SAE Aerospace
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AEROSPACE MATERIAL SPECIFICATION

SAE AMS-DTL-23053/17 REV. A

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Superseding AMS-DTL-23053/17

Insulation Sleeving, Electrical, Heat Shrinkable, Flame Retarded, Modified Polyolefin, Flexible, Crosslinked

FSC 5970

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature. Design authorities may determine that this document is no longer to be used for new design. The product is not recommended for aircraft applications (see AS50881).

STABILIZED NOTICE

This document has been declared “Stabilized” by the AE8-D Wire and Cable Committee and will no longer be subject to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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NOTICE

This document has been taken directly from U.S. Military Specification MIL-DTL-23053/17B 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-23053/17B. 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.

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).

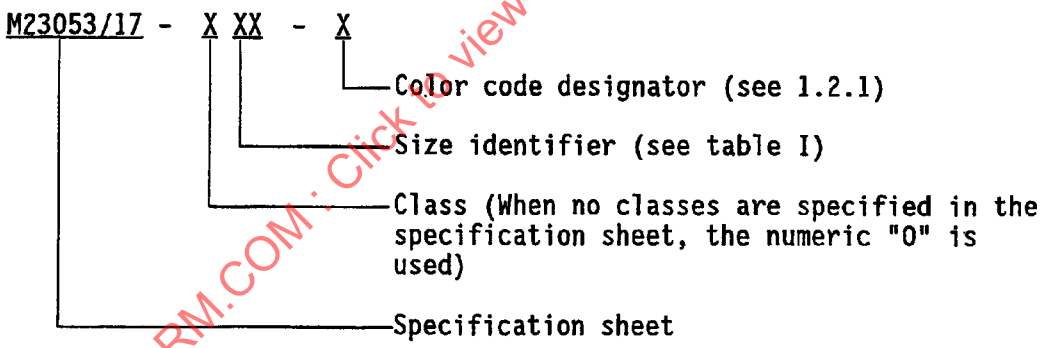
Classification: The heat shrinkable sleeving shall be furnished in the following classes, as specified (see 6.2a):

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/
Class 1			
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)
Class 2			
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
As supplied:		
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
After unrestricted shrinkage:		
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