

TOLERANCES

ALUMINUM ROD & BAR

Diameter Inches	Tolerance Inches	Specified Thickness, or Width, In.	Thickness Tolerance Inches	Width Tolerance Inches
COLD FINISHED ROD		COLD FINISHED FLAT		
0.125 - 0.500	±0.0015	.065 - .500	±.002	±.002
0.501 - 1.000	±0.0020	.501 - 1.00	±.0025	±.0025
1.001 - 1.500	±0.0025	1.001 - 1.500	±.003	±.003
1.501 - 2.000	±0.0040	1.501 - 2.000	±.005	±.005
2.001 - 3.000	±0.0060	2.001 - 3.000	±.008	±.008
3.001 - 3.499	±0.0080	3.001 - 4.000	±.010	±.010
3.500 - 5.000	±0.0120	4.001 - 6.000	±.015	±.020
5.001 - 8.250	±0.016	EXT. SQUARES/ FLATS	THICKNESS/WIDTH TOLERANCES	
EXTRUDED ROD/6061		Specified	Widths	
Under .125	±.006	Thickness, or	Thru	Widths
.125 - .249	±.007	Width, In.	9.99	10.00 - 13.99
.250 - .499	±.008	Under .125	±.006	±.014
.500 - .749	±.009	.125 - .249	±.007	±.015
.750 - .999	±.010	.250 - .499	±.008	±.016
1.000 - 1.499	±.012	.500 - .749	±.009	±.017
1.500 - 1.999	±.014	.750 - .999	±.010	±.018
2.000 - 3.999	±.024	1.0 - 1.49	±.012	±.019
4.000 - 5.999	±.034	1.5 - 1.99	±.014	±.024
6.000 - 7.999	±.044	2.0 - 3.99	±.024	±.034
8.000 - 9.999	±.064	4.0 - 5.99	±.034	±.044
10.000 - 11.999	±.074	6.0 - 7.99	±.044	±.054
12.000 - 13.999	±.084	8.0 - 9.99	±.054	±.064
		10.0 - 11.99	—	±.074
		12.0 - 13.99	—	±.084

TOLERANCES

ALUMINUM DRAWN TUBE — ROUND

Diameter Tolerances/Plus & Minus, Inches

Allowable Deviation of Mean Diam. from Size		Allowable Deviation of Diam. from Size at any Point		
		Not Treated	Heat Treated	Annld.
Up thru 0.500	.003	.003	.006	.018
0.501 - 1.000	.004	.004	.008	.018
1.001 - 2.000	.005	.005	.010	.030
2.001 - 3.000	.006	.006	.012	.036
3.001 - 5.000	.008	.008	.016	.048
5.001 - 6.000	.010	.010	.020	.060
6.001 - 8.000	.015	.015	.030	.090
8.001 - 10.000	.020	.020	.040	.012
10.001 - 12.000	.025	.025	.050	.150

TOLERANCES**Wall Tolerances/Plus & Minus, Inches**

Allowable Deviation of Mean Diam. from Size	Allowable Deviation of Diam. from Size at any Point		
	Non-Heat- Treatable		Heat Treatable
	0.010 - 0.035	.002	.002
0.036 - 0.049	.003	.003	
0.050 - 0.083	.004	.004	±10% of specified
0.084 - 0.120	.005	.006	wall
0.121 - 0.203	.006	.008	±.003"
0.204 - 0.300	.008	.012	minimum
0.301 - 0.375	.015	.020	
0.376 - 0.500	.020	.030	

TOLERANCES**ALUMINUM EXTRUDED TUBE-ROUND****Diameter Tolerance/Plus & Minus, Inches**

Diam. Inches (Size)	Deviation from Size of Mean Diam.		Deviation of Diam. from Size at any Point	
	5083, 5086	Other	5083, 5086	Other
	5454	Alloys	5454	Alloys
0.500 - 0.999	.015	.010	.030	.020
1.000 - 1.999	.018	.012	.038	.025
2.000 - 3.999	.023	.015	.045	.030
4.000 - 5.999	.038	.025	.075	.050
6.000 - 7.999	.053	.035	.113	.075
8.000 - 9.999	.068	.045	.150	.100
10.000 - 11.999	.083	.055	.188	.125
12.000 - 13.999	.098	.065	.225	.150
14.000 - 15.999	.113	.075	.263	.175
16.000 - 17.999	.128	.085	.300	.200

Wall Tolerances/Plus & Minus, Inches**Allowable Deviation of Mean Wall from Specified Wall**

Spec. Wall Inches	Under 1.250 OD		1.250-2.999 OD		3.000-4.999 OD		5.000 and over	
	5083	Other	5083	Other	5083	Other	5083	Other
	5086	Alloys	5086	Alloys	5086	Alloys	5086	Alloys
Under 0.047	.009	.006	—	—	—	—	—	—
0.047-0.061	.011	.007	.012	.008	.012	.088	.015	.010
0.062-0.077	.012	.008	.012	.008	.014	.009	.018	.012
0.078-0.124	.014	.009	.014	.009	.015	.010	.023	.015
0.125-0.249	.014	.009	.014	.009	.020	.013	.030	.020
0.250-0.374	.017	.011	.017	.011	.024	.016	.038	.025
0.375-0.499	—	—	.023	.015	.032	.021	.053	.035
0.500-0.749	—	—	.030	.020	.042	.028	.068	.045
0.750-0.999	—	—	—	—	.053	.035	.083	.055
1.000-1.499	—	—	—	—	.068	.045	.098	.065
1.500-2.000	—	—	—	—	—	—	.113	.075
2.001-2.499	—	—	—	—	—	—	.128	.085
2.500-2.999	—	—	—	—	—	—	.143	.095
3.000-3.499	—	—	—	—	—	—	.158	.105
3.500-4.000	—	—	—	—	—	—	.173	.115

Allowable Wall Deviation at any point (Eccentricity)

2" Wall & Under:	Plus & minus 10% of mean wall .060" maximum, .010" minimum
Over 2"	±.120"

TOLERANCES
ALUMINUM PIPE
Schedule 40 & 80

Outside Diameter		Wall	
Pipe Size Inches	Tolerance Inches	Size Inches	Tolerance %
Under 2 2 and Up	+ .015 - .031 ± 1%	All	- 12½

ALUMINUM TREAD PLATE/SHEET

Thick In.	Tolerance, In.		Thick In.	Tolerance, In.	
	Plus	Minus		Plus	Minus
.100	.008	.012	.250	.018	.030
.125	.010	.015	.375	.025	.045
.156	.011	.019	.500	.035	.060
.188	.013	.023	.625	.044	.075

Specified thickness does not include height of pattern. (Minimum height of raised pattern = 0.040 inch.)

ALUMINUM SHEET THICKNESS*
TOLERANCES (INCHES +/-)

By alloy group and width range

Nom. Thick.	36"		48"		60"	
	1100		1100		1100	
	3003		3003		3003	
	5052	2024	5052	2024	5052	2024
	6061	7075	6061	7075	6061	7075
.190	.007	.006	.009	.007	.011	.009
.160	.007	.006	.009	.007	.011	.009
.125	.0045	.0035	.006	.0035	.007	.0045
.100	.0045	.0035	.006	.0035	.007	.0045
.090	.0035	.0025	.0045	.0035	.006	.0040
.080	.0035	.0025	.0045	.0035	.006	.0040
.063	.0030	.0020	.0035	.0030	.0050	.0030
.050	.0030	.0020	.0035	.0030	.0050	.0030
.040	.0025	.0020	.0035	.0020	.0045	.0030
.032	.0020	.0015	.0025	.0020	.0035	.0030
.025	.0015	.0015	.0020	.0025	.0030	N/A

*Tolerances are representative of Aluminum Association Standards.