



HIERROS NACHO SRL

TODO EN HIERROS

TUBOS ESTRUCTURALES



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HIERROS NACHO SRL
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CLASIFICACIÓN Y USOS

Classification and Uses



Son tubos con costura conformados en frío soldados mediante el proceso ERW (Soldadura por Resistencia Eléctrica) a partir de flejes de acero laminados en caliente, laminados en frío o galvanizados.

La utilización de estos tubos se da en la construcción en general así como herrería de obra y estructura metálica liviana y pesada.

Son utilizados en la industria automotriz específicamente en caños de escape, amortiguadores y asientos, entre otros usos.

Además, se aplican para el armado de columnas para alumbrado público, cartelería y señalización de carreteras. También forman parte de los productos de la industria del mueble y camping como de las maquinarias agrícolas. Hierros Nacho SRL dispone de una amplia gama dimensional (5/8" a 6") y una variada disponibilidad de espesores (0,80 mm a 6,35 mm) en terminaciones redondo, cuadrado y rectangular.

Se comercializan en largos de 6, 9 y 12 metros según el producto considerado, pudiendo requerir largos especiales de acuerdo a posibilidades técnicas de fabricación.

The structural tube is the result of cold forming hot and cold-rolled coil strips or galvanized coil strips into tubes welded with the ERW (Electric-Resistance-Welded) process.

These tubes are used for general construction purposes as well as for jobsite smith work and light and heavy metallic structures.

They are used in the automotive industry, specifically in exhausts, shock absorbers and seats, among other uses.

Furthermore, they can be used for public lighting columns, advertising signs and road signs. They are also part of the furniture and camping industry as well as agricultural machinery. Hierros Nacho SRL has a wide variety of sizes (5/8" to 6") in various steel thicknesses (0.80 mm to 6.35 mm). Structural tubes can be round, square or rectangular.

They are sold in commercial lengths of 6, 9 and 12 meters depending on the type of product, with special lengths manufactured upon request according to the technical possibilities available.

EQUIVALENCIAS DE NORMAS

Equivalent Standards

USO Use	NORMA Standards			
	USA	ARGENTINA	BRASIL Brazil	EUROPA Europe
ESTRUCTURALES <i>Structural</i>	ASTM A 500 ASTM A 513 tipo 1 y 2	IRAM IAS U500 - 228 IRAM IAS U500 - 2592	NBR 8261	
MECÁNICOS <i>Mechanical</i>	ASTM A 513 tp. 3, 4, 5, e 6 ASTM A 513 tipo 1 y 2	IRAM 228 IRAM 2592	ABNT EB 349 NBR 5599 ABNT EB 952 NBR 6591	DIN 2393 DIN 2394



CARACTERÍSTICAS MECÁNICAS

Tensile Properties

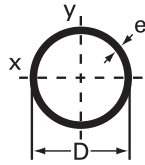
DENOMINACIÓN DEL TUBO <i>Tube Denomination</i>	RESISTENCIA A LA TRACCIÓN MÍNIMA R (MPA) <i>Tensile Strength Minimum</i>	LÍMITE DE FLUENCIA MÍNIMO RE (MPA) <i>Yield Strength</i>		ALARGAMIENTO DE ROTURA MÍNIMO LO = 50 mm <i>Elongation in 50 mm (%)</i>	
		SECCIÓN CIRCULAR <i>Circular Section</i>	SECCIÓN CUADRADO Y RECTANGULAR <i>Square and rectangular section</i>	SECCIÓN CIRCULAR <i>Circular section</i>	SECCIÓN CUADRADO Y RECTANGULAR <i>Square and rectangular section</i>
TE - 20	310	228	269	15	13
TE - 22	363	216	225	12	10
TE - 30	490	294	303	10	8
TE - 36	510	353	364	9	7



TUBOS REDONDOS

Round Tubes

DIMENSIÓN Size D		ESPESOR Thickness e	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyratation Radius
Pulg. Inches	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
5/8"	15.87	0.80	0.297	0.379	0.110	0.138	0.538
		0.90	0.332	0.423	0.121	0.153	0.535
		1.10	0.401	0.510	0.143	0.180	0.528
		1.20	0.434	0.553	0.153	0.192	0.525
		1.60	0.563	0.717	0.188	0.237	0.512
3/4"	19.05	0.80	0.360	0.459	0.195	0.205	0.652
		0.90	0.403	0.513	0.216	0.227	0.648
		1.10	0.487	0.620	0.255	0.268	0.642
		1.20	0.528	0.673	0.274	0.288	0.638
		1.60	0.689	0.877	0.343	0.360	0.625
7/8"	22.22	2.00	0.841	1.071	0.402	0.422	0.613
		0.80	0.423	0.538	0.315	0.283	0.765
		0.90	0.473	0.603	0.349	0.315	0.761
		1.10	0.573	0.730	0.416	0.374	0.755
		1.20	0.622	0.792	0.447	0.403	0.751
1"	25.40	1.60	0.814	1.036	0.564	0.508	0.738
		2.00	0.997	1.270	0.668	0.601	0.725
		0.80	0.485	0.618	0.477	0.376	0.878
		0.90	0.544	0.693	0.530	0.417	0.875
		1.10	0.659	0.840	0.633	0.498	0.868
1 1/8"	28.57	1.20	0.716	0.912	0.682	0.537	0.865
		1.60	0.939	1.196	0.867	0.682	0.851
		2.00	1.154	1.470	1.033	0.813	0.838
		0.80	0.548	0.698	0.686	0.480	0.991
		0.90	0.614	0.782	0.763	0.534	0.988
1 1/4"	31.75	1.10	0.745	0.949	0.914	0.640	0.981
		1.20	0.810	1.032	0.986	0.690	0.978
		1.60	1.064	1.356	1.260	0.882	0.964
		0.80	0.611	0.778	0.949	0.598	1.105
		0.90	0.685	0.872	1.058	0.666	1.101
1 1/2"	38.10	1.10	0.831	1.059	1.269	0.799	1.094
		1.20	0.904	1.152	1.371	0.863	1.091
		1.60	1.190	1.516	1.759	1.108	1.077
		2.00	1.467	1.869	2.116	1.333	1.064
		2.50	1.803	2.297	2.521	1.588	1 048
1 1/2"	38.10	0.80	0.736	0.937	1.661	0.872	1.331
		0.90	0.826	1.052	1.854	0.973	1.328
		1.10	1.004	1.279	2.231	1.171	1.321
		1.20	1.092	1.391	2.414	1.267	1.317
		1.60	1.440	1.835	3.118	1.637	1.304
1 1/2"	38.10	2.00	1.781	2.268	3.775	1.982	1.290
		2.50	2.195	2.796	4.534	2.380	1.273



DIMENSIÓN Size D		ESPESOR Thickness e	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius
Pulg. Inches	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
1 5/8"	41.27	0.80	0.798	1.017	2.122	1.028	1.444
		0.90	0.896	1.141	2.370	1.148	1.441
		1.10	1.090	1.388	2.854	1.383	1.434
		1.20	1.186	1.511	3.091	1.498	1.430
		1.60	1.565	1.994	4.002	1.939	1.417
		2.00	1.937	2.467	4.857	2.354	1.403
		2.50	2.390	3.045	5.852	2.836	1.386
1 3/4"	44.44	0.80	0.861	1.097	2.660	1.197	1.557
		0.90	0.966	1.231	2.973	1.338	1.554
		1.10	1.176	1.498	3.584	1.613	1.547
		1.20	1.280	1.630	3.884	1.748	1.544
		1.60	1.690	2.153	5.039	2.268	1.530
		2.00	2.093	2.667	6.129	2.758	1.516
		2.50	2.586	3.294	7.403	3.332	1.499
1 7/8"	47.62	0.80	0.924	1.177	3.285	1.380	1.671
		0.90	1.037	1.321	3.673	1.542	1.667
		1.10	1.262	1.608	4.432	1.861	1.660
		1.20	1.374	1.750	4.804	2.018	1.657
		1.60	1.816	2.313	6.245	2.623	1.643
		2.00	2.250	2.866	7.610	3.196	1.629
		2.50	2.782	3.544	9.214	3.870	1.612
2"	50.80	0.80	0.986	1.257	4.001	1.575	1.784
		0.90	1.108	1.411	4.475	1.762	1.781
		1.10	1.348	1.718	5.404	2.218	1.774
		1.20	1.468	1.870	5.861	2.307	1.770
		1.60	1.941	2.473	7.630	3.004	1.757
		2.00	2.407	3.066	9.313	3.666	1.743
		2.50	2.978	3.793	11.298	4.448	1.726
		3.20	3.756	4.785	13.867	5.460	1.702
2 1/4"	57.15	0.90	1.248	1.590	6.409	2.243	2.007
		1.10	1.521	1.937	7.751	2.712	2.000
		1.20	1.656	2.109	8.411	2.943	1.997
		1.60	2.192	2.792	10.980	3.842	1.983
		2.00	2.720	3.465	13.437	4.702	1.969
		2.50	3.369	4.292	16.356	5.724	1.952
2 1/2"	63.50	3.20	4.759	6.062	28.144	8.864	2.155
		4.00	5.869	7.477	33.856	10.663	2.128
		4.75	6.882	8.767	38.780	12.214	2.103
3"	76.20	0.90	1.671	2.129	15.737	4.035	2.687
		1.20	2.220	2.827	20.255	5.316	2.677
		1.60	2.944	3.750	26.583	6.977	2.663
		2.00	3.660	4.662	32.705	8.584	2.649

TUBOS REDONDOS

Round Tubes

DIMENSIÓN Size D		ESPESOR Thickness e	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius
Pulg. Inches	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
3"	76.20	3.20	5.761	7.339	49.890	13.094	2.607
		4.75	8.370	10.662	69.611	18.271	2.555
3 1/2"	88.90	1.60	3.445	4.388	42.596	9.583	3.116
		2.00	4.286	5.460	52.527	11.817	3.102
		2.50	5.327	6.786	64.551	14.522	3.084
		3.20	6.763	8.615	80.678	18.150	3.060
		4.75	9.858	12.557	113.579	25.552	3.007
		6.35	12.927	16.468	143.730	32.335	2.954
4"	101.60	1.60	3.946	5.027	64.016	12.602	3.569
		2.00	4.913	6.258	79.076	15.566	3.555
		2.50	6.110	7.783	97.386	19.171	3.537
		3.20	7.765	9.892	122.083	24.032	3.513
		4.75	11.345	14.452	173.020	34.059	3.460
		6.35	14.916	19.002	220.473	43.400	3.406
4 1/2"	114.30	1.60	4.447	5.665	91.630	16.033	4.022
		2.00	5.539	7.056	113.336	19.831	4.008
		2.50	6.893	8.781	139.811	24.464	3.990
		3.20	8.768	11.169	175.676	30.739	3.966
		4.75	12.833	16.348	250.269	43.792	3.913
		6.35	16.905	21.535	320.628	56.103	3.859
5"	127.00	1.60	4.948	6.303	126.224	19.878	4.475
		2.00	6.165	7.854	156.290	24.613	4.461
		2.50	7.676	9.778	193.056	30.403	4.443
		3.20	9.770	12.446	243.031	38.273	4.419
		4.75	14.321	18.243	347.661	54.750	4.365
		6.35	18.894	24.069	447.319	70.444	4.311
5 1/2"	139.70	3.20	10.772	13.722	325.722	46.632	4.872
		4.75	15.808	20.138	467.531	66.934	4.818
		6.35	20.883	26.602	603.666	86.423	4.764

Productos factibles de producción. Consultar disponibilidad en stock.

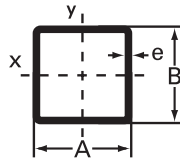
Products under production. Please consult stock availability.



TUBOS CUADRADOS

Square Tubes

DIMENSIÓN <i>Size</i>	ESPESOR <i>Thickness</i> <i>e</i>	RADIO <i>Radius</i>	PESO <i>Weight</i>	AREA DE LA SECCIÓN <i>Sectional Area</i>	MOMENTO DE INERCIA <i>Moment of Inertia</i>	MÓDULO DE INERCIA <i>Elastic Modulus</i>	RADIO DE GIRO <i>Gyration Radius</i>
A x B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
125 x 125	0.80	1.20	0.285	0.374	0.086	0.137	0.479
	0.90	1.35	0.317	0.418	0.094	0.151	0.475
	1.10	1.65	0.377	0.502	0.110	0.175	0.468
	1.20	1.80	0.406	0.542	0.117	0.187	0.464
15 x 15	0.80	1.20	0.348	0.454	0.153	0.204	0.581
	0.90	1.35	0.388	0.508	0.169	0.225	0.577
	1.10	1.65	0.464	0.612	0.198	0.264	0.569
	1.20	1.80	0.501	0.662	0.212	0.282	0.566
	1.60	2.40	0.639	0.858	0.260	0.347	0.551
20 x 20	0.80	1.20	0.474	0.614	0.378	0.378	0.785
	0.90	1.35	0.529	0.688	0.419	0.419	0.781
	1.10	1.65	0.636	0.832	0.497	0.497	0.773
	1.20	1.80	0.689	0.902	0.534	0.534	0.769
	1.60	2.40	0.890	1.178	0.670	0.670	0.754
	2.00	3.00	1.076	1.440	0.787	0.787	0.739
25 x 25	0.80	1.20	0.599	0.774	0.757	0.605	0.989
	0.90	1.35	0.670	0.868	0.841	0.673	0.985
	1.10	1.65	0.809	1.052	1.003	0.803	0.977
	1.20	1.80	0.877	1.142	1.081	0.865	0.973
	1.60	2.40	1.141	1.498	1.373	1.098	0.958
	2.00	3.00	1.390	1.840	1.635	1.308	0.943
30 x 30	0.80	1.20	0.725	0.934	1.329	0.886	1.193
	0.90	1.35	0.811	1.048	1.480	0.987	1.189
	1.10	1.65	0.982	1.272	1.773	1.182	1.181
	1.20	1.80	1.066	1.382	1.914	1.276	1.177
	1.60	2.40	1.392	1.818	2.451	1.634	1.161
	2.00	3.00	1.704	2.240	2.942	1.961	1.146
	2.50	3.75	2.075	2.750	3.495	2.330	1.127
40 x 40	0.80	1.20	0.976	1.254	3.214	1.607	1.601
	0.90	1.35	1.094	1.408	3.588	1.794	1.597
	1.10	1.65	1.327	1.712	4.320	2.160	1.589
	1.20	1.80	1.443	1.862	4.677	2.339	1.585
	1.60	2.40	1.895	2.458	6.050	3.025	1.569
	2.00	3.00	2.332	3.040	7.337	3.668	1.553
	2.50	3.75	2.860	3.750	8.828	4.414	1.534
	3.20	4.80	3.560	4.710	10.712	5.356	1.508
45 x 45	1.10	1.65	1.500	1.932	6.208	2.759	1.793
	1.20	1.80	1.631	2.102	6.727	2.990	1.789
	1.60	2.40	2.146	2.778	8.731	3.881	1.773
	2.00	3.00	2.646	3.440	10.624	4.722	1.757
	2.50	3.75	3.252	4.250	12.839	5.706	1.738
	3.20	4.80	4.062	5.350	15.672	6.965	1.711
50 x 50	1.10	1.65	1.673	2.152	8.579	3.432	1.997
	1.20	1.80	1.819	2.342	9.303	3.721	1.993
	1.60	2.40	2.397	3.098	12.107	4.843	1.977



DIMENSIÓN Size	ESPESOR Thickness e	RADIO Radius	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius
A x B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm
50 x 50	2.00	3.00	2.960	3.840	14.771	5.908	1.961
	2.50	3.75	3.645	4.750	17.911	7.165	1.942
	3.20	4.80	4.564	5.990	21.970	8.788	1.915
	4.00	6.00	5.562	7.360	26.153	10.461	1.885
	4.75	7.13	6.445	8.598	29.663	11.865	1.857
60 x 60	1.60	2.40	2.900	3.738	21.261	7.087	2.385
	2.00	3.00	3.588	4.640	26.064	8.682	2.369
	2.50	3.75	4.430	5.750	31.745	10.582	2.350
	3.20	4.80	5.569	7.270	39.218	13.073	2.323
	4.00	6.00	6.818	8.960	47.070	15.690	2.292
	4.75	7.13	7.936	10.498	53.802	17.934	2.264
70 x 70	5.15	7.73	8.512	11.299	57.155	19.052	2.249
	1.60	2.40	3.402	4.378	34.153	9.758	2.793
	2.00	3.00	4.216	5.440	41.961	11.989	2.777
	2.50	3.75	5.215	6.750	51.328	14.665	2.758
	3.20	4.80	6.574	8.550	63.736	18.210	2.730
	4.00	6.00	8.074	10.560	76.947	21.985	2.699
	4.75	7.13	9.428	12.398	88.438	25.268	2.671
80 x 80	5.15	7.73	10.129	13.359	94.227	26.922	2.656
	6.35	9.53	12.148	16.167	110.250	31.500	2.611
	1.60	2.40	3.904	5.018	51.423	12.856	3.201
	2.00	3.00	4.844	6.240	63.315	15.829	3.185
	2.50	3.75	6.000	7.750	77.661	19.415	3.166
	3.20	4.80	7.579	9.830	96.805	24.201	3.138
	4.00	6.00	9.330	12.160	117.385	29.346	3.107
	4.75	7.13	10.919	14.298	135.472	33.868	3.078
90 x 90	5.15	7.73	11.747	15.419	144.658	36.165	3.063
	6.35	9.53	14.142	18.707	170.379	42.595	3.018
	1.60	2.40	4.407	5.568	73.710	16.380	3.610
	2.00	3.00	5.472	7.040	90.910	20.202	3.594
	2.50	3.75	6.785	8.750	111.745	24.832	3.574
	3.20	4.80	8.584	11.110	139.704	31.045	3.546
	4.00	6.00	10.586	13.760	169.982	37.774	3.515
	4.75	7.13	12.411	16.198	196.803	43.734	3.486
100 x 100	5.15	7.73	13.364	17.479	210.508	46.780	3.470
	6.35	9.53	16.135	21.247	249.216	55.381	3.425
	1.60	2.40	4.909	6.298	101.655	20.331	4.018
	2.00	3.00	6.100	7.840	125.545	25.109	4.002
	2.50	3.75	7.570	9.750	154.578	30.916	3.982
	3.20	4.80	9.588	12.390	193.713	38.743	3.954
	4.00	6.00	11.842	15.360	236.339	47.268	3.923
	4.75	7.13	13.902	18.098	274.332	54.866	3.893
	5.15	7.73	14.981	19.539	293.837	58.767	3.878
	6.35	9.53	18.129	23.787	349.299	69.860	3.832

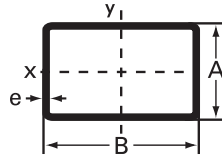
Productos factibles de producción. Consultar disponibilidad en stock.

Products under production. Please consult stock availability.

TUBOS RECTANGULARES

Rectangular tubes

DIMENSIÓN Size		ESPESOR Thickness e	RADIO Radius	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius
A	B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
X - X									Y - Y		
10.00	20.00	0.80	1.20	0.348	0.454	0.076	0.038	0.408	0.231	0.092	0.712
		0.90	1.35	0.388	0.508	0.083	0.042	0.404	0.255	0.102	0.708
		1.10	1.65	0.464	0.612	0.096	0.048	0.397	0.300	0.120	0.700
		1.20	1.80	0.501	0.662	0.102	0.051	0.393	0.321	0.129	0.697
		1.60	2.40	0.639	0.858	0.123	0.061	0.378	0.398	0.159	0.681
15.00	25.00	0.80	1.20	0.474	0.614	0.234	0.117	0.617	0.522	0.209	0.922
		0.90	1.35	0.529	0.688	0.258	0.129	0.613	0.580	0.232	0.918
		1.10	1.65	0.636	0.832	0.305	0.152	0.605	0.689	0.276	0.910
		1.20	1.80	0.689	0.902	0.326	0.163	0.601	0.741	0.296	0.906
		1.60	2.40	0.890	1.178	0.405	0.202	0.586	0.934	0.374	0.891
20.00	30.00	2.00	3.00	1.076	1.440	0.470	0.235	0.571	1.104	0.442	0.876
		0.80	1.20	0.599	0.774	0.526	0.263	0.824	0.988	0.395	1.129
		0.90	1.35	0.670	0.868	0.583	0.292	0.820	1.099	0.440	1.125
		1.10	1.65	0.809	1.052	0.693	0.347	0.812	1.313	0.525	1.117
		1.20	1.80	0.877	1.142	0.746	0.373	0.808	1.416	0.567	1.113
20.00	40.00	1.60	2.40	1.141	1.498	0.941	0.471	0.793	1.805	0.722	1.098
		2.00	3.00	1.390	1.840	1.113	0.556	0.778	2.157	0.863	1.083
		0.80	1.20	0.725	0.934	0.673	0.337	0.849	1.984	0.794	1.457
		0.90	1.35	0.811	1.048	0.748	0.374	0.845	2.212	0.885	1.453
		1.10	1.65	0.982	1.272	0.890	0.445	0.837	2.655	1.062	1.445
20.00	50.00	1.20	1.80	1.066	1.382	0.958	0.479	0.833	2.870	1.148	1.441
		1.60	2.40	1.392	1.818	1.213	0.606	0.817	3.690	1.476	1.425
		2.00	3.00	1.704	2.240	1.438	0.719	0.801	4.446	1.778	1.409
		2.50	3.75	2.075	2.750	1.682	0.841	0.782	5.307	2.123	1.389
		0.80	1.20	0.850	1.094	0.821	0.410	0.866	3.448	1.379	1.775
30.00	40.00	0.90	1.35	0.953	1.228	0.912	0.456	0.862	3.850	1.540	1.771
		1.10	1.65	1.155	1.492	1.087	0.543	0.854	4.633	1.853	1.762
		1.20	1.80	1.254	1.622	1.171	0.585	0.849	5.015	2.006	1.758
		1.60	2.40	1.644	2.138	1.484	0.742	0.833	6.483	2.593	1.741
		2.00	3.00	2.018	2.640	1.763	0.882	0.817	7.855	3.142	1.725
30.00	50.00	2.50	3.75	2.467	3.250	2.068	1.034	0.798	9.443	3.777	1.705
		0.80	1.20	0.850	1.094	1.670	0.835	1.235	2.599	1.040	1.541
		0.90	1.35	0.953	1.228	1.861	0.931	1.231	2.900	1.160	1.537
		1.10	1.65	1.155	1.492	2.232	1.116	1.223	3.488	1.395	1.529
		1.20	1.80	1.254	1.622	2.412	1.206	1.219	3.774	1.510	1.525
30.00	50.00	1.60	2.40	1.644	2.138	3.097	1.549	1.204	4.870	1.948	1.509
		2.00	3.00	2.018	2.640	3.727	1.864	1.188	5.891	2.356	1.494
		2.50	3.75	2.467	3.250	4.443	2.221	1.169	7.068	2.827	1.475
30.00	50.00	0.80	1.20	0.976	1.254	2.011	1.006	1.266	4.417	1.767	1.876
		0.90	1.35	1.094	1.408	2.242	1.121	1.262	4.935	1.974	1.872
		1.10	1.65	1.327	1.712	2.692	1.346	1.254	5.948	2.379	1.864

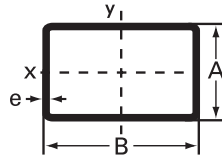


DIMENSIÓN Size		ESPESOR Thickness e	RADIO Radius	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyratión Radius	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyratión Radius
A	B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
X - X									Y - Y		
30.00	50.00	1.20	1.80	1.443	1.862	2.910	1.455	1.250	6.444	2.578	1.860
		1.60	2.40	1.895	2.458	3.743	1.871	1.234	8.358	3.343	1.844
		2.00	3.00	2.332	3.040	4.513	2.256	1.218	10.161	4.064	1.828
		2.50	3.75	2.860	3.750	5.391	2.695	1.199	12.266	4.906	1.809
		3.20	4.80	3.560	4.710	6.474	3.237	1.172	14.950	5.980	1.782
20.00	60.00	0.80	1.20	0.976	1.254	0.968	0.484	0.879	5.460	2.184	2.086
		0.90	1.35	1.094	1.408	1.076	0.538	0.874	6.101	2.440	2.082
		1.10	1.65	1.327	1.712	1.284	0.642	0.866	7.357	2.943	2.073
		1.20	1.80	1.443	1.862	1.383	0.692	0.862	7.972	3.189	2.069
		1.60	2.40	1.895	2.458	1.756	0.878	0.845	10.345	4.138	2.052
		2.00	3.00	2.332	3.040	2.089	1.044	0.829	12.585	5.034	2.035
		2.50	3.75	2.860	3.750	2.453	1.227	0.809	15.203	6.081	2.013
30.00	60.00	3.20	4.80	3.560	4.710	2.876	1.438	0.781	18.548	7.419	1.984
		1.10	1.65	1.500	1.932	3.151	1.576	1.277	9.265	3.706	2.190
		1.20	1.80	1.631	2.102	3.408	1.704	1.273	10.046	4.019	2.186
		1.60	2.40	2.146	2.778	4.389	2.194	1.257	13.074	5.230	2.170
		2.00	3.00	2.646	3.440	5.298	2.649	1.241	15.950	6.380	2.153
		2.50	3.75	3.252	4.250	6.339	3.169	1.221	19.339	7.735	2.133
40.00	50.00	3.20	4.80	4.062	5.350	7.629	3.814	1.194	23.715	9.486	2.105
		1.10	1.65	1.500	1.932	5.153	2.576	1.633	7.264	2.906	1.939
		1.20	1.80	1.631	2.102	5.581	2.790	1.629	7.874	3.149	1.935
		1.60	2.40	2.146	2.778	7.231	3.615	1.613	10.232	4.093	1.919
		2.00	3.00	2.646	3.440	8.782	4.391	1.598	12.466	4.986	1.904
		2.50	3.75	3.252	4.250	10.589	5.294	1.578	15.089	6.035	1.884
40.00	60.00	3.20	4.80	4.062	5.350	12.884	6.442	1.552	18.460	7.384	1.857
		1.10	1.65	1.673	2.152	5.985	2.993	1.668	11.173	4.469	2.279
		1.20	1.80	1.819	2.342	6.484	3.242	1.664	12.121	4.848	2.275
		1.60	2.40	2.397	3.098	8.411	4.205	1.648	15.803	6.321	2.259
		2.00	3.00	2.960	3.840	10.227	5.114	1.632	19.315	7.726	2.243
40.00	60.00	2.50	3.75	3.645	4.750	12.349	6.174	1.612	23.474	9.390	2.223
		3.20	4.80	4.564	5.990	15.057	7.528	1.585	28.883	11.553	2.196
		4.00	6.00	5.562	7.360	17.801	8.900	1.555	34.505	13.802	2.165
		4.75	7.13	6.445	8.598	20.060	10.030	1.527	39.266	15.707	2.137
30.00	70.00	1.10	1.65	1.673	2.152	3.611	1.806	1.295	13.547	5.419	2.509
		1.20	1.80	1.819	2.342	3.906	1.953	1.291	14.699	5.880	2.505
		1.60	2.40	2.397	3.098	5.035	2.517	1.275	19.179	7.672	2.488
		2.00	3.00	2.960	3.840	6.083	3.042	1.259	23.459	9.384	2.472
		2.50	3.75	3.645	4.750	7.286	3.643	1.239	28.536	11.415	2.451
		3.20	4.80	4.564	5.990	8.784	4.392	1.211	35.156	14.062	2.423
		4.00	6.00	5.562	7.360	10.249	5.124	1.180	42.057	16.823	2.390
		4.75	7.13	6.445	8.598	11.407	5.703	1.152	47.920	19.168	2.361

TUBOS RECTANGULARES

Rectangular tubes

DIMENSIÓN Size		ESPESOR Thickness e	RADIO Radius	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius
A	B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
X - X									Y - Y		
40.00	80.00	1.60	2.40	2.900	3.738	10.772	5.386	1.698	31.751	12.701	2.915
		2.00	3.00	3.588	4.640	13.118	6.559	1.681	38.974	15.590	2.898
		2.50	3.75	4.430	5.750	15.870	7.935	1.661	47.620	19.048	2.878
		3.20	4.80	5.569	7.270	19.401	9.701	1.634	59.034	23.614	2.850
		4.00	6.00	6.818	8.960	23.006	11.503	1.602	71.134	28.454	2.818
		4.75	7.13	7.936	10.498	25.998	12.999	1.574	81.606	32.642	2.788
		5.15	7.73	8.512	11.299	27.450	13.725	1.559	86.861	34.744	2.773
60.00	80.00	1.60	2.40	3.402	4.378	26.720	13.360	2.471	41.587	16.635	3.082
		2.00	3.00	4.216	5.440	32.777	16.388	2.455	51.145	20.458	3.066
		2.50	3.75	5.215	6.750	40.016	20.008	2.435	62.641	25.056	3.046
		3.20	4.80	6.574	8.550	49.552	24.776	2.407	77.919	31.168	3.019
		4.00	6.00	8.074	10.560	59.635	29.818	2.376	94.259	37.704	2.988
		4.75	7.13	9.428	12.398	68.337	34.169	2.348	108.539	43.416	2.959
		5.15	7.73	10.129	13.359	72.695	36.347	2.333	115.759	46.304	2.944
40.00	100.00	6.35	9.53	12.148	16.167	84.650	42.325	2.288	135.850	54.340	2.899
		1.60	2.40	3.402	4.378	13.132	6.566	1.732	55.175	22.070	3.550
		2.00	3.00	4.216	5.440	16.009	8.004	1.715	67.913	27.165	3.533
		2.50	3.75	5.215	6.750	19.391	9.695	1.695	83.266	33.306	3.512
		3.20	4.80	6.574	8.550	23.746	11.873	1.666	103.726	41.490	3.483
		4.00	6.00	8.074	10.560	28.211	14.106	1.634	125.683	50.273	3.450
		4.75	7.13	9.428	12.398	31.936	15.968	1.605	144.941	57.976	3.419
50.00	90.00	5.15	7.73	10.129	13.359	33.750	16.875	1.589	154.704	61.882	3.403
		6.35	9.53	12.148	16.167	38.531	19.266	1.544	181.969	72.788	3.355
		1.60	2.40	3.402	4.378	19.606	9.803	2.116	48.701	19.480	3.335
		2.00	3.00	4.216	5.440	23.993	11.996	2.100	59.929	23.971	3.319
		2.50	3.75	5.215	6.750	29.203	14.602	2.080	73.453	29.381	3.299
		3.20	4.80	6.574	8.550	36.009	18.004	2.052	91.463	36.585	3.271
		4.00	6.00	8.074	10.560	43.123	21.562	2.021	110.771	44.308	3.239
50.00	100.00	4.75	7.13	9.428	12.398	49.186	24.593	1.992	127.690	51.076	3.209
		5.15	7.73	10.129	13.359	52.193	26.096	1.977	136.262	54.505	3.194
		6.35	9.53	12.148	16.167	60.321	30.160	1.932	160.179	64.072	3.148
		1.60	2.40	3.653	4.698	21.481	10.740	2.138	62.921	25.169	3.660
		2.00	3.00	4.530	5.840	26.298	13.149	2.122	77.518	31.007	3.643
		2.50	3.75	5.607	7.250	32.026	16.013	2.102	95.151	38.060	3.623
		3.20	4.80	7.076	9.190	39.519	19.759	2.074	118.724	47.490	3.594
60.00	100.00	1.60	2.40	3.904	5.018	32.178	16.089	2.532	70.668	28.267	3.753
		2.00	3.00	4.844	6.240	39.507	19.754	2.516	87.123	34.849	3.737
		2.50	3.75	6.000	7.750	48.286	24.143	2.496	107.036	42.815	3.716
		3.20	4.80	7.579	9.830	59.887	29.944	2.468	133.722	53.489	3.688
		4.00	6.00	9.330	12.160	72.201	36.100	2.437	162.569	65.027	3.656
		4.75	7.13	10.919	14.298	82.783	41.436	2.408	188.071	75.228	3.627



DIMENSIÓN Size		ESPOSOR Thickness e	RADIO Radius	PESO Weight	AREA DE LA SECCIÓN Sectional Area	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO Gyration Radius	MOMENTO DE INERCIA Moment of Inertia	MÓDULO DE INERCIA Elastic Modulus	RADIO DE GIRO
A	B	mm	mm	kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
X - X									Y - Y		
60.00	100.00	5.15	7.73	11.747	15.419	88.234	44.117	2.392	201.082	80.433	3.611
		6.35	9.53	14.142	18.707	103.013	51.507	2.347	237.746	95.098	3.565
40.00	120.00	1.60	2.40	3.904	5.018	15.493	7.746	1.757	87.353	34.941	4.172
		2.00	3.00	4.844	6.240	18.899	9.450	1.740	107.731	43.092	4.155
		2.50	3.75	6.000	7.750	22.911	11.456	1.719	132.411	52.965	4.133
		3.20	4.80	7.579	9.830	28.090	14.045	1.690	165.519	66.208	4.103
		4.00	6.00	9.330	12.160	33.417	16.708	1.658	201.353	80.541	4.069
		4.75	7.13	10.919	14.298	37.874	18.937	1.628	233.070	93.228	4.038
		5.15	7.73	11.747	15.419	40.051	20.025	1.612	249.265	99.706	4.021
		6.35	9.53	14.142	18.707	45.807	22.903	1.565	294.952	117.981	3.971
60.00	120.00	2.00	3.00	5.472	7.040	46.238	23.119	2.563	138.582	54.233	4.388
		2.50	3.75	6.785	8.750	56.557	28.279	2.542	166.932	66.773	4.368
		3.20	4.80	8.584	11.110	70.222	35.111	2.514	209.185	83.674	4.339
		4.00	6.00	10.586	13.760	84.766	42.383	2.482	255.198	102.079	4.307
		4.75	7.13	12.411	16.198	97.408	48.704	2.452	296.198	118.479	4.276
		5.15	7.73	13.364	17.479	103.774	51.887	2.437	317.242	126.897	4.260
		6.35	9.53	16.135	21.247	121.376	60.688	2.390	377.056	150.822	4.213
		2.00	3.00	6.100	7.840	37.825	18.912	2.196	213.265	85.306	5.216
50.00	150.00	2.50	3.75	7.570	9.750	46.141	23.070	2.175	263.016	105.206	5.194
		3.20	4.80	9.588	12.390	57.068	28.534	2.146	330.358	132.143	5.164
		4.00	6.00	11.842	15.360	68.579	34.290	2.113	404.099	161.640	5.129
		4.75	7.13	13.902	18.098	78.471	39.236	2.082	470.192	188.077	5.097
		5.15	7.73	14.981	19.539	83.407	41.704	2.066	504.267	201.707	5.080
		6.35	9.53	18.129	23.787	96.873	48.437	2.018	601.726	240.690	5.030
		2.00	3.00	6.100	7.840	52.969	26.484	2.599	198.121	79.248	5.027
		2.50	3.75	7.570	9.750	64.828	32.414	2.579	244.328	97.731	5.006
60.00	140.00	3.20	4.80	9.588	12.390	80.557	40.279	2.550	306.869	122.748	4.977
		4.00	6.00	11.842	15.360	97.331	48.666	2.517	375.347	150.139	4.943
		4.75	7.13	13.902	18.098	111.943	55.972	2.487	436.720	174.688	4.912
		5.15	7.73	14.981	19.539	119.313	59.657	2.471	468.361	187.344	4.896
		6.35	9.53	18.129	23.787	139.739	69.869	2.424	558.860	223.544	4.847
		2.00	3.00	6.100	7.840	87.657	43.828	3.344	163.433	65.373	4.566
		2.50	3.75	7.570	9.750	107.703	53.852	3.324	201.453	80.581	4.546
		3.20	4.80	9.588	12.390	134.575	67.288	3.296	252.851	101.140	4.517
80.00	120.00	4.00	6.00	11.842	15.360	163.635	81.818	3.264	309.043	123.617	4.486
		4.75	7.13	13.902	18.098	189.338	94.669	3.235	359.326	143.730	4.456
		5.15	7.73	14.981	19.539	202.455	101.228	3.219	385.219	154.088	4.440
		6.35	9.53	18.129	23.787	239.439	119.720	3.173	459.160	183.664	4.394

Productos factibles de producción. Consultar disponibilidad en stock.

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