



**The Tube People**

# Square and Rectangular Mechanical Tubing

1717 W. 115th Street, Chicago, IL 60643 • Phone 773-239-7700 or 800-Leavitt  
Fax 773-239-1023 • www.leavitt-tube.com



## THEORETICAL WEIGHT PER FOOT FACTORS

Outside Dimension		Nominal Wall Thickness								
SQUARES	RECTANGLES	0.028 22 Ga.	0.035 20 Ga.	0.049 18 Ga.	0.065 16 Ga.	0.072 15 Ga.	0.083 14 Ga.	0.095 13 Ga.	0.109 12 Ga.	0.120 11 Ga.
1/2 x 1/2	3/8 x 5/8	.180	.221	.301	.385					
5/8 x 5/8		.227	.281	.384	.495					
	1/2 x 7/8	.251	.311	.426	.550	.606				
3/4 x 3/4	1/2 x 1	.275	.340	.467	.606	.664	.753	.846	.950	1.028
13/16 x 13/16	5/8 x 1	.299	.370	.509	.660	.725	.823			
7/8 x 7/8	3/4 x 1	.323	.400	.550	.716	.786	.894			
	7/8 x 1	.346	.430	.592	.771	.848	.965			
1 x 1	1/2 x 1-1/2	.370	.459	.634	.827	.909	1.035	1.169	1.321	1.436
1-1/8 x 1-1/8	3/4 x 1-1/2	.418	.519	.717	.937	1.031	1.176	1.331	1.506	1.640
	1 x 1-1/4									
1-1/4 x 1-1/4	1 x 1-1/2		.578	.800	1.048	1.154	1.317	1.492	1.691	1.844
1-1/2 x 1-1/2	1 x 2		.697	.967	1.269	1.398	1.600	1.815	2.062	2.252
	1-1/4 x 1-3/4									
	1-1/4 x 2		.757	1.050	1.379	1.521	1.741	1.977	2.247	2.456
1-3/4 x 1-3/4	1-1/2 x 2		.816	1.134	1.490	1.643	1.882	2.138	2.433	2.660
1-7/8 x 1-7/8	1-1/4 x 2-1/2		.876	1.217	1.601	1.765	2.023	2.300	2.618	2.864
2 x 2	1 x 3			1.300	1.711	Structural Tubing—See reverse side.				

This table is based on commonly used sizes. Other sizes are within Leavitt Tube Company's production capabilities. We invite your inquiry.

Tolerances, Outside Dimensions	
Widest Side, Inches	Tolerances, Inches
3/8 to 5/8 Incl.	±0.004
Over 5/8 to 1-1/8	±0.005
Over 1-1/8 to 1-1/2	±0.006
Over 1-1/2 to 2	±0.008
Over 2 to 3	±0.010

CONVEXITY & CONCAVITY TOLERANCES	
Widest Side, Inches	Tolerances, Inches
2-1/2 & Under	±0.010
Over 2-1/2 to 4	±0.015

WALL THICKNESS TOLERANCE
±10% of Nominal Wall Thickness

Straightness
Max. = 1/16" in 3'

Squareness Of Sides
Max. = Widest side (in.) x 0.006"

CORNER RADIUS TOLERANCES		
Squares and Equivalent Rectangles, Inches	Wall Thicknesses in BWG and Inches	Radius Tolerances, Inches
1/2 to 1-1/8 Incl.	22 (0.028)	1/32 to 1/16
1/2 to 2 Incl.	20 (0.035)	1/32 to 1/16
1/2 to 2 Incl.	18 (0.049)	3/64 to 5/64
1/2 to 2 Incl.	16 (0.065)	1/16 to 7/64
3/4 to 2 Incl.	14 (0.083)	5/64 to 1/8
3/4 to 2 Incl.	13 (0.095)	3/32 to 5/32
3/4 to 2 Incl.	12 (0.109)	1/8 to 13/64
3/4 to 2 Incl.	11 (0.120)	1/8 to 7/32

CUTTING TOLERANCES	
Mill Punch-Cut Length	Tolerances, Inches
1 to 3' Incl.	±1/16
Over 3 to 12'	±3/32
Over 12 to 20'	±1/8
Over 20 to 30'	±3/16
Over 30 to 40'	±5/16
Recut (Stationary)	Tol. Length, Inches
Punch-Cut	to 3' ±1/32
Haven-Cut	Over 3 to 8' ±1/16

NOTE: Reference: ASTM A-513-LATEST





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# Round Mechanical Tubing

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## THEORETICAL WEIGHT PER FOOT FACTORS

Outside Diameter		Nominal Wall Thickness														O.D. Decimal		
		0.022 24 Ga.	0.028 22 Ga.	0.035 20 Ga.	0.042 19 Ga.	0.049 18 Ga.	0.065 16 Ga.	0.072 15 Ga.	0.083 14 Ga.	0.095 13 Ga.	0.109 12 Ga.	0.120 11 Ga.	0.134 10 Ga.	0.148 9 Ga.	0.165 8 Ga.		0.180 7 Ga.	
Decimal	Fraction	OUTSIDE DIMENSION TOLERANCES														O.D. Decimal		
		Cold Rolled Steel Tubing							Hot Rolled Steel Tubing									
		O.D. Range			Ga.		Tol. In.		O.D. Range			Ga.		Tol. In.				
0.375	3/8	0.0830	0.1039	0.1272	0.1495	0.1708	0.2154											0.375
0.406			0.1131	0.1388	0.1634	0.1870	0.2369											0.406
0.438	7/16		0.1227	0.1508	0.1778	0.2038	0.2589											0.438
0.500	1/2	0.1124	0.1413	0.1740	0.2056	0.2362	0.3023	0.3294										0.500
0.540			0.1533	0.1889	0.2236	0.2572	0.3301											0.540
0.562			0.1598	0.1972	0.2335	0.2687	0.3453	0.3775										0.562
0.625	5/8	0.1418	0.1787	0.2207	0.2618	0.3017	0.3891	0.4256	0.4809	0.5382								0.625
0.675			0.1937	0.2395	0.2842	0.3279	0.4239	0.4641	0.5253									0.675
0.706			0.2029	0.2511	0.2981	0.3441	0.4454	0.4880	0.5528									0.706
0.750	3/4	0.1712	0.2161	0.2675	0.3179	0.3672	0.4760	0.5218	0.5918	0.6652	0.7469	0.8082						0.750
0.812	13/16		0.2347	0.2907	0.3457	0.3997	0.5191	0.5696	0.6468	0.7281								0.812
0.840			0.2430	0.3012	0.3583	0.4143	0.5385	0.5911	0.6717	0.7566	0.8519							0.840
0.875	7/8		0.2535	0.3143	0.3740	0.4327	0.5628	0.6181	0.7027	0.7921	0.8926	0.9685						0.875
0.910			0.2640	0.3274	0.3897	0.4510	0.5871	0.6450	0.7338									0.910
0.922			0.2676	0.3319	0.3951	0.4573	0.5955	0.6542	0.7444									0.922
0.995			0.2894	0.3592	0.4279	0.4955	0.6462	0.7104	0.8092	0.9140	1.032	1.122						0.995
1.000	1		0.2909	0.3611	0.4301	0.4981	0.6497	0.7143	0.8136	0.9191	1.038	1.129						1.000
1.050			0.3059	0.3798	0.4526	0.5243	0.6844	0.7527	0.8580	0.9699	1.096	1.193						1.050
1.062	1-1/16		0.3095	0.3843	0.4580	0.5306	0.6928	0.7620	0.8688	0.9820	1.110	1.208						1.062
1.125	1-1/8		0.3284	0.4078	0.4862	0.5636	0.7365	0.8105	0.9245	1.046	1.184	1.289						1.125
1.250	1-1/4		0.3658	0.4546	0.5424	0.6291	0.8234	0.9067	1.035	1.173	1.330	1.450						1.250
1.315			0.3852	0.4789	0.5716	0.6631	0.8686	0.9567	1.093	1.239	1.405	1.533						1.315
1.375	1-3/8		0.4032	0.5014	0.5985	0.6946	0.9103	1.003	1.146	1.300	1.475	1.610	1.778					1.375
1.437	1-7/16		0.4217	0.5246	0.6263	0.7270	0.9533	1.051	1.201	1.363	1.547	1.689						1.437
1.500	1-1/2		0.4406	0.5481	0.6546	0.7600	0.9971	1.099	1.257	1.427	1.621	1.770	1.957					1.500
1.600			0.4705	0.5855	0.6995	0.8124	1.067	1.176	1.346	1.528	1.737	1.899						1.600
1.625	1-5/8		0.4780	0.5949	0.7107	0.8255	1.084	1.195	1.368	1.554	1.766	1.931	2.136	2.337	2.575			1.625
1.660				0.6080	0.7264	0.8439	1.108	1.222	1.399	1.589	1.807	1.976	2.186	2.392	2.637			1.660
1.690				0.6192	0.7399	0.8596	1.129	1.245	1.426	1.620	1.842	2.014	2.229	2.440	2.690			1.690
1.750	1-3/4			0.6417	0.7669	0.8910	1.171	1.292	1.479	1.681	1.912	2.091	2.315	2.535	2.796			1.750
1.875	1-7/8			0.6884	0.8230	0.9565	1.258	1.388	1.590	1.808	2.058	2.251	2.494	2.732	3.016			1.875
1.900				0.6978	0.8342	0.9696	1.275	1.407	1.612	1.833	2.087	2.283	2.530	2.772	3.060			1.900
2.000	2			0.7352	0.8791	1.022	1.345	1.484	1.701	1.935	2.203	2.412	2.673	2.930	3.237			2.000
2.125	2-1/8			0.7820	0.9352	1.087	1.431	1.580	1.812	2.062	2.349	2.572						2.125
2.218	2-7/32			0.8168	0.9770	1.136	1.496	1.652	1.894	2.156	2.457	2.691						2.218
2.250	2-1/4			0.8287	0.9913	1.153	1.518	1.676	1.923	2.189	2.495	2.732	3.031	3.326	3.678			2.250
2.375	2-3/8			0.8755	1.047	1.218	1.605	1.773	2.034	2.315	2.640	2.893	3.210	3.523	3.898	4.224		2.375
2.500	2-1/2			0.9223	1.104	1.284	1.692	1.869	2.145	2.442	2.786	3.053	3.389	3.721	4.119	4.464		2.500
2.625	2-5/8			0.9690	1.160	1.349	1.779	1.965	2.255	2.569	2.932	3.213	3.568	3.919	4.339	4.705		2.625
2.750	2-3/4			1.0158	1.216	1.415	1.866	2.061	2.366	2.696	3.077	3.374	3.747	4.117	4.560	4.945		2.750
2.875	2-7/8			1.0626	1.272	1.480	1.953											2.875
3.000	3			1.1094	1.328	1.546	2.039											3.000

Structuring Tubing – See reverse side.

**WALL THICKNESS TOLERANCES**  
 Cold Rolled Tubing:  
 Refer ASTM A-513, Table 9  
 Hot Rolled Tubing:  
 Refer ASTM A-513, Table 6

**CUTTING TOLERANCES**  
**Mill Punch-Cut**  

Length	Tol. Inches
to 3' Incl.	±1/16
Over 3 to 12'	±3/32
Over 12 to 20'	±1/8
Over 20 to 30'	±3/16
Over 30 to 40'	±5/16

Recut (Stationary) } Tol. Length Inches  
 Punch-Cut } to 3' = 1/32  
 Haven-Cut } Over 3 to 8' = 1/16

**STRAIGHTNESS**  
 Max. = 0.010" Per Foot

NOTE: Reference  
 ASTM A-513-LATEST