INCH-POUND
MIL-DTL-24643/22E
1 October 2009
SUPERSEDING
MIL-DTL-24643/22D
22 August 2002

DETAIL SPECIFICATION SHEET

CABLE, ELECTRICAL, -20 °C TO +90 °C, 5000 VOLTS, TYPE LS5KVTSGU

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

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-24643.

Construction, Watertight with Circuit Integrity

First	-	Copper conductor, coated or uncoated (see table I for size).
Second	-	Thermoset insulation, extruded or taped. Minimum average wall thickness 0.140 inch.
Third	-	Optional covering (see table I for diameter)
Fourth	-	The three conductors shall be cabled together with a lay in accordance with 3.4.4 of MIL-DTL-24643. Fillers may be used as necessary to form a firm well-rounded assembly. Standard identification code applied by Method 1 or letter identification code applied by Method 5.
Fifth	-	An optional binder.
Sixth	-	Cross-linked polyolefin jacket. Minimum average wall thickness 0.090 inch.

TABLE I. Details.

Military part no. M24643/22	Type and size	Conductor size		Cable overall diameter max. (inches)	Conductor resistance (ohms)	Insulation resistance (megohms)	Accelerated service loading ampere
		Navy std	AWG				
-01UN	LS5KVTSGU-100	100	0 (Class D)	1.74	0.106	400	295
-02UN	LS5KVTSGU-150	150	000 (Class D)	1.95	0.0674	350	400
-03UN	LS5KVTSGU-250	250	250 MCM (Class C)	2.22	0.0453	300	535
-04UN	LS5KVTSGU-350	350	350 MCM (Class D)	2.45	0.0321	265	665
-05UN	LS5KVTSGU-400	400 (127)		2.60	0.0273	250	750

REQUIREMENTS:

Qualification required.

INSPECTION:

Basic Electricals:

Conductor resistance (ohms/1000 feet at 25 °C, max.)	See table I
Voltage withstand (volts, root mean square, min.)	
Conductor to conductor	13500
Insulation resistance (megohms/1000 feet, min.)	
Conductor to conductor	See table I
Conductor continuity	No failure

Group A:

Visual and dimensional	No failure
Watertightness (see MIL-DTL-24643 for limits of water leakage)	No failure

Group B:

Cold bending cable	No failure
Thermoset proof test (percent, max.)	
Insulation (extruded insulations only)	50
Jacket (when tested at 200 °C)	50
Drip (95±1 °C)	Zero
Physicals (unaged)	
Insulation (extruded)	
Tensile strength (lb/in^2, min.)	700

Elongation (percent, min.)	150
Jacket (cable)	
Tensile strength (lb/in^2, min.)	1300
Elongation (percent, min.)	160
Tear (lb/in thickness, min.)	35
Gas flame (1 hour)	No failure
Group C:	
Physicals (aged) air oven	
Jacket (cable)	
Tensile strength (percent of unaged, min.)	60
Elongation (percent of unaged, min.)	60
Permanence of printing (jacket) (cycles, min.)	125
Heat distortion (percent of unaged, max.)	30
Cable fill (sealant) removability	No failure
Shrinkage	No failure
Group D:	
Flame propagation (cable)	No failure
Qualification Inspection:	
Qualification inspection shall include basic electricals; groups A, B, C, and D; plus the following:	
Cold working (minus 20±2 °C)	No damage
Gas flame (3 hours)	No failure
Accelerated service (Sizes 100 and larger) (see table I for load current)	No failure
Aging and compatibility (cable) (125±5 °C)	No failure
Abrasion resistance (jacket) (scrapes, min.)	75
Acid gas equivalent (percent, max.)	
Jacket	2
Fillers	2
Insulation	18
Halogen content (percent, max.)	
Jacket	0.2
Fillers	0.2
Insulation	0.2
Immersion (jacket)	

Tensile strength (percent of unaged, min.)	50
Elongation (percent of unaged, min.)	50
Smoke index (max.)	
Jacket	25
Fillers	45
Insulation	45
Toxicity index (max.)	
Jacket	5
Fillers	5
Insulation	1.5
Durometer (jacket) - Type A (hardness, min.)	80
Weathering (jacket)	No failure
Electrical moisture absorption (extruded insulations only)	No failure

UNIT ORDERING LENGTHS:

Type and size	Feet (nominal)
LS5KVTSGU all sizes	1000

CHANGES FROM PREVIOUS ISSUE: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:
Army – MI
Navy – SH

Preparing Activity:
Navy – SH
(Project 6145-2008-026)

Review Activities:
Army – AR, AV, CR
Navy – CG, EC
DLA – CC

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil.