



# AEROSPACE MATERIAL SPECIFICATION

AMS2243™

REV. L

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Superseding AMS2243K

## Tolerances Corrosion and Heat-Resistant Steel Tubing

### RATIONALE

AMS2243L adds metric values and tolerances to all tables, clarifies mechanical and hydraulic tubing (2.1, 2.2, 3.1, 3.2), and is the result of a Five-Year Review and update of the specification.

#### 1. SCOPE

This specification covers manufacturing tolerances applicable to seamless and welded tubing of corrosion and heat-resistant steel. These tolerances apply to all conditions and are based on individual measurements, unless otherwise noted. Tubing may be specified by two dimensions only (OD and wall thickness, ID and wall thickness, or OD and ID).

#### 2. DIAMETER

##### 2.1 Mechanical Tubing and Tubing Other than Pressure Tubing; Welded (see 2.1.1) or Seamless (see 2.1.2)

Shall be as shown in Table 1. Standard tolerances shall apply unless special tolerances are specified by the purchaser.

**Table 1A - Tolerances for tubing other than pressure tubing, inch/pound units**

Specified OD or ID Inches	Standard Tolerance, Inches Including Ovality (see 2.3) Plus and Minus	Special Tolerance, Inches Including Ovality (see 2.3) Plus and Minus
Up to 0.5, excl	0.005	0.003
0.5 to 1.5, excl	0.005	0.003
1.5 to 3.5, excl	0.010	0.004
3.5 to 5.5, excl	0.015	0.005
5.5 and over	0.031	0.010

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**Table 1B - Tolerances for tubing other than pressure, diameter, SI units**

Specified OD or ID Millimeters	Standard Tolerance, Millimeters	Special Tolerance, Millimeters
	Including Ovality (see 2.3) Plus and Minus	Including Ovality (see 2.3) Plus and Minus
Up to 14, excl	0.12	0.08
14 to 38, excl	0.12	0.08
38 to 90, excl	0.25	0.10
90 to 140, excl	0.38	0.13
140 and over	0.75	0.25

## 2.1.1 Welded Tubing

Shall be bead-reduced or shall be cold finished by tube-reducing, cold-drawing, machining, or grinding.

## 2.1.2 Seamless Tubing

Shall be cold-finished by tube-reducing, cold-drawing, machining, or grinding.

## 2.2 Pressure (Hydraulic) Tubing (see 6.2.5); Cold Drawn or Cold Reduced (Seamless or Welded)

Shall be as shown in Table 2. Standard tolerances shall apply unless special tolerances are specified by the purchaser.

**Table 2A - Tolerances for pressure tubing, inch/pound units**

Specified OD or ID Inches	Standard OD or ID Tolerance, Inches	Special OD or ID Tolerance, Inches
	Including Ovality (see 2.3) Plus and Minus	Including Ovality (see 2.3) Plus and Minus
Up to 0.5, incl	0.003	0.003
Over 0.5 to 1.0, excl	0.004	0.003
1.0 to 1.5, excl	0.005	0.003
1.5 to 2.0, excl	0.006	0.004
2.0 to 2.5, excl	0.007	0.004
2.5 to 3.5, excl	0.010	0.004
3.5 to 5.5, excl	0.015	0.005
5.5 to 8.0, excl	0.030	0.010
8.0 to 8.625, incl	0.045	0.020

**Table 2B - Tolerances for pressure tubing, SI units**

Specified OD or ID Millimeters	Standard OD or ID Tolerance, Millimeters	Special OD or ID Tolerance, Millimeters
	Including Ovality (see 2.3) Plus and Minus	Including Ovality (see 2.3) Plus and Minus
Up to 14, incl	0.08	0.08
Over 14 to 25, excl	0.10	0.08
25.0 to 38, excl	0.13	0.08
38 to 50, excl	0.15	0.10
50.0 to 65, excl	0.18	0.10
65 to 90, excl	0.25	0.10
90 to 140, excl	0.38	0.13
140 to 200, excl	0.75	0.25
200.0 to 215, incl	1.12	0.50

## 2.2.1 Half Tolerances

When half tolerances are specified, the tolerances of Table 2 shall be plus only; the minus side of the tolerance range shall not be applicable.