

DETAIL SPECIFICATION SHEET
CABLE, ELECTRICAL, TYPE LSC5P, LSC5POS AND LSC5POSR

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.

This cable can be manufactured in three variations: LSC5P (Unshielded Patch Cable, Non-Watertight), LSC5POS (AWG 24, Metallic Foil and Braid Patch Cable, Non-Watertight), and LSC5POSR (AWG 26, Metallic Foil and Braid Patch Cable, Non-Watertight).

REQUIREMENTS:

Qualification Required.

Construction (Shielded and UTP, Non-Watertight)

- First - Copper conductor, tin coated, stranded, 24 AWG or 26 AWG.
- Second - Polyolefin insulation. Wall thickness as necessary, in order for the completed cable to meet the specified electrical requirements. Maximum insulation diameter shall not exceed 0.046 inch.
- Third - Two insulated conductors, twisted together such that they meet the electrical requirements specified below. Wire identification codes shall be in compliance with ANSI/TIA -568-B.2 as follows:
 - Pair 1 – white/blue and blue,
 - Pair 2 – white/orange and orange,
 - Pair 3 – white/green and green,
 - Pair 4 – white/brown and brown.
- Fourth - Four pairs cabled together with a lay as required to meet electrical requirements.

Construction Variant for type LSC5P

- Fifth - Cross-linked polyolefin jacket. Minimum thickness of 0.040 inch.

Construction Variant for types LSC5POS and LSC5POSR

- Fifth - An optional binder tape applied with overlap.
- Sixth - Metallic foil/polyester tape. (Metallic foil side facing out and in contact with the braid).
- Seventh - Braided shield of 36 AWG or 34 AWG tin coated copper. Coverage as required to meet shield performance requirements.
- Eighth - An optional binder tape applied with overlap.
- Ninth - Cross-linked polyolefin jacket. Minimum thickness of 0.040 inch.

TABLE I. Details.

Military Part No. M24643/61	AWG	Type	Number of Pairs	Overall Diameter (in.)	
				Minimum	Maximum
-01UN	24	LSC5P-4	4	0.230	0.280
-02UD	24	LSC5POS-4	4	0.290	0.370
-03UD	26	LSC5POSR-4	4	0.230	0.280

EXAMINATION AND TESTS:

Basic Electricals:

DC resistance (ohms/100 m)

26 AWG

14 max.

24 AWG

9.38 max.

DC resistance unbalance

5% max.

Group A:

Visual and dimensional

No Failure

Capacitance

Mutual capacitance of a pair (max. @1 kHz)

5.6 nf/100 m

Pair to ground capacitance unbalance (max. @1 kHz)

330 pf /100 m

Input impedance (1 MHz to 100 MHz)

100 ohms \pm 15%

TABLE II. Swept electrical parameters.

Frequency (MHz)	1.0	4.0	10	16	31.25	62.5	100
Return Loss dB/100 m (min.)	20.0	23.0	25.0	25.0	23.6	21.5	20.1
Insertion Loss dB/100 m 24 AWG (max.)	2.4	4.9	7.8	9.8	14.0	20.4	26.4
Insertion Loss dB/100 m 26 AWG (max.)	3.0	6.2	9.8	12.3	17.6	25.5	33.0
NEXT dB/100 m (min.)	65.3	56.3	50.3	47.2	42.9	38.4	35.3
ELFEXT dB/100 m (min.)	63.8	51.8	43.8	39.7	33.9	27.9	23.8
PS NEXT dB/100 m (min.)	62.3	53.3	47.3	44.2	39.9	35.4	32.3
PS ELFEXT db/100 m (min.)	60.8	48.8	40.8	36.7	30.9	24.9	20.8
Propagation Delay ns/100 m (max.)	570	552	545	543	540	539	538
Delay Skew ns/100 m (max.)	45	45	45	45	45	45	45
Note: Values are for reference only. Actual values shall be determined utilizing the formulas in ANSI/TIA-568-B.2.							

Group B:

Drip – 95 ±1 °C Zero

Tear (pounds per inch thickness, min.) (ASTM D470) 35

Physicals (unaged)

Insulation (polyolefin)

Tensile strength (lb/in² min.) 1300

Elongation (percent, min.) 160

Jacket

Tensile strength (lb/in² min.) 1300

Elongation (percent, min.) 160

Cross-linked proof test (percent, max.)

Jacket 50

Group C:

Physicals (aged air oven)

Insulation (polyolefin)

Tensile strength (percent of unaged min.) – lb/in² min. 75%

Elongation (percent of unaged min.)	75%
Jacket	
Tensile strength (percent of unaged min.) – lb/in ² min.	60%
Elongation (percent of unaged min.)	60%
Shrinkage	No Failure
Heat Distortion (percent of unaged, max.)	30
Conformance to material, construction and coverage	No Failure
Surface transfer impedance (types LSC5POS and LSC5POSR)	
Milliohms (per meter, max.)	700
EMP response (dB, min.)	60
Permanence of printing (jacket) (cycles, min.)	125
Group D:	
Flame propagation (cable)	No Failure
Qualification Inspection:	
Qualification inspection shall include basic electrical, all groups A, B and C, plus the following:	
Aging and compatibility (cable) 95 ±2 °C	No Failure
Abrasion resistance (jacket)	No Failure
Acid gas equivalent (percent, max.)	
Jacket	2
Insulation	18
Halogen content (percent, max.)	
Jacket	0.2
Immersion (Jacket)	
Tensile strength (percent of unaged, min.)	50
Elongation (percent of unaged, min.)	50
Smoke index, max.	
Jacket	25
Insulation	45
Toxicity index, max.	
Jacket	5
Insulation	1.5
Durometer (jacket) – Type A (hardness, min.)	80
Weathering (jacket)	No Failure

Custodians:

Army – MI
Navy – SH

Preparing Activity:

Navy – SH
(Project 6145-2005-013)

Review Activities:

Army – AR, AV, CR
Navy – CG, EC
DLA – IS

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>.