

MIL-C-24643/6B
 3 October 1986
 SUPERSEDING
 MIL-C-0024643/6A(SH)
 8 November 1985
 MIL-C-24643/6
 28 September 1984

MILITARY SPECIFICATION SHEET

CABLE, ELECTRICAL, 600 VOLTS, A.C., TYPE LSMDY

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the cable described herein shall consist of this specification and the latest issue of MIL-C-24643.

REQUIREMENTS:

Qualification required.

Construction (watertight)

- First - Copper conductor, uncoated (see table I for size).
- Second - Separator may be used at manufacturer's option where required to provide free-stripping insulation.
- Third - Ethylene propylene rubber or cross-linked polyethylene insulation (see table I for wall thickness).
- Fourth - Standard identification code applied by method 1.
- Fifth - Nineteen conductors, cabled together with a lay not greater than 24 times the pitch diameter of the layer. Cabling sequence to be consecutive, starting with no. 1, from the center outward. Fillers shall be used to form a firm, well-rounded assembly.
- Sixth - Binder tape applied helically with overlap.
- Seventh - Cross-linked polyolefin jacket.
- Eighth - Braided metal armor.
- Ninth - Cross-linked polyolefin jacket (see table I for wall thickness). Cable surface marking required.

ⓑ denotes changes.

AMSC N/A
DISTRIBUTION STATEMENT A

Approved for public release; distribution unlimited

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TABLE I. Details.

Military part no. M24643/6	Type and size	Conductor size AWG	Insulation thickness (min) (inch)	Inner cable jacket thickness (nominal) (inch)	Diameter over armor (nominal) (inch)	Cable jacket thickness (nominal) (inch)	Overall diameter		Conductor resistance per 1000 feet (max) (ohms)	Insulator resistance (megohms)	Cold bending mandrel (inches)
							minimum (inches)	maximum (inches)			
-01AN	LSMDY-6	12(class B)	0.028	0.050	1.000	0.060	1.120	1.190	1.715	100	15
-02AN	LSMDY-14	9(class B)	.040	.050	1.380	.060	1.500	1.570	0.859	100	21
-03AN	LSMDY-23	7(class B)	.052	.085	1.710	.075	1.880	1.960	.542	100	25
-04AN	LSMDY-40	4(class C)	.052	.065	1.960	.075	2.150	2.240	.270	90	29
-05AN	LSMDY-60	2(class D)	.052	.065	2.250	.075	2.425	2.525	.171	75	33

EXAMINATION AND TESTS:

RequirementsBasic electrical:

Conductor resistance - ohms/1000 feet at 25°C, maximum.. (see table I)	
Voltage withstand - volts, root mean square, minimum	
Conductor to conductor.....	2500
Conductor to armor.....	2500
Armor to water.....	500
Insulation resistance - megohms/1000 feet, minimum..... (see table I)	
Conductor continuity.....	No failure

Group A:

Visual and dimensional.....	No failure
Watertightness - see MIL-C-24643 for limits of water leakage (with outer jacket removed).....	No failure

Group B:

Cold bending, cable - (see table I for mandrel diameter).....	No damage
Drip - 95 + 1°C.....	Zero
Tear - pounds per inch thickness, minimum (ASTM D 470)..	35
Physicals (unaged)	
Insulation	
Ethylene propylene rubber	
Tensile strength - lb/in ² , minimum.....	700
Elongation - percent, minimum.....	250
Cross-linked polyethylene	
Tensile strength - lb/in ² , minimum.....	1800
Elongation - percent, minimum.....	250
Jacket (cable)	
Tensile strength - lb/in ² , minimum.....	1300
Elongation - percent, minimum.....	160

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EXAMINATION AND TESTS: (Continued)

	<u>Requirements</u>
<u>Group C:</u>	
Physicals (aged)	
Insulation	
Ethylene propylene rubber	
Air oven	
Tensile strength - percent of unaged, minimum.....	75
Elongation - percent of unaged, minimum.....	75
Cross-linked polyethylene	
Air oven	
Tensile strength - percent of unaged, minimum.....	80
Elongation - percent of unaged, minimum.....	80
Jacket (cable)	
Air oven	
Tensile strength - percent of unaged, minimum.....	60
Elongation - percent of unaged, minimum.....	60
Hot oil immersion	
Tensile strength - lb/in ² , minimum..	50
Elongation - percent, minimum.....	50
Shrinkage.....	No failure
Permanence of printing (jacket) - cycles, minimum.....	250
Permanence of printing (conductor) - cycles, minimum....	50
Cable filler removability.....	No failure
Heat distortion - percent of unaged, maximum.....	30
Armor - conformance to material construction and coverage.....	No failure

QUALIFICATION INSPECTION:

Qualification inspection shall include basic electrical, all of groups A, B and C, plus the following:

Aging and compatibility (cable)(125 ± 5°C).....	No failure
Abrasion resistance (jacket) - scrapes, minimum.....	75
Acid gas equivalent - percent, maximum	
Jacket.....	2
Fillers.....	2
Insulation.....	18
Halogen content - percent, maximum	
Jacket.....	0.2
Fillers.....	0.2
Flame propagation (cable).....	No failure
Immersion (jacket)	
Tensile strength - percent of unaged, minimum.....	50
Elongation - percent of unaged, minimum.....	50

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QUALIFICATION INSPECTION: (Continued)

	<u>Requirements</u>
Smoke index, maximum	
Jacket.....	25
Fillers.....	—
Insulation.....	45
Toxicity index, maximum	
Jacket.....	5
Fillers.....	5
Insulation.....	1.5
Durometer outer (jacket) - (type A) hardness, minimum...	80
Weathering (jacket).....	No failure

UNIT ORDERING LENGTH: 1000 feet (nominal)

NOTE: Not for Air Force use.

Custodians:

Army - MI
Navy - SH

Preparing activity:

Navy - SH
(Project 6145-1005-06)

Review activities:

Army - AV, CR, ER
Navy - EC
DLA - IS

User activities:

Army - ME, AR, AL
Navy - CG