

REV.  
B

AS23053™/12

FEDERAL SUPPLY CLASS  
5970

## RATIONALE

CHANGE DIELECTRIC STRENGTH PROPERTY REQUIREMENT TO MORE DIRECTLY OBTAINED BREAKDOWN VOLTAGE. REFER TO AIR23054 FOR ADDITIONAL INFORMATION. METRIC DIMENSION SIGNIFICANT DIGIT INCREASED TO TWO POSITIONS BASED ON THE BALLOT COMMENT. METRIC DIMENSION EDITORIAL CORRECTION.

## NOTICE

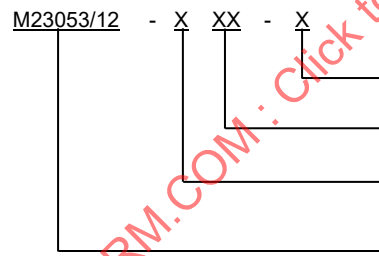
THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS23053.

## REQUIREMENTS:

- DIMENSIONS AND PROPERTIES IN INCH/POUND UNITS AND THE FAHRENHEIT TEMPERATURES ARE PRIMARY; DIMENSIONS AND PROPERTIES IN SI UNITS AND THE CELSIUS TEMPERATURES ARE SHOWN AS THE APPROXIMATE EQUIVALENTS OF THE PRIMARY UNITS AND ARE PRESENTED ONLY FOR INFORMATION.
- POLYMER TYPE: THE BASE POLYMER USED IN FORMULATING THIS SLEEVING SHALL BE POLYTETRAFLUOROETHYLENE.
- CONTINUOUS OPERATING TEMPERATURE RANGE: -88 TO +482 °F (-67 TO +250 °C).
- 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 1.3 AND 3.3.3).
- CLASS: THE SLEEVING SHALL BE FURNISHED IN THE FOLLOWING CLASSES, AS SPECIFIED (SEE 7.3A):

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

- LONGITUDINAL CHANGE: ±20%
- PART NUMBER: THE PART NUMBER SHALL BE AS LISTED BELOW:



COLOR CODE DESIGNATOR (SEE 1.3)

SIZE IDENTIFIER (SEE TABLE 1)

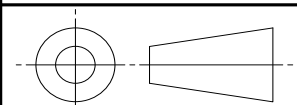
CLASS (WHERE NO CLASSES ARE SPECIFIED IN THE SPECIFICATION SHEET, THE NUMERIC "0" IS USED)

SPECIFICATION SHEET

EXAMPLE: THIN WALLED (CLASS 3 CLEAR), .430 INCH (10.9 MM) AS SUPPLIED ID, CLEAR SLEEVING SHALL BE IDENTIFIED AS M23053/12-327-C.

For more information on this standard, visit  
<https://www.sae.org/standards/content/AS23053/12B>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8D

PROCUREMENT SPECIFICATION: AS23053



## AEROSPACE STANDARD

(R) INSULATION SLEEVING, ELECTRICAL, HEAT  
SHRINKABLE POLYTETRAFLUOROETHYLENE

AS23053™/12  
SHEET 1 OF 6  
SUPERSEDES AMS-DTL-23053/12A

REV.  
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8. **DIMENSIONAL LIFE:** THE DIMENSIONAL LIFE OF A PRODUCT APPLIES TO THE EXPANDED ID, RECOVERED ID, AND WALL THICKNESS DIMENSIONS OF THE PRODUCT AS SOLD BY THE MANUFACTURERS, DISTRIBUTORS, AND REBRAND DISTRIBUTORS. AS23053/12 PRODUCTS CAN BE EXPECTED TO HAVE A MINIMUM DIMENSIONAL LIFE OF 4 YEARS WHEN STORED BETWEEN 32 TO 95 °F (0 TO 35 °C). PRODUCTS STORED ABOVE THESE CONDITIONS MAY NOT MEET THE MINIMUM EXPANDED ID REQUIREMENTS OF THE DETAIL SPECIFICATION. A PRODUCT MAY BE USED BY THE FINAL PURCHASER BEYOND THE EXPECTED MINIMUM DIMENSIONAL LIFE, AS LONG AS THE EXPANDED ID, RECOVERED ID, AND WALL THICKNESS OF THE PRODUCT MEET THE REQUIREMENTS OF THIS SPECIFICATION AT THE TIME OF USE.
9. **UNRESTRICTED SHRINKAGE:** TEST METHOD 5.5; 662 °F  $\pm$  8 °F (350 °C  $\pm$  4 °C) FOR 10 MINUTES.

**TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) 1/**

| PART NUMBER 3/  | AS SUPPLIED<br>ID MINIMUM | AFTER UNRESTRICTED SHRINKAGE |                           |
|-----------------|---------------------------|------------------------------|---------------------------|
|                 |                           | ID MAXIMUM                   | WALL THICKNESS 2/         |
| CLASS 1         |                           |                              |                           |
| M23053/12-101-* | .166 (4.22)               | .130 (3.30)                  | .030 ± .005 (0.76 ± 0.13) |
| M23053/12-102-* | .250 (6.35)               | .193 (4.90)                  | .030 ± .005 (0.76 ± 0.13) |
| M23053/12-103-* | .333 (8.46)               | .257 (6.53)                  | .030 ± .005 (0.76 ± 0.13) |
| M23053/12-104-* | .415 (10.54)              | .320 (8.13)                  | .030 ± .005 (0.76 ± 0.13) |
| M23053/12-105-* | .498 (12.65)              | .383 (9.73)                  | .030 ± .005 (0.76 ± 0.13) |
| M23053/12-106-* | .580 (14.73)              | .448 (11.38)                 | .030 ± .006 (0.76 ± 0.15) |
| M23053/12-107-* | .666 (16.92)              | .510 (12.95)                 | .030 ± .006 (0.76 ± 0.15) |
| M23053/12-108-* | .748 (19.00)              | .572 (14.53)                 | .030 ± .006 (0.76 ± 0.15) |
| M23053/12-109-* | .830 (21.08)              | .637 (16.18)                 | .030 ± .006 (0.76 ± 0.15) |
| M23053/12-110-* | .915 (23.24)              | .700 (17.78)                 | .032 ± .006 (0.81 ± 0.15) |
| M23053/12-111-* | 1.000 (25.40)             | .764 (19.41)                 | .040 ± .007 (1.02 ± 0.18) |
| M23053/12-112-* | 1.170 (29.72)             | .891 (22.63)                 | .045 ± .007 (1.14 ± 0.18) |
| MS3053/12-113-* | 1.330 (33.78)             | 1.020 (25.91)                | .050 ± .008 (1.27 ± 0.20) |
| CLASS 2         |                           |                              |                           |
| M23053/12-201-* | .050 (1.27)               | .027 (0.69)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-202-* | .055 (1.40)               | .032 (0.81)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-203-* | .060 (1.52)               | .039 (0.99)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-204-* | .065 (1.65)               | .043 (1.09)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-205-* | .076 (1.93)               | .049 (1.24)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-206-* | .085 (2.16)               | .054 (1.37)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-207-* | .110 (2.79)               | .067 (1.70)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-208-* | .120 (3.05)               | .072 (1.83)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-209-* | .130 (3.30)               | .080 (2.03)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-210-* | .140 (3.56)               | .080 (2.03)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-211-* | .150 (3.81)               | .089 (2.26)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-212-* | .170 (4.32)               | .101 (2.57)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-213-* | .191 (4.85)               | .112 (2.84)                  | .016 ± .003 (0.41 ± 0.08) |
| M23053/12-214-* | .205 (5.21)               | .124 (3.15)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-215-* | .215 (5.46)               | .130 (3.30)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-216-* | .240 (6.10)               | .141 (3.58)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-217-* | .270 (6.86)               | .158 (4.01)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-218-* | .302 (7.67)               | .178 (4.52)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-219-* | .320 (8.13)               | .198 (5.03)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-220-* | .370 (9.40)               | .224 (5.69)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-221-* | .390 (9.91)               | .249 (6.32)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-222-* | .410 (10.41)              | .260 (6.60)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-223-* | .430 (10.92)              | .278 (7.06)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-224-* | .450 (11.43)              | .311 (7.90)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-225-* | .470 (11.94)              | .329 (8.36)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-226-* | .470 (11.94)              | .347 (8.81)                  | .020 ± .004 (0.51 ± 0.10) |
| M23053/12-227-* | .470 (11.94)              | .334 (8.48)                  | .025 ± .006 (0.64 ± 0.15) |
| M23053/12-228-* | .560 (14.22)              | .399 (10.13)                 | .025 ± .006 (0.64 ± 0.15) |
| M23053/12-229-* | .655 (16.64)              | .462 (11.73)                 | .025 ± .006 (0.64 ± 0.15) |
| M23053/12-230-* | .750 (19.05)              | .524 (13.31)                 | .025 ± .006 (0.64 ± 0.15) |
| M23053/12-231-* | .930 (23.62)              | .655 (16.64)                 | .030 ± .006 (0.76 ± 0.15) |
| M23053/12-232-* | 1.125 (28.58)             | .786 (19.96)                 | .035 ± .008 (0.89 ± 0.20) |
| M23053/12-233-* | 1.310 (33.27)             | .911 (23.14)                 | .035 ± .008 (0.89 ± 0.20) |
| M23053/12-234-* | 1.500 (38.10)             | 1.036 (26.31)                | .035 ± .008 (0.89 ± 0.20) |

**TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) 1/ (CONTINUED)**

| PART NUMBER 3/  | AS SUPPLIED<br>ID MINIMUM | AFTER UNRESTRICTED SHRINKAGE |                           |
|-----------------|---------------------------|------------------------------|---------------------------|
|                 |                           | ID MAXIMUM                   | WALL THICKNESS 2/         |
| CLASS 3         |                           |                              |                           |
| M23053/12-301-* | .034 (0.86)               | .015 (0.38)                  | .009 ± .002 (0.23 ± 0.05) |
| M23053/12-302-* | .038 (0.97)               | .018 (0.46)                  | .009 ± .002 (0.23 ± 0.05) |
| M23053/12-303-* | .046 (1.17)               | .022 (0.56)                  | .010 ± .003 (0.25 ± 0.08) |
| M23053/12-304-* | .050 (1.27)               | .027 (0.69)                  | .010 ± .003 (0.25 ± 0.08) |
| M23053/12-305-* | .055 (1.40)               | .032 (0.81)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-306-* | .060 (1.52)               | .039 (0.99)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-307-* | .065 (1.65)               | .043 (1.09)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-308-* | .076 (1.93)               | .049 (1.24)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-309-* | .085 (2.16)               | .054 (1.37)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-310-* | .093 (2.36)               | .061 (1.55)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-311-* | .110 (2.79)               | .067 (1.70)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-312-* | .120 (3.05)               | .072 (1.83)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-313-* | .140 (3.56)               | .080 (2.03)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-314-* | .150 (3.81)               | .089 (2.26)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-315-* | .153 (3.89)               | .096 (2.44)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-316-* | .170 (4.32)               | .101 (2.57)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-317-* | .191 (4.85)               | .112 (2.84)                  | .012 ± .003 (0.30 ± 0.08) |
| M23053/12-318-* | .205 (5.21)               | .124 (3.15)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-319-* | .215 (5.46)               | .130 (3.30)                  | .015 ± .003 (0.38 ± 0.08) |
| M23053/12-320-* | .240 (6.10)               | .141 (3.58)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-321-* | .270 (6.86)               | .158 (4.01)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-322-* | .302 (7.67)               | .178 (4.52)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-323-* | .320 (8.13)               | .198 (5.03)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-324-* | .370 (9.40)               | .224 (5.69)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-325-* | .390 (9.91)               | .249 (6.32)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-326-* | .410 (10.41)              | .260 (6.60)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-327-* | .430 (10.92)              | .278 (7.06)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-328-* | .450 (11.43)              | .311 (7.90)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-329-* | .470 (11.94)              | .329 (8.36)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-330-* | .470 (11.94)              | .347 (8.81)                  | .015 ± .004 (0.38 ± 0.10) |
| CLASS 4         |                           |                              |                           |
| M23053/12-401-* | .050 (1.3)                | .025 (0.6)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-402-* | .055 (1.4)                | .031 (0.8)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-403-* | .060 (1.5)                | .038 (1.0)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-404-* | .065 (1.7)                | .043 (1.1)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-405-* | .076 (1.9)                | .046 (1.2)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-406-* | .085 (2.2)                | .054 (1.4)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-407-* | .093 (2.4)                | .057 (1.4)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-408-* | .110 (2.8)                | .063 (1.6)                   | .006 ± .002 (0.2 ± 0.1)   |
| M23053/12-409-* | .120 (3.0)                | .072 (1.8)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-410-* | .140 (3.6)                | .080 (2.0)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-411-* | .150 (3.8)                | .089 (2.3)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-412-* | .170 (4.3)                | .099 (2.5)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-413-* | .191 (4.9)                | .110 (2.8)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-414-* | .205 (5.2)                | .122 (3.1)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-415-* | .215 (5.5)                | .130 (3.3)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-416-* | .240 (6.1)                | .139 (3.5)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-417-* | .270 (6.9)                | .154 (3.9)                   | .008 ± .002 (0.2 ± 0.1)   |
| M23053/12-418-* | .302 (7.7)                | .172 (4.4)                   | .010 ± .002 (0.3 ± 0.1)   |
| M23053/12-419-* | .320 (8.1)                | .192 (4.9)                   | .010 ± .002 (0.3 ± 0.1)   |
| M23053/12-420-* | .370 (9.4)                | .214 (5.4)                   | .010 ± .002 (0.3 ± 0.1)   |
| M23053/12-421-* | .390 (9.9)                | .241 (6.1)                   | .010 ± .002 (0.3 ± 0.1)   |
| M23053/12-422-* | .410 (10.4)               | .260 (6.6)                   | .010 ± .003 (0.3 ± 0.1)   |
| M23053/12-423-* | .430 (10.9)               | .270 (6.9)                   | .010 ± .003 (0.3 ± 0.1)   |
| M23053/12-424-* | .450 (11.4)               | .301 (7.6)                   | .010 ± .003 (0.3 ± 0.1)   |
| M23053/12-425-* | .470 (11.9)               | .329 (8.4)                   | .012 ± .003 (0.3 ± 0.1)   |
| M23053/12-426-* | .470 (11.9)               | .347 (8.8)                   | .012 ± .003 (0.3 ± 0.1)   |

**TABLE 1 - CONSTRUCTION DETAILS, INCHES (MM) 1/ (CONTINUED)**

| PART NUMBER 3/  | AS SUPPLIED<br>ID MINIMUM | AFTER UNRESTRICTED SHRINKAGE |                           |
|-----------------|---------------------------|------------------------------|---------------------------|
|                 |                           | ID MAXIMUM                   | WALL THICKNESS 2/         |
| CLASS 5         |                           |                              |                           |
| M23053/12-501-* | .078 (1.98)               | .025 (0.64)                  | .009 ± .002 (0.23 ± 0.05) |
| M23053/12-502-* | .125 (3.18)               | .037 (0.94)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-503-* | .187 (4.75)               | .050 (1.27)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-504-* | .250 (6.35)               | .063 (1.60)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-505-* | .312 (7.92)               | .078 (1.98)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-506-* | .375 (9.53)               | .096 (2.44)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-507-* | .438 (11.13)              | .112 (2.84)                  | .012 ± .002 (0.30 ± 0.05) |
| M23053/12-508-* | .500 (12.70)              | .144 (3.66)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-509-* | .562 (14.27)              | .155 (3.94)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-510-* | .625 (15.88)              | .178 (4.52)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-511-* | .687 (17.45)              | .198 (5.03)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-512-* | .750 (19.05)              | .224 (5.69)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-513-* | .875 (22.23)              | .244 (6.20)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-514-* | 1.000 (25.40)             | .278 (7.06)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-515-* | 1.250 (31.75)             | .347 (8.81)                  | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-516-* | 1.500 (38.10)             | .400 (10.16)                 | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-517-* | 1.750 (44.45)             | .450 (11.43)                 | .015 ± .004 (0.38 ± 0.10) |
| M23053/12-518-* | 2.000 (50.80)             | .520 (13.21)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-519-* | 2.250 (57.15)             | .585 (14.86)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-520-* | 2.500 (63.50)             | .650 (16.51)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-521-* | 2.750 (69.85)             | .710 (18.03)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-522-* | 3.000 (76.20)             | .775 (19.69)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-523-* | 3.250 (82.55)             | .835 (21.21)                 | .020 ± .005 (0.51 ± 0.13) |
| M23053/12-524-* | 3.500 (88.90)             | .900 (22.86)                 | .025 ± .005 (0.64 ± 0.13) |
| M23053/12-525-* | 3.750 (95.25)             | .960 (24.38)                 | .025 ± .005 (0.64 ± 0.13) |
| M23053/12-526-* | 4.000 (101.60)            | 1.025 (26.04)                | .025 ± .005 (0.64 ± 0.13) |

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 1.3 AND 3.3.3).