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AS33611

FEDERAL SUPPLY CLASS
4710

RATIONALE

AS33611 HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

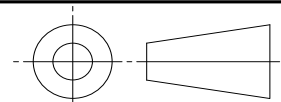
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THIRD ANGLE PROJECTION



CUSTODIAN: G-3



AEROSPACE STANDARD

TUBE BEND RADII

AS33611
SHEET 1 OF 3



Documents

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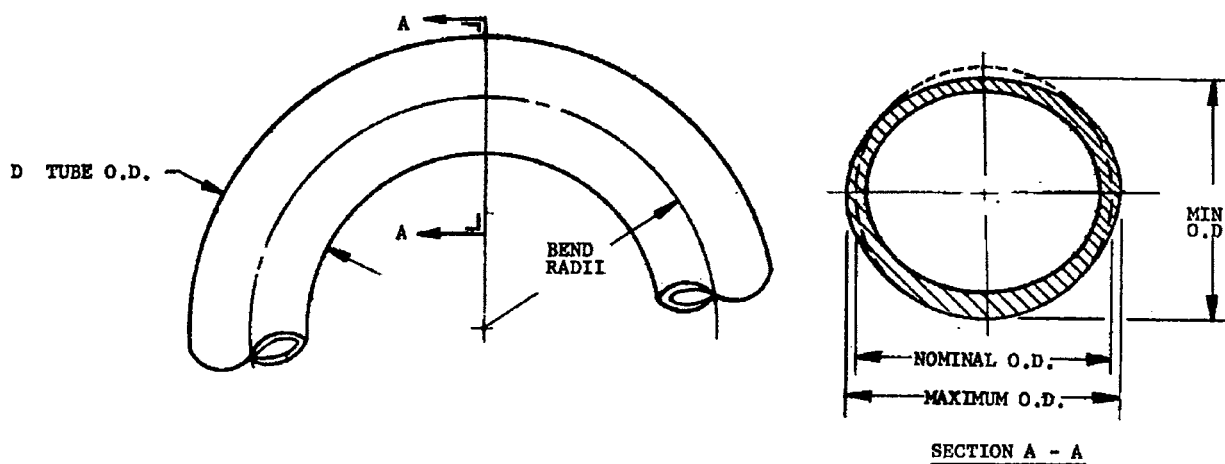


FIGURE 1 - TUBE

TABLE I - BEND RADII FOR CRES AND ALUMINUM TUBING

TUBE OD	SPECIAL BEND RADII SEE NOTE (5)		RECOMMENDED BEND RADII		ADDITIONAL BEND RADII
	1 - 1/2 D	2D	3D	4D	6D
1/8	.188	.250	.375	.500	.750
3/16	.281	.375	.563	.750	1.125
1/4	.375	.500	.750	1.000	1.500
5/16	.469	.625	.938	1.250	1.875
3/8	.563	.750	1.125	1.500	2.250
7/16	.656	.875	1.312	1.750	2.625
1/2	.750	1.000	1.500	2.000	3.000
5/8	.938	1.250	1.875	2.500	3.750
3/4	1.125	1.500	2.250	3.000	4.500
7/8	1.3125	1.750	2.625	3.500	5.250
1	1.500	2.000	3.000	4.000	6.000
1 - 1/8	1.688	2.250	3.375	4.500	6.750
1 - 1/4	1.875	2.500	3.750	5.000	7.500
1 - 3/8	2.063	2.750	4.125	5.500	8.250
1 - 1/2	2.250	3.000	4.500	6.000	9.000
1 - 5/8	2.438	3.250	4.875	6.500	9.750
1 - 3/4	2.625	3.500	5.250	7.000	10.500
1 - 7/8	2.813	3.750	5.625	7.500	11.250
2	3.000	4.000	6.000	8.000	12.000
2 - 1/4	3.375	4.500	6.750	9.000	13.500
2 - 1/2	3.750	5.000	7.500	10.000	15.000
3	4.500	6.000	9.000	12.000	18.000

NOTES:

1. FLATNESS IN THE AREA OF A TUBE BEND SHALL BE DEFINED BY THE FORMULA

$$\text{FLATNESS \%} = \frac{\text{MAX. OD} - \text{MIN OD}}{\text{NOMINAL OD}} \times 100$$

2. THE BENDS WITH WALL THICKNESS PER TABLE II, WHEN USED IN FLUID SYSTEMS WITH WORKING PRESSURES OF 1500 psi OR GREATER, SHALL NOT EXCEED FLATNESS VALUES OF:
 - a. 5% FOR CRES OR ALUMINUM
 - b. 3% FOR TITANIUM, COMMERCIALLY PURE AND COLD WORKED, STRESS RELIEVED.
3. TUBE FLATNESS FOR FLUID SYSTEMS WITH WORKING PRESSURES LESS THAN 1000 psi SHALL NOT EXCEED 10% FOR CRES AND ALUMINUM AND 5% FOR TITANIUM.
4. FLATNESS LIMITATIONS APPLY TO BEND RADII LISTED ON THIS STANDARD. APPLICABILITY TO OTHER BEND RADII SHOULD BE VERIFIED BY TESTING.

	AEROSPACE STANDARD		AS33611 SHEET 2 OF 3	 Documents
	TUBE BEND RADII			

