The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS-DTL-23053/1

Issued JUL 1999

Insulation Sleeving, Electrical, Heat Shrinkable, Crosslinked Chlorinated Polyolefin, Flexible

FSC 5970

NOTICE

This document has been taken directly from U.S. Military Specification MIL-DTL-23053/1C and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-DTL-23053/1C. Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this SAE technical document.

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-7121 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS: http://www.sae.org

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 crosslinked chlorinated polyolefin.

Continuous operating temperature range:

Class 1: -55°C (-67°F) to +90°C (+194°F)
Class 2: -70°C (-94°F) to +121°C (+250°F)

Color: The sleeving shall be furnished in a black color that conforms to Class II of MIL-STD-104 (see 1.2.1 and 3.4.1.5).

Class: The sleeving shall be furnished in the following classes, as specified (see 6.2a):

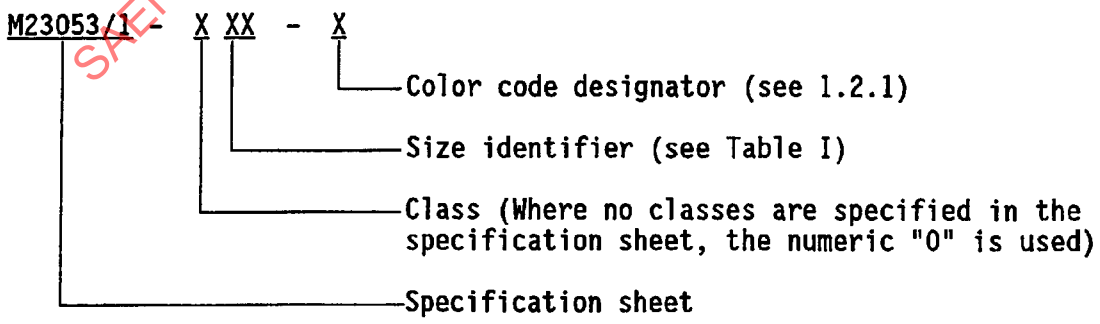
Class 1 - Normal operating temperature
Class 2 - Extended operating temperature

NOTICE:

Class 1 sleeving because of its temperature limitations should not be considered for new design applications. Class 2 sleeving can be substituted for Class 1 sleeving.

Longitudinal change: +1, -10 percent

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



Example: Class 2, black, 1.000 inch (25.4 mm) as supplied ID sleeving shall be identified as M23053/1-207-0.

TABLE I. Construction details, inches (mm). 1/

Military Part number 3/	As supplied ID minimum	After unrestricted shrinkage ID maximum	After unrestricted shrinkage Wall thickness 2/
Class 1			
M23053/1-101-0	.250 (6.4)	.143 (3.6)	.035 ± .010 (.89 ± .25)
M23053/1-102-0	.375 (9.5)	.211 (5.4)	.040 ± .010 (1.01 ± .25)
M23053/1-103-0	.500 (12.7)	.286 (7.3)	.048 ± .015 (1.21 ± .38)
M23053/1-104-0	.625 (15.9)	.357 (9.1)	.052 ± .015 (1.32 ± .38)
M23053/1-105-0	.750 (19.1)	.428 (10.9)	.057 ± .015 (1.44 ± .38)
M23053/1-106-0	.875 (22.2)	.500 (12.7)	.065 ± .020 (1.65 ± .51)
M23053/1-107-0	1.000 (25.4)	.570 (14.5)	.070 ± .020 (1.77 ± .51)
M23053/1-108-0	1.250 (31.8)	.714 (18.1)	.087 ± .020 (2.20 ± .51)
M23053/1-109-0	1.500 (38.1)	.857 (21.8)	.095 ± .020 (2.41 ± .51)
M23053/1-110-0	1.750 (44.5)	1.000 (25.4)	.107 ± .020 (2.71 ± .51)
M23053/1-111-0	2.000 (50.8)	1.140 (29.0)	.110 ± .020 (2.79 ± .51)
M23053/1-112-0	3.000 (76.2)	1.710 (43.4)	.125 ± .020 (3.17 ± .51)
M23053/1-113-0	4.000 (101.6)	2.280 (57.9)	.140 ± .020 (3.55 ± .51)
Class 2			
M23053/1-201-0	.250 (6.4)	.143 (3.6)	.035 ± .010 (.89 ± .25)
M23053/1-202-0	.375 (9.5)	.211 (5.4)	.040 ± .010 (1.01 ± .25)
M23053/1-203-0	.500 (12.7)	.286 (7.3)	.048 ± .015 (1.21 ± .38)
M23053/1-204-0	.625 (15.9)	.357 (9.1)	.052 ± .015 (1.32 ± .38)
M23053/1-205-0	.750 (19.1)	.428 (10.9)	.057 ± .015 (1.44 ± .38)
M23053/1-206-0	.875 (22.2)	.500 (12.7)	.065 ± .020 (1.65 ± .51)

TABLE I. Construction details, inches (mm). 1/ - Continued

Military Part Number 3/	As supplied ID minimum	After unrestricted Shrinkage	
		ID maximum	Wall thickness 2/
M23053/1-207-0	1.000 (25.4)	.570 (14.5)	.070 ± .020 (1.77 ± .51)
M23053/1-208-0	1.250 (31.8)	.714 (18.1)	.087 ± .020 (2.20 ± .51)
M23053/1-209-0	1.500 (38.1)	.857 (21.8)	.095 ± .020 (2.41 ± .51)
M23053/1-210-0	1.750 (44.5)	1.000 (25.4)	.107 ± .020 (2.71 ± .51)
M23053/1-211-0	2.000 (50.8)	1.140 (29.0)	.110 ± .020 (2.79 ± .51)
M23053/1-212-0	3.000 (76.2)	1.710 (43.4)	.125 ± .020 (3.17 ± .51)
M23053/1-213-0	4.000 (101.6)	2.280 (57.9)	.140 ± .020 (3.55 ± .51

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 acquisition color.

Unrestricted shrinkage procedures: Test method 4.6.5; 175° ± 2°C (347° ± 4°F) for 10 minutes, maximum.

TABLE II. Physical properties. 1/

Characteristic	Requirement	Test procedure and condition
As supplied:		
ID, minimum	Table I	4.6.3.1.1
Low temperature flexibility	No cracks	4.6.7.1 Class 1:-55° ± 2°C (-67° ± 4°F); Class 2: -70° ± 2°C (-94° ± 4°F)
Heat shock	No cracks, flowing or dripping	4.6.8 Class 1: 150° ± 2°C; (302° ± 4°F); Class 2: 200° ± 2°C (392° ± 4°F)
Restricted shrinkage	No cracks	4.6.6.1.1 135° ± 2°C (275° ± 4°F)
Voltage withstand	Pass	4.6.6.2