INCH-POUND

MS27110E
19 October 2011
SUPERSEDING
MS27110D
19 July 2004

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL - SILICONE INSULATED, COPPER, 600 VOLT, 200°C, FEP JACKET

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-8777.

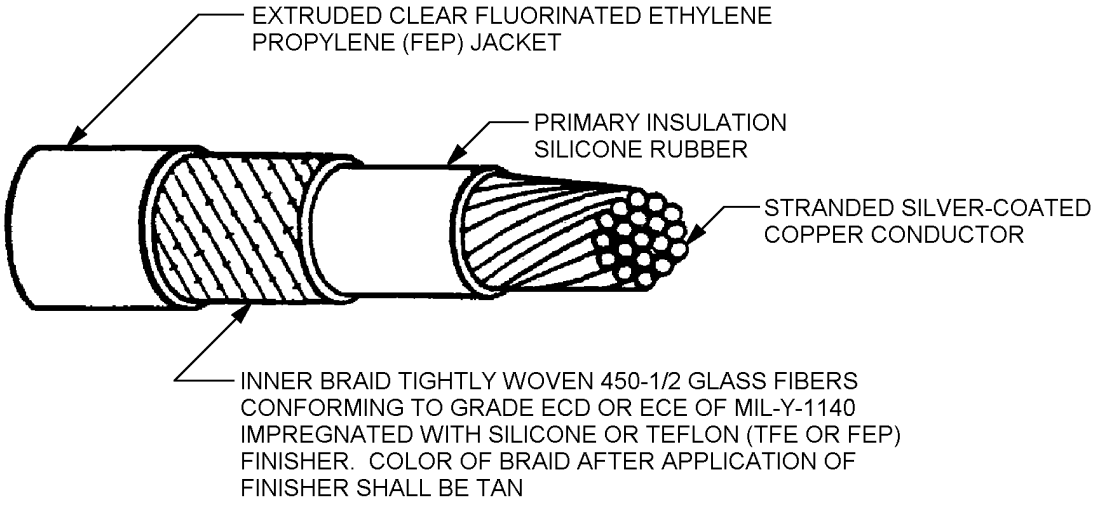


FIGURE 1. Cable.

TABLE I. Performance details.

Wire size	Abrasion test				Flaws test		Insulation and surface resistance			Life cycle and cold bend		
	Resistance, inches of tape min.	Tension load lbs.	Weight support bracket	Weight lbs.	Min ac voltage 60 Hz rms		Humidity resistance megohms per 200 feet min.	Insulation resistance megohms per 50 feet min.	Surface resistance megohm inches min	Mandrel diameter		Test load life cycle cold bend lbs.
					Primary insulation	Finished wire				Life cycle	Cold bend	
22	22	1	A	1	2000	5000	3000	1000	100	4.5	3	.75
20	22	1	A	1	2000	5000	3000	1000	100	4.5	3	.75
18	22	1	A	1	2000	5000	3000	1000	100	6.5	3	1
16	30	2	A	1	2000	5000	3000	1000	100	6.5	3	1
14	13	2	B	3	2000	5000	3000	1000	100	6.5	6	1
12	17	2	B	3	2000	5000	3000	1000	100	6.5	6	3
10	20	2	B	3	3000	5000				10	6	3
8	25	2	B	3	3000	5000				10	6	3
6	25	2	C	3	4000	5000				10	10	6
4	33	2	C	4.25	4000	5000				10	10	6

TABLE II. Finished wire construction.

Dash	Wire size	Number of strands	Resistance at 20°C (68°F) ohms/1000 feet max.	Finished wire diameter nominal	FEP jacket thickness nominal	Weight finished wire lbs/1000 ft. max.
22	22	19	15.2	.086 ± .004	.007 + .002, –.001	7.1
20	20	19	9.42	.096 ± .004	.007 + .002, –.001	9.0
18	18	19	6.03	.108 ± .004	.007 + .002, –.001	12.1
16	16	19	4.76	.116 ± .004	.007 + .002, –.001	14.3
14	14	19	2.99	.141 ± .004	.008 + .002, –.001	21.5
12	12	19	1.88	.160 ± .005	.008 + .002, –.001	30.5
10	10	49	1.16	.194 ± .005	.008 + .002, –.001	48.0
8	8	133	.70	.243 ± .007	.010 ± .002	75.0
6	6	133	.436	.292 ± .007	.010 ± .002	114.0
4	4	133	.274	.357 ± .007	.010 ± .002	173.0

TABLE III. Dimensions.

Inches	mm	Inches	mm
.001	.03	.108	2.74
.002	.05	.116	2.95
.004	.10	.141	3.58
.005	.13	.160	4.06
.007	.18	.194	4.93
.008	.20	.243	6.17
.010	.25	.292	7.42
.086	2.18	.357	9.07
.096	2.44		

REQUIREMENTS

The procurement specification for items described in this specification sheet is MIL-DTL-8777.

Dimensions are in inches.

Metric equivalents are given for information only.

Dimensions and configuration: See figure 1 and tables I, II and III.

Tensile strength (minimum): 800 psi before aging; 600 psi after aging.

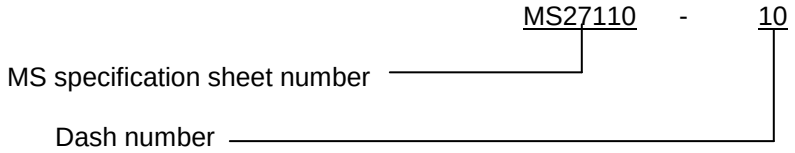
Elongation (minimum): 1.5 inches (38 mm) for a 2 inch (51 mm) specimen stretched to 3.5 inches, (89 mm) before and after aging.

Insulation shrinkage: During and following the thermal shock test, none of the insulation shall shrink back or flare greater then .060 inch (1.52 mm) for wire sizes 22 to 12, and .125 inch (3.18 mm) for wire sizes 10 to 4.

Test sample requirements: Two 24-inch (610 mm) samples shall be taken from each reel of finished wire, or 25,000 feet (7620 mm), whichever is less. The samples shall be placed on mandrels with weights attached as specified for the life cycle test and subjected to 200 ± 5°C for 20 hours. Following the air open test, the samples shall be cooled for one hour and subjected to the bend tests and the dielectric tests of MIL-DTL-8777. During these tests, the outer jacket shall not shrink more than .125 inch (3.18 mm) from each end.

Marking: Marking on inner braid in accordance with MIL-DTL-8777 shall be visable throught the outer FEP jacket.

Part or Identifying Number (PIN) example:



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.

Referenced documents. In addition to MIL-DTL-8777, this document references the following:
MIL-Y-1140

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 6145-2011-022)

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 https://assist.daps.dla.mil.