Tolerance Tables

Cross Sectional Tolerances for Group 1 — Compounds Only

Dimension (Inches) Above - Incl.	Tolerance	Dimension (Inches) (Fractions)	Dimension (Millimeters) Above - Incl.	Tolerance
HIGH PRECISION RMA — CLASS A — DWG DESIGNATION A				
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				

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

Tolerance Tables

Cross Sectional Tolerances for Group 2 — Compounds Only

Dimension (Inches) Above - Incl.	Tolerance	Dimension (Inches) (Fractions)	Dimension (Millimeters) Above - Incl.	Tolerance
HIGH PRECISION RMA — CLASS A — DWG DESIGNATION A				
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				

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

Tolerance Tables

Standard Dimensional Tolerance Table — Molded Rubber Products

Dimension (Inches) Above - Incl.	Fixed	Closure	Dimension (Millimeters) Above - Incl.	Fixed	Closure
HIGH PRECISION DWG DESIGNATION A1					
0 - .40	±.004	±.005	0 - 10	±.10	±.13
.40 - .63	.005	.006	10 - 16	.13	.16
.63 - 1.00	.006	.008	16 - 25	.16	.20
1.00 - 1.60	.008	.010	25 - 40	.20	.25
1.60 - 2.50	.010	.013	40 - 63	.25	.32
2.50 - 4.00	.013	.016	63 - 100	.32	.40
4.00 - 6.30	.016	.020	100 - 160	.40	.50
PRECISION DWG DESIGNATION A2					
0 - .40	±.006	±.008	0 - 10	±.16	±.20
.40 - .63	.008	.010	10 - 16	.20	.25
.63 - 1.00	.010	.013	16 - 25	.25	.32
1.00 - 1.60	.013	.016	25 - 40	.32	.40
1.60 - 2.50	.016	.020	40 - 63	.40	.50
2.50 - 4.00	.020	.025	63 - 100	.50	.63
4.00 - 6.30	.025	.032	100 - 160	.63	.80
6.30 & over — To find fixed dimensional tolerances multiply by 0.4%			160 & over — To find fixed dimensional tolerances multiply by 0.4%		

Drawing Designation “A1" is the tightest tolerance classification and indicates a high precision rubber product. Such products require expensive molds, fewer cavities per mold, costly in-process controls and inspection procedures. The exact method of measurement should be agreed upon between rubber manufacturer and customer, as errors in measurement may be large in relation to the tolerance.

Some materials, particularly those requiring post curing, do not lend themselves to Drawing Designation “A1" tolerances.

Drawing Designation “A2" tolerances indicate a precision product. Molds must be precision machined and kept in good repair. Careful inspection will usually be required.

Tolerance Tables

Standard Dimensional Tolerance Table — Molded Rubber Products

Dimension (Inches) Above - Incl.	Fixed	Closure	Dimension (Millimeters) Above - Incl.	Fixed	Closure
COMMERCIAL DWG DESIGNATION A3					
0 - .40	±.008	±.013	0 - 10	±.20	±.32
.40 - .63	.010	.016	10 - 16	.25	.40
.63 - 1.00	.013	.020	16 - 25	.32	.50
1.00 - 1.60	.016	.025	25 - 40	.40	.63
1.60 - 2.50	.020	.032	40 - 63	.50	.80
2.50 - 4.00	.025	.040	63 - 100	.63	1.00
4.00 - 6.30	.032	.050	100 - 160	.80	1.25
6.30 & over — To find fixed dimensional tolerances multiply by 0.5%			160 & over — To find fixed dimensional tolerances multiply by 0.5%		
NON-CRITICAL DWG DESIGNATION A4					
0 - .40	±.013	±.032	0 - 10	±.32	±.80
.40 - .63	.016	.036	10 - 16	.40	.90
.63 - 1.00	.020	.040	16 - 25	.50	1.00
1.00 - 1.60	.025	.045	25 - 40	.63	1.12
1.60 - 2.50	.032	.050	40 - 63	.80	1.25
2.50 - 4.00	.040	.056	63 - 100	1.00	1.40
4.00 - 6.30	.050	.063	100 - 160	1.25	1.60
6.30 & over — To find fixed dimensional tolerances multiply by 0.8%			160 & over — To find fixed dimensional tolerances multiply by 0.8%		

Drawing Designation “A3" tolerances indicate a ”commercial" product and will normally be used for most products.

Drawing Designation “A4" tolerances apply to products where dimensional control is non-critical and secondary to cost.