



# GALVANIZED/ COMMERCIAL QUALITY STEEL TUBING

*Weight Per Foot  
Specifications*

 **allied**  
TUBE & CONDUIT  
MECHANICAL TUBE  
DIVISION

# Galvanized/Commercial Quality Steel Tubing

<b>ROUND</b> (in inches)		Nominal decimal for ordering gauge														
Outside Diameter	Equiv. Sizes	22	20	19	18	17	16	15	14	13	12	11	10	9	8	7
		.028	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180
.500		.1413	.1740	.2056	.2362	.2740	.3023									
.625		.1787	.2207	.2618	.3017	.3516	.3891									
.706	1/2" EMT	.2029	.2511	.2981	.3441	.4018	.4454									
.750		.2161	.2675	.3179	.3672	.4291	.4760	.5218								
.815	1/2" IMC	.2356	.2918	.3471	.4012	.4694	.5211	.5719	.6495							
.870		.2520	.3124	.3718	.4300	.5035	.5594	.6142								
.875		.2535	.3143	.3740	.4327	.5066	.5628	.6181								
.922	3/4" EMT	.2676	.3319	.3951	.4573	.5357	.5955	.6542	.7444							
.980		.2850	.3535	.4211	.4877	.5717	.6358	.6989	.7959							
.995		.2894	.3592	.4279	.4955	.5810	.6462	.7104	.8092	.9140						
1.000		.2909	.3611	.4301	.4981	.5841	.6497	.7143	.8136	.9191						
1.029		.2996	.3719	.4431	.5133	.6020	.6698	.7366	.8394	.9485						
1.050	3/4 NPS	.3059	.3798	.4526	.5243	.6151	.6844	.7527	.8580	.9699						
1.125		.3284	.4078	.4862	.5636	.6616	.7365	.8105	.9245							
1.163	1" EMT		.4220	.5033	.5835	.6851	.7629	.8397	.9583	1.0846						
1.187				.5141	.5961	.7000	.7796									
1.250			.4546	.5424	.6291	.7391	.8234	.9067	1.0354	1.1730	1.3295	1.4496	1.5986			
1.290	1" IMC			.5603	.6500	.7639	.8512	.9375	1.0709	1.2136	1.3761	1.5009	1.6559			
1.315	1 NPS		.4789	.5716	.6631	.7794	.8686	.9567	1.0931	1.2390	1.4052	1.5329	1.6917			
1.375			.5014	.5985	.6946	.8166	.9103	1.0029	1.1464							
1.500			.5481	.6546	.7600	.8941	.9971	1.0991	1.2573	1.4268	1.6208	1.7703	1.9567			
1.510	1 1/4" EMT		.5519	.6591	.7653	.9003	1.0041	1.1068	1.2661	1.4370	1.6325	1.7831	1.9711			
1.625			.5949	.7107	.8255	.9716	1.0840	1.1953	1.3682	1.5538	1.7665	1.9306	2.1358			
1.638	1 1/4" IMC			.7166	.8323	.9796	1.0930	1.2053	1.3797	1.5670	1.7816	1.9473	2.1544			
1.660	1 1/4 NPS		.6080	.7264	.8439	.9933	1.1083	1.2223	1.3992	1.5893	1.8072	1.9755	2.1859			
1.690							1.1291	1.2453	1.4258	1.6198	1.8422	2.0140	2.2289			
1.740	1 1/2" EMT		.6379	.7624	.8858	1.0429	1.1639	1.2838	1.4702	1.6706	1.9005	2.0781	2.3005			
1.750			.6417	.7669	.8910	1.0491	1.1708	1.2915	1.4791							
1.875							1.2577	1.3877	1.5900	1.8077	2.0578	2.2513	2.4939			
1.883	1 1/2" IMC			.8266	.9607	1.1315	1.2632	1.3939	1.5971	1.8158	2.0671	2.2616	2.5054	2.7450		
1.900	1 1/2 NPS		.6978	.8342	.9696	1.1421	1.2750	1.4070	1.6122	1.8331	2.0869	2.2834	2.5297	2.7719	3.0603	
2.000			.7352	.8791	1.0220	1.2041	1.3445	1.4839	1.7009	1.9346	2.2034	2.4117	2.6730	2.9301		
2.197	2" EMT			.9676	1.1251	1.3262	1.4814	1.6356	1.8757	2.1347	2.4330	2.6644	2.9552	3.2418		
2.360	2" IMC				1.2105	1.4273	1.5947	1.7610	2.0203	2.3002	2.6229	2.8735	3.1887	3.4996		
2.375	2 NPS			1.0475	1.2184	1.4366	1.6051	1.7726	2.0336	2.3155	2.6404	2.8927	3.2101	3.5234	3.8981	4.2236
2.500					1.2839	1.5141	1.6920	1.8688	2.1445	2.4424	2.7860	3.0531	3.3892	3.7211		
2.750								2.0612	2.3663	2.6963	3.0773	3.3738	3.7473	4.1167		
2.857	2 1/2" IMC							2.1436	2.4613	2.8049	3.2020	3.5110	3.9006	4.2860	4.7483	5.1511
2.875	2 1/2 NPS							2.1574	2.4773	2.8232	3.2230	3.5341	3.9264	4.3144	4.7800	5.1857
3.000								2.2536	2.5882	2.9502	3.3686	3.6945	4.1054	4.5122	5.0005	5.4262
3.476	3" IMC							2.6200	3.0105	3.4336	3.9233	4.3051	4.7873	5.2653	5.8401	6.3422
3.500	3 NPS						2.3868	2.6385	3.0318	3.4579	3.9512	4.3359	4.8217	5.3033	5.8824	6.3883
3.971	3 1/2" IMC							3.4497	3.9363	4.5000	4.9401	5.4963	6.0484	6.7132	7.2946	
4.000	3 1/2 NPS							3.0233	3.4754	3.9657	4.5338	4.9773	5.5379	6.0943	6.7644	7.3504
4.466	4" IMC							3.3820	3.8889	4.4390	5.0768	5.5750	6.2054	6.8316	7.5863	8.2471
4.500	4 NPS							3.4081	3.9191	4.4735	5.1164	5.6187	6.2541	6.8854	7.6463	8.3125
5.000	4 1/2 NPS									4.9813	5.6990	6.2601	6.9704	7.6764	8.5282	9.2746

Refer to the color coding at the right for "typical" yield/tensile properties achieved. These properties are measured in tension according to methods outlined in ASTM specification E8. Elongation (in 2") properties will vary with each OD/gauge combination. Please inquire about specific product applications where minimum mechanical properties are required.

Typical Mechanical Properties Achieved:	
<span style="background-color: #ADD8E6; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	40,000 psi yield/45,000 psi tensile
<span style="background-color: #D2B48C; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	45,000 psi yield/48,000 psi tensile
<span style="background-color: #FFD700; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	50,000 psi yield/55,000 psi tensile

Allied welcomes inquiries for additional sizes and shapes, both commercial quality and galvanized.

# Weight Per Foot Chart (lbs.)

SHAPES															
Size	Shape	20	19	18	17	16	15	14	13	12	11	10	9	8	7
		.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180
.625	SQ	.2810	.3333	.3841	.4476	.4954									
.750	SQ	.3406	.4047	.4675	.5463	.6060	.6644	.7535							
.813	SQ	.3706	.4407	.5095	.5960	.6617	.7261	.8246							
.875	SQ	.4001	.4762	.5509	.6449	.7166	.7869	.8947							
1.000	SQ	.4597	.5476	.6342	.7436	.8271	.9094	1.0359	1.1701	1.3218					
1.250	SQ	.5788	.6905	.8009	.9409	1.0483	1.1543	1.3183	1.4934	1.6927					
1.500	SQ	.6979	.8334	.9677	1.1383	1.2695	1.3993	1.6007	1.8166	2.0635	2.2538				
1.625	SQ					1.3801	1.5218	1.7419	1.9782	2.2490	2.4580				
1.750	SQ						1.6443	1.8831	2.1398	2.4344	2.6621				
2.000	SQ					1.7118	1.8893	2.1655	2.4631	2.8053	3.0704	3.4031	3.7304	4.1208	4.4586
2.188	SQ											3.7451			
2.250	SQ						2.1343	2.4479	2.7863	3.1762	3.4787	3.8590			
2.500	SQ						2.3792	2.7303	3.1095	3.5470	3.8870	4.3150			
3.000	SQ							3.2951	3.7560	4.2888	4.7036	5.2268	5.7447	6.3664	6.9084
4.000	SQ								5.0490	5.7723	6.3368				
1.500x1.000	FSO**	.4789	.5716	.6631	.7794	.8686	.9567								
1.750x1.125	FSO**	.5519	.6591	.7653	.9003	1.0041	1.1068	1.2661							
2.000x1.094	FSO**	.6080	.7264	.8439	.9933	1.1083	1.2223								
2.250x1.313	FSO**	.6978	.8342	.9696	1.1421	1.2750	1.4070								
2.375x1.625	FSO**			1.1251	1.3262	1.4814									
2.750x1.630	FSO**					1.6051	1.7726	2.0336							
.625x1.125	RCT	.4001	.4762	.5509	.6449	.7166									
.750x1.500	RCT	.5192	.6191	.7176	.8423	.9377									
1.000x1.750	RCT	.6383	.7620	.8843	1.0396	1.1589									
1.000x2.000	RCT	.6979	.8334	.9677	1.1383	1.2695	1.3993	1.6007							
1.500x2.500	RCT			1.3011	1.5330	1.7118	1.8893	2.1655	2.4631	2.8053	3.0704				
1.500x3.000	RCT					1.9330	2.1343	2.4479	2.7863	3.1762	3.4787	3.8590			
1.500x3.500	RCT			1.6345	1.9277	2.1541	2.3792	2.7303	3.1095	3.5470	3.8870	4.3150			
1.625x3.000	RCT					1.9883	2.1955	2.5185	2.8671	3.2689	3.5808				
2.000x3.000	RCT					2.1541	2.3792	2.7303	3.1095	3.5470	3.8870	4.3150	4.7376	5.2436	5.6835
2.000x4.000	RCT							3.2951	3.7560	4.2888	4.7036	5.2268	5.7447		

\*\* Flat-Sided Oval

## Structural Tubing

ROUND (in inches)		Nominal decimal for ordering guage	
Outside Diameter	Equiv. Sizes	6 .203	5 .220
2.375	2 NPS	4.7134	5.0681
2.875	2½ NPS	5.7984	6.2440
3.000		6.0697	6.5380
3.476	3" IMC	7.1026	7.6575
3.500	3 NPS	7.1547	7.7139
3.971	3½" IMC	8.1768	8.8216
4.000	3½ NPS	8.2398	8.8898
4.466	4" IMC	9.2510	9.9857
4.500	4 NPS	9.3248	10.0657

SHAPES (in inches)			
Size	Shape	6 .203	5 .220
2.000	SQ	4.9848	5.3297
2.000x3.000	RCT	6.3462	6.8268

**Typical Mechanical Properties Achieved:**  
 45,000 psi yield/48,000 psi tensile  
 50,000 psi yield/55,000 psi tensile

## Square Tubing Options

Square tubing is available as weld-in-corner, round-to-square, or both.

See the table to the right.

OD Size	RTS	WIC
0.625	X	
0.750	X	
0.813	X	
0.875	X	
1.000	X	X
1.250	X	X
1.500	X	X
1.625		X
1.750		X
1.875		X
2.000	X	X
2.188		X
2.250	X	X
2.500	X	X
3.000	X	
4.000	X	

# Tube Specification Selection Guide

## All steel tube products...

are manufactured per ASTM-A500. Please inquire about our ability to meet ASTM-A513 and other tube specifications.

## Carbon steel used:

16 gauge - 22 gauge (cold rolled steel)  
16 gauge - 5 gauge (hot rolled steel)

## Carbon steel chemical properties:

	1008 Steel (16 gauge and lighter)	1010 Steel (15 gauge and heavier)	1015 Steel (15 gauge and heavier)	1022 Steel (15 gauge and heavier)
Carbon max. %	.10	.13	.18	.23
Manganese max. %	0.50	0.60	0.60	1.00
Phosphorus max. %	0.030	0.030	0.030	0.030
Sulphur max. %	0.035	0.035	0.035	0.035

## Tolerances Achieved:

STANDARD O.D. TOLERANCES		LENGTH TOLERANCES	
Round: OD	Tolerance	Length	Tolerance
.500 thru 1.510	±.005	Under 5'*	± 1/16"
1.625 thru 2.000	±.010	5' - 15'	± 1/8"
2.197 thru 4.500	±.015	15' - 20'	± 1/4"
5.000	±.020	20' - 27'	± 1/2"
All Shapes	±.010		
Except:			
1x1 & Smaller	±.005		
3.000 x 3.000	±.015		
4.000 x 4.000	±.020		
1.500 x 3.000	±.020		
1.625 x 2.375	±.015		
1.630 x 2.750	±.015		
2.000 x 3.000	±.015		
2.000 x 4.000	±.015		

\*Must be cut off-line.  
Closer length tolerances available upon request.

## Other Specification Parameters

- **Wall Thickness:** Per ASTM A500.
- **ID Flash:** Not to exceed wall thickness or 3/32", whichever is less. Please inquire about special ID control requirements.
- **Eddy Current Testing:** Available for select sizes.
- **Cut length:** All products will be shipped with a mill punch cut unless alternate end finish is specifically ordered.
- **Bending Radius (Minimum Centering):**  
-2 1/2 to 3 times the outside diameter (round).  
-3 1/2 to 5 times the outside dimension (shapes).
- **Packaging:** Hexagon bundling standard for all sizes 1.000" and larger. Either hex or square bundling available on smaller sizes. Contact your Allied representative for special packaging requests.
- **Specialty Shapes:** Will be considered upon request.
- **Powder Coating:** Clear and color powder coating available upon request.
- **Shipping Quantities:** Normal shipping quantities are plus or minus 10%.

## Fabrication Options

### Harvey, IL:

- Bundle Cutting
- Punching
- Embossing
- In-line Swaging

### Kokomo, IN:

- Deburring
- Cold Saw
- Bundle Cutting
- Haven Saw
- Swaging: Round, Square and Rectangle Sizes

### Philadelphia, PA:

- Cold Saw
- Embossing
- Off-line Swaging
- In-line Swaging

### Phoenix, AZ:

- Bundle Cutting
- Haven Saw
- Off-line Swaging
- In-line Swaging

**TECTRON**<sup>™</sup> The Tectron division of Allied Tube & Conduit also provides HR/CR commercial quality/pre-coated steel tubing. For a size chart and specifications on Tectron products, please contact your local Allied representative or call (800) 999-TUBE. You may also fax your request to (800) 995-5159.



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