

Insulation Sleeving, Electrical, Heat Shrinkable,
Fluoroelastomer, Flexible

FSC 5970

RATIONALE

Revise to include comments received by the government and industry, update references, align specification with SAE guidelines, and review specification for known technical problems.

The requirements for acquiring the sleeving described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-DTL-23053.

REQUIREMENTS

Polymer type: The base elastomer used in formulating this sleeving shall be fluoroelastomer.

Continuous operating temperature range: -40 °F (-40 °C) to +392 °F (+200 °C).

Color: The heat shrinkable sleeving shall be furnished in the color specified by the acquisition activity (See 6.2); however, black shall be considered standard. Colors shall conform to the requirements of Class II of MIL-STD-104. (See 1.2.1 and 3.4.2.1)

Longitudinal change: ±20 percent.

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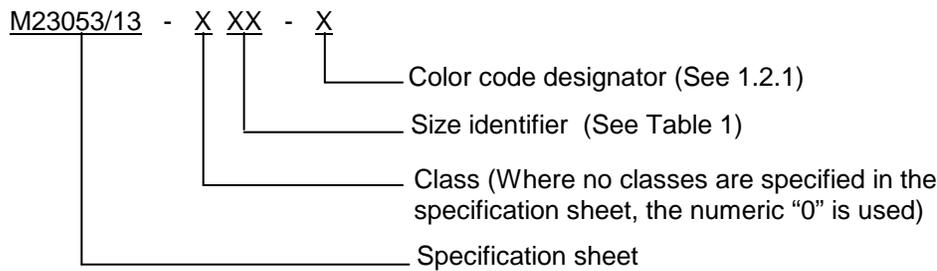
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Military part number: The Military part number shall consist of the basic number of this specification sheet and dash numbers as follows:



Example: Black, 0.500 inch (12.7 mm) as supplied ID sleeving shall be identified as M23053/13-004-0.

TABLE I. CONSTRUCTION DETAILS, INCHES (MM). 1/

Military part number <u>1/</u>	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall Thickness <u>2/</u>
M23053/13-001-*	0.187(4.75)	0.094(2.38)	0.035 ± 0.007(0.889 ± 0.178)
M23053/13-002-*	0.250(6.35)	0.125(3.18)	0.035 ± 0.007(0.889 ± 0.178)
M23053/13-003-*	0.375(9.53)	0.187(4.75)	0.035 ± 0.007(0.889 ± 0.178)
M23053/13-004-*	0.500(12.70)	0.250(6.35)	0.035 ± 0.007(0.889 ± 0.178)
M23053/13-005-*	0.625(15.88)	0.312(7.92)	0.042 ± 0.008(1.067 ± 0.203)
M23053/13-006-*	0.750(19.05)	0.375(9.53)	0.042 ± 0.008(1.067 ± 0.203)
M23053/13-007-*	0.875(22.23)	0.437(11.10)	0.049 ± 0.011(1.245 ± 0.279)
M23053/13-008-*	1.000(25.40)	0.500(12.70)	0.049 ± 0.011(1.245 ± 0.279)
M23053/13-009-*	1.250(31.75)	0.625(15.88)	0.055 ± 0.015(1.397 ± 0.381)
M23053/13-010-*	1.500(38.10)	0.750(19.05)	0.055 ± 0.015(1.397 ± 0.381)
M23053/13-011-*	2.000(50.80)	1.000(25.40)	0.065 ± 0.017(1.651 ± 0.432)
M23053/13-012-*	0.125(3.18)	0.063(1.60)	0.030 ± 0.007(0.762 ± 0.178)

1/ Diameter limits for object to be enclosed shall be as specified in technical data.

2/ Wall thickness values are less when shrinkage is restricted.

3/ The asterisk in the part number shall be replaced by color code designations (See 1.2.1). Black is the standard color.

Unrestricted shrinkage: Test method 4.6.5; 392 °F ± 9 (200 °C ± 5) for 10 minutes maximum.

TABLE 2 - PHYSICAL PROPERTIES

Characteristic	Requirement	Test procedure and condition
<u>As supplied:</u>		
ID, minimum	Table 1	4.6.3.1.1
Cold impact	No cracking	4.6.7.2 -40 °F ± 1 (-40 °C ± 2)
Heat shock	No cracks, flowing or dripping	4.6.8 572 °F ± 9 (300 °C ± 5)
Restricted shrinkage	No cracks	4.6.6 392 °F ± 4 (200 °C ± 2)
Voltage withstand	Pass	4.6.6.3
<u>After unrestricted shrinkage:</u>		
ID, maximum	Table 1	4.6.3.1.2
Wall thickness	Table 1	4.6.3.2
Tensile strength, psi (MPa), minimum	1200(8.2)	4.6.13, ASTM D 412
Ultimate elongation, percent	250	4.6.13, ASTM D 412
Tensile stress at 200 percent elongation, psi (MPa), maximum	2000(13.8)	4.6.2 ASTM D 412
Dielectric strength, volts/mil, (Kv/mm), minimum	200(7.9)	4.6.2 ASTM D 2671
Volume resistivity, Ohm-cm, minimum	10 ⁹	4.6.2 ASTM D 876
Corrosion	No corrosion or pitting	4.6.10.1 and 4.6.10.2 347 °F ± 4 (175 °C ± 2) for 16 hours.
Heat resistance, properties after:		4.6.9 482 °F ± 5.4 (250 °C ± 3) for 168 hours
Tensile strength, psi (MPa), minimum	1200(8.2)	
Ultimate elongation, percent, minimum	200	
Water absorption, percent, maximum	0.5	4.6.2 ASTM D 570, 24 hrs at 73 °F (23 °C)