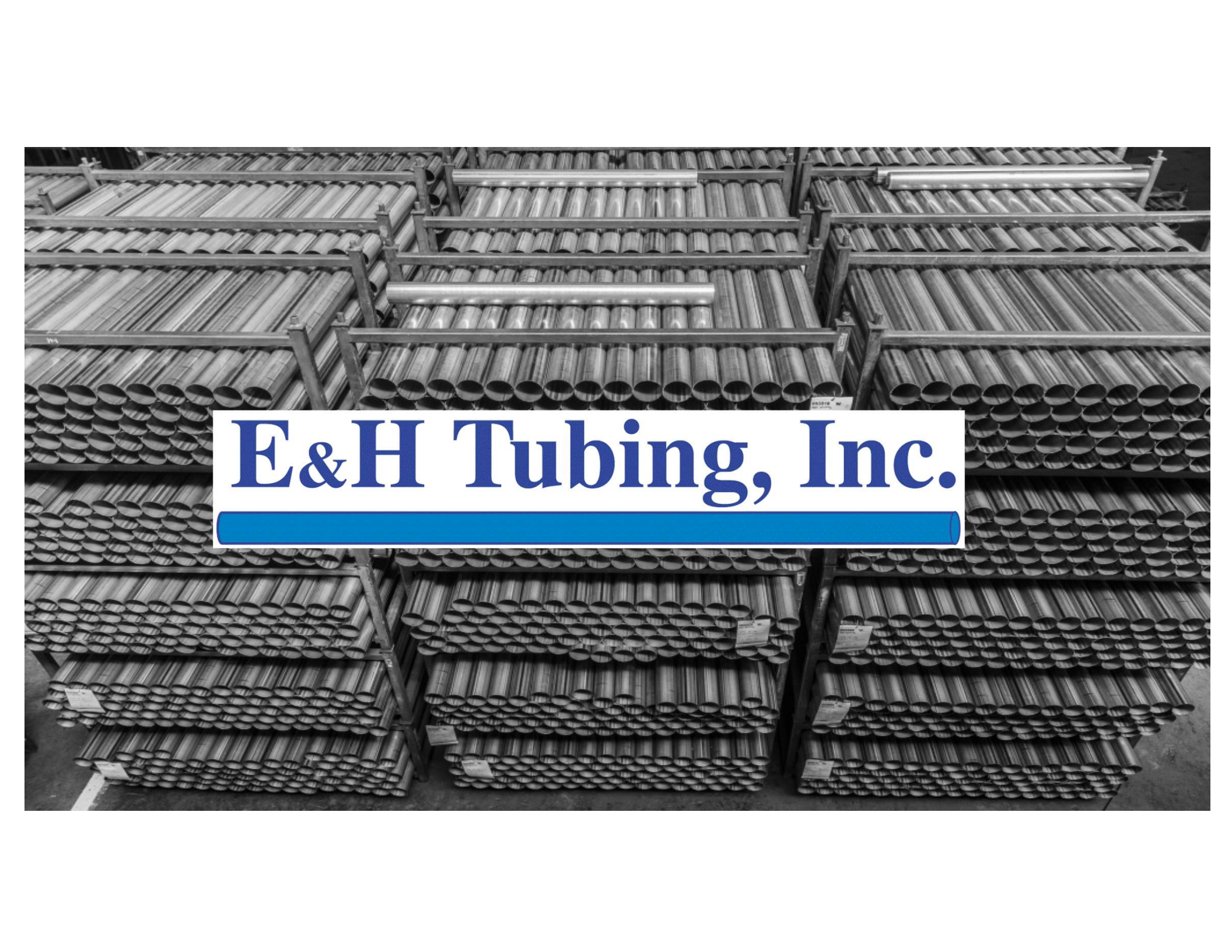




E&H Tubing, Inc.



About E&H Tubing



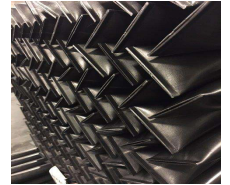
- Purchased in 2013, E&H Tubing is a leading North American mechanical tube mill offering a high quality product with value add capabilities and the product and technical expertise to make us a key supply-chain partner
- Located in Brownstown, IN operating 3 welded tube mills
- Over \$50 million annually in sales
- 170,000 sq. ft. of manufacturing / value add operations
- E&H manufactures Galvanized, Cold-Rolled, Hot-Rolled, Hot-Rolled Pickled and Oiled ERW steel tubing (round, square, rectangle and some special shapes)



E&H Tubing, Inc.



The E&H Difference Value Add Capabilities



- Super Shield Coating System:
 - Microwave Technology providing the most advanced UV curing technology available in the market
 - Producing more UV energy without the excess heat of conventional UV bulbs
 - Super Shield is dryer and cleaner without the use of corrosive chemicals
 - Providing a flake free surface with improved corrosion resistance for longer life
- Secondary Operations:
 - Notching, Tube Laser, Coping, Haven Cutting, Swaging, De-burr / De-brush
 - New Cut-off rails allow for more consistent lengths off the mills reducing the need for secondary cutting

E&H Tubing, Inc.

Secondary Operations

- Notching
- Coping
- Swaging
- Haven Cutting
- Debrush/Deburr



E&H Tubing, Inc.

Industries Served

- Agriculture
- Lawn and Garden
- Metal Buildings
- Fence
- Greenhouse
- Satellite Posts
- Racking Systems
- Material Handling
- Gates
- Trailer
- Furniture
- Carport
- Conduit



E&H Tubing, Inc.

ASTM A513 TUBING SPECIFICATIONS

Tolerances, Outside Dimension O.D. Range, Round Tubing

COLD ROLLED	BWG GAUGE	FLASH IN TUBING TOLERANCES IN
3/8 to 5/8" Incl.	22-16	Plus or Minus .003
Over 5/8 to 1-1/8" Incl.	22-11	Plus or Minus .0035
Over 1-1/8 to 2" Incl.	22-10	Plus or Minus .005
Over 2" to 2-1/2" Incl.	20-10	Plus or Minus .006
Over 2-1/2 to 3" Incl.	20-10	Plus or Minus .008
HOT ROLLED		
Over 1/2 to 1 1/8" Incl.	16-10	Plus or Minus .0035
Over 1-1/8 to 2" Incl.	16-7	Plus or Minus .005
Over 2 to 2-1/2" Incl.	16-8	Plus or Minus .006
Over 2-1/2 to 3" Incl.	16-9	Plus or Minus .008
Over 3 to 3-1/2" Incl.	16-4	Plus or Minus .009
Over 3-1/2 to 4" Incl.	14-4	Plus or Minus .010
Over 4 to 5" Incl.	14-4	Plus or Minus .020
Over 5"		Inquire

* Measured at least 2" from cut end of tubing.

Wall Thickness Tolerances for Hot Rolled Round Tubing

WALL THICKNESS		OUTSIDE DIAMETER, INCHES					
		3/4 TO 1 INCL.		OVER 1 TO 1-15/16 INCL.		OVER 1-15/16 TO 3 INCL.	
		WALL THICKNESS TOLERANCES, INCHES					
IN.	BWG	PLUS	MINUS	PLUS	MINUS	PLUS	MINUS
0.065	16	0.005	0.009	0.004	0.010	0.003	0.011
0.072	15	0.005	0.009	0.004	0.010	0.003	0.011
0.083	14	0.006	0.010	0.005	0.011	0.004	0.012
0.095	13	0.006	0.010	0.005	0.011	0.004	0.012
0.109	12	0.006	0.010	0.005	0.011	0.004	0.012
0.120	11	-	-	0.005	0.011	0.004	0.012
0.134	10	-	-	0.005	0.011	0.004	0.012

Length Tolerances

	IN	MM
Mill Cut	+/- 1/4	-0 + 12.7
Cut-Length	+/- 1/32	+/- 1.0

STRAIGHTNESS TOLERANCE FOR ROUND TUBING

0.030" /3 ft. lengths for tubing up to 8.000" outside diameter.

OVALITY (HOT AND COLD ROLLED STEEL)

The ovality may be 50% greater than the outside tolerances but the mean outside diameter shall be within the specific tolerance.

Wall Thickness Tolerances for Cold Rolled Round Tubing

WALL THICKNESS		OUTSIDE DIAMETER, INCHES						
		3/4 TO 7/8 INCL.		OVER 7/8 TO 1 7/8 INCL.		OVER 1-7/8 TO 3 INCL.		
		WALL THICKNESS TOLERANCES, INCHES						
IN.	BWG	PLUS	MINUS	PLUS	MINUS	PLUS	MINUS	
0.022	24	0.001	0.005	0.001	0.005	-	-	
0.028	22	0.001	0.005	0.001	0.005	-	-	
0.035	20	0.002	0.005	0.001	0.005	0.001	0.005	
0.049	18	0.003	0.006	0.002	0.006	0.002	0.006	
0.065	16	0.005	0.007	0.004	0.007	0.004	0.007	
0.083	14	0.006	0.007	0.005	0.007	0.004	0.007	

* Measured at corners at least 2" from cut end of tubing.

** Measured in center of the flat sides, applies to size determined at the corners.

Tolerances, Square and Rectangular

WALL THICKNESS TOLERANCE, SQUARE & RECTANGULAR TUBING
+/-10% of Nominal Wall Thickness
STRAIGHTNESS TOLERANCE SQUARE & RECTANGULAR TUBING
Max. = 1/16" in 3'
SQUARENESS OF SIDES TOLERANCE
Max. = Wide Side (Inches) X .006"

Tolerances, Outside Dimensions Square & Rectangular Tubing *

WIDEST SIDE, INCHES	TOLERANCES, INCHES
3/8 to 5/8" Incl.	Plus or Minus .004
Over 5/8 to 1-1/8"	Plus or Minus .005
1-1/8 to 1-1/2"	Plus or Minus .006
1-1/2 to 2"	Plus or Minus .008

Twist Tolerances

LARGEST DIMENSION, INCHES	TOLERANCE IN 3 FEET (INCHES)
1/2 and Under	0.032
Over 1/2 to 1-1/2 Incl.	0.050
Over 1-1/2 to 2-1/2 Incl.	0.062
Over 2-1/2 to 4 Incl.	0.075

E&H Tubing, Inc.



Our product meets or exceeds the following specifications:

- ASTM F 1043-08 for pipe section modulus and yield strength
- ASTM A 500 grade B
- ASTM A 513



E&H Fence Framework Size and Dimension Range

Product Description	Fence O.D.	Dec. Equiv.	Wall inches	Gauge	Weight lbs/ft	Pcs/Lift
Residential	1 3/8"	1.315	.047	18	0.636	91
Residential	1 3/8"	1.315	.055	17	0.740	91
Residential	1 3/8"	1.315	.065	16	0.868	91
IST-15	1 3/8"	1.315	.072	15	0.956	91
IST-20	1 3/8"	1.315	.080	14	1.055	91
IST-40	1 3/8"	1.315	.104	12	1.350	91
Residential	1 5/8"	1.660	.047	18	0.810	61
Residential	1 5/8"	1.660	.055	17	0.943	61
Residential	1 5/8"	1.660	.065	16	1.107	61
IST-15	1 5/8"	1.660	.072	15	1.221	61
IST-20	1 5/8"	1.660	.085	14	1.430	61
IST-30	1 5/8"	1.660	.095	13	1.500	61
IST-40	1 5/8"	1.660	.111	12	1.836	61
Residential	1 7/8"	1.900	.047	18	0.930	61
Residential	1 7/8"	1.900	.055	17	1.084	61
Residential	1 7/8"	1.900	.065	16	1.274	61
IST-15	1 7/8"	1.900	.072	15	1.406	61
IST-20	1 7/8"	1.900	.090	14	1.740	61
IST-30	1 7/8"	1.900	.105	13	2.015	61
IST-40	1 7/8"	1.900	.120	12	2.281	36
Residential	2 3/8"	2.375	.047	18	1.169	37
Residential	2 3/8"	2.375	.055	17	1.363	37
Residential	2 3/8"	2.375	.065	16	1.604	37
IST-15	2 3/8"	2.375	.076	15	1.866	37
IST-20	2 3/8"	2.375	.095	13	2.313	37
IST-30	2 3/8"	2.375	.115	11	2.780	37
IST-40	2 3/8"	2.375	.130	10	3.117	26
IST-20	2 7/8"	2.875	.110	12	3.248	19

Super Shield Proprietary Clear Finish with Microwave Curing technology is offered exclusively by E&H Tubing

Hot Dipped Zinc Coating

Carbon Steel Substrate

Microwave Curing

Super Shield coating is cured by the most advanced microwave U.V. curing technology available. The very best process in the world! It produces more U.V. energy without the excess heat of conventional U.V. bulbs. Super Shield is dryer and cleaner without the use of corrosive chemicals.

No Flaking.

Super Shield goes through an extensive three phase quality control procedure ensuring the highest quality product on the market. No flaking - no worries.

ID Coating.

While competitors use a light zinc spray on the ID of their galvanized tube, E&H supplies a hot dipped galvanized coating to the ID of our galvanized tube.



E&H Tubing, Inc.

Weight Per Lineal Foot		Gauge										
		22	20	19	18	17	16	15	14	13	12	11
Size		.028	.035	.042	.049	.055	.065	.072	.083	.095	.109	.120
.5000	1/2"	.179	.221	.262	.301	.3331	.389	.425	.480	.538	.601	.647
.6250	5/8"	.225	.279	.331	.383	.4267	.497	.545	.619	.696	.782	.847
.7500	3/4"	.272	.337	.402	.465	.5202	.606	.666	.757	.855	.964	1.048
.8125	13/16"	.295	.367	.437	.506	.5670	.660	.726	.827	.934	1.056	1.148
.8750	7/8"	.319	.396	.472	.547	.6138	.714	.786	.896	1.013	1.146	1.248
1.0000	1"	.365	.454	.542	.629	.7074	.823	.906	1.034	1.172	1.328	1.448
1.1250	1 1/8"	.412	.513	.612	.710	.8009	.931	1.026	1.173	1.330	1.510	1.648
1.1810	30mm	.450	.563	.671	.783	.8429	1.031	1.133	1.306	1.485	1.693	1.852
1.2500	1 1/4"	.459	.571	.682	.792	.8945	1.040	1.146	1.311	1.489	1.692	1.849
1.3750	1 3/8"	.506	.629	.752	.874	.9881	1.148	1.266	1.450	1.647	1.874	2.049
1.5000	1 1/2"	.552	.688	.822	.956	1.0817	1.257	1.386	1.589	1.806	2.056	2.249
1.7500	1 3/4"	.646	.805	.962	1.119	1.2688	1.473	1.627	1.866	2.123	2.420	2.650
2.0000	2"	.739	.921	1.103	1.283	1.4559	1.690	1.867	2.143	2.440	2.783	3.050
2.1250	2 1/8"	.786	.980	1.173	1.364	1.5495	1.799	1.987	2.281	2.598	2.965	3.250
2.2500	2 1/4"	.833	1.038	1.243	1.446	1.6431	1.907	2.107	2.420	2.757	3.147	3.451
2.5000	2 1/2"	.926	1.155	1.383	1.610	1.8302	2.124	2.348	2.697	3.074	3.511	3.851
3.0000	3"	1.113	1.389	1.663	1.937	2.2045	2.558	2.828	3.251	3.708	4.239	4.652
3.5000	3 1/2"	1.300	1.622	1.944	2.264	2.5788	2.992	3.309	3.805	4.342	4.966	5.453
4.0000	4"	1.487	1.856	2.224	2.591	2.9530	3.426	3.789	4.359	4.977	5.694	6.254

Weight Per Lineal Foot		22	20	19	18	17	16	15	14	13	12	11
Size		.028	.035	.042	.0490	.055	.065	.072	.083	.095	.109	.120
.375" x .625"	3/8" x 5/8"	.179	.221	.262	.301	.3331	.389	.425	.480	.538	.601	.647
.375" x 1.00"	3/8" x 1"	.249	.308	.367	.424	.4735	.551	.605	.688	.776	.874	.948
.500" x .750"	1/2" x 3/4"	.225	.279	.332	.383	.4267	.497	.545	.619	.696	.783	.848
.500" x 1.00"	1/2" x 1"	.272	.337	.402	.465	.5202	.606	.666	.757	.855	.964	1.048
.500" x 1.25"	1/2" x 1 1/4"	.319	.396	.472	.547	.6138	.714	.786	.896	1.013	1.146	1.248
.500" x 1.500"	1/2" x 1 1/2"	.365	.454	.542	.629	.7074	.823	.906	1.034	1.172	1.328	1.448
.625" x 1.00"	5/8" x 1"	.295	.367	.437	.506	.5670	.660	.726	.827	.934	1.056	1.148
.625" x 1.500"	5/8" x 1 1/2"	.389	.483	.577	.669	.7542	.877	.966	1.104	1.251	1.419	1.548
.750" x 1.000"	3/4" x 1"	.319	.396	.472	.547	.6138	.714	.786	.896	1.013	1.146	1.248
.750" x 1.250"	3/4" x 1 1/4"	.365	.454	.542	.629	.7074	.823	.906	1.034	1.172	1.328	1.448
.750" x 1.500"	3/4" x 1 1/2"	.412	.513	.612	.710	.8009	.931	1.026	1.173	1.330	1.510	1.649
.867" x 1.89"	-	.5149	.6411	.7661	.8902	.9907	1.1697	1.2903	1.478	1.679	1.910	2.089
.750" x 2.000"	3/4" x 2"	.506	.629	.752	.874	.9881	1.148	1.266	1.450	1.647	1.874	2.049
1.000" x 1.250"	1" x 1 1/4"	.412	.513	.612	.710	.8009	.931	1.026	1.173	1.330	1.510	1.649
1.000" x 1.500"	1" x 1 1/2"	.459	.571	.682	.792	.8945	1.040	1.146	1.311	1.489	1.692	1.849
1.000" x 2.000"	1" x 2"	.552	.688	.822	.956	1.0817	1.257	1.386	1.589	1.806	2.056	2.249
1.000" x 2.250"	1" x 2 1/4"	.599	.746	.892	1.037	1.1752	1.365	1.507	1.727	1.965	2.238	2.514
1.000" x 2.500"	1" x 2 1/2"	.646	.805	.962	1.119	1.2688	1.473	1.627	1.866	2.123	2.420	2.650
1.000" x 3.000"	1" x 3"	.739	.921	1.103	1.283	1.4559	1.690	1.867	2.143	2.440	2.783	3.050
1.250" x 2.000"	1 1/4" x 2"	.599	.746	.892	1.037	1.1725	1.365	1.507	1.727	1.965	2.238	2.450
1.250" x 2.500"	1 1/4" x 2 1/2"	.693	.863	1.032	1.201	1.3624	1.582	1.747	2.004	2.282	2.602	2.850
1.250" x 3.000"	1 1/4" x 3"	.786	.980	1.173	1.364	1.5495	1.799	1.987	2.281	2.599	2.965	3.251
1.500" x 2.000"	1 1/2" x 2"	.646	.805	.962	1.119	1.2688	1.473	1.627	1.866	2.123	2.420	2.650
1.500" x 2.500"	1 1/2" x 2 1/2"	.739	.921	1.103	1.283	1.4559	1.690	1.867	2.143	2.440	2.783	3.050
1.500" x 3.000"	1 1/2" x 3"	.833	1.038	1.243	1.446	1.6431	1.907	2.107	2.420	2.757	3.147	3.451
1.500" x 3.500"	1 1/2" x 3 1/2"	.926	1.155	1.383	1.610	1.8302	2.124	2.348	2.697	3.074	3.511	3.851
1.750" x 2.500"	1 3/4" x 2 1/2"	.786	.980	1.173	1.364	1.5495	1.799	1.987	2.281	2.599	2.965	3.251
2.000" x 3.000"	2" x 3"	.926	1.155	1.383	1.610	1.8302	2.124	2.348	2.697	3.074	3.511	3.851

ROUNDS		Gauge										ROUNDS		Gauge											
		22	20	19	18	17	16	15	14	13	12			11	22	20	19	18	17	16	15	14	13	12	11
Weight Per Lineal Foot		.028	.035	.042	.049	.055	.065	.072	.083	.095	.109	.120	Weight Per Lineal Foot		.028	.035	.042	.049	.055	.065	.072	.083	.095	.109	.120
.7060		.2134	.2393	.2804	.3552	.3828	.4561	.5037	.5608	.6199	.6950	.7510	1.7500	1 3/4"	.5149	.6411	.7661	.8902	.9966	1.1697	1.2903	1.478	1.679	1.910	2.089
.7500	3/4"	.2161	.2675	.3179	.3672	.4086	.4760	.5214	.5918	.6646	.7462	.8074	1.8125	1 13/16"	.5336	.6644	.7942	.9229	1.0333	1.2131	1.3384	1.534	1.743	1.984	2.170
.8125	13/16"	.2348	.2909	.3459	.3999	.4454	.5194	.5694	.6473	.7280	.8190	.8875	1.8750	1 7/8"	.5523	.6878	.8222	.9556	1.0701	1.2565	1.4018	1.589	1.806	2.056	2.249
.8400	1/2" IPS	.2428	.3009	.3580	.4139	.4615	.5380	.5906	.6710	.7558	.8509	.9228	1.9000	1 1/2" IPS	.5598	.6971	.8334	.9687	1.0848	1.2739	1.4057	1.610	1.831	2.085	2.281
.8750	7/8"	.2533	.3143	.3740	.4323	.4821	.5623	.6175	.7021	.7914	.8917	.9676	2.0000	2"	.5897	.7345	.8783	1.0210	1.1436	1.3433	1.4826	1.699	1.933	2.201	2.409
.9220		.2797	.3180	.3770	.4770	.5098	.6260	.6528	.7454	.8391	.9464	1.0278	2.1250	2 1/8"	.6271	.7812	.9344	1.0864	1.2171	1.4301	1.5787	1.810	2.060	2.347	2.570
.9375	15/16"	.2720	.3374	.4017	.4650	.5189	.6057	.6655	.7579	.8548	.9645	1.0477	2.2500	2 1/4"	.6645	.8280	.9904	1.1518	1.2906	1.5168	1.6748	1.921	2.186	2.492	2.730
1.0000	1"	.2907	.3611	.4301	.4977	.5556	.6491	.7136	.8129	.9182	1.037	1.128	2.3750	2 3/8" IPS	.7018	.8747	1.0465	1.2172	1.3640	1.6036	1.7709	2.032	2.313	2.638	2.890
1.0500	3/4" IP	.3056	.3798	.4526	.5238	.5850	.6838	.7620	.8572	.9689	1.095	1.191	2.5000	2 1/2"	.7392	.9214	1.1026	1.2827	1.4375	1.6904	1.8670	2.143	2.440	2.783	3.050
1.0625	1 1/16"	.3094	.3841	.4578	.5304	.5924	.6925	.7617	.8687	.9821	1.111	1.209	2.6250	2 5/8"	.7766	.9681	1.1586	1.3481	1.5110	1.7772	1.9632	2.253	2.567	2.929	3.210
1.1250	1 1/8"	.3280	.4078	.4862	.5631	.6291	.7359	.8097	.9237	1.045	1.183	1.288	2.7500	2 3/4"	.8140	1.0149	1.2147	1.4135	1.5845	1.8639	2.0593	2.364	2.694	3.074	3.371
1.1630		.3501	.4141	.4877	.5850	.6514	.7649	.8262	.9181	1.0836	1.2270	1.3367	2.8750	2 7/8" IPS	.8514	1.0616	1.2708	1.4789	1.6580	1.9507	2.1554	2.475	2.821	3.220	3.531
1.1875	1 3/16"	.3467	.4308	.5138	.5958	.6659	.7792	.8578	.9795	1.709	1.256	1.369	3.0000	3"	.8887	1.1083	1.3268	1.5443	1.7315	2.0375	2.2515	2.586	2.947	3.365	3.691
1.2500	1 1/4"	.3654	.4546	.5424	.6285	.7026	.8226	.9058	1.034	1.172	1.328	1.448	3.1250	3 1/8"	.9261	1.1550	1.3829	1.6097	1.8050	2.1243	2.3476	2.697	3.074	3.511	3.851
1.3125	1 5/16" IPS	.3841	.4775	.5699	.6612	.7393	.8660	.9539	1.090	1.236	1.402	1.529	3.2500	3 1/4"	.9635	1.2018	1.4390	1.6751	1.8785	2.2110	2.4438	2.807	3.201	3.657	4.011
1.3750	1 3/8"	.4028	.5014	.5985	.6939	.7761	.9094	1.002	1.145	1.299	1.474	1.608	3.3750	3 3/8"	1.0009	1.2485	1.4951	1.7406	1.9520	2.2978	2.5399	2.918	3.328	3.802	4.172
1.4375	1 7/16"	.4215	.5243	.6260	.7266	.8128	.9528	1.0500	1.201	1.363	1.547	1.689	3.5000	3 1/2"	1.0383	1.2952	1.5511	1.8060	2.0255	2.3846	2.6360	3.029	3.455	3.948	4.332
1.5000	1 1/2"	.4402	.5481	.6546	.7593	.8496	.9962	1.098	1.256	1.426	1.619	1.769													
1.5625	1 9/16"	.4589	.5715	.6827	.7923	.8863	1.040	1.147	1.312	1.489	1.693	1.849													
1.6250	1 5/8"	.4776	.5949	.7107	.8248	.9231	1.083	1.194	1.367	1.552	1.765	1.929													
1.6600	1 1/4" IPS	.4880	.6074	.7258	.8431	.9437	1.1072	1.2211	1.397	1.588	1.806	1.973													
1.6875	1 11/16"	.4963	.6177	.7381	.8575	.9598	1.1263	1.2423	1.423	1.616	1.838	2.010													