

AEROSPACE MATERIAL SPECIFICATION



AMS-DTL-23053/15

Issued

JUL 1999

Insulation Sleeving, Electrical, Heat Shrinkable,
Polyolefin, Heavy-Wall, Coated, Flexible, Outer Wall Crosslinked
FSC 5970

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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 polymer used in formulating the outer wall of this sleeving shall be a polyolefin.

Continuous operating temperature range: -55°C (-67°F) to +110°C (+230°F).

Color: The heat shrinkable sleeving shall be furnished in colors that conform to the requirements of Class II of MIL-STD-104. Black shall be the standard acquisition color.

Longitudinal change: +1 -10 percent

Classes: The sleeving shall be furnished in the following classes, as specified:

Class 1 - Heavy Wall

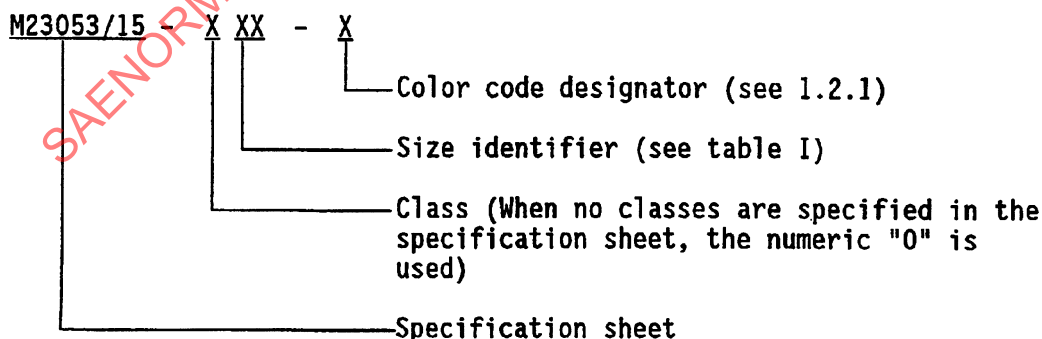
Class 2 - Medium Wall

Coatings: The inner wall of the sleeving shall be coated with an adhesive or sealant type material which shall effectively seal the enclosed area against moisture.

Adhesive: Adhesive is for pressure retention and load bearing applications.

Sealant: Sealant is for water hold out applications.

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 1, black sleeving, 3.00 inch (76.2 mm) as supplied ID sleeving shall be identified as M23053/15-105-0.

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

Military part number	As supplied ID minimum 3/	After unrestricted shrinkage	
		ID maximum	Wall thickness nominal
<u>Class 1</u>			
M23053/15-101-0	.750(19.1)	.220(5.59)	.105(2.7)
M23053/15-102-0	1.100(27.9)	.375(9.53)	.120(3.1)
M23053/15-103-0	1.500(38.1)	.500(12.7)	.140(3.6)
M23053/15-104-0	2.000(50.8)	.750(19.1)	.155(3.44)
M23053/15-105-0	3.000(76.2)	1.250(31.8)	.155(3.44)
M23053/15-106-0	4.000(101.6)	1.750(44.5)	.155(3.44)
M23053/15-107-0	.300(7.6)	.100(2.5)	.050(1.3)
M23053/15-108-0	.400(10.2)	.150(3.8)	.060(1.5)
M23053/15-109-0	1.300(33.0)	.375(9.5)	.120(3.1)
M23053/15-110-0	1.700(43.2)	.500(12.7)	.155(3.4)
M23053/15-111-0	2.700(68.6)	.900(22.9)	.155(3.4)
M23053/15-112-0	4.500(114.3)	1.750(44.5)	.170(4.3)
<u>Class 2</u>			
M23053/15-201-0	.400(10.2)	.150(3.81)	.060(1.52)
M23053/15-202-0	.750(19.1)	.220(5.59)	.060(1.52)
M23053/15-203-0	1.100(27.9)	.375(9.53)	.105(2.67)
M23053/15-204-0	1.300(33.0)	.375(9.53)	.105(2.67)

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

Military part number	As supplied ID minimum 3/	After unrestricted shrinkage	
		ID maximum	Wall thickness nominal
M23053/15-205-0	1.500(38.1)	.500(12.7)	.120(3.05)
M23053/15-206-0	1.700(43.2)	.500(12.7)	.140(3.56)
M23053/15-207-0	2.700(68.6)	.900(22.9)	.155(3.94)
M23053/15-208-0	2.000(50.8)	.750(19.1)	.140(3.6)

1/ Diameter limits for objects to be enclosed shall be as recommended in technical data.

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

3/ As supplied ID is for uncoated product. An allowance of approximately .050 inch (1.3 mm) may be necessary depending on coating.

Unrestricted shrinkage: Test method 4.6.5.2; $200^{\circ} \pm 2^{\circ}\text{C}$ ($392^{\circ} \pm 4^{\circ}\text{F}$) for 10 minutes maximum.

TABLE II. Physical properties.

Characteristic	Requirement	Test procedure and conditions
<u>As supplied:</u>		
ID, minimum	Table I	4.6.3
Low temperature flexibility	No cracking	4.6.7.1 $-55^{\circ} \pm 2^{\circ}\text{C}$ ($-67^{\circ} \pm 4^{\circ}\text{F}$)
Heat shock	No cracking, flowing or dripping of outer wall	4.6.8 $225^{\circ} \pm 3^{\circ}\text{C}$ ($437^{\circ} \pm 6^{\circ}\text{F}$)
Secant modulus, psi (MPa), maximum	25,000(172.4)	4.6.12.1, 2 percent strain, ASTM D882
Color stability	Pass	4.6.15 $175^{\circ} \pm 2^{\circ}\text{C}$ ($347^{\circ} \pm 4^{\circ}\text{F}$) 24 hours