

SAE Aerospace An SAE International Group	AEROSPACE MATERIAL SPECIFICATION	SAE AMS-DTL-23053/10	REV. A
		Issued 1999-07 Revised 2012-08	
		Superseding AMS-DTL-23053/10	
Insulation Sleeving, Electrical, Heat Shrinkable, Silicone Rubber, 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 a silicone.

Continuous operating temperature range: -103 °F (-75 °C) to +347 °F (+175 °C).

Color: The sleeving shall be furnished in a black color that conforms to the requirements of Class II of MIL-STD-104. (See 1.2.1)

Longitudinal change: +3, -10 percent

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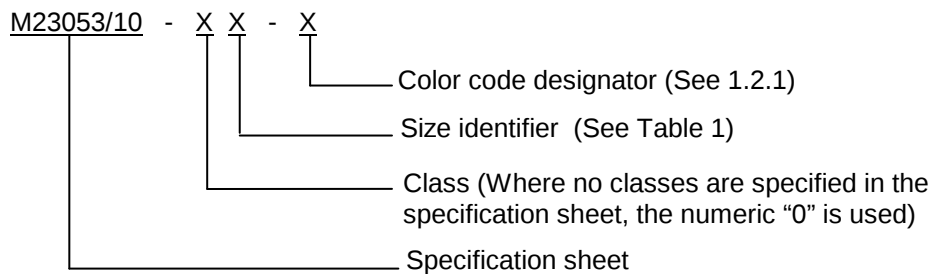
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Military part number: The Military part number shall consist of the basic number of this specification sheet and dash numbers shown as follows:



Example: Black, 2.000 inch (50.80 mm) as supplied ID sleeving shall be identified as M23053/10-012-0.

TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) ^{1/}

Military part number ^{3/}	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall Thickness ^{2/}
M23053/10-001-0	0.125(3.18)	0.071(1.80)	0.020 ± 0.006 (0.508 ± 0.152)
M23053/10-002-0	0.250(6.35)	0.143(3.63)	0.035 ± 0.010 (0.889 ± 0.254)
M23053/10-003-0	0.375(9.53)	0.214(5.44)	0.040 ± 0.010 (1.016 ± 0.254)
M23053/10-004-0	0.500(12.70)	0.286(7.27)	0.048 ± 0.015 (1.219 ± 0.381)
M23053/10-005-0	0.625(15.88)	0.357(9.07)	0.052 ± 0.015 (1.321 ± 0.381)
M23053/10-006-0	0.750 (19.05)	0.428(10.87)	0.057 ± 0.015 (1.448 ± 0.381)
M23053/10-007-0	0.875(22.23)	0.500(12.70)	0.065 ± 0.015 (1.651 ± 0.381)
M23053/10-008-0	1.000(25.40)	0.570(14.48)	0.070 ± 0.020 (1.778 ± 0.508)
M23053/10-009-0	1.250(31.75)	0.714(18.14)	0.087 ± 0.020 (2.210 ± 0.508)
M23053/10-010-0	1.500(38.10)	0.857(21.77)	0.095 ± 0.020 (2.413 ± 0.508)
M23053/10-011-0	1.750(44.45)	1.000(25.40)	0.107 ± 0.020 (2.718 ± 0.508)
M23053/10-012-0	2.000(50.80)	1.140(28.96)	0.110 + 0.020 (2.794 + 0.508)

^{1/} Diameter limits for the object to be enclosed shall be as recommended in technical data.

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

^{3/} The color code identified is the standard color.

Unrestricted shrinkage: Test method 4.6.5.2 392 °F ± 4 (200 °C ± 2) for 10 minutes.

TABLE 2 PHYSICAL PROPERTIES

Characteristic	Requirement	Test procedure and condition
<u>As supplied:</u>		
ID, minimum	Table 1	4.6.3.1.1
Heat shock	No cracks, flowing or dripping	4.6.8 572 °F ± 7.2 (300 °C ± 4) No mandrel bend
Tensile stress at 100 percent, psi (MPa), maximum	1000(6.9)	4.6.12.2 ASTM D 412
Cold impact	No cracking	4.6.7.2 -105 °F ± 4 (-75 °C ± 2) longitudinal strip. ASTM D 746
Dielectric strength, volts/mil (Kv/mm), minimum	200(7.9)	4.6.2 ASTM D 2671
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	600(4.2)	4.6.13 ASTM D 638, 20 inches/minute
Ultimate elongation, percent, minimum	200	4.6.13 ASTM D 638, 20 inches/minute
Volume resistivity, Ohm-cm, minimum	1×10^{11}	4.6.2 ASTM D 876
Water absorption, Percent, maximum	1.0	4.6.2 ASTM D 570, 24 hrs at 23 °C
Corrosion	No corrosion or pitting	4.6.10.1 and 4.6.10.2, 347 °F ± 4 (175 °C ± 2), 16 hours
Heat resistance, properties after:		4.6.9 392 °F ± 4 (200 °C ± 3), 168 hours
Tensile strength, psi (MPa), minimum	450(3.1)	
Ultimate elongation, percent, minimum	100	