

# AEROSPACE MATERIAL SPECIFICATION



AMS-DTL-23053/17

Issued

JUL 1999

Insulation Sleeving, Electrical, Heat Shrinkable,  
Flame Retarded, Modified Polyolefin, Flexible, 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 this sleeving shall be a polyolefin.

Continuous operating temperature range: -55°C (-67°F) to +120°C (+250°F).

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

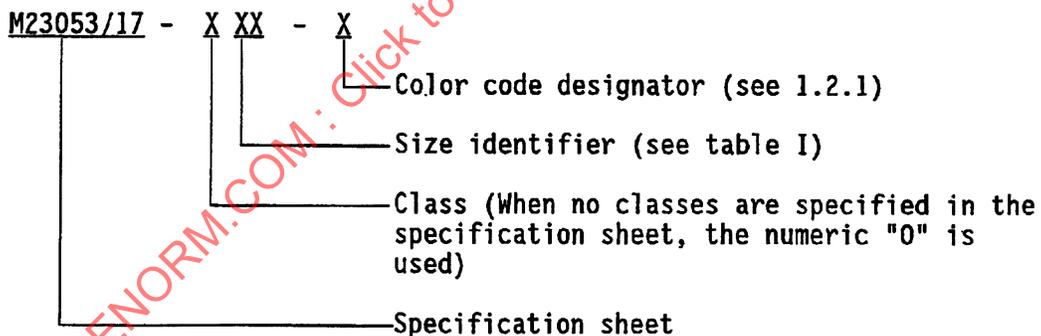
Class 1 - Standard wall

Class 2 - Thin wall

Color: Translucent to clear.

Longitudinal Change: Classes 1 and 2: +2, -10 percent

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



Example: Class 1, 0.250 inch (6.35 mm) as supplied ID sleeving shall be identified as M23053/17-106-C.

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

Military part number	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall thickness 2/
<u>Class 1</u>			
M23053/17-101-C	.046(1.17)	.023(.58)	.016 ± .003(.406 ± .076)
M23053/17-102-C	.063(1.60)	.031(.79)	.017 ± .003(.432 ± .076)
M23053/17-103-C	.093(2.36)	.046(1.17)	.020 ± .003(.508 ± .076)
M23053/17-104-C	.125(3.18)	.062(1.58)	.020 ± .003(.508 ± .076)
M23053/17-105-C	.187(4.75)	.093(2.36)	.020 ± .003(.508 ± .076)
M23053/17-106-C	.250(6.35)	.125(3.18)	.025 ± .003(.635 ± .076)
M23053/17-107-C	.375(9.53)	.187(4.75)	.025 ± .003(.635 ± .076)
M23053/17-108-C	.500(12.7)	.250(6.35)	.025 ± .003(.635 ± .076)
M23053/17-109-C	.750(19.1)	.375(9.53)	.030 ± .003(.762 ± .076)
M23053/17-110-C	1.000(25.4)	.500(12.7)	.035 ± .005(.889 ± .127)
<u>Class 2</u>			
M23053/17-201-C	.046(1.17)	.023(.58)	.010 ± .003(.254 ± .076)
M23053/17-202-C	.063(1.60)	.031(.79)	.010 ± .003(.254 ± .076)
M23053/17-203-C	.093(2.36)	.046(1.17)	.012 ± .003(.305 ± .076)
M23053/17-204-C	.125(3.18)	.062(1.58)	.012 ± .003(.305 ± .076)
M23053/17-205-C	.187(4.75)	.093(2.36)	.012 ± .003(.305 ± .076)
M23053/17-206-C	.250(6.35)	.125(3.18)	.014 ± .003(.356 ± .076)
M23053/17-207-C	.375(9.53)	.187(4.75)	.014 ± .003(.356 ± .076)
M23053/17-208-C	.500(12.7)	.250(6.35)	.014 ± .003(.356 ± .076)
M23053/17-209-C	.750(19.1)	.375(9.53)	.017 ± .003(.432 ± .076)
M23053/17-210-C	1.000(25.4)	.500(12.7)	.020 ± .005(.508 ± .127)

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

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

Unrestricted shrinkage: Test method 4.6.5: 200° ± 2°C (392° ± 4°F) for 3 minutes.

TABLE II. Physical properties. 1/

Characteristic	Requirement	Test procedure and conditions
<u>As supplied:</u>		
ID, minimum	Table 1	4.6.3
Heat shock	No cracks, flowing or dripping	4.6.8 200° ± 3°C (392° ± 6°F)
Secant modulus, psi (MPa), minimum	15,000(103.4)	4.6.12.1, 2 percent strain, ASTM D882
Restricted shrinkage	No cracks	4.6.6.1.1 200° ± 2°C (392° ± 4°F)
Voltage withstand	Pass	4.6.6.2
Clarity stability	Pass	4.6.16 125° ± 1°C (257° ± 2°F), 24 hours
Concentricity, min.	70%	4.6.3.3
<u>After unrestricted shrinkage:</u>		
ID, maximum	Table 1	4.6.3
Wall thickness	Table 1	4.6.3
Tensile strength, psi (MPa), minimum	1,500(10.4)	4.6.13 ASTM D638, 20 inches/min.
Ultimate elongation, percent, minimum	200	4.6.13 ASTM D638, 20 inches/min.
Dielectric strength, volts/mil (Kv/mm), minimum	750(29.5)	4.6.2 ASTM D2671