

**Tolerances
(R) Titanium and Titanium Alloy Tubing**

RATIONALE

AMS2244C has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

This specification covers established manufacturing tolerances applicable to titanium and titanium alloy tubing. These tolerances apply to all conditions, unless otherwise noted. The term "excl" is used to apply only to the higher figure of the specified range.

- 1.1 Tubing shall be specified in either inch/pound units or SI units. When inch/pound units are used, the tolerances shown for SI units are not applicable. When SI units are used, the tolerances for inch/pound units are not applicable.

2. DIAMETER:

When specified, OD tolerances shall apply to the ID but not to both ID and OD of the same lot of tubing. Mean OD is the average of two measurements taken at right angles to each other. Diameter tolerances include ovality except for tubing having specified wall thickness less than 4% of the specified OD; for tubing with specified wall thickness less than 4% of the specified OD, the ovality tolerance shall be double the diameter tolerance.

- 2.1 Seamless, Cold Reduced, Annealed or Stress Relieved:

Shall be as shown in Table 1.

TABLE 1A - OD Tolerances, Seamless Tubing, Inch/Pound Units

Specified OD Inches	Standard Tolerance		Special Tolerance
	Inch Plus and minus		Inch Plus only
Up to 0.093, excl	0.002		0.002
0.093 to 0.100, excl	0.003		0.003
0.100 to 1.000, excl	0.004		0.004
1.000 to 1.500, excl	0.005		0.005
1.500 to 2.000, excl	0.006		0.006
2.000 to 2.500, excl	0.007		0.007
2.500 to 3.500, excl	0.010		0.010
3.500 to 4.500, excl	0.015		0.015

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TABLE 1B - OD Tolerances, Seamless Tubing, SI Units

Specified OD Millimeters	Standard Tolerance Millimeter Plus and minus	Special Tolerance Millimeter Plus only
Up to 2.50, excl	0.05	0.05
2.50 to 4.75, excl	0.08	0.08
4.75 to 25.00, excl	0.10	0.10
25.00 to 37.50, excl	0.13	0.13
37.50 to 50.00, excl	0.15	0.15
50.00 to 63.50, excl	0.18	0.18
63.50 to 89.00, excl	0.25	0.25
89.00 to 115.00, excl	0.38	0.38

2.2 Welded, Cold Reduced, Annealed or Stress Relieved:

Shall be as shown in Table 2 or Table 3 as applicable.

TABLE 2A - Standard OD Tolerances, Inch/Pound Units

Specified OD Inches	Tolerance, Inch plus only
Up to 0.125, excl	0.002
0.125 to 0.100, excl	0.003
0.100 to 0.500, excl	0.004
0.500 and over	0.005

TABLE 2B - Standard OD Tolerances, SI Units

Specified OD Millimeters	Tolerance, Millimeter plus only
Up to 3.00, excl	0.05
3.00 to 4.75, excl	0.08
4.75 to 12.50, excl	0.10
12.50 and over	0.12

TABLE 3A - Special OD Tolerances, Inch/Pound Units

Specified OD Inches	Tolerance, Inch plus only
Up to 0.250, excl	0.001
0.250 to 0.12, excl	0.002
0.12 to 1.000, excl	0.004

TABLE 3B - Special OD Tolerances, SI Units

Specified OD Millimeters	Tolerance, Millimeter plus only
Up to 6.25, excl	0.03
6.25 to 20.50, excl	0.05
20.50 to 25.00, excl	0.10