

Rope, Aramid Fiber, Jacketed Cabled Strand, Extruded Jacket

1. SCOPE:

1.1 Form:

This specification covers cabled-strand ropes formed from impregnated aramid fibers.

1.2 Application:

Primarily for nonconductive tension elements in antenna-supports.

1.3 Classification:

The ropes are classified by construction and size as shown in Table I.

2. APPLICABLE DOCUMENTS:

See AMS 3813.

3. TECHNICAL REQUIREMENTS:

3.1 Basic Specification:

The complete requirements for procuring the ropes described herein shall consist of this document and the latest issue of the basic specification, AMS 3813.

3.2 Material and Construction:

The rope shall consist of aramid fiber yarn strands cabled together in a rope construction as specified in Table I, and covered with an extruded jacket.

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- 3.2.1 Constructional Yarns: The constructional yarns shall consist of one or more single yarns gathered together without twist and impregnated with a polymeric formulation. Each single yarn shall conform to AMS 3904/5 and shall be free of splices.
- 3.2.2 Rope Strand: Each rope strand shall consist of the number of constructional yarns designated in the construction identification, cabled or twisted together, impregnated with a polymeric formulation, and cured.
- 3.2.3 Polymeric Formulation: The polymeric formulation shall be a urethane applied so that each aramid filament is uniformly coated. Volumetric ratio of polymeric formulation impregnant to yarn shall be approximately 15%.
- 3.2.4 Jacket: The finished rope shall be covered with an extruded polyurethane jacket. Each jacket, when measured, shall not vary in thickness by more than 25%.
- 3.2.5 Rope Construction and Size: Rope construction and size shall be specified in the form "A x B x C," where "A" designates the number of rope strands, "B" designates the number of constructional yarns in each strand, and "C" is the nominal diameter of the rope without its jacket, expressed in inches (millimetres). The form "A x B x C IRC" designates a rope with an independently-wound rope core, the strands of which are not included in the quantity "A". The requirements of 3.2.1, 3.2.2, and 3.2.3 apply to independently-wound rope cores as well as to the principal rope strands.
- 3.3 Properties:
- Shall be as specified in Table I and as follows; the properties of ropes having constructions and sizes other than those listed in Table I shall be as agreed upon by purchaser and vendor.
- 3.3.1 Breaking Strength: Shall be as specified in Table I.
- 3.3.2 Outside Diameter and Linear Density: Shall be within $\pm 5\%$ of the value shown in Table I.
- 3.3.3 Weatherability: The breaking strength, after exposure to accelerated weathering conditions, shall be not less than 95% of the value specified in Table I.
- 3.3.4 Vibration Fatigue: The breaking strength, after exposure to simulated aeolian vibration conditions, shall be not less than 95% of the value specified in Table I.
- 3.3.5 Flashover Voltage: Shall be not less than 165 kilovolts.