MIL-C-13777/1B
15 September 1969
SUPERSEDING
MIL-C-13777/1A
1 September 1966

MILITARY SPECIFICATION SHEET

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

The complete requirements for procuring the cable described herein shall consist of this document and the latest issue of Specification MIL-C-13777.

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

REQUIREMENTS:

Dimensions and configuration: See applicable figure and design data for the following cable types:

020403			040560	041215
020405	030470	031115	040635S	041260
020425	030485	S031170	040657	041335
S020500	030565	031355	040695	041488
020555	030575S	S031640	040870	041635
020610	030635	040440	041065	041655
020645	030675	040470	041135	041754
030445	030945	040500	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.

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

DESIGN DATA

Type Designation	020403	020405	020425	S020500	020555	020610
Figure No.----------	1	1	1	1	1	1
Total Wires----------	2	2	2	2	2	2
No. 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						
No. 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"

DESIGN DATA

Type Designation	020645	030445	030470	030485	030565
Figure No.----------	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 No. 1----------			Filler	Filler	Filler
(a) Number of wires----	2	3			
(b) AWG #----------	#10	#18			
(c) Maximum Lay--------	3.50" (Tw)				
Layer No. 2----------					
(a) Number of wires----			3	3	3
(b) AWG #----------			#16	#18	#14
(c) Maximum Lay--------			4.00"	3.00"	4.00"
Sheath					
No. 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"

DESIGN DATA

Type Designation	030575S	030635	030675	030945	031115
Figure No.----------	2	2	2	2	2
Total Wires----------	3	3	3	3	3
No. 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 No. 1----------	Filler	Filler	Filler	Filler	Filler
Layer No. 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					
No. 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"

DESIGN DATA

Type Designation	S031170	031355	S031640	040440	040470
Figure No.----------	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 No. 1----------	Filler	Filler	Filler	Filler	
Layer No. 2----------					
(a) Number of wires----	3	3	3	4	4
(b) AWG #----------	#4	#1	#0	#20	#18
(c) Maximum Lay--------					
Sheath		*			
No. 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"

*An open cotton braid separator may be substituted over this cable assembly and included in the total sheath thickness (Type 031355).

DESIGN DATA

Type Designation	040500	040560	040635S	040675	040695
Figure No.----------	3	3	3	3	3
Total Wires----------	4	4	4	4	4
No. 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"	0.030"
Spark Test Voltage-------	3000	3000	3000	3000	4000
Inspection Test Voltage--	1500	1500	1500	1500	2000
Cabling					
Layer No. 1----------	Filler	Filler	Filler	Filler	Filler
Layer No. 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					
No. 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"

DESIGN DATA

Type Designation (1)	040870	041065	041135		041215
Figure No.----------	3	3	3		3
Total Wires----------	4	4	4		4
No. 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 No. 1----------	Filler	Filler	Filler		Filler
Layer No. 2----------					
(a) Number of wires----	4	4	4		4
(b) AWG #----------	#8	#8	3/#6	1/#8	#6
(c) Maximum Lay--------	6.00"	5.50"	7.00"		8.00"
Sheath					
No. 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"

(1) Cold Bend Torque 30 Ft/lbs.

DESIGN DATA

Type Designation	041260		041335	041488	
Figure No.----------	3		3	3	
Total Wires----------	4		4	4	
No. of Conductors & AWG #	3/#4	1/#8	4/#4	3/#2	1/#8
Insulation					
Min average thickness----	0.060"		0.060"	0.078"	0.026"
Spark Test Voltage-------	5000		4000	5000	
Inspection Test Voltage--	2500		2000	2500	
Cabling					
Layer No. 1----------	Filler		Filler	Filler	
Layer No. 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					
No. 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"	

DESIGN DATA

Type Designation	041635		041655	041754	
Figure No.----------	3		3	3	
Total Wires----------	4		4	4	
No. 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 No. 1----------	Filler	Filler		Filler	
Layer No. 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					
No. 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"	

DESIGN DATA

Type Designation	S041886	041210	050502
Figure No.----------	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 No. 1----------	Filler	Filler	Filler
Layer No. 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			
No. of Layers----------	2	2	1
Total thickness Min------	0.172"	1.190"	0.070"
Minimum OD Cable---------	1.886"	1.210"	0.487"
Maximum OD Cable---------	1.916"	1.240"	0.517"

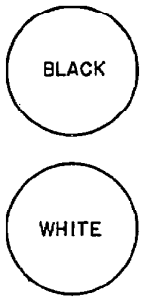
Custodians:
Army - MU
Navy - SH
Air Force - 17

Preparing activity:
Army - MU

(Project 6145-0470)

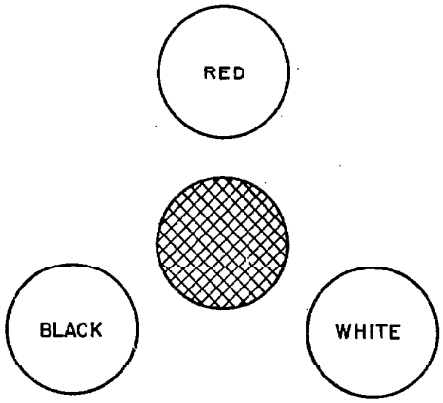
Reviewer:
Army - MI, EL, WC
Navy - SH
Air Force - 85

Users:
Army - ME, AT
Navy - MC, AS, EC
Air Force - 11



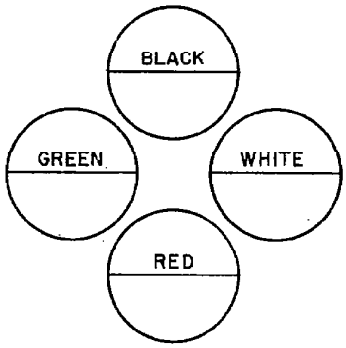
CABLE TYPES: 020403
020405 020425 S020500
020555 020610 020645

FIGURE 1



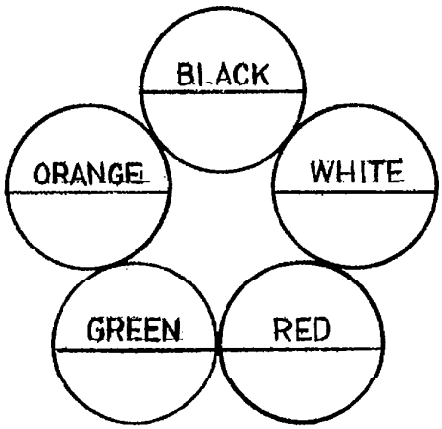
CABLE TYPES:
030445 030470 030485
030565 030575S 030635
030675 030945 031115
S031170 031355 S031640

FIGURE 2



CABLE TYPES:
040440 040470 040500 041135 041215 041260 041210
040560 040635S 040657 041335 041488 041635
040695 040870 041065 041655 041754 S041886

FIGURE 3



CABLE TYPE: 050502

FIGURE 4

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