

REV.
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AS23053™/11

RATIONALE

UNRESTRICTED RECOVERY TIME IS REQUIRED. EDITORIAL CHANGES AND CLARIFICATION STATEMENTS ARE ADDED.

NOTICE

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

REQUIREMENTS:

FOR PARAGRAPH NUMBERS WITHOUT A BASE SPECIFICATION NUMBER, AS23053 SHALL APPLY.

1. 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.
2. POLYMER TYPE: THE BASE POLYMER USED IN FORMULATING THIS SLEEVING SHALL BE FLUORINATED ETHYLENE PROPYLENE.
3. CONTINUOUS OPERATING TEMPERATURE RANGE: -88 TO +392 °F (-67 TO +200 °C).
4. COLOR: THE SLEEVING SHALL BE FURNISHED IN CLEAR (WATER WHITE TO TRANSPARENT BLUE), THE AS MANUFACTURED COLOR (SEE 1.3).
5. CLASS: THE SLEEVING SHALL BE FURNISHED IN THE FOLLOWING CLASSES, AS SPECIFIED (SEE 7.3A).

CLASS 1 - NORMAL SHRINK RATIO, HEAVY WALL.

CLASS 2 - HIGH SHRINK RATIO, MEDIUM WALL.

6. LONGITUDINAL CHANGE: ±15%.
7. PART NUMBER: THE PART NUMBER SHALL BE AS LISTED BELOW:

M23053/11 - X XX - X

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

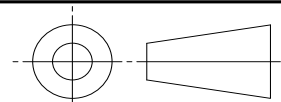
EXAMPLE: CLASS 2 CLEAR, 0.750 INCH (19.1 MM) AS SUPPLIED ID CLEAR SLEEVING SHALL BE IDENTIFIED AS M23053/11-207-C.

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 MANUFACTURER. DISTRIBUTORS AND REBRAND DISTRIBUTORS. AS23053/11 PRODUCTS CAN BE EXPECTED TO HAVE A MINIMUM DIMENSIONAL LIFE OF 4 YEARS WHEN STORED BETWEEN 32 TO 81 °F (0 TO 27 °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: SLEEVING 1 INCH AND BELOW: 410 °F ± 10 °F (210 °C ± 6 °C). SLEEVING OVER 1 INCH DIAMETER: 430 °F ± 10 °F (221 °C ± 6 °C). HEATING TIME SHALL BE 10 MINUTES.

For more information on this standard, visit

<https://www.sae.org/standards/content/AS23053/11B/>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS23053



AEROSPACE STANDARD

INSULATION SLEEVING, ELECTRICAL,
HEAT-SHRINKABLE FLUORINATED ETHYLENE
PROPYLENE, NON-CROSSLINKED

AS23053™/11
SHEET 1 OF 4

SUPERSEDES AMS-DTL-23053/11A

REV.
B

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

PART NUMBER 3/	AS SUPPLIED ID MINIMUM	AFTER UNRESTRICTED SHRINKAGE	
		ID MAXIMUM	WALL THICKNESS 2/
CLASS 1			
M23053/11-101-C	.031 (0.8)	.027 (0.7)	.008 ± .002 (0.2 ± 0.1)
M23053/11-102-C	.036 (0.9)	.032 (0.8)	.008 ± .002 (0.2 ± 0.1)
M23053/11-103-C	.045 (1.1)	.039 (1.0)	.008 ± .002 (0.2 ± 0.1)
M23053/11-104-C	.060 (1.5)	.049 (1.2)	.008 ± .002 (0.2 ± 0.1)
M23053/11-105-C	.075 (1.9)	.061 (1.5)	.009 ± .002 (0.2 ± 0.1)
M23053/11-106-C	.092 (2.3)	.072 (1.8)	.009 ± .002 (0.2 ± 0.1)
M23053/11-107-C	.115 (2.9)	.089 (2.3)	.009 ± .002 (0.2 ± 0.1)
M23053/11-108-C	.141 (3.6)	.114 (2.9)	.010 ± .003 (0.3 ± 0.1)
M23053/11-109-C	.158 (4.0)	.124 (3.1)	.010 ± .003 (0.3 ± 0.1)
M23053/11-110-C	.180 (4.6)	.143 (3.6)	.010 ± .003 (0.3 ± 0.1)
M23053/11-111-C	.197 (5.0)	.158 (4.0)	.011 ± .004 (0.3 ± 0.1)
M23053/11-112-C	.225 (5.7)	.180 (4.6)	.011 ± .004 (0.3 ± 0.1)
M23053/11-113-C	.248 (6.3)	.198 (5.0)	.011 ± .004 (0.3 ± 0.1)
M23053/11-114-C	.290 (7.4)	.226 (5.7)	.011 ± .004 (0.3 ± 0.1)
M23053/11-115-C	.310 (7.9)	.249 (6.3)	.011 ± .004 (0.3 ± 0.1)
M23053/11-116-C	.365 (9.3)	.280 (7.1)	.012 ± .004 (0.3 ± 0.1)
M23053/11-117-C	.400 (10.2)	.311 (7.9)	.012 ± .004 (0.3 ± 0.1)
M23053/11-118-C	.440 (11.2)	.349 (8.9)	.012 ± .004 (0.3 ± 0.1)
M23053/11-119-C	.500 (12.7)	.383 (9.7)	.015 ± .004 (0.4 ± 0.1)
M23053/11-120-C	.580 (14.7)	.448 (11.4)	.020 ± .004 (0.5 ± 0.1)
M23053/11-121-C	.666 (16.9)	.510 (13.0)	.020 ± .004 (0.5 ± 0.1)
M23053/11-122-C	.830 (21.1)	.637 (16.2)	.025 ± .004 (0.6 ± 0.1)
M23053/11-123-C	1.000 (25.4)	.764 (19.4)	.030 ± .004 (0.8 ± 0.1)
M23053/11-124-C	1.170 (29.7)	.891 (22.6)	.035 ± .004 (0.9 ± 0.1)
M23053/11-125-C	1.300 (33.0)	1.000 (25.4)	.020 ± .004 (0.5 ± 0.1)
M23053/11-126-C	1.330 (33.8)	1.020 (25.9)	.035 ± .004 (0.9 ± 0.1)
M23053/11-127-C	1.700 (43.2)	1.300 (33.0)	.020 ± .004 (0.5 ± 0.1)
M23053/11-128-C	2.100 (53.3)	1.700 (43.2)	.020 ± .004 (0.5 ± 0.1)
M23053/11-129-C	2.600 (66.0)	2.100 (53.3)	.020 ± .004 (0.5 ± 0.1)
M23053/11-130-C	3.100 (78.7)	2.600 (66.0)	.020 ± .004 (0.5 ± 0.1)
M23053/11-131-C	3.500 (88.9)	3.100 (78.7)	.020 ± .004 (0.5 ± 0.1)
M23053/11-132-C	4.300 (109.2)	3.500 (88.9)	.020 ± .004 (0.5 ± 0.1)
M23053/11-133-C	1.500 (38.1)	1.145 (29.1)	.035 ± .004 (0.9 ± 0.1)
M23053/11-134-C	1.666 (42.3)	1.270 (32.3)	.035 ± .004 (0.9 ± 0.1)
M23053/11-135-C	1.833 (46.6)	1.390 (35.3)	.035 ± .004 (0.9 ± 0.1)
M23053/11-136-C	2.000 (50.8)	1.570 (39.9)	.035 ± .004 (0.9 ± 0.1)
CLASS 2			
M23053/11-201-C	.093 (2.4)	.056 (1.4)	.008 ± .003 (0.2 ± 0.1)
M23053/11-202-C	.125 (3.2)	.075 (1.9)	.010 ± .003 (0.3 ± 0.1)
M23053/11-203-C	.188 (4.8)	.115 (2.9)	.010 ± .003 (0.3 ± 0.1)
M23053/11-204-C	.250 (6.4)	.150 (3.8)	.010 ± .003 (0.3 ± 0.1)
M23053/11-205-C	.375 (9.5)	.225 (5.7)	.012 ± .003 (0.3 ± 0.1)
M23053/11-206-C	.500 (12.7)	.300 (7.6)	.015 ± .004 (0.4 ± 0.1)
M23053/11-207-C	.750 (19.1)	.450 (11.4)	.020 ± .004 (0.5 ± 0.1)
M23053/11-208-C	1.000 (25.4)	.600 (15.2)	.025 ± .005 (0.6 ± 0.1)
M23053/11-209-C	1.500 (38.1)	.900 (22.9)	.030 ± .005 (0.8 ± 0.1)
M23053/11-210-C	2.000 (50.8)	1.200 (30.5)	.030 ± .005 (0.8 ± 0.1)

1/ DIAMETER LIMITS FOR THE OBJECT TO BE ENCLOSED SHALL BE AS RECOMMENDED IN TECHNICAL DATA.

2/ WALL THICKNESS VALUES ARE LESS WHEN SHRINKAGE IS RESTRICTED.

3/ COLOR IDENTIFIED IS THE STANDARD COLOR (REFER TO AS23053 1.3).

TABLE 2 - PHYSICAL PROPERTIES 1/

CHARACTERISTIC	REQUIREMENT	TEST PROCEDURE AND CONDITION (REFER TO AS23053)
AS SUPPLIED:		
ID, MINIMUM RESTRICTED SHRINKAGE	TABLE 1 NO CRACKS	5.3.1 5.6 410 TO 430 °F ± 4 °F (210 TO 221 °C ± 2 °C)
VOLTAGE WITHSTAND	PASS	5.6.2C
CLARITY STABILITY	PASS	5.16 410 TO 430 °F ± 4 °F (210 TO 221 °C ± 2 °C), 24 HOURS
AFTER UNRESTRICTED SHRINKAGE:		
ID, MAXIMUM	TABLE 1	5.3.2
WALL THICKNESS	TABLE 1	5.3.3
TENSILE STRENGTH PSI (MPA), MINIMUM	2000 (13.8)	5.13 ASTM D638, CLASS 1: 2 IN/MIN CLASS 2: 20 IN/MIN
ULTIMATE ELONGATION, PERCENT, MINIMUM	200	5.13 ASTM D638, CLASS 1: 2 IN/MIN CLASS 2: 20 IN/MIN
DIELECTRIC STRENGTH, VOLTS/MIL (KV/MM), MINIMUM	500 (19.7)	5.2 ASTM D2671
VOLUME RESISTIVITY, OHM-CM, MINIMUM	10 ¹⁷	5.2 ASTM D876
WATER ABSORPTION, PERCENT, MAXIMUM	0.01	5.2 ASTM D570, 24 HOURS AT 73 °F (23 °C)
LOW TEMPERATURE FLEXIBILITY	NO CRACKS	5.7.1 -85 °F ± 2 °F (-65 °C ± 1 °C)
HEAT RESISTANCE, PROPERTIES AFTER:		5.9 482 °F ± 5.4 °F (250 °C ± 3 °C), 96 HOURS
TENSILE STRENGTH, PSI (MPA) , MINIMUM	2000 (13.8)	
ULTIMATE ELONGATION, PERCENT, MINIMUM	200	
DIELECTRIC STRENGTH, VOLTS/MIL (KV/MM), MINIMUM	500 (19.7)	5.2 ASTM D2671

1/ UNLESS OTHERWISE SPECIFIED, REQUIREMENTS, TEST PROCEDURES AND CONDITIONS ARE FOR ALL CLASSES.



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