INCH-POUND

MIL-DTL-13777/1C
13 June 2011
SUPERSEDING
MIL-C-13777/1B
15 September 1969

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL 2, 3, 4, AND 5 CONDUCTORS

Inactive for new design after 1 June 1998.

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-13777.

REQUIREMENTS:

Dimensions and configuration: See applicable figure and design data for the following cable types specified in table I. Design data is shown in table III.

TABLE I. Cable types.

020403	030470	031115	040560	041215
020405	030485	S031170	040635	041260
020425	030565	031355	040657	041335
S020500	030575S	S031640	040695	041488
020555	030635	040440	040870	041635
020610	030675	040470	041065	041655
0202645	030945	040500	041135	041754
030445			041210	S041886
				050502

In any conflict between the design data and the applicable figure, the design data shall govern.

Exceptions to mechanical testing:

Cable types listed below will be tested for the twist requirement only as specified in table II.

TABLE II. Cable types for twist requirement.

020403	020555	020645	030470	030565
020405	020610	030445	030485	030575S
020425				

TABLE III. Design data.

	Design data					
Type designation	020403	020405	020425	S020500	020555	020610
Figure number	1	1	1	1	1	1
Total wires	2	2	2	2	2	2
Number of conductors & AWG #	2/#20	2/#18	2/#16	2/#16	2/#14	2/#12
Insulation						
Min average thickness	0.015”	0.015”	0.015”	0.015”	0.018”	0.030”
Spark test voltage	3000	3000	3000	3000	4000	4000
Inspection test voltage	1500	1500	1500	1500	1800	2000
Cabling						
Layer No. 1						
(a) Number of wires	2	2	2	2	2	2
(b) AWG #	#20	#18	#16	#16	#14	#12
(c) Maximum lay	2.50”	2.50” (Twist)	2.50” (Twist)	3.00”	3.25” (Twist)	3.50” (Twist)
Sheath						
Number of layers	1	1	1	1	1	1
Total thickness min	0.070”	0.063”	0.078”	0.080”	0.078”	0.094”
Minimum OD cable	0.390”	0.390”	0.410”	0.485”	0.540”	0.595”
Maximum OD cable	0.420”	0.420”	0.440”	0.515”	0.570”	0.625”
Maximum Wt. (lbs./1000ft.)		91	101		176	235
	Design data					
Type designation		020645	030445	030470	030485	030565
Figure number		1	2	2	2	2
Total wires		2	3	3	3	3
No. of conductors & AWG #		2/#10	3/#18	3/#16	3/#18	3/#14
Insulation						
Min average thickness		0.040”	0.015”	0.015”	0.015”	0.030”
Spark test voltage		5000	3000	3000	3000	4000
Inspection test voltage		2500	1500	1500	1500	2000
Cabling						
Layer 1				Filler	Filler	Filler
(a) Number of wires		2	3			
(b) AWG #		#10	#18			
(c) Maximum lay		3.50” (Tw)				
Layer 2						
(a) Number of wires				3	3	3
(b) AWG #				#16	#18	#14
(c) Maximum lay				4.00”	3.00”	4.00”
Sheath						
Number. of layers		1	1	1	2	1
Total thickness min		0.094”	0.070”	0.078”	0.110”	0.078”
Minimum OD cable		0.630”	0.430”	0.445”	0.470”	0.550”
Maximum OD cable		0.660”	0.460”	0.495”	0.500”	0.580”
Maximum Wt. (lbs./1000ft.)		250				193

See notes at the end of table.

TABLE III. Design data – Continued.

Type designation	030575S	030635	030675	030945	031115
Figure number	2	2	2	2	2
Total wires	3	3	3	3	3
Number of conductors & AWG #	3/#18S	3/#12	3/#10	3/#8	3/#6
Insulation					
Min average thickness	0.015”	0.030”	0.030”	0.060”	0.060”
Spark test voltage	3000	4000	4000	7500	7500
Inspection test voltage	1500	2000	2000	2500	2500
Cabling					
Layer 1	Filler	Filler	Filler	Filler	Filler
Layer 2					
(a) Number of wires	3	3	3	3	3
(b) AWG #	#18S	#12	#10	#8	#6
(c) Maximum lay	4.00”	4.00”	4.00”	6.00”	6.00”
Sheath					
Number of layers	1	1	1	1	2
Total thickness min	0.078”	0.084”	0.078”	0.090”	0.125”
Minimum OD cable	0.550”	0.620”	0.660”	0.930”	1.100”
Maximum OD cable	0.600”	0.650”	0.690”	0.960”	1.130”
Maximum Wt. (lbs./1000ft.)		253		570	710
	Design data				
Type designation	S031170	031355	S031640	040440	040470
Figure number	2	2	2	3	3
Total wires	3	3	3	4	4
No. of conductors & AWG #	3/#4	3/#1	3/#0	4/#20	4/#18
Insulation					
Min average thickness	0.060”	0.070”	0.075”	0.015”	0.015”
Spark test voltage	7500	7500	7500	3000	3000
Inspection test voltage	2500	2500	2500	1500	1500
Cabling					
Layer 1	Filler	Filler	Filler	Filler	
Layer 2					
(a) Number of wires	3	3	3	4	4
(b) AWG #	#4	#1	#0	#20	#18
(c) Maximum lay					
Sheath		1/			
Number of layers	2	1	2	1	1
Total thickness min	0.100”	0.090”	0.120”	0.070”	0.070”
Minimum OD cable	1.155”	1.340”	1.625”	0.425”	0.440”
Maximum OD cable	1.185”	1.370”	1.655”	0.455”	0.500”
Maximum Wt.(lbs./1000ft.)		1600			

See notes at the end of table.

TABLE III. Design data – Continued.

Type designation	040500	040560	040635S	040675	040695
Figure number	3	3	3	3	3
Total wires	4	4	4	4	4
Number of conductors & AWG #	4/#16	4/#14	4/#18S	4/#12	4/#10
Insulation					
Min average thickness	0.015”	0.015”	0.015”	0.015”	0.015”
Spark test voltage	3000	3000	3000	3000	4000
Inspection test voltage	1500	1500	1500	1500	2000
Cabling					
Layer 1	Filler	Filler	Filler	Filler	Filler
Layer 2					
(a) Number of wires	4	4	4	4	4
(b) AWG #	#16	#14	#18S	#12	#10
(c) Maximum lay	4.00”		4.00”	4.00”	4.00”
Sheath					
Number of layers	1	1	1	1	1
Total thickness min	0.078”	0.080”	0.093”	0.094”	0.090”
Minimum OD cable	0.475”	0.530”	0.620”	0.625”	0.680”
Maximum OD cable	0.525”	0.590”	0.650”	0.688”	0.710”
Maximum Wt.(lbs./1000ft.)					400
Type designation [2/]	040870	041065	041135		041215
Figure number	3	3	3		3
Total wires	4	4	4		4
Number of conductors & AWG #	4/#8	4/#8	3/#6	1/#8	4/#6
Insulation					
Min average thickness	0.040”	0.060”	0.060”		0.060”
Spark test voltage	4000	4000	4000		7500
Inspection test voltage	2000	2000	2000		2500
Cabling					
Layer 1	Filler	Filler	Filler		
Layer 2					
(a) Number of wires	34	4	4		4
(b) AWG #	#8	#8	3/#6	1/#8	#6
(c) Maximum lay	6.00”	5.50”	7.00”		8.00”
Sheath					
Number of layers	2	2	2		2
Total thickness min	0.094”	0.141”	0.141”		0.156”
Minimum OD cable	0.850”	1.040”	1.100”		1.190”
Maximum OD cable	0.890”	1.090”	1.170”		1.240”
Maximum Wt.(lbs/1000ft.)	490				

See notes at the end of table.

TABLE III. Design data – Continued.

Type designation	041260		041335		041488	
Figure number	3		3		3	
Total wires	4		4		4	
Number of conductors & AWG #	3/#4	1/#8	4/#4		3/#2	1/#8
Insulation						
Min. average thickness	0.060”		0.060”		0.078”	0.060”
Spark test voltage	5000		4000		5000	
Inspection test voltage	2500		2000		2500	
Cabling						
Layer 1	Filler		Filler		Filler	
Layer 2						
(a) Number of wires	4		4		4	
(b) AWG #	3/#4	1/#8	#4		3/#2	1/#8
(c) Maximum lay	8.00”		10.00”		10.75”	
Sheath						
Number of layers	2		2		2	
Total thickness min	0.156”		0.156”		0.172”	
Minimum OD cable	1.235”		1.310”		1.443”	
Maximum OD cable	1.285”		1.360”		1.533”	
Type designation	041635		041655		041754	
Figure number	3		3		3	
Total wires	4		4		4	
Number. of conductors & AWG #	4/#2		3/#0	1/#8	3 #2/0	1/#4
Insulation						
Min average thickness	0.075”		0.075”	0.060”	0.052”	0.032”
Spark test voltage	7500		7500	5000	7500	
Inspection test voltage	5000		5000	2500	2500	
Cabling						
Layer 1	Filler		Filler		Filler	
Layer 2						
(a) Number of wires	4		4		4	
(b) AWG #	1/#2		3/#0	1/#8	3 #2/0	#4
(c) Maximum lay			10.00”		12.00”	
Sheath						
Number. of layers	2		2		2	
Total thickness min	0.188”		0.172”		0.127”	
Minimum OD cable	1.610”		1.605”		1.719”	
Maximum OD cable	1.660”		1.705”		1.789”	

See notes at the end of table.

TABLE III. Design data – Continued.

Type designation	S041886	041210		050502
Figure number	3	3		4
Total wires	4	4		5
No. of conductors & AWG #	4/#-0	3/#4	1/#8	5/#18
Insulation				
Min average thickness	0.075”	0.060”		0.015”
Spark test voltage	7500	5000		3000
Inspection test voltage	5000	2500		1500
Cabling				
Layer 1	Filler	Filler		Filler
Layer 2				
(a) Number of wires	4	4		5
(b) AWG #	#1-0	3/#4	1/#8	#18
(c) Maximum lay	12.00”	8.00”		
Sheath				
Number of layers	2	2		1
Total thickness min	0.172”	0.125		0.070”
Minimum OD cable	1.886”	1.180”		0.487”
Maximum OD cable	1.916”	1.240”		0.517”

1/ An open cotton braid separator may be substituted over this cable assembly and included in the total sheath thickness (Type 031355).
2/ Cold Bend Torque 30 Ft/lbs.

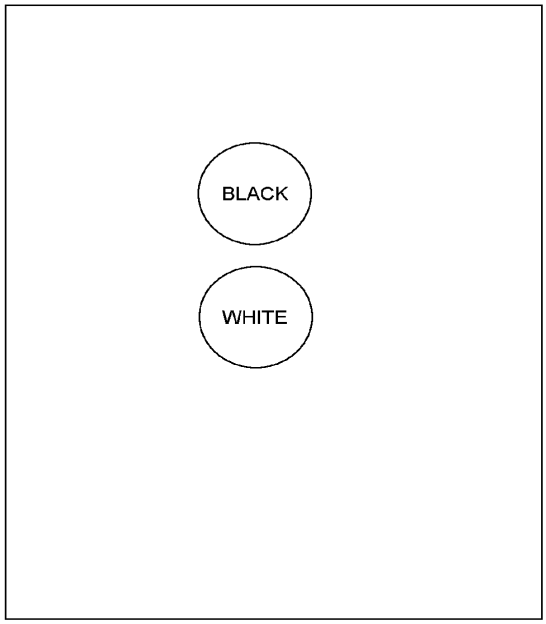

FIGURE 1. Cable types (020403, 020405, 020425, S020500, 020555, 020610, 020645).

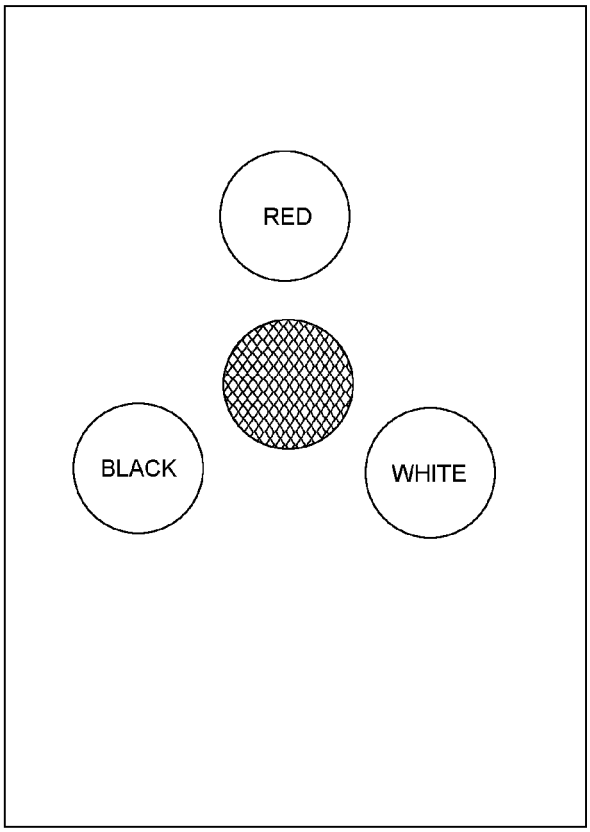

FIGURE 2. Cable types (030445, 030470, 030485, 030565, 030575S, 030635, 030675, 030945, 031115, S031170, 031355, S031640).

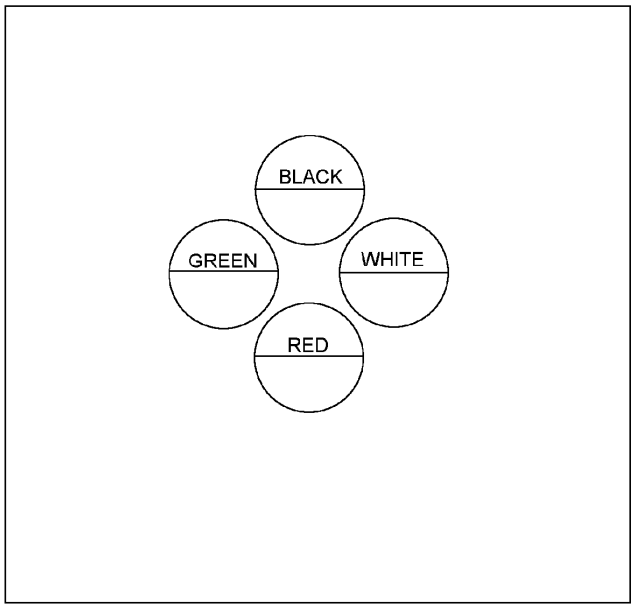

FIGURE 3. Cable types (040440, 040560, 0404695, 040470, 040635S, 040870, 040500, 040657, 041065, 041135, 041335, 041655, 041215, 041488, 041754, 041260, 041635, S041886, 041210).

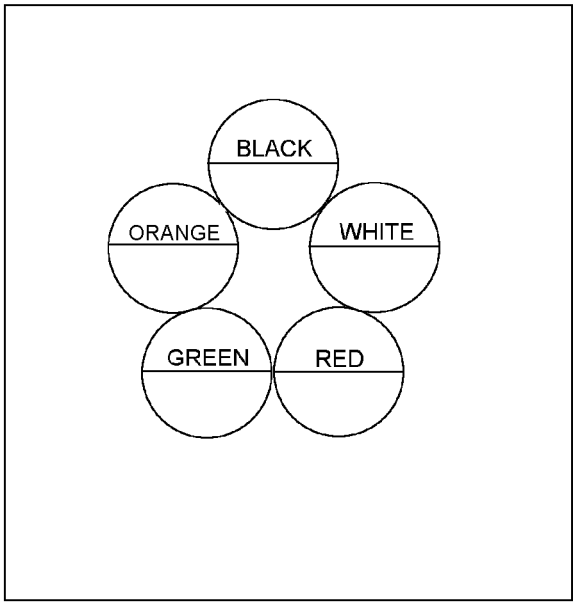

FIGURE 4. Cable type (050502).

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issues due to the extensiveness of the changes.

Referenced documents. This document references MIL-DTL-13777.

CONCLUDING MATERIAL

Custodians:
Army – AV
Navy – SH
Air Force – 85
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2011-004)

Review activities:
Army – AR, CR, MI

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 using the Assist Online database at https://assist.daps.dla.mil.