

INCH-POUND

NOTICE  
OF VALIDATION

MIL-I-23053/15A  
NOTICE 1  
28 October 1991

MILITARY SPECIFICATION

INSULATION SLEEVING, ELECTRICAL, HEAT SHRINKABLE  
POLYOLEFIN, HEAVY-WALL, COATED, FLEXIBLE, OUTER WALL CROSSLINKED

MIL-I-23053/15A, dated 1 May 1986, has been reviewed and determined to be valid for use in acquisition.

Custodians:

Army - ER  
Navy - AS  
Air Force - 85

Preparing activity:

Navy - AS

AMSC N/A  
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited. FSC 5970

MIL-I-23053/15A  
01 May 1986  
SUPERSEDING  
MIL-I-23053/15  
20 May 1976

## MILITARY SPECIFICATION SHEET

INSULATION SLEEVING, ELECTRICAL, HEAT SHRINKABLE  
POLYOLEFIN, HEAVY-WALL, COATED, FLEXIBLE, OUTER WALL CROSSLINKED

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the sleeving described herein shall consist of this document and the latest issue of MIL-I-23053.

## REQUIREMENTS:

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:

NOTE: Entire specification sheet revised.

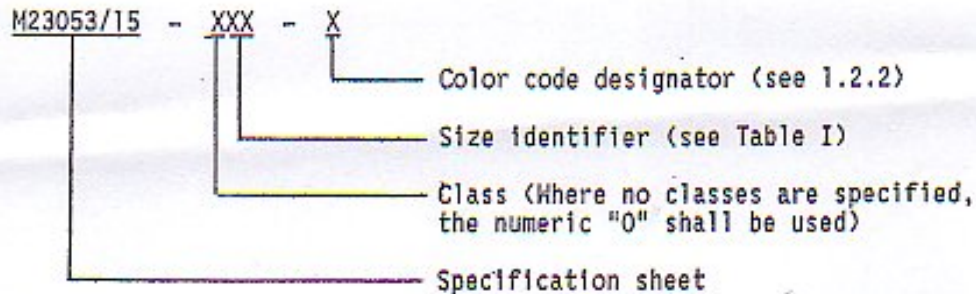
AMSC N/A

FSC 5970

DISTRIBUTION STATEMENT A, Approved for public release; distribution is unlimited.

THIS DOCUMENT CONTAINS 4 PAGES.

## MIL-I-23053/15A



**Example:** Class 1, black sleeving, 3.00 inch (76.2 mm) as supplied ID 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
<b>Class 1</b>			
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)
<b>Class 2</b>			
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)
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(3.44)
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.

## MIL-I-23053/15A

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)	4.6.13.1, 2 percent strain, ASTM D 882
Color stability	Pass	4.6.16 $175^{\circ} \pm 2^{\circ}\text{C}$ ( $347^{\circ} \pm 4^{\circ}\text{F}$ ) 24 hours
<u>After unrestricted shrinkage:</u>		
ID, maximum	Table I	4.6.3
Wall thickness	Table I	4.6.3
Tensile strength, psi (MPa), minimum	1200(8.3)	4.6.14 ASTM D 638, 2 inches/minute
Ultimate elongation, percent, minimum	200	4.6.14 ASTM D 638, 2 inches/minute
Dielectric strength, volts/mil (Kv/mm), minimum	200(7.9)	4.6.2 ASTM D 2671
Volume resistivity, Ohm-cm, minimum	$10^{13}$	4.6.2 ASTM D 876
Corrosion	No corrosion	4.6.10.1 and 4.6.10.2 $121^{\circ} \pm 2^{\circ}\text{C}$ ( $250^{\circ} \pm 4^{\circ}\text{F}$ ) for 16 hours
Flammability	Pass	4.6.15.3

MIL-I-23053/15A

TABLE II. Physical properties. - Continued

Characteristic	Requirement	Test procedure and conditions
Water absorption, percent, maximum	0.5	4.6.2 ASTM D 570 24 hrs at 23°C
Heat resistance, properties after:		4.6.9 175° + 2°C (347° ± 4°F), 168 hours
Ultimate elongation, percent, minimum	100	
Tensile strength, psi (MPa), minimum	1,000(6.9)	
Fluid resistance, properties after:		4.6.11
Tensile strength, psi (MPa), minimum	750(5.2)	
Dielectric strength volts/mil (Kv/mm), minimum	200(7.9)	
Fungus resistance	No growth	4.6.2 ASTM G 21

Shelf life conditions: Supplier shall certify to storage at 40°C (104°F) for 2 years. Conformance to 3.5. See 3.5.2 for shelf life extension.

Flammability: Only the outer jacket is flame retardant.

Intended use: Heat shrinkable, flexible, heavy wall, coated sleeving is used for repair of heavy duty cables, splice covers.

Custodians:  
Army - ER  
Navy - AS  
Air Force - 85

Preparing activity:  
Navy - AS  
(Project 5970-0577-14)