

STANDARD TOLERANCE REFERENCE

Flatness:

Tolerance applies to any 1 inch along the surface of the profile or tolerance multiplied by the width along a gradual deviation from flat. Flatness can be checked by using a straight edge and feeler gauges.

Bar, Solid & Semihollow Profiles			
Wall Thickness	Surface Width		
	Up to 5.999	6.000 - 7.999	8.000 - 9.999
Up Through 0.124	.004	.006	.010
0.125 – 0.187	.004	.006	.008
0.188 – 0.249	.004	.006	.008
0.250 – 0.374	.004	.006	.006
0.375 – 0.499	.004	.004	.006
0.500 – 0.749	.004	.004	.006
0.750 – 0.999	.004	.004	.006
1.000 – 1.499	.004	.004	.006
1.500 – 1.999	.004	.004	.004
2.000 and up	.004	.004	.004

Reference: Table 8-5 Aluminum Extrusion Manual

Hollow Profiles			
Wall Thickness	Surface Width		
	Up to 5.999	6.000 - 7.999	8.000 - 9.999
Up Through 0.124	.006	.008	.012
0.125 – 0.187	.006	.008	.010
0.188 – 0.249	.004	.006	.010
0.250 – 0.374	.004	.006	.008
0.375 – 0.499	.004	.006	.008
0.500 – 0.749	.004	.004	.006
0.750 – 0.999	.004	.004	.006
1.000 and up	.004	.004	.004

Reference: Table 8-6 Aluminum Extrusion Manual

Squareness:

Standard allowable is +/- 1° from specified angle of the profile.

If a part is 45° we are allowed up to 46 degrees and down to 44°. Squareness can be checked by using a protractor or with a square and feeler gauge.

One degree equals 0.017" per inch. If a part has a leg height of 4 inches long we are allowed a total of 0.068" from to the tip of the leg.

Twist along the length:

Twist can be checked by placing the part on the granite block or any flat surface.

Hold down one corner and measure the amount of rise on the opposite, diagonal corner using feeler gauges.

For part width up though 1.499", standard allowable is 1° per foot, to a maximum of 7°.

For part width from 1.500" – 2.999", standard allowable is ½° per foot, to a maximum of 5°.

For part width 3.000" and over, standard allowable is ¼° per foot, to a maximum of 3°.

Guidelines to apply the above tolerances:

1° over 1" = 0.017"

½° over 1" = 0.0085"

¼° over 1" = 0.0045"

1° to a maximum of 7° = Max length 7 feet

½° to a maximum of 5° = Max length 10 feet

¼° to a maximum of 3° = Max length 12 feet

Straightness along the length:

Standard allowable is 0.012" per foot.

If a part is 6 feet long we are allowed a bow of 0.072" over the entire length.

Straightness can be checked by placing the part on the granite block or on any straight edge. You measure the amount of bow using feeler gauges.

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