

STANDARDS FOR CROSS SECTIONAL TOLERANCE TABLES

Tolerances for outside (O.D.) diameters, inside (I.D.) diameters, wall thickness, width, height and general cross sectional dimensions or extrusions. See Figures 17 and 18, Page 22.

Table 13

Schedule 1
Cross Sectional Tolerances for Group 1 —
Compounds Only

**HIGH PRECISION
RMA — CLASS A — DWG DESIGNATION A**

Dimension (Inches)	Tolerance	Dimension (Inches) (Fractions)	Dimension (Millimeters) (Above-incl.)	Tolerance
Above-incl.		(Fractions)	Above-incl.	
0.00-0.10*	± .008	(0- ³ / ₃₂)	0.0- 2.5*	± 0.20
0.10-0.16	0.010	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.25
0.16-0.25	0.013	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.32
0.25-0.40	0.016	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.40
0.40-0.63	0.020	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	0.50
0.63-1.00	0.025	(⁵ / ₈ -1)	16.0-25.0	0.63

Use ± 2-1/4% for dimensions over 1.00 inch.

**PRECISION
RMA — CLASS 1 — DWG DESIGNATION A1**

0.00-0.10*	± .010	(0- ³ / ₃₂)	0.0- 2.5*	± 0.25
0.10-0.16	0.013	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.32
0.16-0.25	0.016	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.40
0.25-0.40	0.020	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.50
0.40-0.63	0.025	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	0.63
0.63-1.00	0.032	(⁵ / ₈ -1)	16.0-25.0	0.80

Use ± 2-3/4% for dimensions over 1.00 inch.

**COMMERCIAL
RMA — CLASS 2 — DWG DESIGNATION A2**

0.00-0.10*	± .013	(0- ³ / ₃₂)	0.0- 2.5*	± 0.32
0.10-0.16	0.016	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.40
0.16-0.25	0.020	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.50
0.25-0.40	0.025	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.63
0.40-0.63	0.032	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	0.80
0.63-1.00	0.040	(⁵ / ₈ -1)	16.0-25.0	1.00

Use ± 3-1/2% for dimensions over 1.00 inch.

**NON CRITICAL
RMA — CLASS 3 — DWG DESIGNATION A3**

0.00-0.10*	± .016	(0- ³ / ₃₂)	0.0- 2.5*	± 0.40
0.10-0.16	0.020	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.50
0.16-0.25	0.025	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.63
0.25-0.40	0.032	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.80
0.40-0.63	0.040	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	1.00
0.63-1.00	0.050	(⁵ / ₈ -1)	16.0-25.0	1.25

Use ± 4-1/2% for dimensions over 1.00 inch.

Table 14

Schedule 2
Cross Section Tolerances for Group 2 —
Compounds Only

**HIGH PRECISION
RMA — CLASS A — DWG DESIGNATION A**

Dimension (Inches)	Tolerance	Dimension (Inches) (Fractions)	Dimension (Millimeters) (Above-incl.)	Tolerance
Above-incl.		(Fractions)	Above-incl.	
0.00-0.10*	± .010	(0- ³ / ₃₂)	0.0- 2.5*	± 0.25
0.10-0.16	0.013	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.32
0.16-0.25	0.016	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.40
0.25-0.40	0.020	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.50
0.40-0.63	0.025	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	0.63
0.63-1.00	0.032	(⁵ / ₈ -1)	16.0-25.0	0.80

Use ± 2-3/4% for dimensions over 1.00 inch.

**PRECISION
RMA — CLASS 1 — DWG DESIGNATION A1**

0.00-0.10*	± .013	(0- ³ / ₃₂)	0.0- 2.5*	± 0.32
0.10-0.16	0.016	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.40
0.16-0.25	0.020	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.50
0.25-0.40	0.025	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.63
0.40-0.63	0.030	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	0.80
0.63-1.00	0.040	(⁵ / ₈ -1)	16.0-25.0	1.00

Use ± 3-1/2% for dimensions over 1.00 inch.

**COMMERCIAL
RMA — CLASS 2 — DWG DESIGNATION A2**

0.00-0.10*	± .016	(0- ³ / ₃₂)	0.0- 2.5*	± 0.40
0.10-0.16	0.020	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.50
0.16-0.25	0.025	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.63
0.25-0.40	0.030	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	0.80
0.40-0.63	0.040	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	1.00
0.63-1.00	0.050	(⁵ / ₈ -1)	16.0-25.0	1.25

Use ± 4-1/2% for dimensions over 1.00 inch.

**NON CRITICAL
RMA — CLASS 3 — DWG DESIGNATION A3**

0.00-0.10*	± .020	(0- ³ / ₃₂)	0.0- 2.5*	± 0.50
0.10-0.16	0.025	(³ / ₃₂ - ⁵ / ₃₂)	2.5- 4.0	0.63
0.16-0.25	0.030	(⁵ / ₃₂ - ¹ / ₄)	4.0- 6.3	0.80
0.25-0.40	0.040	(¹ / ₄ - ¹³ / ₃₂)	6.3-10.0	1.00
0.40-0.63	0.050	(¹³ / ₃₂ - ⁵ / ₈)	10.0-16.0	1.25
0.63-1.00	0.063	(⁵ / ₈ -1)	16.0-25.0	1.60

Use ± 5-1/2% for dimensions over 1.00 inch.

Note: There is a relationship between hardness and the amount of tolerance which will be used. The lower the hardness the more tolerance necessary.

*General cross sectional dimensions below 0.040" (1 mm) are impractical.