

MIL-C-0024643/6C(SH)
 29 May 1987
 USED IN LIEU OF
 MIL-C-24643/6B
 3 October 1986

MILITARY SPECIFICATION SHEET

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

This limited coordination military specification has been prepared by the Naval Sea Systems Command based upon currently available technical information but it has not been approved for promulgation as a coordinated revision of MIL-C-24643. It is subject to modification. However, pending its promulgation as a coordinated military specification, it may be used in acquisition.

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

REQUIREMENTS:

Qualification required.

- ① First - Copper conductor, uncoated (see table I for size).
Coated copper may be used at manufacturer's option where required to provide free-stripping insulation.
- Second - Separator may be used at manufacturer's option where required to provide free-stripping insulation.
- ① Third - Ethylene propylene rubber or cross-linked polyethylene insulation or at the manufacturer's option a composite with a primary insulation consisting of ethylene propylene rubber or cross-linked polyethylene. The composite layer may be substituted for up to 10 percent of the wall thickness (see table I for wall thickness).
- Fourth - 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.
- Fifth - Binder tape applied helically with overlap.
- Sixth - Cross-linked polyolefin jacket.
- Seventh - Braided metal armor.
- Eighth - Cross-linked polyolefin jacket (see table I for wall thickness). Cable surface marking required.

① denotes changes.

AMSC N/A

FSC 6145

DISTRIBUTION STATEMENT A Approved for public release; distribution unlimited

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C 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	1.73	100	15
-02AN	LSMDY-14	9(class B)	.040	.050	1.380	.060	1.500	1.570	.868	100	21
-03AN	LSMDY-23	7(class B)	.052	.085	1.710	.075	1.880	1.960	.598	100	25
-04AN	LSMDY-40	4(class C)	.052	.065	1.960	.075	2.150	2.240	.273	90	29
-05AN	LSMDY-60	2(class D)	.052	.065	2.250	.075	2.425	2.525	.172	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/in², minimum..... 700
Elongation - percent, minimum..... 250
Cross-linked polyethylene
Tensile strength - lb/in², minimum..... 1800
Elongation - percent, minimum..... 250
Jacket (cable)
Tensile strength - lb/in², minimum..... 1300
Elongation - percent, minimum..... 160

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EXAMINATION AND TESTS: (Continued)

RequirementsGroup C:

Physicals (aged)

Insulation

Ethylene propylene rubber

Air oven

Tensile strength - percent of unaged, minimum.....	75
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Elongation - percent of unaged, minimum.....	75
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Cross-linked polyethylene

Air oven

Tensile strength - percent of unaged, minimum.....	80
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Elongation - percent of unaged, minimum.....	80
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Jacket (cable)

Air oven

Tensile strength - percent of unaged, minimum.....	60
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Elongation - percent of unaged, minimum.....	60
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Hot oil immersion

Tensile strength - lb/in ² , minimum..	50
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Elongation - percent, minimum.....	50
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Shrinkage.....	No failure
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Permanence of printing (jacket) - cycles, minimum.....	250
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Permanence of printing (conductor) - cycles, minimum.....	50
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Cable filler removability.....	No failure
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Heat distortion - percent of unaged, maximum.....	30
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Armor - conformance to material construction and coverage.....	No failure
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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
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Abrasion resistance (jacket) - scrapes, minimum.....	75
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Acid gas equivalent - percent, maximum	
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Jacket.....	2
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Fillers.....	2
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Insulation.....	18
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Halogen content - percent, maximum	
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Jacket.....	0.2
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Fillers.....	0.2
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Flame propagation (cable).....	No failure
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Immersion (jacket)

Tensile strength - percent of unaged, minimum.....	50
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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)

1000 feet (nominal) for sizes 6, 14 and 23.

500 feet (nominal) for sizes 40 and 60.

NOTE: Not for Air Force use.

Custodians:

Army - MI

Navy - SH

Preparing activity:

Navy - SH

(Project 6145-N329-02)

Review activities:

Army - AV, CR, ER

Navy - EC

DLA - IS

User activities:

Army - ME, AR, AL

Navy - CG