

REV.
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SAE AS81914/11

FEDERAL SUPPLY CLASS
9330

RATIONALE

REVISION IS REQUIRED TO CORRECT THE TABLE 1 METRIC EQUIVALENT VALUES FOR APPROX. WEIGHT, DASH #S 03, 04, 05, 06, 07, 08, 09 AND 10, AND TO CORRECT THE TABLE 1 METRIC EQUIVALENT VALUE FOR MIN BEND RADIUS, DASH # 04, MIN BEND RADIUS OF .50.

NOTICE

THE REQUIREMENTS FOR ACQUIRING THE TUBING DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE IN EFFECT OF SAE AS81914.

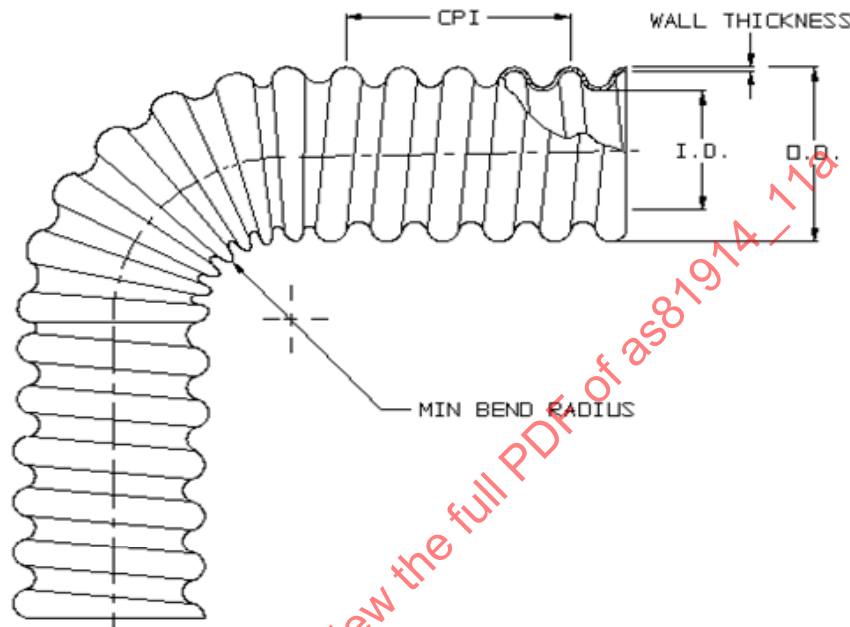
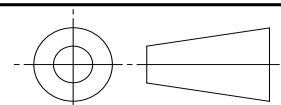


FIGURE 1 – DIMENSIONS AND CONFIGURATION

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THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8C1

PROCUREMENT SPECIFICATION: AS81914

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

TUBING, PLASTIC, LIGHTWEIGHT, ZERO HALOGEN, EXTRA FLEXIBLE, CONVOLUTED, HELICAL, CLOSE CONVOLUTION, POLYETHERETHERKEYTONE (PEEK)

SAE AS81914/11
SHEET 1 OF 4

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TABLE 1 – FIGURE 1 DIMENSIONS

DASH NUMBER	MAX INSIDE DIA. (I.D.)	MIN INSIDE DIA. (I.D.)	MAX OUTER DIA. (O.D.)	MAX WALL THICKNESS	CONVOLUTIONS PER INCH (CPI) ± 1	APPROX. WEIGHT LBS (KG) PER 100 FEET (30.5 M) REF.	MIN BEND RADIUS
01	.188 (4.78)	.181 (4.60)	.307 (7.80)	.010 (0.25)	8	0.6 (0.27)	.31 (7.9)
02	.281 (7.14)	.273 (6.93)	.405 (10.29)	.010 (0.25)	8	0.8 (0.36)	.44 (11.2)
03	.312 (7.92)	.300 (7.62)	.440 (11.18)	.010 (0.25)	8	1.4 (0.64)	.44 (11.2)
04	.375 (9.53)	.364 (9.25)	.500 (12.70)	.010 (0.25)	8	1.6 (0.73)	.50 (12.7)
05	.437 (11.10)	.427 (10.85)	.550 (13.97)	.010 (0.25)	8	1.8 (0.82)	.63 (16.0)
06	.500 (12.70)	.485 (12.32)	.630 (16.00)	.010 (0.25)	8	2.0 (0.91)	.75 (19.1)
07	.625 (15.88)	.608 (15.44)	.750 (19.05)	.010 (0.25)	8	2.4 (1.09)	.75 (19.1)
08	.750 (19.05)	.730 (18.54)	.890 (22.61)	.011 (0.28)	8	3.0 (1.36)	.94 (23.9)
09	.875 (22.23)	.855 (21.72)	1.060 (26.92)	.011 (0.28)	8	3.8 (1.72)	1.13 (28.7)
10	1.000 (25.40)	.980 (24.89)	1.195 (30.35)	.012 (0.30)	7	5.2 (2.36)	1.25 (31.8)
11	1.125 (28.58)	1.105 (28.07)	1.350 (34.29)	.012 (0.30)	7	6.4 (2.90)	1.31 (33.3)
12	1.250 (31.75)	1.220 (30.99)	1.500 (38.10)	.012 (0.30)	7	9.8 (4.45)	1.44 (36.6)
13	1.500 (38.10)	1.480 (37.59)	1.780 (45.21)	.014 (0.36)	7	11.5 (5.22)	1.75 (44.5)
14	1.750 (44.45)	1.730 (43.94)	2.020 (51.31)	.014 (0.36)	7	14.0 (6.35)	2.00 (50.8)
15	2.000 (50.80)	1.980 (50.29)	2.280 (57.91)	.015 (0.38)	7	16.0 (7.26)	2.25 (57.2)

NOTES:

1. DIMENSIONS ARE IN INCHES.
2. UNLESS OTHERWISE SPECIFIED TOLERANCES SHALL BE: .XX = $\pm .010$ (0.25 MM), .XXX = $\pm .005$ (0.13 MM).
3. METRIC EQUIVALENTS ARE GIVEN FOR GENERAL INFORMATION ONLY AND ARE BASED ON 25.4 MM = 1 INCH.
4. METRIC DIMENSIONS IN PARENTHESES ARE SHOWN IN MILLIMETERS.

REQUIREMENTS:

1. DIMENSIONS AND CONFIGURATION: SEE FIGURE 1 AND TABLE 1.
2. CONVOLUTION TYPE: HELICAL.
3. LENGTHS SHALL BE SPECIFIED IN FEET BY THE PROCURING ACTIVITY AND DOES NOT FORM A PART OF THE IDENTIFYING PART NUMBER. MINIMUM ORDER LENGTH SHALL BE 3 FEET (0.914 M) AND THE TUBING ORDER LENGTH TOLERANCES SHALL BE AS SPECIFIED IN TABLE 2. TUBING SHALL BE PROCURED AS COILS.

TABLE 2 – ORDER LENGTH TOLERANCE

ORDER LENGTH RANGE	
LENGTH IN FEET (METERS)	TOLERANCE IN INCHES (MM)
3 – 12 (0.914 M – 3.66 M)	+ 2.0 / - 0.0 (+ 50.8 MM / - 0.0 MM)
13 – 50 (3.96 M – 15.24 M)	+ 4.0 / - 0.0 (+ 101.6 MM / - 0.0 MM)
51 AND UP (15.55 M AND UP)	+ 6.0 / - 0.0 (+ 152.4 MM / - 0.0 MM)

4. CONTINUOUS OPERATING TEMPERATURE: -55 °C (-67 °F) TO 250 °C (482 °F).
5. COLOR: UNLESS OTHERWISE SPECIFIED, THE SUPPLIED COLOR SHALL BE BLACK.
6. PHYSICAL PROPERTIES: GENERAL PHYSICAL REQUIREMENT VALUES ALONG WITH ASSOCIATED TEST CONDITIONS ARE LOCATED IN TABLE 3.
7. SHELF LIFE: THE STORAGE/SHELF LIFE SHALL BE 20 YEARS.

TABLE 3 – PHYSICAL PROPERTIES

PROPERTY	REQUIREMENT
CONSTRUCTION DETAILS	IN ACCORDANCE WITH TABLE 1
STRESS IN PSI @ 10% STRAIN	250 TO 900
SPECIFIC GRAVITY	1.32 MAX
CRUSH RESISTANCE, HORIZONTAL	10 LBS (4.54KG) MIN.
HEAT SHOCK	234/230°C (454/446°F) FOR 4 HOURS. 15% MAX LONGITUDINAL CHANGE. NO DRIPPING, FLOWING OR CRACKING
HEAT AGING	STRESS IN PSI @10% STRAIN, 80% OF INITIAL VALUE. 179/175 °C (354/347 °F) FOR 96 HOURS.
FLUID RESISTANCE	STRESS IN PSI @ 10% STRAIN 80% OF INITIAL VALUE
FLAMMABILITY	NON-FLAMMABLE 1/
FUNGUS RESISTANCE	NON-NUTRIENT 1/
HALOGEN	ZERO HALOGEN 1/
DIELECTRIC BREAKDOWN	12 000 VOLTS, NO BREAKDOWN

1/ PROPERTIES NOT TESTED FOR.