

Insulation Sleeving, Electrical, Heat Shrinkable,
Polytetrafluoroethylene

FSC 5970

RATIONALE

Revise to include comments received by the government and industry, update references, align specification with SAE guidelines, and review specification for known technical problems.

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 polytetrafluoroethylene.

Continuous operating temperature range: -88 °F (-67 °C) to +482 °F (+250 °C).

Class: The sleeving shall be furnished in the following classes, as specified (See 6.4a and 6.8):

- Class 1 - Thick wall sleeving
- Class 2 - Standard wall sleeving
- Class 3 - Thin wall sleeving
- Class 4 - Very thin wall sleeving
- Class 5 - High shrink, thin wall

Color: The sleeving shall be furnished in clear (transparent milk white to light tan) or in the color specified by the acquiring activity. Colors shall conform to the requirements of Class I of MIL-STD-104. (See 1.2.1 and 3.4.2.1)

Longitudinal change: ±20 percent

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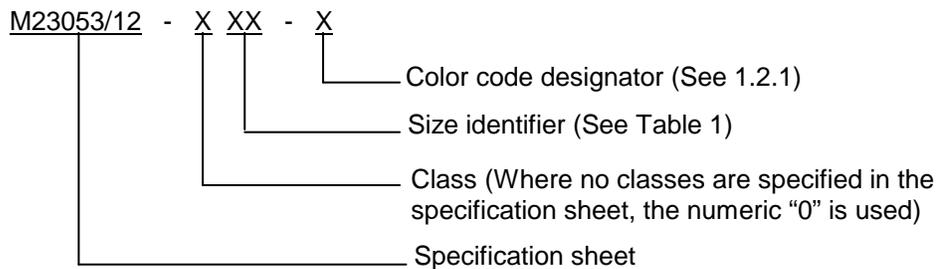
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Military part number: The Military part number shall consist of the basic number of this specification sheet and dash numbers as follows:



Example: Thin walled (Class 3), 0.430 inch (10.9 mm) as supplied ID, clear sleeving shall be identified as M23053/12-327-C.

TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) ^{1/}

Military part number ^{1/}	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall Thickness ^{2/}
Class 1			
M23053/12-101-*	0.166 (4.22)	0.130 (3.30)	0.030 ± 0.005 (0.762 ± 0.127)
M23053/12-102-*	0.250 (6.35)	0.193 (4.90)	0.030 ± 0.005 (0.762 ± 0.127)
M23053/12-103-*	0.333 (8.46)	0.257 (6.53)	0.030 ± 0.005 (0.762 ± 0.127)
M23053/12-104-*	0.415 (10.54)	0.320 (8.13)	0.030 ± 0.005 (0.762 ± 0.127)
M23053/12-105-*	0.498 (12.65)	0.383 (9.73)	0.030 ± 0.005 (0.762 ± 0.127)
M23053/12-106-*	0.580 (14.73)	0.448 (11.38)	0.030 ± 0.006 (0.762 ± 0.152)
M23053/12-107-*	0.666 (16.92)	0.510 (12.95)	0.030 ± 0.006 (0.762 ± 0.152)
M23053/12-108-*	0.748 (19.00)	0.572 (14.53)	0.030 ± 0.006 (0.762 ± 0.152)
M23053/12-109-*	0.830 (21.08)	0.637 (16.18)	0.030 ± 0.006 (0.762 ± 0.152)
M23053/12-110-*	0.915 (23.24)	0.700 (17.78)	0.032 ± 0.006 (0.813 ± 0.152)
M23053/12-111-*	1.000 (25.40)	0.764 (19.41)	0.040 ± 0.007 (1.016 ± 0.178)
M23053/12-112-*	1.170 (29.72)	0.891 (22.63)	0.045 ± 0.007 (1.143 ± 0.178)
MS3053/12-113-*	1.330 (33.78)	1.020 (25.91)	0.050 ± 0.008 (1.270 ± 0.203)
Class 2			
M23053/12-201-*	0.050 (1.27)	0.027 (0.69)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-202-*	0.055 (1.40)	0.032 (0.81)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-203-*	0.060 (1.52)	0.039 (0.99)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-204-*	0.065 (1.65)	0.043 (1.09)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-205-*	0.076 (1.93)	0.049 (1.24)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-206-*	0.085 (2.16)	0.054 (1.37)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-207-*	0.110 (2.79)	0.067 (1.70)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-208-*	0.120 (3.05)	0.072 (1.83)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-209-*	0.130 (3.30)	0.080 (2.03)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-210-*	0.140 (3.56)	0.080 (2.03)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-211-*	0.150 (3.81)	0.089 (2.26)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-212-*	0.170 (4.32)	0.101 (2.57)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-213-*	0.191 (4.85)	0.112 (2.84)	0.016 ± 0.003 (0.406 ± 0.076)
M23053/12-214-*	0.205 (5.21)	0.124 (3.15)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-215-*	0.215 (5.46)	0.130 (3.30)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-216-*	0.240 (6.10)	0.141 (3.58)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-217-*	0.270 (6.86)	0.158 (4.01)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-218-*	0.302 (7.67)	0.178 (4.52)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-219-*	0.320 (8.13)	0.198 (5.03)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-220-*	0.370 (9.40)	0.224 (5.69)	0.020 ± 0.004 (0.508 ± 0.102)

TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) 1/ (CONT.)

Military part number 1/	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall Thickness 2/
M23053/12-221-*	0.390 (9.91)	0.249 (6.32)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-222-*	0.410 (10.41)	0.260 (6.60)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-223-*	0.430 (10.92)	0.278 (7.06)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-224-*	0.450 (11.43)	0.311 (7.90)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-225-*	0.470 (11.94)	0.329 (8.36)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-226-*	0.470 (11.94)	0.347 (8.81)	0.020 ± 0.004 (0.508 ± 0.102)
M23053/12-227-*	0.470 (11.94)	0.334 (8.48)	0.025 ± 0.006 (0.635 ± 0.152)
M23053/12-228-*	0.560 (14.22)	0.399 (10.13)	0.025 ± 0.006 (0.635 ± 0.152)
M23053/12-229-*	0.655 (16.64)	0.462 (11.73)	0.025 ± 0.006 (0.635 ± 0.152)
M23053/12-230-*	0.750 (19.05)	0.524 (13.31)	0.025 ± 0.006 (0.635 ± 0.152)
M23053/12-231-*	0.930 (23.62)	0.655 (16.64)	0.030 ± 0.006 (0.762 ± 0.152)
M23053/12-232-*	1.125 (28.58)	0.786 (19.96)	0.035 ± 0.008 (0.899 ± 0.203)
M23053/12-233-*	1.310 (33.27)	0.911 (23.14)	0.035 ± 0.008 (0.899 ± 0.203)
M23053/12-234-*	1.500 (38.10)	1.036 (26.31)	0.035 ± 0.008 (0.899 ± 0.203)
<u>Class 3</u>			
M23053/12-301-*	0.034 (0.86)	0.015 (0.38)	0.009 ± 0.002 (0.229 ± 0.051)
M23053/12-302-*	0.038 (0.97)	0.018 (0.46)	0.009 ± 0.002 (0.229 ± 0.051)
M23053/12-303-*	0.046 (1.17)	0.022 (0.56)	0.010 ± 0.003 (0.254 ± 0.076)
M23053/12-304-*	0.050 (1.27)	0.027 (0.69)	0.010 ± 0.003 (0.254 ± 0.076)
M23053/12-305-*	0.055 (1.40)	0.032 (0.81)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-306-*	0.060 (1.52)	0.039 (0.99)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-307-*	0.065 (1.65)	0.043 (1.09)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-308-*	0.076 (1.93)	0.049 (1.24)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-309-*	0.085 (2.16)	0.054 (1.37)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-310-*	0.093 (2.36)	0.061 (1.55)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-311-*	0.110 (2.79)	0.067 (1.70)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-312-*	0.120 (3.05)	0.072 (1.83)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-313-*	0.140 (3.56)	0.080 (2.03)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-314-*	0.150 (3.81)	0.089 (2.26)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-315-*	0.153 (3.89)	0.096 (2.44)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-316-*	0.170 (4.32)	0.101 (2.57)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-317-*	0.191 (4.85)	0.112 (2.84)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-318-*	0.205 (5.21)	0.124 (3.15)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-319-*	0.215 (5.46)	0.130 (3.30)	0.015 ± 0.003 (0.381 ± 0.076)
M23053/12-320-*	0.240 (6.10)	0.141 (3.58)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-321-*	0.270 (6.86)	0.158 (4.01)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-322-*	0.302 (7.67)	0.178 (4.52)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-323-*	0.320 (8.13)	0.198 (5.03)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-324-*	0.370 (9.40)	0.224 (5.69)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-325-*	0.390 (9.91)	0.249 (6.32)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-326-*	0.410 (10.41)	0.260 (6.60)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-327-*	0.430 (10.92)	0.278 (7.06)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-328-*	0.450 (11.43)	0.311 (7.90)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-329-*	0.470 (11.94)	0.329 (8.36)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-330-*	0.470 (11.94)	0.347 (8.81)	0.015 ± 0.004 (0.381 ± 0.102)
<u>Class 4</u>			
M23053/12-401-*	0.050 (1.27)	0.025 (0.64)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-402-*	0.055 (1.40)	0.031 (0.79)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-403-*	0.060 (1.52)	0.038 (0.97)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-404-*	0.065 (1.65)	0.043 (1.09)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-405-*	0.076 (1.93)	0.046 (1.17)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-406-*	0.085 (2.16)	0.054 (1.37)	0.006 ± 0.002 (0.152 ± 0.051)

TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) 1/ (CONT.)

Military part number 1/	As supplied ID minimum	After unrestricted shrinkage	
		ID maximum	Wall Thickness 2/
M23053/12-407-*	0.093 (2.36)	0.057 (1.45)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-408-*	0.110 (2.79)	0.063 (1.60)	0.006 ± 0.002 (0.152 ± 0.051)
M23053/12-409-*	0.120 (3.05)	0.072 (1.83)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-410-*	0.140 (3.56)	0.080 (2.03)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-411-*	0.150 (3.81)	0.089 (2.26)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-412-*	0.170 (4.32)	0.099 (2.51)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-413-*	0.191 (4.85)	0.110 (2.79)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-414-*	0.205 (5.21)	0.122 (3.10)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-415-*	0.215 (5.46)	0.130 (3.30)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-416-*	0.240 (6.10)	0.139 (3.53)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-417-*	0.270 (6.86)	0.154 (3.91)	0.008 ± 0.002 (0.203 ± 0.051)
M23053/12-418-*	0.302 (7.67)	0.172 (4.37)	0.040 ± 0.002 (1.016 ± 0.051)
M23053/12-419-*	0.320 (8.13)	0.192 (4.88)	0.045 ± 0.002 (1.143 ± 0.051)
M23053/12-420-*	0.370 (9.40)	0.214 (5.44)	0.050 ± 0.002 (1.270 ± 0.051)
M23053/12-421-*	0.390 (9.91)	0.241 (6.12)	0.030 ± 0.002 (0.762 ± 0.051)
M23053/12-422-*	0.410 (10.41)	0.260 (6.60)	0.010 ± 0.003 (0.254 ± 0.076)
M23053/12-423-*	0.430 (10.92)	0.270 (6.86)	0.010 ± 0.003 (0.254 ± 0.076)
M23053/12-424-*	0.450 (11.43)	0.301 (7.65)	0.010 ± 0.003 (0.254 ± 0.076)
M23053/12-425-*	0.470 (11.94)	0.329 (8.36)	0.012 ± 0.003 (0.305 ± 0.076)
M23053/12-426-*	0.470 (11.94)	0.347 (8.81)	0.012 ± 0.003 (0.305 ± 0.076)
<u>Class 5</u>			
M23053/12-501-*	0.078 (1.98)	0.025 (0.64)	0.009 ± 0.002 (0.229 ± 0.051)
M23053/12-502-*	0.125 (3.18)	0.037 (0.94)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-503-*	0.187 (4.75)	0.050 (1.27)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-504-*	0.250 (6.35)	0.063 (1.60)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-505-*	0.312 (7.92)	0.078 (1.98)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-506-*	0.375 (9.53)	0.096 (2.44)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-507-*	0.438 (11.13)	0.122 (2.84)	0.012 ± 0.002 (0.305 ± 0.051)
M23053/12-508-*	0.500 (12.70)	0.144 (3.66)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-509-*	0.562 (14.27)	0.155 (3.94)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-510-*	0.625 (15.88)	0.178 (4.52)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-511-*	0.687 (17.45)	0.198 (5.03)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-512-*	0.750 (19.05)	0.224 (5.69)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-513-*	0.875 (22.23)	0.244 (6.20)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-514-*	1.000 (25.40)	0.278 (7.06)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-515-*	1.250 (31.75)	0.347 (8.81)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-516-*	1.500 (38.10)	0.400 (10.16)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-517-*	1.750 (44.45)	0.450 (11.43)	0.015 ± 0.004 (0.381 ± 0.102)
M23053/12-518-*	2.000 (50.80)	0.520 (13.21)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-519-*	2.250 (57.15)	0.585 (14.86)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-520-*	2.500 (63.50)	0.650 (16.51)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-521-*	2.750 (69.85)	0.710 (18.03)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-522-*	3.000 (76.20)	0.775 (19.68)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-523-*	3.250 (82.55)	0.835 (21.21)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-524-*	3.500 (88.90)	0.900 (22.86)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-525-*	3.750 (95.25)	0.960 (24.38)	0.020 ± 0.005 (0.508 ± 0.127)
M23053/12-526-*	4.000 (101.6)	1.025 (26.03)	0.020 ± 0.005 (0.508 ± 0.127)

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

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

3/ The asterisk (*) in the part number shall be replaced by color code designators (See 1.2.2).