

Standards for Dimensional Tolerances

"A1" High Precision

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 in advance between the manufacturer and the customer, as errors in measurement may be large in relation to the tolerance. Some materials, particularly those requiring post curing, (i.e.. fluoroelastomers), do not lend themselves to A1 tolerances.

A1 - High Precision		
SIZE (in.)	FIXED	CLOSURE
0 - .40	±.004	±.005
.40 - .63	.005	.006
.63 - 1.00	.006	.008
1.00 - 1.60	.008	.010
1.60 - 2.50	.010	.013
2.50 - 4.00	.013	.016
4.00 - 6.30	.016	.020
A2 - Precision		
SIZE (in.)	FIXED	CLOSURE
0 - .40	±.006	±.008
.40 - .63	.008	.010
.63 - 1.00	.010	.013
1.00 - 1.60	.013	.016
1.60 - 2.50	.016	.020
2.50 - 4.00	.020	.025
4.00 - 6.30	.025	.032
6.30 + multiply by	.004	.005
A3 - Commercial		
SIZE (in.)	FIXED	CLOSURE
0 - .40	±.008	±.013
.40 - .63	.010	.016
.63 - 1.00	.013	.020
1.00 - 1.60	.016	.025
1.60 - 2.50	.020	.032
2.50 - 4.00	.025	.040
4.00 - 6.30	.032	.050
6.30 + multiply by	.005	.008
A4 - Basic		
SIZE (in.)	FIXED	CLOSURE
0 - .40	±.013	±.032
.40 - .63	.016	.036
.63 - 1.00	.020	.040
1.00 - 1.60	.025	.045
1.60 - 2.50	.032	.050
2.50 - 4.00	.040	.056
4.00 - 6.30	.050	.063
6.30 + multiply by	.008	.010

"A2" Precision

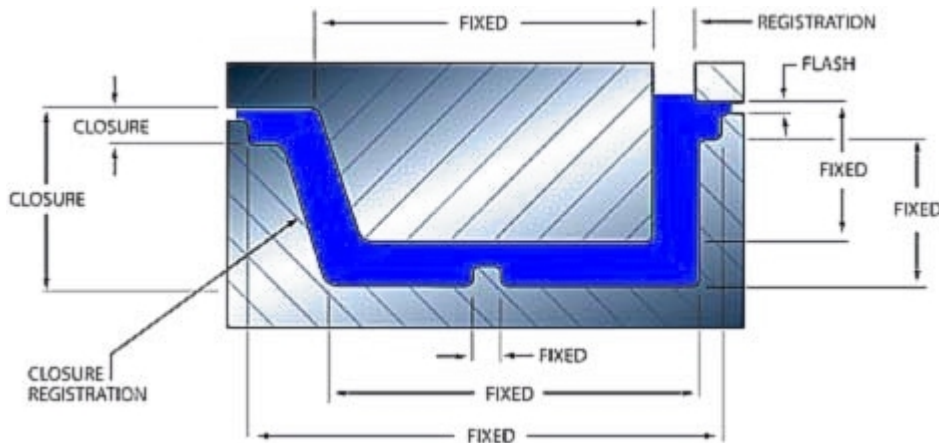
The A2 tolerance indicates a precision product. Molds must be precision machined and kept in good repair. While measurement methods may be simpler than the drawing dimension A1, careful inspection will usually be required. (A2 are typically assumed to be the standard rubber tolerances for engineered rubber components unless otherwise indicated.)

"A3" Commercial

The A3 tolerances indicate a commercial product and will normally be used for non-critical applications for which precision molding is not required.

"A4" Basic

When cost, not dimensional control, is of overriding importance, this tolerance is used.



The information and tables are standards published by the RMA (Rubber Manufacturer's Association) Handbook for molded parts.