

LI
ANGULO DE LADOS IGUALES
DIMENSIONES

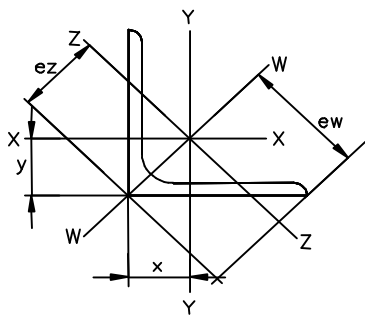
Designación tamaño y espesor <i>t</i>		Peso	<i>k</i>	<i>R</i>	Gramil			Sujetadores		
					<i>g</i>	<i>g</i> ₁	<i>g</i> ₂	Diámetro máximo	Espac. recom.	
mm x mm*	in. x in.	kg/m	mm	mm	mm	mm	mm	mm	in.	mm
19 x 3	3/4 x 1/8	0.88	11.1	3.2	11	-	-	6.3	1/4	20
	x 5	1.25	12.7	3.2	11	-	-	6.3	1/4	20
22 x 3	7/8 x 1/8	1.04	11.1	3.2	12	-	-	6.3	1/4	20
	x 5	1.49	12.7	3.2	12	-	-	6.3	1/4	20
25 x 3	1 x 1/8	1.19	11.1	3.2	14	-	-	9.5	3/8	30
	x 5	1.73	12.7	3.2	14	-	-	9.5	3/8	30
	x 6	2.22	14.3	3.2	14	-	-	9.5	3/8	30
32 x 3	1 1/4 x 1/8	1.50	11.1	4.7	18	-	-	12.7	1/2	40
	x 5	2.20	12.7	4.7	18	-	-	12.7	1/2	40
	x 6	2.86	14.3	4.7	18	-	-	12.7	1/2	40
38 x 3	1 1/2 x 1/8	1.83	11.1	4.7	20	-	-	12.7	1/2	40
	x 5	2.68	12.7	4.7	20	-	-	12.7	1/2	40
	x 6	3.48	14.3	4.7	20	-	-	12.7	1/2	40
	x 8	4.26	15.9	4.7	20	-	-	12.7	1/2	40
	x 10	4.99	17.5	4.7	20	-	-	12.7	1/2	40
44 x 3	1 3/4 x 1/8	2.14	11.1	6.3	25	-	-	15.9	5/8	50
	x 5	3.15	12.7	6.3	25	-	-	15.9	5/8	50
	x 6	4.12	14.3	6.3	25	-	-	15.9	5/8	50
	x 8	5.04	15.9	6.3	25	-	-	15.9	5/8	50
51 x 3	2 x 1/8	2.46	11.1	6.3	30	-	-	15.9	5/8	50
	x 5	3.63	12.7	6.3	30	-	-	15.9	5/8	50
	x 6	4.75	14.3	6.3	30	-	-	15.9	5/8	50
	x 8	5.83	15.9	6.3	30	-	-	15.9	5/8	50
	x 10	6.99	17.5	6.3	30	-	-	15.9	5/8	50
64 x 4	2 1/2 x 5/32	3.83	11.1	6.3	35	-	-	19	3/4	60
	x 5	4.61	12.7	6.3	35	-	-	19	3/4	60
	x 6	6.10	14.3	6.3	35	-	-	19	3/4	60
	x 8	7.44	15.9	6.3	35	-	-	19	3/4	60
	x 10	8.78	17.5	6.3	35	-	-	19	3/4	60

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

Espac. recom. Es espaciamento recomendado.

* Redondeado al milímetro



LI
ANGULO DE LADOS IGUALES
PROPIEDADES

Designación tamaño y espesor <i>t</i>		Area	Ejes X-X y Y-Y				Eje W-W				Eje Z-Z			
			<i>I</i>	<i>S</i>	<i>r</i>	<i>x = y</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>e_w</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>e_z</i>
mm x mm*	in. x in.	cm ²	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm
19 x 3 x 5	3/4 x 1/8	1.11	0.37	0.28	0.58	0.58	0.58	0.43	0.73	1.34	0.16	0.19	0.38	0.82
	x 3/16	1.59	0.50	0.39	0.56	0.66	0.83	0.62	0.72	1.34	0.17	0.18	0.38	0.93
22 x 3 x 5	7/8 x 1/8	1.32	0.58	0.38	0.66	0.66	0.90	0.58	0.82	1.56	0.26	0.28	0.48	0.93
	x 3/16	1.90	0.79	0.54	0.66	0.74	1.23	0.79	0.81	1.56	0.35	0.33	0.48	1.05
25 x 3 x 5 x 6	1 x 1/8	1.52	0.92	0.51	0.79	0.76	1.24	0.69	0.93	1.79	0.41	0.38	0.48	1.07
	x 3/16	2.21	1.25	0.72	0.76	0.81	2.08	1.16	0.93	1.79	0.41	0.36	0.48	1.14
	x 1/4	2.80	1.54	0.92	0.74	0.86	2.49	1.39	0.91	1.79	0.83	0.69	0.48	1.21
32 x 3 x 5 x 6	1 1/4 x 1/8	1.93	1.33	0.80	0.97	0.89	2.91	1.30	1.19	2.24	0.83	0.66	0.60	1.25
	x 3/16	2.79	2.54	1.16	0.97	0.97	3.74	1.67	1.19	2.24	0.83	0.61	0.60	1.37
	x 1/4	3.72	3.21	1.49	0.94	1.02	4.99	2.23	1.16	2.24	1.24	0.86	0.60	1.44
38 x 3 x 5 x 6 x 8 x 10	1 1/2 x 1/8	2.34	3.25	1.18	1.17	1.07	5.41	2.01	1.47	2.69	1.24	0.82	0.73	1.51
	x 3/16	3.43	4.58	1.64	1.17	1.12	7.07	2.63	1.44	2.69	1.66	1.05	0.73	1.58
	x 1/4	4.40	5.83	2.20	1.14	1.19	8.74	3.24	1.42	2.69	2.49	1.48	0.73	1.68
	x 5/16	5.40	6.66	2.62	1.12	1.24	10.40	3.86	1.39	2.69	2.91	1.66	0.73	1.75
	x 3/8	6.34	7.91	3.11	1.12	1.30	12.07	4.48	1.37	2.69	3.33	1.82	0.73	1.83
44 x 3 x 5 x 6 x 8	1 3/4 x 1/8	2.74	5.41	1.64	1.40	1.22	8.73	2.78	1.72	3.14	2.08	1.21	0.86	1.72
	x 3/16	4.03	7.49	2.29	1.37	1.30	11.65	3.71	1.70	3.14	2.91	1.59	0.86	1.83
	x 1/4	5.20	9.57	3.11	1.35	1.35	14.56	4.66	1.67	3.14	3.74	1.97	0.86	1.90
	x 5/16	6.39	11.24	3.77	1.32	1.40	17.48	5.56	1.65	3.14	4.57	2.32	0.86	1.97
51 x 3 x 5 x 6 x 8 x 10	2 x 1/8	3.10	7.91	2.13	1.60	1.40	12.49	3.48	1.97	3.58	3.32	1.68	0.99	1.97
	x 3/16	4.61	11.45	3.11	1.57	1.45	17.48	4.88	1.95	3.58	4.57	2.28	0.99	2.00
	x 1/4	6.06	14.57	4.10	1.55	1.50	22.47	6.27	1.93	3.58	5.82	2.77	0.99	2.10
	x 5/16	7.42	17.46	4.92	1.52	1.55	26.63	7.43	1.90	3.58	7.07	3.24	0.99	2.18
	x 3/8	8.77	19.98	5.74	1.50	1.63	30.80	8.60	1.87	3.58	8.32	3.61	0.99	2.30
64 x 4 x 5 x 6 x 8 x 10	2 1/2 x 5/32	4.88	19.44	4.21	1.98	1.73	31.10	6.93	2.52	4.49	7.84	3.20	1.24	2.45
	x 3/16	5.81	22.89	4.92	1.98	1.75	36.62	8.15	2.46	4.49	9.15	3.70	1.24	2.47
	x 1/4	7.68	29.14	6.39	1.96	1.83	45.36	10.10	2.43	4.49	11.65	4.58	1.24	2.54
	x 5/16	9.48	35.38	7.87	1.93	1.88	55.35	12.32	2.41	4.49	14.56	5.51	1.24	2.64
	x 3/8	11.16	40.79	9.34	1.91	1.93	64.09	14.27	2.38	4.49	17.06	6.29	1.24	2.71

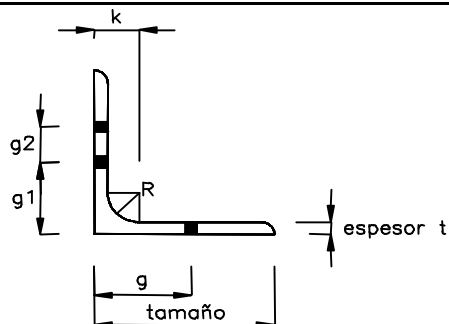
Notas:

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* Redondeado al milímetro



LI
ANGULO DE LADOS IGUALES
DIMENSIONES



Designación tamaño y espesor <i>t</i>		Peso	<i>k</i>	<i>R</i>	Gramil			Sujetadores		Espac. recom.
					<i>g</i>	<i>g</i> ₁	<i>g</i> ₂	Diámetro máximo	in.	
mm x mm*	in. x in.	kg/m	mm	mm	mm	mm	mm	mm	mm	
76 x 5	3 x 3/16	5.52	12.7	7.9	45	-	-	22.2	7/8	70
x 6	x 1/4	7.29	14.3	7.9	45	-	-	22.2	7/8	70
x 8	x 5/16	9.08	15.9	7.9	45	-	-	22.2	7/8	70
x 10	x 3/8	10.72	17.5	7.9	45	-	-	22.2	7/8	70
x 11	x 7/16	12.35	19.1	7.9	45	-	-	22.2	7/8	70
x 13	x 1/2	13.99	20.6	7.9	45	-	-	22.2	7/8	70
x 16	x 5/8	17.11	27.0	7.9	45	-	-	22.2	7/8	70
89 x 5	3 1/2 x 3/16	6.55	12.7	8.4	50	-	-	22.2	7/8	70
x 6	x 1/4	8.63	14.3	8.3	50	-	-	22.2	7/8	70
x 8	x 5/16	10.71	15.9	8.1	50	-	-	22.2	7/8	70
x 10	x 3/8	12.65	17.5	8.0	50	-	-	22.2	7/8	70
x 13	x 1/2	16.52	20.6	7.6	50	-	-	22.2	7/8	70
102 x 6	4 x 1/4	9.82	15.9	9.5	60	-	-	22.2	7/8	70
x 8	x 5/16	12.20	17.5	9.5	60	-	-	22.2	7/8	70
x 10	x 3/8	14.58	19.1	9.5	60	-	-	22.2	7/8	70
x 11	x 7/16	16.82	20.6	9.5	60	-	-	22.2	7/8	70
x 13	x 1/2	19.05	22.2	9.5	60	-	-	22.2	7/8	70
x 16	x 5/8	23.36	25.4	9.5	60	-	-	22.2	7/8	70
x 19	x 3/4	27.53	28.6	9.5	60	-	-	22.2	7/8	70
127 x 10	5 x 3/8	18.30	22.2	12.7	70	45	50	25.4	1	80
x 11	x 7/16	21.28	23.8	12.7	70	45	50	25.4	1	80
x 13	x 1/2	24.11	25.4	12.7	70	45	50	25.4	1	80
x 16	x 5/8	29.76	28.6	12.7	70	45	50	25.4	1	80
x 19	x 3/4	35.12	31.8	12.7	70	45	50	25.4	1	80
152 x 10	6 x 3/8	22.17	22.2	12.7	90	60	60	25.4	1	90
x 11	x 7/16	25.60	23.8	12.7	90	60	60	25.4	1	90
x 13	x 1/2	29.17	25.4	12.7	90	60	60	25.4	1	90
x 14	x 9/16	32.59	27.0	12.7	90	60	60	25.4	1	90
x 16	x 5/8	36.01	28.6	12.7	90	60	60	25.4	1	90
x 19	x 3/4	42.71	31.8	12.7	90	60	60	25.4	1	90
x 22	x 7/8	49.26	35.0	12.7	90	60	60	25.4	1	90
x 25	x 1	55.66	38.1	12.7	90	60	60	25.4	1	90

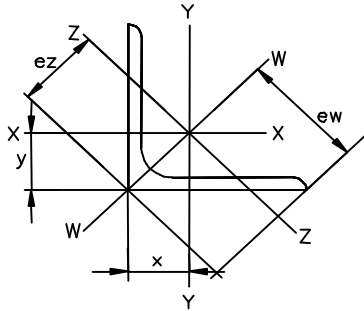
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Espac. recom. Es espaciamento recomendado.

* Redondeado al milímetro

LI
ANGULO DE LADOS IGUALES
PROPIEDADES



Designación tamaño y espesor <i>t</i>		Area	Ejes X-X y Y-Y				Eje W-W				Eje Z-Z			
			<i>I</i>	<i>S</i>	<i>r</i>	<i>x = y</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>e_w</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>e_z</i>
mm x mm*	in. x in.	cm ²	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm
76 x 5	3 x 3/16	7.03	40.01	7.22	2.39	2.08	64.38	11.97	3.03	5.38	16.12	5.48	1.51	2.94
x 6	x 1/4	9.29	51.60	9.50	2.36	2.13	78.66	14.62	2.94	5.38	20.39	6.86	1.49	2.97
x 8	x 5/16	11.48	62.90	11.60	2.34	2.21	96.98	18.02	2.92	5.38	24.97	8.21	1.47	3.04
x 10	x 3/8	13.61	73.30	13.60	2.31	2.26	112.79	20.96	2.89	5.38	29.55	9.41	1.47	3.14
x 11	x 7/16	15.68	82.80	15.60	2.31	2.31	128.19	23.82	2.87	5.38	33.71	10.34	1.47	3.26
x 13	x 1/2	17.74	92.40	17.50	2.29	2.36	142.76	26.53	2.84	5.38	38.29	11.53	1.47	3.32
x 16	x 5/8	21.68	109.10	21.30	2.24	2.49	158.16	29.39	2.82	5.38	42.45	12.05	1.47	3.52
89 x 5	3 1/2 x 3/16	8.36	64.36	9.92	2.78	2.40	102.84	16.38	3.51	6.29	25.88	7.63	1.76	3.39
x 6	x 1/4	10.90	83.66	13.01	2.77	2.46	133.53	21.26	3.50	6.29	33.79	9.71	1.76	3.48
x 8	x 5/16	13.48	101.95	16.00	2.74	2.51	162.49	25.87	3.47	6.29	41.41	11.66	1.75	3.55
x 10	x 3/8	16.00	119.46	18.84	2.72	2.57	191.20	30.44	3.47	6.29	50.22	13.87	1.74	3.63
x 13	x 1/2	20.97	151.51	24.41	2.69	2.69	238.09	37.91	3.37	6.29	61.59	16.21	1.73	3.80
102 x 6	4 x 1/4	12.52	124.90	17.20	3.18	2.77	191.89	26.72	3.96	7.18	48.10	12.30	2.00	3.91
x 8	x 5/16	15.48	154.40	21.10	3.15	2.84	239.33	33.33	3.93	7.18	61.60	15.36	2.00	4.01
x 10	x 3/8	18.45	181.50	24.90	3.12	2.89	283.03	39.41	3.91	7.18	73.25	18.17	1.98	4.03
x 11	x 7/16	21.35	206.90	28.70	3.12	2.94	322.99	44.98	3.88	7.18	83.66	20.15	1.98	4.15
x 13	x 1/2	24.19	231.40	32.30	3.10	2.99	361.28	50.31	3.86	7.18	94.48	22.44	1.98	4.21
x 16	x 5/8	29.74	277.20	39.30	3.05	3.12	433.71	60.40	3.81	7.18	115.71	26.35	1.98	4.39
x 19	x 3/4	35.10	318.80	46.00	3.02	3.22	497.39	69.27	3.75	7.18	136.10	29.97	1.95	4.54
127 x 10	5 x 3/8	23.29	363.80	39.70	3.96	3.53	579.60	64.60	4.99	8.96	148.00	29.80	2.52	4.97
x 11	x 7/16	26.97	417.10	45.70	3.94	3.58	662.90	74.00	4.96	8.96	171.10	33.80	2.52	5.06
x 13	x 1/2	30.65	468.30	51.60	3.91	3.63	746.50	83.30	4.94	8.96	190.10	37.20	2.49	5.12
x 16	x 5/8	37.81	535.30	63.30	3.86	3.76	897.30	100.50	4.87	8.96	233.30	43.90	2.48	5.31
x 19	x 3/4	44.77	655.20	74.20	3.81	3.86	1035.50	115.60	4.82	8.96	275.30	50.50	2.48	5.45
152 x 10	6 x 3/8	28.13	640.60	57.80	4.78	4.16	1018.60	94.60	6.02	10.76	262.60	44.70	3.05	5.88
x 11	x 7/16	32.65	735.90	66.70	4.75	4.22	1173.50	109.00	5.99	10.76	298.30	50.10	3.02	5.96
x 13	x 1/2	37.10	828.70	75.50	4.72	4.27	1326.10	123.30	5.97	10.76	331.30	54.90	2.99	6.03
x 14	x 9/16	41.48	918.60	84.20	4.70	4.34	1464.60	136.00	5.94	10.76	372.60	60.80	2.99	6.12
x 16	x 5/8	45.87	1005.60	92.80	4.67	4.39	1604.80	149.20	5.92	10.76	406.40	65.60	2.98	6.20
x 19	x 3/4	54.45	1171.70	109.10	4.65	4.52	1859.20	172.70	5.85	10.76	484.20	75.90	2.98	6.38
x 22	x 7/8	62.77	1328.60	125.00	4.60	4.62	2101.80	196.20	5.79	10.76	555.40	85.10	2.97	6.52
x 25	x 1	70.97	1476.00	140.00	4.57	4.72	2327.80	203.30	5.73	10.76	624.20	93.70	2.96	6.66

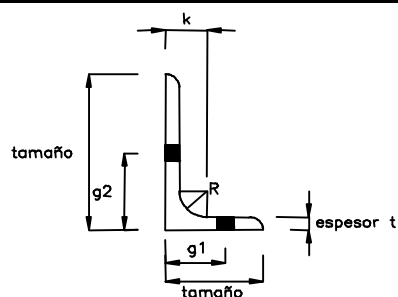
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* Redondeado al milímetro



LD
ANGULO DE LADOS DESIGUALES
DIMENSIONES



Designación tamaño y espesor <i>t</i>		Peso	<i>k</i>	<i>R</i>	Gramil**		Diám. máx. del sujetador***			
					<i>g</i> ₁	<i>g</i> ₂	Lado menor		Lado mayor	
mm x mm x mm*	in. x in. x in.	kg/m	mm	mm	mm	mm	mm	in.	mm	in.
102 x 76 x 6 x 8 x 10 x 11 x 13 x 16 x 19	4 x 3 x 1/4	8.63	17.46	9.3	45	60	22.2	7/8	22.2	7/8
	x 5/16	10.72	19.1	9.3	45	60	22.2	7/8	22.2	7/8
	x 3/8	12.63	20.64	9.3	45	60	22.2	7/8	22.2	7/8
	x 7/16	14.58	22.23	9.3	45	60	22.2	7/8	22.2	7/8
	x 1/2	16.52	23.81	9.3	45	60	22.2	7/8	22.2	7/8
	x 5/8	20.24	26.98	9.3	45	60	22.2	7/8	22.2	7/8
	x 3/4	23.81	28.58	9.3	45	60	22.2	7/8	22.2	7/8
132 x 102 x 8 x 10 x 11 x 13 x 16 x 19 x 22 x 25	6 x 4 x 5/16	15.19	20.64	12.7	60	90	22.2	7/8	25.4	1
	x 3/8	18.31	22.23	12.7	60	90	22.2	7/8	25.4	1
	x 7/16	21.28	23.81	12.7	60	90	22.2	7/8	25.4	1
	x 1/2	24.11	25.4	12.7	60	90	22.2	7/8	25.4	1
	x 5/8	29.76	28.58	12.7	60	90	22.2	7/8	25.4	1
	x 3/4	35.12	31.75	12.7	60	90	22.2	7/8	25.4	1
	x 7/8	40.48	34.9	12.7	60	90	22.2	7/8	25.4	1
	x 1	45.84	38.1	12.7	60	90	22.2	7/8	25.4	1

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Espac. recom. Es espaciamiento recomendado.

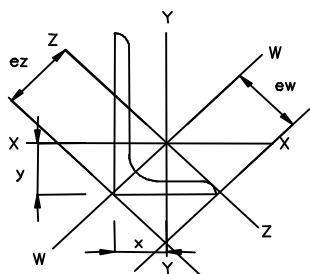
* Redondeado al milímetro

** La localización de dos líneas de gramiles en un solo lado deberá tomarse de la tabla de ángulos de lados iguales.

*** El espaciamiento recomendado de sujetadores deberá tomarse de la tabla de ángulos de lados iguales, correspondiente al mismo diámetro de sujetador.



LD
ANGULO DE LADOS DESIGUALES
PROPIEDADES

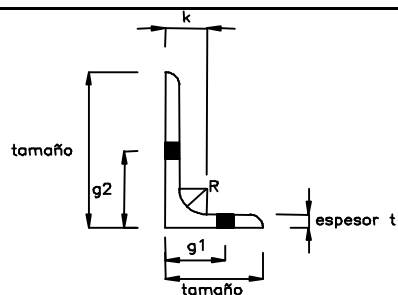


Designación tamaño y espesor <i>t</i>		Area	Eje X-X				Eje Y-Y			
			<i>I</i>	<i>S</i>	<i>r</i>	<i>y</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>x</i>
mm x mm x mm*	in. x in. x in.	cm ²	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm
102 x 76 x 6	4 x 3 x 1/4	10.90	115.3	16.39	3.25	3.15	56.6	9.83	2.26	1.88
	x 8	13.48	140.7	20.16	3.23	3.20	68.7	11.96	2.25	1.93
	x 10	16.00	164.8	23.93	3.20	3.25	79.9	14.26	2.23	1.98
	x 11	18.51	188.1	27.53	3.18	3.30	90.7	16.22	2.21	2.03
	x 13	20.96	210.2	30.97	3.16	3.88	100.7	18.36	2.19	2.11
	x 16	25.67	251.0	37.69	3.12	3.48	119.3	22.13	2.15	2.21
	x 19	30.26	288.4	43.91	3.09	3.60	136.5	25.73	2.12	2.34
132 x 102 x 8	6 x 4 x 5/16	19.44	472.7	45.58	4.93	4.87	173.1	22.10	2.98	2.33
	x 10	23.29	560.6	54.40	4.91	4.93	203.9	26.22	2.96	2.39
	x 11	26.97	643.5	62.76	4.88	4.98	233.1	30.31	2.94	2.44
	x 13	30.65	723.8	70.96	4.86	5.05	261.0	34.08	2.92	2.51
	x 16	37.81	877.0	87.02	4.82	5.16	313.0	41.62	2.88	2.62
	x 19	44.77	1020.2	102.42	4.77	5.28	361.3	48.67	2.84	2.74
	x 22	51.48	1154.2	117.17	4.73	5.38	405.8	55.55	2.80	2.84
	x 25	58.00	1280.0	131.50	4.70	5.50	447.5	62.20	2.78	2.96

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro



LD
ANGULO DE LADOS DESIGUALES
DIMENSIONES

Designación tamaño y espesor <i>t</i>		Peso	<i>k</i>	<i>R</i>	Gramil**		Diám. máx. del sujetador***			
					<i>g</i> ₁	<i>g</i> ₂	Lado menor		Lado mayor	
mm x mm x mm*	in. x in. x in.	kg/m	mm	mm	mm	mm	mm	in.	mm	in.
102 x 76 x 6 x 8 x 10 x 11 x 13 x 16 x 19	4 x 3 x 1/4	8.63	17.46	9.5	45	60	22.2	7/8	22.2	7/8
	x 5/16	10.72	19.1	9.5	45	60	22.2	7/8	22.2	7/8
	x 3/8	12.65	20.64	9.5	45	60	22.2	7/8	22.2	7/8
	x 7/16	14.58	22.23	9.5	45	60	22.2	7/8	22.2	7/8
	x 1/2	16.52	23.81	9.5	45	60	22.2	7/8	22.2	7/8
	x 5/8	20.24	26.98	9.5	45	60	22.2	7/8	22.2	7/8
	x 3/4	23.81	28.58	9.5	45	60	22.2	7/8	22.2	7/8
132 x 102 x 8 x 10 x 11 x 13 x 16 x 19 x 22 x 25	6 x 4 x 5/16	15.19	20.64	12.7	60	90	22.2	7/8	25.4	1
	x 3/8	18.31	22.23	12.7	60	90	22.2	7/8	25.4	1
	x 7/16	21.28	23.81	12.7	60	90	22.2	7/8	25.4	1
	x 1/2	24.11	25.4	12.7	60	90	22.2	7/8	25.4	1
	x 5/8	29.76	28.58	12.7	60	90	22.2	7/8	25.4	1
	x 3/4	35.12	31.75	12.7	60	90	22.2	7/8	25.4	1
	x 7/8	40.48	34.9	12.7	60	90	22.2	7/8	25.4	1
	x 1	45.84	38.1	12.7	60	90	22.2	7/8	25.4	1

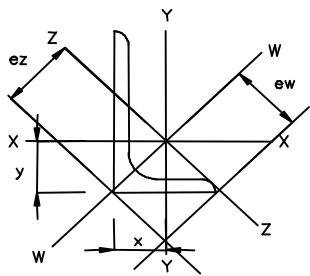
Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro

** La localización de dos líneas de gramiles en un solo lado deberá tomarse de la tabla de ángulos de lados iguales.

*** El espaciamiento recomendado de sujetadores deberá tomarse de la tabla de ángulos de lados iguales, correspondiente al mismo diámetro de sujetador.



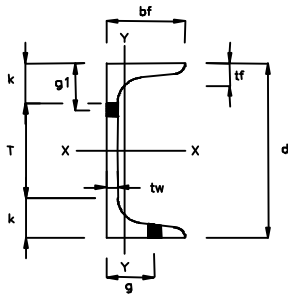
LD
ANGULO DE LADOS DESIGUALES
PROPIEDADES

Designación tamaño y espesor <i>t</i>		Area	Eje W-W				Eje Z-Z				Tan. a
			<i>I</i>	<i>S</i>	<i>r</i>	<i>e_w</i>	<i>I</i>	<i>S</i>	<i>r</i>	<i>e_z</i>	
mm x mm x mm*	in. x in. x in.	cm ²	cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	cm	a
102 x 76 x 6 x 8 x 10 x 11 x 13 x 16 x 19	4 x 3 x 1/4	10.90	142.0	25.56	4.57	5.55	30.0	8.17	1.65	3.67	0.558
	x 5/16	13.48	172.6	31.04	3.58	5.56	36.8	9.84	1.65	3.74	0.554
	x 3/8	16.00	201.8	36.43	3.55	5.57	42.9	11.26	1.62	3.81	0.551
	x 7/16	18.51	229.7	41.24	3.52	5.57	49.1	12.69	1.62	3.87	0.547
	x 1/2	20.96	256.0	42.38	3.49	6.04	54.9	12.42	1.62	4.42	0.543
	x 5/8	25.67	303.4	54.10	3.44	5.61	67.1	16.26	1.62	4.12	0.534
	x 3/4	30.26	345.7	61.28	3.38	5.64	79.2	18.47	1.62	4.29	0.523
132 x 102 x 8 x 10 x 11 x 13 x 16 x 19 x 22 x 25	6 x 4 x 5/16	19.44	548.0	71.72	5.31	7.64	97.9	18.12	2.24	5.40	0.448
	x 3/8	23.29	649.1	84.63	5.28	7.67	115.4	21.06	2.23	5.48	0.446
	x 7/16	26.97	743.7	96.83	5.25	7.86	133.0	23.96	2.21	5.55	0.443
	x 1/2	30.65	834.9	108.42	5.22	7.72	150.0	26.60	2.21	5.64	0.440
	x 5/8	37.81	1008.7	130.31	5.16	7.74	181.3	31.32	2.18	5.79	0.435
	x 3/4	44.77	1168.0	150.32	5.11	7.77	213.5	35.89	2.18	5.95	0.428
	x 7/8	51.48	1315.3	168.85	5.05	7.79	244.7	40.24	2.18	6.08	0.421
	x 1	58.00	1452.6	185.22	5.00	7.84	275.4	44.00	2.18	6.25	0.414

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro



CE
PERFIL C ESTANDAR
DIMENSIONES

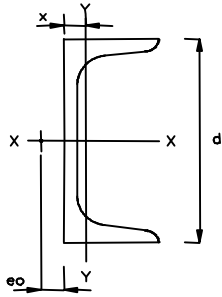
Designación <i>d</i> x peso		Alma	Patín		Distancia		Gramil		Sujetadores			
		<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>g</i>	<i>g₁</i>	Diámetro máximo en patín		Espac. recom.	
mm* x kg/m	in. x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.	mm
76 x 6.10	3 x 4.10	4.32	35.81	6.93	44	16	24	38	-	-	-	-
x 7.44	x 5.00	6.50	38.05	6.93	44	16	24	38	-	-	-	-
x 8.93	x 6.00	9.04	40.54	6.93	44	16	25	38	-	-	-	-
102 x 8.04	4 x 5.40	4.57	40.13	7.52	70	16	25	51	-	-	-	-
x 10.79	x 7.25	8.13	43.69	7.52	70	16	25	51	15.9	5/8	50	-
127 x 9.97	5 x 6.70	4.83	44.45	8.13	91	18	25	51	-	-	-	-
x 13.39	x 9.00	8.26	47.88	8.13	91	18	29	51	15.9	5/8	50	-
152 x 12.20	6 x 8.20	5.08	48.77	8.71	114	19	29	57	15.9	5/8	50	-
x 15.63	x 10.50	7.98	51.66	8.71	114	19	29	57	15.9	5/8	50	-
x 19.35	x 13.00	11.10	54.79	8.71	114	19	35	57	15.9	5/8	50	-
x 23.07	x 15.50	14.30	58.00	8.70	114	19	35	57	15.9	5/8	50	-
178 x 14.58	7 x 9.80	5.33	53.09	9.30	136	21	32	57	15.9	5/8	50	-
x 18.23	x 12.25	7.98	55.73	9.30	136	21	32	57	15.9	5/8	50	-
x 21.95	x 14.75	10.64	58.39	9.30	136	21	32	57	15.9	5/8	50	-
203 x 17.11	8 x 11.50	5.59	57.40	9.91	161	21	35	57	19.0	3/4	60	-
x 20.46	x 13.75	7.70	59.51	9.91	161	21	35	57	19.0	3/4	60	-
x 27.90	x 18.75	12.37	64.19	9.91	161	21	38	57	19.0	3/4	60	-
x 31.62	x 21.25	14.80	67.00	9.90	159	22	38	57	19.0	3/4	60	-
229 x 19.80	9 x 13.40	5.92	62.00	10.50	181	24	30	60	19.0	3/4	60	-
x 22.10	x 15.00	7.24	63.00	10.50	181	24	30	60	19.0	3/4	60	-
x 29.30	x 20.00	11.40	67.00	10.50	181	24	30	60	19.0	3/4	60	-
254 x 22.76	10 x 15.30	6.10	66.04	11.07	210	22	38	97	19.0	3/4	60	-
x 29.76	x 20.00	9.63	69.57	11.07	210	22	40	97	19.0	3/4	60	-
x 37.20	x 25.00	13.36	73.30	11.07	210	22	40	97	19.0	3/4	60	-
x 44.64	x 30.00	17.09	77.04	11.07	210	22	40	97	19.0	3/4	60	-
305 x 30.80	12 x 20.70	7.16	74.73	12.72	254	22.5	50	93	22.2	7/8	70	-
x 37.20	x 25.00	9.83	77.39	12.72	254	22.5	50	93	22.2	7/8	70	-
x 44.64	x 30.00	12.95	80.52	12.72	254	22.5	50	93	22.2	7/8	70	-
381 x 50.30	15 x 33.90	10.20	86.00	16.50	308	37	40	85	25.4	1	80	-
x 59.10	x 40.00	13.20	89.00	16.50	308	37	40	85	25.4	1	80	-
x 73.00	x 50.00	18.20	94.00	16.50	308	37	50	85	25.4	1	80	-

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

Espac. recom. Es espaciado recomendado.

* Redondeado al milímetro



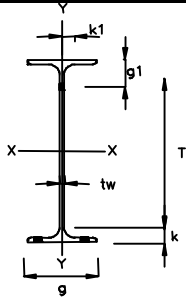
CE
PERFIL C ESTANDAR
PROPIEDADES

Designación <i>d</i> x peso		Alma <i>cm²</i>	Distancia		$\frac{d}{A_f}$	Eje X-X			Eje Y-Y		
			<i>x</i>	<i>e_o</i>		<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>
<i>mm* x kg/m</i>	<i>in. x lb./ft.</i>	<i>cm²</i>	<i>mm</i>	<i>mm</i>	<i>cm⁻¹</i>	<i>cm⁴</i>	<i>cm³</i>	<i>cm</i>	<i>cm⁴</i>	<i>cm³</i>	<i>cm</i>
76 x 6.10	3 x 4.10	7.68	11.07	11.70	3.07	66.60	17.50	2.95	8.32	3.44	1.04
x 7.44	x 5.00	9.42	11.13	9.96	2.89	74.90	19.70	2.82	10.41	3.93	1.04
x 8.93	x 6.00	11.29	11.56	8.18	2.71	87.40	22.90	2.78	12.90	4.42	1.07
102 x 8.04	4 x 5.40	10.06	11.61	12.83	3.37	158.20	31.10	3.98	13.32	4.75	1.14
x 10.79	x 7.25	13.68	11.66	9.81	3.09	187.30	36.90	3.70	18.31	5.74	1.17
127 x 9.97	5 x 6.70	12.58	12.29	14.00	3.51	308.00	48.50	4.95	19.98	6.23	1.27
x 13.39	x 9.00	16.97	12.14	10.85	3.26	366.30	57.70	4.65	26.64	7.37	1.24
152 x 12.20	6 x 8.20	15.42	12.98	15.21	3.59	541.10	71.00	5.94	29.14	8.19	1.37
x 15.63	x 10.50	19.81	12.67	12.33	3.99	628.50	82.50	5.64	36.21	9.34	1.35
x 19.35	x 13.00	24.58	13.06	9.65	3.19	720.10	94.50	5.41	45.79	10.65	1.35
x 23.07	x 15.50	29.42	13.97	7.18	3.02	812.90	106.70	5.26	53.30	12.10	1.35
178 x 14.58	7 x 9.80	18.39	12.72	16.45	3.60	878.20	98.80	6.91	40.79	10.32	1.50
x 18.23	x 12.25	23.10	13.35	13.66	3.43	1003.10	112.80	6.58	49.95	11.63	1.47
x 21.95	x 14.75	27.87	13.52	11.21	3.27	1127.90	126.90	6.38	58.27	12.95	1.45
203 x 17.11	8 x 11.50	21.68	14.50	17.69	3.57	1344.40	132.30	7.87	54.11	12.95	1.60
x 20.46	x 13.75	25.94	14.05	15.35	3.45	1409.10	146.60	7.59	62.43	14.09	1.57
x 27.90	x 18.75	35.42	14.35	10.94	3.19	1818.90	179.00	7.16	83.25	16.39	1.52
x 31.62	x 21.25	40.32	14.99	9.08	3.06	1988.10	195.70	7.02	93.70	18.20	1.52
229 x 19.80	9 x 13.40	25.30	15.27	18.95	3.51	1970.00	172.00	8.83	70.80	15.10	1.67
x 22.10	x 15.00	28.20	14.88	17.26	3.46	2090.00	183.00	8.61	76.40	15.70	1.65
x 29.30	x 20.00	37.30	14.81	12.95	3.25	2460.00	216.00	8.13	92.30	17.40	1.57
254 x 22.76	10 x 15.30	28.97	16.10	20.21	3.47	2805.40	221.20	9.83	94.90	19.01	1.81
x 29.76	x 20.00	37.94	15.40	16.18	3.29	3284.10	258.90	9.30	116.96	21.63	1.76
x 37.20	x 25.00	47.42	15.67	12.54	3.13	3796.00	298.20	8.94	139.85	24.25	1.72
x 44.64	x 30.00	56.90	16.48	9.36	2.97	4287.20	339.20	8.69	163.99	27.00	1.70
305 x 30.80	12 x 20.70	39.29	17.73	22.10	3.21	5369.40	352.30	11.71	161.50	28.35	2.03
x 37.20	x 25.00	47.42	17.11	18.94	1.30	5993.70	394.90	11.25	186.05	30.81	1.98
x 44.64	x 30.00	56.90	17.11	15.70	2.98	3742.90	442.40	10.89	213.94	33.76	1.94
381 x 50.30	15 x 33.90	64.00	20.00	22.53	2.68	13000.00	683.00	14.30	326.00	48.80	2.26
x 59.10	x 40.00	75.30	19.74	19.32	2.59	14300.00	751.00	13.80	364.00	51.80	2.20
x 73.00	x 50.00	93.70	20.27	14.62	2.46	16400.00	863.00	13.20	424.00	56.60	2.13

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro



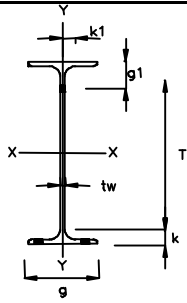
IE
PERFIL I ESTANDAR
DIMENSIONES

Designación <i>d</i> x peso		Peralte	Alma	Patín		Distancia		Gramil		Sujetadores	
		<i>d</i>	<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>g</i>	<i>g₁</i>	Diámetro máximo en patín	
mm* x kg/m	in. x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
76 x 8.50	3 x 5.70	76	4.32	59.18	6.60	41	17	36	38	10.0	3/8
x 11.20	x 7.50	76	8.86	63.73	6.60	41	17	36	38	10.0	3/8
100 x 8.32	4 x 5.60	100	4.50	50.00	6.80	62	19	38	51	13.0	1/2
102 x 11.50	x 7.70	102	4.90	67.64	7.44	64	19	38	51	13.0	1/2
x 14.10	x 9.50	102	8.28	71.02	7.44	64	19	38	51	13.0	1/2
127 x 11.20	5 x 7.50	120	5.10	78.00	7.70	86	21	44	44	13.0	1/2
x 14.90	x 10.00	127	5.44	76.30	8.28	86	21	40	44	13.0	1/2
x 22.00	x 14.75	127	12.55	83.41	8.28	86	21	40	44	13.0	1/2
160 x 17.90	6 x 12.00	160	6.30	74.00	9.50	108	22	51	51	16.0	5/8
152 x 18.60	x 12.50	152	5.89	84.63	9.12	108	22	44	51	16.0	5/8
x 25.70	x 17.25	152	11.81	90.55	9.12	108	22	44	51	16.0	5/8
178 x 22.80	7 x 15.30	178	6.40	93.01	9.96	130	24	50	57	16.0	5/8
x 29.80	x 20.00	178	11.43	98.04	9.96	130	24	50	57	16.0	5/8
200 x 26.30	8 x 17.70	200	7.50	90.00	11.30	152	25	60	60	19.0	3/4
203 x 27.40	x 18.40	203	6.88	101.63	10.82	152	25	60	60	19.0	3/4
x 34.20	x 23.00	203	11.20	105.94	10.82	152	25	60	60	19.0	3/4
229 x 32.44	9 x 21.80	229	7.40	110.00	11.60	178	26	65	60	19.0	3/4
254 x 37.80	10 x 25.40	254	7.90	118.39	12.47	197	29	70	60	19.0	3/4
x 52.10	x 35.00	254	15.09	125.58	12.47	197	29	70	60	19.0	3/4
305 x 47.30	12 x 31.80	305	8.89	127.00	13.82	244	30	76	64	19.0	3/4
x 52.10	x 35.00	305	10.87	128.98	13.82	244	30	76	64	19.0	3/4

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro

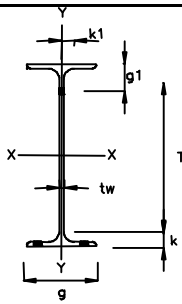


IE
PERFIL I ESTANDAR
PROPIEDADES

Peso	Area	Criterio de sección compacta			r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
		$\frac{b_f}{2t_f}$	$\frac{d}{t_w}$	F_y'''			I	S	r	I	S	r		J	Z_x
kg/m	cm ²			kg/m ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
8.5	10.80	4.5	17.6	-	1.45	1.95	105	27.5	3.12	18.94	6.4	1.33	1.66	32.00	10.70
11.2	14.30	4.8	8.6	-	1.50	1.81	122	32.0	2.92	24.40	7.7	1.31	3.75	38.73	13.54
8.32	10.60	3.7	22.2	-	1.24	2.94	171	34.2	4.01	12.20	4.88	1.07	1.27	39.67	8.83
11.5	14.60	4.5	20.7	-	1.63	2.02	253	49.8	4.17	31.80	9.4	1.48	2.91	57.52	15.80
14.1	18.00	4.8	12.3	-	1.65	1.92	283	55.6	3.96	37.60	10.6	1.45	5.00	66.20	18.52
11.2	14.20	3.8	23.5	-	1.53	2.68	329	54.7	4.81	25.16	7.41	1.33	2.16	63.73	13.54
14.9	19.00	4.6	23.4	-	1.83	2.00	512	80.6	5.21	50.78	13.3	1.63	4.58	92.91	22.45
22.0	28.00	5.0	10.1	-	1.88	1.83	633	99.8	4.75	69.51	16.6	1.57	1.33	121.60	30.81
17.9	22.80	3.9	25.4	-	1.94	2.28	938	117.0	6.41	64.45	14.8	1.68	5.24	136.00	27.15
18.6	23.70	4.6	25.9	-	2.00	1.98	920	120.8	6.22	75.75	17.9	1.79	7.08	138.80	30.32
25.7	32.70	5.0	12.9	-	2.06	1.85	1095	143.7	5.79	96.15	21.3	1.71	15.40	173.70	38.67
22.8	29.00	4.7	27.8	-	2.21	1.92	1528	172.1	7.26	110.00	23.6	1.95	9.90	198.30	40.00
29.8	37.90	4.9	15.6	-	2.24	1.82	1765	198.3	6.83	132.00	26.9	1.86	18.73	237.61	48.51
26.3	33.50	4.0	26.7	-	2.36	1.97	2148	214.0	8.01	137.90	26.0	2.03	10.70	249.60	47.94
27.4	34.90	4.7	29.5	-	2.39	1.85	2397	236.0	8.28	155.00	30.5	2.11	14.15	270.40	51.78
34.2	43.70	4.9	18.1	-	2.41	1.78	2701	265.5	7.87	179.00	33.9	2.03	22.89	316.27	60.30
32.44	40.70	4.7	31.0	-	2.90	1.79	3535	309.3	9.32	214.80	39.1	2.29	13.84	355.30	72.90
37.8	48.10	4.7	32.2	4480	2.77	1.72	5161	404.8	10.34	283.00	47.7	2.42	24.97	465.40	812.80
52.1	66.50	5.0	16.8	-	2.79	1.62	6119	481.8	9.60	348.00	55.4	2.29	53.70	580.10	101.93
47.3	60.30	4.6	34.3	3947	2.95	1.74	9074	596.5	12.27	390.00	61.3	2.54	37.46	688.26	104.88
52.1	66.50	4.7	28.0	-	2.95	1.71	9532	626.0	12.00	411.00	63.7	2.49	44.95	734.14	111.27

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



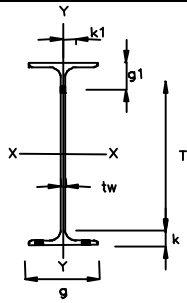
IE
PERFIL I ESTANDAR
DIMENSIONES

Designación <i>d</i> x peso		Peralte	Alma	Patín		Distancia		Gramil		Sujetadores	
		<i>d</i>	<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>g</i>	<i>g₁</i>	Diámetro máximo en patín	
mm* x kg/m	in. x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
305 x 60.7	12 x 40.8	305	11.73	133.40	16.74	232	37	76	64	19.0	3/4
		305	17.45	139.11	16.74	232	37	76	64	19.0	3/4
381 x 63.8	15 x 42.9	381	10.44	139.73	15.80	311	35	80	70	19.0	3/4
		381	13.97	143.25	15.80	311	35	80	70	19.0	3/4
457 x 81.4	18 x 54.7	457	11.71	152.43	17.55	381	38	90	80	22.2	7/8
		457	18.06	158.78	17.55	381	38	90	80	22.2	7/8
508 x 98.2	20 x 66.0	508	12.83	158.88	20.19	425	41	90	80	22.2	7/8
		508	16.13	162.18	20.19	425	41	90	80	22.2	7/8
508 x 128.0	20 x 86.0	514	16.76	179.32	23.37	425	44	110	90	25.4	1
		514	20.32	182.88	23.37	425	44	110	90	25.4	1
610 x 119.0	24 x 80.0	607	12.70	177.80	22.10	521	44	110	90	25.4	1
		607	15.88	180.98	22.10	521	44	110	90	25.4	1
		607	18.92	184.02	22.10	521	44	110	90	25.4	1
610 x 158.0	24 x 106.0	622	15.75	200.00	27.69	521	51	120	100	25.4	1
		622	20.32	204.47	27.69	521	51	120	100	25.4	1

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro

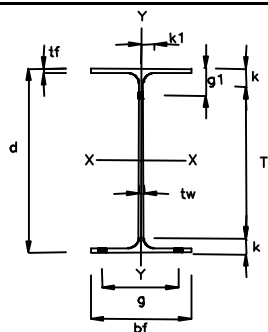


IE
PERFIL I ESTANDAR
PROPIEDADES

Peso	Area	Criterio de sección compacta			r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico		
		$\frac{b_f}{2t_f}$	$\frac{d}{t_w}$	F_y'''			I	S	r	I	S	r		J	Z_x	Z_y
		kg/m	cm ²	kg/m ²			cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴		cm ³	cm	cm ⁴
60.7	77.4	4.0	26.0	-	3.15	1.36	11321	744.0	12.11	566.0	84.6	2.69	73.26	870.2	145.00	
74.4	94.8	4.2	17.5	-	3.18	1.31	12695	832.5	11.56	653.0	94.1	2.62	117.38	100.3	168.80	
63.8	81.3	4.4	36.5	3486	3.20	1.72	18606	976.7	15.11	599.0	85.70	2.72	64.10	1136.0	147.81	
74.4	94.8	4.5	27.3	-	3.20	1.69	20229	1062.0	14.61	653.0	91.3	2.62	88.24	1263.0	163.38	
81.4	104.0	4.3	39.0	3053	3.48	1.71	33465	1465.0	17.96	866.0	113.7	2.90	98.65	1721.0	198.28	
104.2	133.0	4.5	25.3	-	3.45	1.64	38543	1688.0	17.04	1003.0	127.00	2.74	172.74	2048.0	236.00	
98.2	125.0	3.9	39.6	2961	3.66	1.58	49532	1950.0	19.89	1153.0	145.0	3.02	149.00	2294.0	251.00	
112.0	142.0	4.0	31.5	-	3.63	1.55	53278	2098.0	19.35	1240.0	152.7	2.95	191.00	2507.0	274.00	
128.0	163.0	3.8	30.8	-	4.14	1.23	65765	2540.0	20.00	1948.0	218.0	3.45	276.40	3000.0	377.00	
143.0	182.0	3.9	25.4	-	4.14	1.20	69511	2704.0	19.58	2089.0	228.0	3.38	349.20	3245.0	408.00	
119.0	152.0	4.0	48.0	2016	4.09	1.55	87409	2868.0	24.05	1756.0	198.0	3.40	203.00	3343.0	339.00	
134.0	171.0	4.1	38.4	3149	4.06	1.52	93652	3064.0	23.39	1869.0	206.0	3.30	251.40	3638.0	365.00	
149.0	189.0	4.2	32.2	4479	4.04	1.50	99479	3261.0	22.91	1985.0	216.0	3.23	316.00	3933.0	392.00	
158.0	201.0	3.6	39.5	2977	4.72	1.13	122372	3933.0	24.66	3209.0	321.0	4.00	420.40	4572.0	544.00	
180.0	230.0	3.7	30.6	-	4.72	1.10	131529	4228.0	23.95	3467.0	339.0	3.89	532.80	5014.0	593.00	

Notas:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



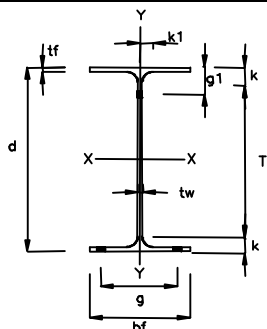
IR
PERFIL I RECTANGULAR
DIMENSIONES

Designación d x peso		Peralte	Alma	Patín		Distancia			Gramil		Sujetadores	
		d	t _w	b _f	t _f	T	k	k ₁	g	g ₁	Diametro máximo en patín	
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
102 x 19,4	4 x 13	106	7.1	103	8.8	71	17	11	60	50	12.7	0.5
127 x 23,7	5 x 16	127	6.1	127	9.1	89	19	11	70	50	19	3/4
	x 28,1	131	6.9	128	10.9	90	21	11	70	55	22.2	7/8
152 x 13,6	6 x 9	150	4.3	100	5.5	121	14	10	60	45	12.7	0.5
	x 18,0	153	5.8	102	7.1	121	16	10	60	55	12.7	0.5
	x 24,0	160	6.6	102	10.3	121	19	11	60	55	12.7	0.5
152 x 22,4	6 x 15	152	5.8	152	6.6	120	16	10	90	55	22.2	0.875
	x 29,7	157	6.6	153	9.3	119	19	11	90	55	22.2	7/8
	x 37,2	162	8.1	154	11.6	121	21	11	90	60	25.4	1
203 x 15,0	8 x 10	200	4.3	100	5.2	169	16	11	60	55	12.7	1/2
	x 19,4	203	5.8	102	6.5	168	17	11	60	55	12.7	1/2
	x 22,5	206	6.2	102	8	168	19	13	60	55	12.7	1/2
203 x 26,6	8 x 18	207	5.8	133	8.4	169	19	11	70	55	22.2	7/8
	x 31,2	210	6.4	134	10.2	169	21	13	70	60	25.4	1
203 x 35,9	8 x 24	201	6.2	165	10.2	157	22	14	90	60	25.4	1
	x 41,8	205	7.2	166	11.8	157	24	14	90	60	25.4	1
203 x 46,2	8 x 31	203	7.2	203	11	156	24	14	140	60	22.2	7/8
	x 52,2	206	7.9	204	12.6	155	25	14	140	60	25.4	1
	x 59,3	210	9.1	205	14.2	156	27	16	140	65	25.4	1
	x 71,4	216	10.2	206	17.4	156	30	16	140	65	25.4	1
	x 86,6	222	13	209	20.6	156	33	17	140	70	25.4	1
	x 99,8	229	14.5	210	23.7	156	37	17	140	75	25.4	1

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.



IR
PERFIL I RECTANGULAR
PROPIEDADES

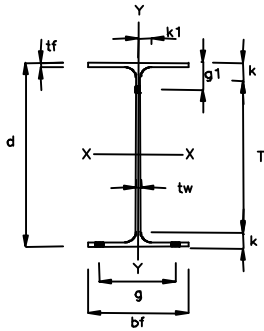
Peso	Area	Criterio de sección compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		J	Zx
kg/m	cm ²		kg/cm ²		kg/cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
19.4	24.7	5.9	-	14.9	-	2.8	1.17	470	89	4.4	161	31	2.5	6.2	103	48
23.7	32.2	6.9	-	20.9	-	3.5	1.1	887	140	5.4	313	49	3.2	7.9	157	75
28.1	35.7	5.9	-	19.1	-	3.5	0.94	1091	167	5.5	380	60	3.3	12.9	190	91
13.6	17.3	9.1	3540	34.7	3857	2.6	2.74	683	91	6.3	91	18	2.3	1.7	102	28
18	22.9	7.1	-	26.2	-	2.7	2.12	920	120	6.3	124	25	2.3	3.7	136	38
24	30.6	5	-	24.2	-	2.7	1.51	1336	167	6.6	184	36	2.5	9.2	192	56
22.4	28.6	11.5	2246	26	-	4.1	1.51	1211	159	6.5	388	51	3.7	4.2	177	78
29.7	37.9	8.3	4364	23.8	-	4.2	1.11	1723	220	6.8	554	72	3.8	9.9	244	110
37.2	47.4	6.7	-	19.9	-	4.2	0.91	2223	274	6.9	712	92	3.9	19.1	310	140
15	19.1	9.6	3216	46.4	2157	2.5	3.58	1282	128	8.2	87	17	2.1	1.7	145	27
19.4	24.8	7.8	-	34.7	3857	2.6	3.08	1648	162	8.2	114	22	2.1	3.7	187	35
22.5	28.6	6.4	-	33.1	4239	2.6	2.52	1998	193	8.4	142	28	2.2	5.8	223	44
26.6	33.9	8	-	35.4	3706	3.5	1.85	2576	249	8.7	332	50	3.1	7.1	279	76
31.2	39.7	6.6	-	33.1	4239	3.6	1.55	3134	298	8.9	407	61	3.2	11.7	334	93
35.9	45.7	8.17	4505	32.4	4424	4.5	1.2	3446	342	8.7	762	92	4.1	14.6	380	140
41.8	53.2	7	-	28.3	-	4.5	1.04	4079	398	8.8	903	109	4.1	22.5	446	166
46.2	58.9	9.2	3517	28.1	-	5.5	0.91	4579	451	8.8	1544	152	5.1	22.5	498	231
52.2	66.5	8.1	4527	26.2	-	5.6	0.81	5286	511	8.9	1773	174	5.2	32	569	264
59.3	75.5	7.2	-	22.9	-	5.6	0.72	6077	582	9	2044	200	5.2	46.6	652	303
71.4	91.0	5.9	-	21.3	-	5.7	0.6	7659	710	9.2	2535	246	5.3	81.6	803	375
86.6	110.3	5.1	-	17.2	-	5.7	0.52	9490	852	9.3	3126	300	5.3	139	980	457
99.8	127.1	4.4	-	15.8	-	5.8	0.46	11321	990	9.4	3688	351	5.4	211	1150	536

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



IR
PERFIL I RECTANGULAR
DIMENSIONES

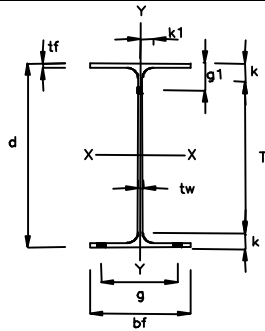


Designación <i>d</i> x peso		Peralte	Alma	Patin		Distancia			Gramil		Sujetadores	
		<i>d</i>	<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>k₁</i>	<i>g</i>	<i>g₁</i>	Diametro máximo en patin	
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
254 x 17,9	10 x 12	251	4.8	101	5.3	219	16	11	60	65	12.7	0.5
x 22,3	x 15	254	5.8	102	6.9	219	17	11	60	65	12.7	0.5
x 25,3	x 17	257	6.1	102	8.4	219	19	13	60	65	12.7	1/2
x 28,5	x 19	260	6.4	102	10	219	21	13	60	70	12.7	1/2
254 x 32,9	10 x 22	258	6.1	146	9.1	220	19	13	90	65	19	0.75
x 38,5	x 26	262	6.6	147	11.2	218	22	13	90	70	19	0.75
x 44,8	x 30	266	7.6	148	13	218	24	13	90	70	22.2	0.875
254 x 49,2	10 x 33	247	7.4	202	11	193	27	17	140	65	22.2	0.875
x 58,2	x 39	252	8	203	13.5	195	29	17	140	75	22.2	7/8
x 67,4	x 45	257	8.9	202	11	193	32	17	140	80	25.4	1
254 x 72,9	10 x 49	253	8.6	254	14.2	193	30	17	140	75	28.6	1 1/8
x 80,00	x 54	256	9.4	255	15.6	193	32	17	140	80	28.6	1 1/8
x 89,1	x 60	260	10.7	256	17.3	193	33	19	140	80	28.6	1 1/8
x 101,3	x 68	264	11.9	257	19	194	35	19	140	80	28.6	1 1/8
x 114,5	x 77	269	13.5	259	22.1	193	38	21	140	85	28.6	1 1/8
x 131,2	x 88	275	15.4	261	25.1	193	41	21	140	90	28.6	1 1/8
x 148,9	x 100	282	17.3	263	28.4	193	44	22	140	90	28.6	1 1/8
x 166,6	x 112	289	19.2	265	31.8	193	48	24	140	95	28.6	1 1/8

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.



IR
PERFIL I RECTANGULAR
PROPIEDADES

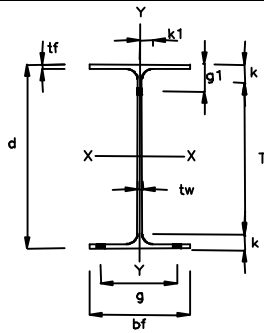
Peso	Area	Criterio de sección compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		J	Z_x
kg/m	cm ²		kg/cm ²		kg/cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
17.9	22.8	9.4	3340	51.9	1724	2.4	4.67	2239	179	9.9	91	18	2	2.5	206	29
22.3	28.5	7.4	-	43.4	2466	2.5	3.64	2686	226	10	120	24	2.1	4.2	262	38
25.3	32.2	6.1	-	42.1	2620	2.6	3.01	3409	265	10.3	148	29	2.1	6.7	306	46
28.5	36.3	5.1	-	41	2763	2.6	2.54	4008	308	10.5	176	35	2.2	9.6	354	55
32.9	41.9	8	-	42.4	2583	3.8	1.93	4912	380	10.8	475	65	3.4	10	426	100
38.5	49.1	6.6	-	39.7	2947	3.9	1.6	5994	457	11	587	80	3.5	16.6	513	123
44.8	57.0	5.7	-	34.9	3813	3.9	1.39	7076	531	11.1	695	94	3.5	25.8	600	145
49.2	62.6	9.2	3548	33.6	4114	5.4	1.11	7076	574	10.6	1523	151	4.9	24.1	636	229
58.2	74.2	7.5	-	31.5	-	5.5	0.93	8699	690	10.8	1873	185	5	40.8	767	282
67.4	85.8	6.5	-	28.9	-	5.5	0.8	10323	805	11	2223	218	5.1	62.9	900	333
72.9	92.9	8.9	3725	29.4	-	7	0.7	11321	895	11	3888	306	6.5	57.9	990	464
80	101.9	8.2	4472	27.3	-	7	0.64	12612	983	11.1	4287	338	6.5	75.8	1091	513
89.1	113.6	7.4	-	24.3	-	7	0.59	14193	1093	11.2	4828	377	6.5	103	1222	574
101.3	129.0	6.6	-	22.1	-	7.1	0.53	16400	1240	11.3	5577	433	6.6	148	1398	657
114.5	145.8	5.9	-	20	-	7.1	0.47	18938	1408	11.4	6410	493	6.6	213	1600	752
131.2	167.1	5.2	-	17.9	-	7.2	0.42	22227	1614	11.5	7451	570	6.7	313	1851	870
148.9	189.7	4.6	-	16.3	-	7.2	0.38	25931	1835	11.7	8616	655	6.7	454	2130	1000
166.6	212.3	4.2	-	15	-	7.3	0.34	29802	2065	11.8	9823	742	6.8	659	2409	1134

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



IR
PERFIL I RECTANGULAR
DIMENSIONES

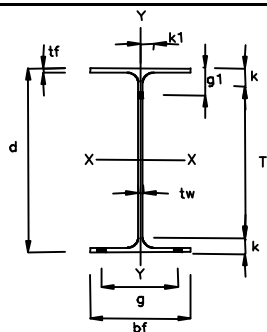


Designación <i>d</i> x peso		Peralte	Alma	Patin		Distancia			Gramil		Sujetadores	
		<i>d</i>	<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>k₁</i>	<i>g</i>	<i>g₁</i>	Diametro máximo en patín	
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
305 x 21.10	12 x 14	303	5	101	5.7	268	17	13	60	65	12.7	0.5
x 23.90	x 16	305	5.6	101	6.7	266	19	13	60	65	12.7	0.5
x 28.20	x 19	309	6	102	8.9	268	21	13	60	70	12.7	1/2
x 32.80	x 22	313	6.6	102	10.8	268	22	13	60	70	12.7	1/2
305 x 38.70	12 x 26	310	5.8	165	9.7	266	22	13	90	70	25.4	1
x 44.50	x 30	313	6.6	166	11.2	266	24	13	90	70	25.4	1
x 52.20	x 35	318	7.6	167	13.2	267	25	14	90	70	28.6	1.125
305 x 59.80	12 x 40	303	7.5	203	13.1	240	32	19	140	80	22.2	0.875
x 66.90	x 45	306	8.5	204	14.6	243	32	21	140	80	25.4	1
x 74.40	x 50	310	9.4	205	16.3	240	35	21	140	80	25.4	1
305 x 79.00	12 x 53	306	8.8	254	14.6	243	32	21	140	80	28.6	1 1/8
x 86.10	x 58	310	9.1	254	16.3	240	32	21	140	80	28.6	1 1/8
305 x 96.70	12 x 65	308	9.9	305	15.4	241	33	21	140	80	28.6	1 1/8
x 106.70	x 72	311	10.9	306	17	241	35	22	140	80	28.6	1 1/8
x 117.50	x 79	314	11.9	307	18.7	241	37	22	140	85	28.6	1 1/8
x 129.70	x 87	318	13.1	308	20.6	242	38	22	140	85	28.6	1 1/8
x 142.80	x 96	323	14	309	22.9	240	41	22	140	90	-	1 1/8
x 158.00	x 106	327	15.5	310	25.1	242	43	24	140	90	-	1 1/8
x 178.80	x 120	333	18	312	28.1	241	46	25	140	95	-	1 1/8
x 202.10	x 136	341	20.1	315	31.8	242	49	25	140	95	-	1 1/8
x 226.40	x 152	348	22.1	317	35.6	240	54	27	140	100	-	1 1/8
x 253.20	x 170	356	24.4	319	39.6	242	57	29	140	105	-	1 1/8
x 282.60	x 190	365	26.9	322	44.1	241	62	30	140	110	-	1 1/8
x 313.00	x 210	374	30	325	48.3	240	67	32	140	115	-	1 1/8
x 342.90	x 230	382	32.6	328	52.6	243	70	32	140	115	-	1 1/8
x 375.30	x 252	391	35.4	330	57.2	242	75	33	140	120	-	1 1/8
x 414.30	x 279	403	38.9	334	62.7	241	81	35	140	130	-	1 1/8
x 453.80	x 305	415	41.3	336	68.7	240	87	37	140	135	-	1 1/8
x 500.40	x 336	427	45.1	340	75.1	240	94	38	140	140	-	1 1/8

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.

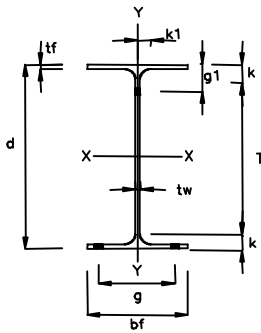


IR
PERFIL I RECTANGULAR
PROPIEDADES

Peso	Area	Criterio de sección compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
		$b_f/2t_f$	$F'y$	d/t_w	F_y'''			I	S	r	I	S	r		J	Z_x
kg/m	cm ²		kg/cm ²		kg/cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
21.1	26.8	8.8	3818	59.6	1307	2.4	0.25	3688	244	11.7	98	20	1.9	2.9	285	31
23.9	30.4	7.5	-	54.5	1564	2.4	4.26	4287	280	11.9	117	23	2	4.2	329	37
28.2	3509.0	5.7	-	51.7	1737	2.5	2.42	5411	349	12.2	157	31	2.1	7.5	405	49
32.8	41.8	4.7	-	47.3	2076	2.6	2.83	6493	416	12.5	194	38	2.2	12	480	60
38.7	49.4	8.5	4073	53.1	1647	4.4	1.95	8491	547	13.1	720	88	3.8	12.5	610	134
44.5	56.7	7.4	-	47.5	2058	4.4	1.69	9906	633	13.2	845	102	3.9	19.1	706	157
52.2	66.5	6.3	-	41.7	2671	4.4	1.44	11863	747	13.3	1020	122	3.9	30.8	839	188
59.8	76.1	7.8	4920	40.5	2831	5.4	1.14	12903	850	13	1836	180	4.9	39.5	942	275
66.9	85.2	7	6062	36	3583	5.5	1.03	14568	952	13.1	2081	203	4.9	54.5	1060	311
74.4	94.8	6.3	7460	32.9	4290	5.5	0.93	16400	1060	13.2	2343	228	5	74.1	1186	351
79	100.7	8.7	3933	35	3791	6.9	0.83	17690	1157	13.3	3987	315	6.3	65.8	1277	477
86.1	109.7	7.8	-	33.9	4041	6.9	0.75	19771	1278	13.4	4454	351	6.4	87.4	1416	533
96.7	123.2	9.9	3018	31.1	-	8.3	0.66	22185	1440	13.4	7242	477	7.7	90.7	1586	723
106.9	136.1	9	3675	28.5	-	8.4	0.6	24850	1596	13.5	8116	531	7.7	122	1770	806
117.5	149.7	8.2	4396	26.3	-	8.4	0.55	27554	1753	13.6	8991	587	7.7	160	1950	890
129.7	165.2	7.5	-	24.3	-	8.4	0.5	30801	1934	13.7	10031	651	7.8	212	2163	990
142.8	181.9	6.8	-	23.1	-	8.5	0.46	34672	2147	13.8	11238	728	7.8	286	2409	1106
158	201.3	6.2	-	21.1	-	8.5	0.42	38834	2376	13.9	12529	808	7.9	380	2687	1231
178.8	227.8	5.6	-	18.5	-	8.6	0.38	44537	2671	14	14360	920	8	537	3048	1400
202.1	257.4	5	-	17	-	8.7	0.34	51613	3048	14.2	16566	1052	8	770	3507	1606
226.4	288.4	4.5	-	15.8	-	8.7	0.31	59521	3425	14.4	18897	1193	8.1	1074	3982	1819
253.2	322.6	4	-	14.6	-	8.8	0.28	68678	3851	14.6	21519	1349	8.2	1482	4506	2065
282.6	360.0	3.7	-	13.6	-	-	0.26	78667	4310	14.8	24516	1524	8.3	2031	5096	2343
313	398.7	3.4	-	12.5	-	-	0.24	89073	4785	15	27638	1704	8.3	2693	5703	2606
342.9	436.8	3.1	-	11.7	-	-	0.22	1E+05	5260	15.2	30884	1885	8.4	3488	6325	2900
375.3	478.1	2.9	-	11	-	-	0.21	1E+05	5785	15.4	34464	2081	8.5	4495	7014	3212
414.8	528.4	2.7	-	10.4	-	-	0.19	1E+05	6440	15.6	39000	2343	8.6	5952	7882	3605
453.8	578.1	2.5	-	10	-	-	0.18	1E+05	7128	16	43704	2606	8.7	7700	8800	3998
500.4	637.4	2.3	-	9.5	-	-	0.17	2E+05	7915	16.3	49531	2900	8.8	10114	9881	4490

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



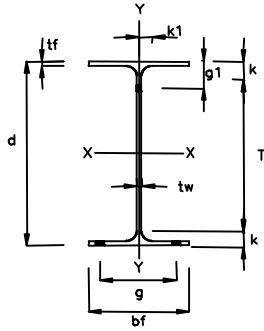
IR
PERFIL I RECTANGULAR
DIMENSIONES

Designación <i>d</i> x peso		Peralte <i>d</i>	Alma <i>t_w</i>	Patin		Distancia			Gramil		Sujetadores	
				<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>k₁</i>	<i>g</i>	<i>g₁</i>	Diametro maximo en patin	
mm* x kg/m	x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
356 x 32.9	14 x 22	349	5.8	127	8.5	305	22	14	70	70	19	0.75
x 38.9	x 26	353	6.4	128	10.7	306	24	14	70	70	22.2	0.875
356 x 44.8	14 x 30	352	6.9	171	9.8	304	24	16	90	70	28.6	1 1/8
x 50.6	x 34	355	7.2	171	11.6	304	25	16	90	70	28.6	1.125
x 56.7	x 38	358	7.9	172	13.1	304	27	16	90	75	28.6	1.125
356 x 63.8	14 x 43	347	7.8	203	13.5	280	33	22	140	80	22.2	0.875
x 71.4	x 48	350	8.6	204	15.1	280	35	22	140	80	25.4	1
x 79.0	x 53	354	9.4	205	16.8	281	37	24	140	85	25.4	1
356 x 90.7	14 x 61	353	9.5	254	16.4	280	37	24	140	85	28.6	1 1/8
x 101.3	x 68	357	10.5	255	18.3	280	38	24	140	85	28.6	1 1/8
x 110.4	x 74	360	11.4	256	19.9	281	40	24	140	85	28.6	1 1/8
x 122.1	x 82	363	13	257	21.7	281	41	25	140	90	28.6	1 1/8

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.



IR
PERFIL I RECTANGULAR
PROPIEDADES

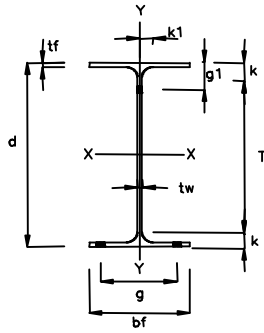
Peso	Area	Criterio de sección compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástica		
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		J	Zx	Zy
			kg/cm^2														
kg/m	cm ²				cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³		
32.9	41.9	7.5	-	59.7	1303	3.2	3.23	8283	475	14.1	291	46	2.6	8.7	544	72	
38.9	49.6	6	-	54.5	1564	3.3	2.59	10198	578	14.4	371	58	2.7	15	659	91	
44.8	57.1	8.7	3888	51.3	1765	4.4	2.1	12112	688	14.6	816	95	3.8	15.8	775	147	
50.6	64.5	7.4	-	49.1	1926	4.5	1.79	14152	796	14.8	970	113	3.9	23.7	895	174	
56.7	72.3	6.6	-	45.5	2243	4.5	1.59	16025	895	14.9	1111	129	3.9	33.3	1008	198	
63.8	81.3	7.5	-	44.8	2314	5.4	1.27	17815	1027	14.8	1881	185	4.8	43.7	1141	283	
71.4	91.0	6.8	-	40.6	2817	5.4	1.14	20187	1152	14.9	2139	210	4.9	60.8	1285	321	
79	100.7	6.1	-	37.6	3285	5.5	1.03	22518	1275	15	2402	234	4.9	80.7	1427	361	
90.7	115.5	7.8	-	37	3392	6.9	0.85	26640	1511	15.2	4454	352	6.2	91.6	1671	537	
101.3	129.0	7	-	33.8	4065	6.9	0.77	30093	1688	15.3	5036	397	6.2	125.7	1885	605	
110.4	140.7	6.4	-	31.5	-	6.9	0.71	33132	1835	15.3	5577	436	6.3	161.5	2065	665	
121.1	155.5	5.9	-	28.1	-	7	0.65	36711	2016	15.4	6160	480	6.3	211.5	2278	734	

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



IR
PERFIL I RECTANGULAR
DIMENSIONES

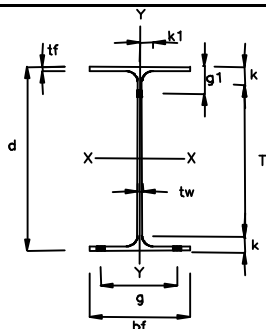


Design				Patín		Distancia				Sujetadores			
				b_f	t_f	T	k	k_1	g	g_1	Diámetro máximo en patín		
mm* x kg/m	n x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
356 x 134.2	14 x 90	356	11.2	369	18	286	35	22	140	80	70	0.875	
x 147.4	x 99	360	12.3	370	19.8	287	37	22	140	85	70	0.875	
x 162.1	x 109	364	13.3	371	21.8	284	40	22	140	85	70	7/8	
x 178.8	x 120	368	15	373	23.9	285	41	24	140	90	70	7/8	
x 196.3	x 132	372	16.4	374	26.2	287	43	24	140	90	70	0.875	
356 x 216.3	14 x 145	375	17.3	394	27.7	287	44	25	140	90	70	0.875	
x 236.5	x 159	380	18.9	395	30.2	285	48	25	140	95	70	0.875	
x 262.3	x 176	387	21.1	398	33.3	285	51	27	140	100	70	0.875	
x 287.7	x 193	393	22.6	399	36.6	285	54	27	140	100	70	0.875	
x 314.0	x 211	399	24.9	401	39.6	285	57	29	140	105	28.6	1 1/8	
x 346.9	x 233	407	27.2	404	43.7	287	60	30	140	105	28.6	1 1/8	
356 x 382.9	14 x 257	416	29.8	406	48	286	65	30	140	110	28.6	1 1/8	
x 421.9	x 283	425	32.8	409	52.6	285	70	32	140	115	28.6	1 1/8	
x 462.9	x 311	435	35.8	412	57.4	286	75	33	140	120	28.6	1 1/8	
x 511.5	x 342	446	35.8	416	62.7	287	79	35	140	125	28.6	1 1/8	
x 552.0	x 370	455	39.1	418	67.6	287	84	37	140	130	28.6	1 1/8	
x 592.5	x 398	465	42	421	72.3	287	89	38	140	135	28.6	1 1/8	
x 633.1	x 426	474	45	424	77.1	287	94	40	140	140	28.6	1 1/8	
356 x 678.6	14 x 455	483	47.6	428	81.5	286	98	41	140	145	28.6	1 1/8	
x 744.5	x 500	498	55.6	432	88.9	285	106	44	140	155	28.6	1 1/8	
x 820.4	x 550	514	60.5	437	97	285	114	46	140	160	28.6	1 1/8	
x 901.5	x 605	531	65.9	442	106	287	122	49	140	170	28.6	1 1/8	
x 992.6	x 665	550	71.9	448	115	286	132	52	140	180	28.6	1 1/8	
x 1088.6	x 730	569	78	454	125	287	141	56	140	190	28.6	1 1/8	

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.

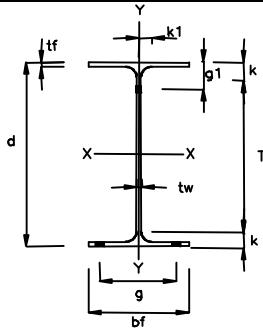


IR
PERFIL I RECTANGULAR
PROPIEDADES

Peso	Area	Criterio de seccion compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsion	Modulo de seccion plastico		
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		J	Zx	Zy
			kg/cm^2		kg/cm^2												
kg/m	cm^2		kg/cm^2		cm	cm^{-1}	cm^4	cm^3	cm	cm^4	cm^3	cm	cm^4	cm^3	cm^3		
134.2	171.0	10.2	2855	31.9	-	10.1	0.54	41581	2343	15.6	15068	818	9.4	169	2573	1239	
147.4	187.8	9.3	3405	29.2	-	10.2	0.49	46202	2573	15.7	16732	905	9.4	224	2835	1370	
162.1	206.5	8.5	4121	27.3	-	10.2	0.45	51613	2835	15.8	18605	1003	9.5	296	3146	1519	
178.8	227.8	7.8	-	24.5	-	10.3	0.41	57440	3114	15.8	20603	1106	9.5	390	3474	1671	
196.5	250.3	7.2	-	22.7	-	10.3	0.38	63683	3425	16	22810	1221	9.6	512	3835	1852	
216.3	275.5	7.1	-	21.7	-	10.9	0.34	71175	3802	16.1	28179	1431	10.1	633	4261	2179	
236.5	301.3	6.5	-	20.1	-	10.9	0.32	79084	4162	16.2	31134	1576	10.2	824	4703	2393	
262.3	334.2	6	-	18.3	-	11	0.29	89073	4605	16.3	34880	1753	10.2	1103	5244	2671	
287.7	366.5	5.5	-	17.4	-	11	0.3	99895	5080	16.5	38751	1950	10.3	1448	5817	2950	
314	400.0	5.1	-	16	-	11.1	0.25	110717	5539	16.6	42872	2130	10.3	1856	6391	3245	
346.9	442.0	4.6	-	15	-	11.2	0.23	125285	6145	16.8	47866	2376	10.4	2477	7145	3622	
382.9	487.8	4.2	-	13.9	-	11.3	0.21	141518	6800	17	53694	2638	10.5	3292	7980	4031	
421.9	537.5	3.9	-	13	-	11.3	0.2	159839	7522	17.2	59937	2933	10.6	4329	8882	4490	
462.9	589.7	3.6	-	12.1	-	11.4	0.18	180228	8292	17.5	67013	3261	10.7	5660	9881	4982	
511.5	651.7	3.3	-	11.4	-	11.5	0.17	203953	9160	17.7	75338	3622	10.8	7409	11012	5553	
552	703.3	3.1	-	10.8	-	11.6	0.16	226429	9947	18	82830	3949	10.8	9240	12061	6063	
592.5	754.9	2.9	-	10.3	-	11.7	0.15	249738	10750	18.2	90322	4293	10.9	11363	13126	6588	
633.1	806.5	2.8	-	10	-	11.8	0.15	274712	11586	18.4	98230	4638	11	13777	14240	7112	
678.6	864.6	2.6	-	9.4	-	11.9	0.14	299270	12389	18.6	106555	4982	11.1	16441	15338	7669	
744.5	948.4	2.4	-	9	-	12	0.13	341721	13732	19	119874	5555	11.3	21398	17206	8554	
820.4	1045.2	2.3	-	8.5	-	12.2	0.12	392505	15256	19.4	135275	6192	11.4	27887	19337	9554	
901.5	1148.5	2.1	-	8.1	-	12.3	0.11	449528	17042	19.8	153173	6932	11.6	36212	21631	10684	
992.6	1264.6	2	-	7.7	-	12.5	0.11	516125	18845	20.2	173568	7735	11.7	46618	24256	11963	
1088.9	1387.2	1.8	-	7.3	-	12.7	0.1	595210	20975	20.8	196460	8636	11.9	60357	27202	13372	

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



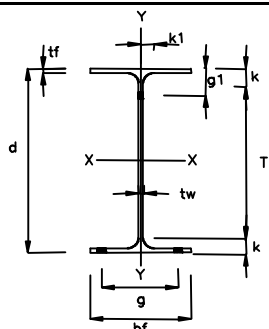
IR
PERFIL I RECTANGULAR
DIMENSIONES

Designación <i>d</i> x peso		Peralte	Alma	Patín		Distancia			Gramil		Sujetadores		
		<i>d</i>	<i>t_w</i>	<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>k₁</i>	<i>g</i>	<i>g₁</i>	Diámetro máximo en patín		
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
406 x 38.90	16 x 26	398.526	6.35	139.7	8.763	345	27	19	70	75	25.4	1	
	x 46.20	x 31	403.352	6.985	140.335	11.176	346	29	19	70	75	25.4	1
406 x 53.70	16 x 36	402.844	7.493	177.419	10.922	346	29	19	90	75	28.6	1 1/8	
	x 59.80	x 40	406.654	7.747	177.673	12.827	346	30	21	90	75	28.6	1.125
	x 67.40	x 45	409.702	8.763	178.689	14.351	346	32	21	90	80	28.6	1.125
	x 74.40	x 50	413.004	9.652	179.578	16.002	346	33	21	90	80	28.6	1.125
	x 85.10	x 57	417.322	10.922	180.848	18.161	347	35	22	90	80	28.6	1.125
406 x 99.80	16 x 67	414.782	10.033	259.969	16.891	345	35	21	140	80	28.6	1.125	
	x 114.50	x 77	419.608	11.557	261.493	19.304	347	37	22	140	85	28.6	1 1/8
	x 132.70	x 89	425.45	13.335	263.271	22.225	346	40	22	140	85	28.6	1 1/8
	x 148.90	x 100	431	14.9	265	25	345	43	24	140	90	28.6	1 1/8
457 x 52.20	18 x 35	449.58	7.62	152.4	10.795	392	29	19	90	75	22.2	7/8	
	x 59.80	x 40	454.66	8.001	152.781	13.335	394	30	21	90	75	22.2	7/8
	x 68.40	x 46	458.724	9.144	153.924	15.367	395	32	21	90	80	25.4	1
457 x 74.50	18 x 50	456.946	9.017	190.373	14.478	393	32	21	90	80	28.6	1 1/8	
	x 82.00	x 55	459.994	9.906	191.262	16.002	393	33	21	90	80	28.6	1 1/8
	x 89.10	x 60	463.296	10.541	191.897	17.653	393	35	21	90	80	28.6	1 1/8
	x 96.70	x 65	466.09	11.43	192.786	19.05	393	37	22	90	85	28.6	1 1/8
	x 105.30	x 71	469.138	12.573	193.929	20.574	393	38	22	90	85	28.6	1 1/8
457 x 112.90	18 x 76	462.534	10.795	280.289	17.272	393	35	21	140	80	28.6	1 1/8	
	x 128.10	x 86	467.106	12.192	281.686	19.558	394	37	22	140	85	28.6	1 1/8
	x 144.30	x 97	472.186	13.589	283.083	22.098	393	40	22	140	85	28.6	1 1/8
	x 157.50	x 106	475.742	14.986	284.48	23.876	393	41	24	140	90	28.6	1 1/8
	x 177.80	x 119	481.838	16.637	286.131	26.924	393	44	24	140	90	28.6	1 1/8

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro.

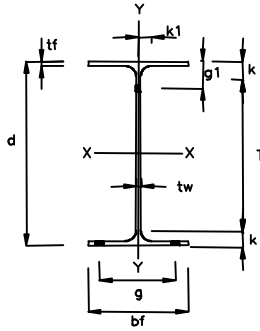


IR
PERFIL I RECTANGULAR
PROPIEDADES

Peso	Area	Criterio de seccion compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de seccion plástico	
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		J	Z_x
kg/m	cm ²		kg/cm ²		kg/cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
38.9	49.6	8	-	62.8	1178	3.5	3.26	12529	629	15.9	399	57	2.8	10.8	724.30823	90.128852
46.2	58.8	6.3	-	57.7	1395	3.5	2.57	15609	773	16.3	516	74	3	19.1	884.90146	114.70945
53.7	68.4	8.1	4527	53.8	1604	4.5	2.08	18647	926	16.5	1020	115	3.9	22.5	1048.7721	176.98029
59.8	76.1	6.9	-	52.5	1685	4.6	1.78	21561	1060	16.8	1203	135	4	32.9	1194.617	208.11571
67.4	85.8	6.2	-	46.8	2120	4.6	1.6	24391	1191	16.9	1365	153	4	46.2	1348.6554	237.61243
74.4	94.8	5.6	-	42.8	2535	4.7	1.44	27430	1327	17	1548	172	4	63.3	1507.6099	267.10914
85.1	108.4	5	-	38.2	3183	4.7	1.27	31550	1511	17.1	1794	198	4.1	92.4	1720.6417	309.71551
99.8	127.1	7.7	-	41.3	2723	7	0.95	39708	1917	17.7	4953	390	6.2	99.5	2130.3183	581.74077
114.5	145.8	6.8	-	36.3	3524	7	0.83	46202	2196	17.8	5744	441	6.3	148.6	2458.0596	673.50833
132.7	169.0	5.9	-	31.9	4564	7.1	0.73	54110	2540	17.9	6785	515	6.3	226.8	2867.7362	788.21778
148.9	189.7	5.3	-	29	-	7.1	0.65	62018	2868	18	7742	585	6.4	321.7	3244.6387	899.64981
52.2	66.5	7.1	-	59	1334	3.8	2.73	21228	944	17.9	637	84	3.1	21.2	1089.7398	132.73522
59.8	76.1	5.7	-	56.8	1439	3.9	2.23	25473	1121	18.3	795	104	3.2	33.7	1284.7458	163.87064
68.4	87.1	5	-	50.2	1843	3.9	1.94	29636	1291	18.4	937	122	3.3	50.8	1486.3067	191.72865
74.5	94.8	6.6	-	50.7	1807	4.9	1.66	33299	1457	18.7	1669	175	4.2	51.6	1655.0935	272.02526
82	104.5	6	-	46.4	2157	5	1.5	37045	1611	18.8	1869	195	4.2	69.1	1835.3512	303.16068
89.1	113.5	5.4	-	44	2399	5	1.37	40957	1770	18.9	2085	218	4.3	90.3	2015.6089	337.57352
96.7	123.2	5.1	-	40.8	2790	5	1.27	44537	1917	19	2281	236	4.3	113.6	2179.4795	368.70894
105.3	134.2	4.7	-	37.3	3338	5	1.18	48699	2081	19.1	2510	259	4.3	144.8	2376.1243	404.76048
112.9	143.9	8.1	4527	42.8	2535	7.5	0.96	55359	2393	19.6	6327	452	6.6	117.8	2671.0914	691.5341
128.1	163.2	7.2	-	38.3	3166	7.5	0.85	63683	2720	19.7	7284	518	6.7	170.7	3047.9939	793.1339
144.3	183.9	6.4	-	34.7	3857	7.6	0.76	72840	3081	19.9	8366	592	6.7	243.9	3457.6705	906.20464
157.5	200.6	6	-	31.7	-	7.6	0.7	79500	3343	19.9	9157	646	6.8	311.3	3769.0247	991.41737
177.8	226.5	5.3	-	29	-	7.6	0.63	91155	3785	20	10531	736	6.8	441.2	4277.0237	1132.3461

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



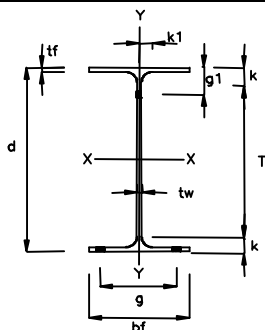
IR
PERFIL I RECTANGULAR
DIMENSIONES

Designación d x peso		Peralte <i>d</i>	Alma <i>t_w</i>	Patin		Distancia			Gramil		Sujetadores	
				<i>b_f</i>	<i>t_f</i>	<i>T</i>	<i>k</i>	<i>k₁</i>	<i>g</i>	<i>g₁</i>	Diametro maximo en patin	
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
533 x 65.8	21 x 44	525	8.9	165	11.4	464	30	22	90	75	25.4	1
x 74.4	x 50	529	9.7	166	13.6	462	33	22	90	80	25.4	1
x 84.6	x 57	535	10.3	166	16.5	465	35	22	90	80	28.6	1 1/8
533 x 92.7	21 x 62	533	10.2	209	15.6	463	35	22	140	80	25.4	1
x 101.3	x 68	537	10.9	210	17.4	464	37	22	140	85	25.4	1
x 108.9	x 73	539	11.6	211	18.8	463	38	24	140	85	25.4	1
x 123.1	x 83	544	13.1	212	21.2	465	40	24	140	85	25.4	1
x 138.3	x 93	549	14.7	214	23.6	463	43	25	140	90	25.4	1
533 x 150.9	21 x 101	543	12.7	312	20.3	463	40	24	140	85	28.6	1 1/8
x 165.6	x 111	546	14	313	22.2	464	41	24	140	90	28.6	1 1/8
x 181.8	x 122	551	15.2	315	24.4	465	43	25	140	90	28.6	1 1/8
x 196.5	x 132	554	16.5	316	26.3	462	46	25	140	95	28.6	1 1/8
x 218.8	x 147	560	18.3	318	29.2	465	48	27	140	95	28.6	1 1/8
610 x 82.0	24 x 55	599	10	178	12.8	532	33	24	90	80	28.6	1 1/8
x 92.2	x 62	603	10.9	179	15	533	35	24	90	80	28.6	1 1/8
610 x 101.6	24 x 68	603	10.5	228	14.9	533	35	24	140	80	28.6	1 1/8
x 113.4	x 76	608	11.2	228	17.3	535	37	24	140	85	28.6	1 1/8
x 125.1	x 84	612	11.9	229	19.6	533	40	24	140	85	28.6	1 1/8
x 140.3	x 94	617	13.1	230	22.2	535	41	25	140	90	28.6	1 1/8
610 x 155.0	24 x 104	611	12.7	324	19.1	535	78	25	140	85	28.6	1 1/8
x 174.2	x 117	616	14	325	21.6	534	41	25	140	90	28.6	1 1/8
x 195.0	x 131	622	15.4	327	24.4	533	44	27	140	90	28.6	1 1/8
x 217.8	x 146	628	16.5	328	27.7	533	48	27	140	95	28.6	1 1/8
x 241.6	x 162	635	17.9	329	31.1	533	51	27	140	100	28.6	1 1/8
686 x 125.6	27 x 81	678	11.7	253	16.3	609	35	24	140	80	28.6	1 1/8
x 140.3	x 94	684	12.4	254	18.9	611	37	24	140	85	28.6	1 1/8
x 151.9	x 102	688	13.1	254	21.1	609	40	24	140	85	28.6	1 1/8
x 169.7	x 114	693	14.5	256	23.6	611	41	24	140	90	28.6	1 1/8
686 x 217.3	27 x 146	695	15.4	355	24.8	610	43	25	140	90	28.6	1 1/8
x 240.1	x 161	701	16.8	356	27.4	609	46	25	140	95	28.6	1 1/8
x 264.9	x 178	706	18.4	358	30.2	611	48	27	140	95	28.6	1 1/8

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.



IR
PERFIL I RECTANGULAR
PROPIEDADES

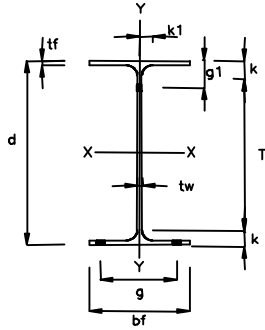
Peso	Area	Criterio de seccion compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsion J	Modulo de seccion plastico	
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		Zx	Zy
			kg/cm^2													
kg/m	cm^2		kg/cm^2		cm	cm^{-1}	cm^4	cm^3	cm	cm^4	cm^3	cm	cm^4	cm^3	cm^3	
65.8	83.9	7.2	-	59	1334	4	2.78	35088	1337	20.5	862	104	3.2	32	1563	167
74.4	94.8	6.1	-	54.8	1546	4.1	2.35	40957	1549	20.8	1036	125	3.3	47.5	1803	200
84.6	107.7	5	-	52	1717	4.2	1.95	48699	1819	21.2	1274	153	3.4	73.7	2114	243
92.7	118.1	6.7	-	52.5	1685	5.3	1.63	55359	2081	21.7	2393	228	4.5	76.2	2360	356
101.3	129.0	6	-	49.1	1926	5.4	1.47	61602	2294	21.8	2693	257	4.6	102	2662	400
108.9	138.7	5.6	-	46.7	2129	5.4	1.36	66597	2474	21.9	2939	279	4.6	126	2819	436
123.1	156.8	5	-	46.1	2684	5.5	1.21	76170	2802	22	3388	230	4.6	181	3212	500
138.3	176.1	4.5	-	37.3	3338	5.5	1.09	86160	3146	22.1	3867	362	4.7	251	3622	569
150.9	192.3	7.7	-	42.7	2547	8.3	0.86	100728	3720	22.9	10323	660	7.3	217	4146	1011
165.6	211.0	7.1	-	39.1	3038	8.3	0.78	111133	4080	23	11405	729	7.4	284	4572	1118
181.8	231.6	6.5	-	36.1	3564	8.4	0.72	123224	4474	23.1	12695	806	7.4	374	5031	1239
169.5	250.3	6	-	33.6	4114	8.4	0.67	134026	4834	23.2	13890	877	7.4	470	5457	1349
218.8	278.7	5.4	-	30.6	4960	8.5	0.6	151091	5391	23.3	15650	985	7.5	641	6112	1517
82	104.5	6.9	-	59.7	1303	4.3	2.62	56191	1818	23.1	1211	136	3.4	49	2196	218
92.2	117.4	6	-	52.2	1524	4.3	2.25	64516	2147	23.4	1436	161	3.5	71	2507	257
101.6	129.7	7.7	-	57.2	1419	5.7	1.78	76170	2524	24.3	2930	257	4.7	78	2900	401
113.4	144.5	6.6	-	54.4	1569	5.8	1.54	87408	2884	24.6	3434	302	4.9	112	3277	469
125.1	159.4	5.9	-	51.3	1765	5.9	1.37	98647	3212	24.9	3929	342	5	154	3671	534
140.3	178.7	5.2	-	47.2	2085	5.9	1.21	112382	3638	25.1	4537	393	5	219	4162	615
155	197.4	8.5	4111	48.1	2007	8.5	0.99	129031	4228	25.7	10780	667	7.4	191	4736	1023
174.2	221.9	7.5	-	44.1	2388	8.6	0.87	147345	4769	25.7	12362	762	7.5	280	5359	1170
195	248.4	6.7	-	40.5	2831	8.6	0.78	167324	5391	25.9	14652	869	7.5	395	6063	1336
217.8	277.4	5.9	-	38.1	3199	8.7	0.69	190633	6080	26.2	16275	991	7.6	552	6850	1527
241.6	307.7	5.3	-	35.5	3685	8.8	0.62	215191	6784	26.4	18439	1121	7.7	770	7669	1721
125.6	160.0	7.8	-	58.1	1376	6.3	1.65	118626	3490	27.2	4412	347	5.3	117	3998	544
140.3	178.7	6.7	-	54.9	1541	6.4	1.42	136107	3982	27.7	5162	406	5.4	168	4556	636
151.9	193.6	6	-	52.6	1679	6.5	1.28	150675	4375	27.9	5786	456	5.5	220	4998	711
169.7	216.1	5.4	-	47.9	2024	6.6	1.15	170238	4900	28	6618	516	5.5	305	5621	808
217.3	276.8	7.2	-	45.3	2263	9.3	0.79	234337	6735	29	18439	1041	8.2	454	7554	1598
240.1	305.8	6.5	-	41.8	2658	9.4	0.72	261392	7456	29.2	20687	1162	8.2	612	8390	1786
264.9	337.4	5.9	-	38.4	3149	9.4	0.65	290945	8226	29.5	23100	1291	8.3	812	9291	2000

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



IR
PERFIL I RECTANGULAR
DIMENSIONES

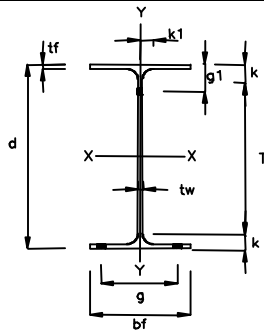


Designación d x peso		Peralte	Alma	Patin		Distancia			Gramil		Sujetadores		
		d	t _w	b _f	t _f	T	k	k ₁	g	g ₁	Diametro maximo		
mm* x kg/m	in x lb./ft.	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in.
762 x 147.4	30 x 99	753	13.2	265	17	680	37	25	140	85	28.6	1.125	
x 160.5	x 108	758	13.8	266	19.3	678	40	25	140	85	28.6	1.125	
x 173.2	x 116	762	14.4	267	21.6	680	41	25	140	90	28.6	1 1/8	
x 184.9	x 124	766	14.9	267	21.6	681	43	25	140	90	28.6	1 1/8	
x 197.0	x 132	770	15.6	268	25.4	681	44	27	140	90	28.6	1.125	
762 x 257.3	30 x 173	773	16.6	381	27.1	678	48	27	140	95	28.6	1.125	
x 284.1	x 191	779	18.6	382	30.1	681	49	27	140	95	28.6	1.125	
x 314.0	x 211	786	19.7	384	33.4	678	54	29	140	100	28.6	1.125	
838 x 175.7	33 x 118	835	14	292	18.8	755	40	27	140	85	28.6	1 1/8	
x 194.0	x 130	840	14.7	292	21.7	755	43	27	140	90	28.6	1 1/8	
x 210.7	x 141	846	15.4	293	24.4	757	44	27	140	90	28.6	1 1/8	
x 226.4	x 152	851	16.1	294	26.8	755	48	29	140	95	28.6	1 1/8	
838 x 299.3	33 x 201	855	18.2	400	29.2	757	49	29	140	95	28.6	1 1/8	
x 329.2	x 221	862	19.7	401	32.4	575	52	30	140	100	28.6	1 1/8	
x 359.1	x 241	868	21.1	403	35.6	757	56	30	140	105	28.6	1 1/8	
914 x 201.1	36 x 135	903	15.2	304	20.1	817	43	29	140	90	28.6	1 1/8	
x 223.9	x 150	911	15.9	304	23.9	815	48	29	140	95	28.6	1 1/8	
x 238.0	x 160	915	16.5	305	25.9	816	49	29	140	95	28.6	1 1/8	
x 253.2	x 170	919	17.3	306	27.9	817	51	30	140	100	28.6	1 1/8	
x 271.5	x 182	923	18.4	307	30	815	54	30	140	100	28.6	1 1/8	
x 288.7	x 194	927	1.4	308	32	816	56	30	140	105	28.6	1 1/8	
x 313.0	x 210	932	21.1	309	34.5	814	59	32	140	105	28.6	1 1/8	
914 x 342.4	36 x 230	912	19.3	418	32	791	60	37	140	105	28.6	1 1/8	
x 365.2	x 245	916	20.3	419	34.3	789	64	37	140	110	28.6	1 1/8	
x 387.4	x 260	921	21.3	420	36.6	791	65	38	140	110	28.6	1 1/8	
x 417.3	x 280	928	22.5	422	39.9	791	68	38	140	115	28.6	1 1/8	
x 447.2	x 300	933	24	423	42.7	790	71	38	140	120	28.6	1 1/8	

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.

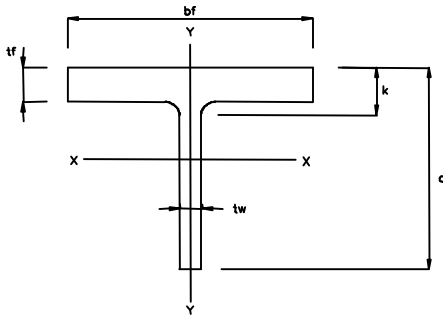


IR
PERFIL I RECTANGULAR
PROPIEDADES

Peso	Area	Criterio de seccion compacta				r_T	d/A_f	Eje X-X			Eje Y-Y			Constante de torsion J	Modulo de seccion plastico	
		$bf/2tf$	$F'y$	d/tw	Fy'''			I	S	r	I	S	r		Z_x	Z_y
			kg/cm^2		kg/cm^2											
kg/m	cm^2				cm	cm^{-1}	cm^4	cm^3	cm	cm^4	cm^3	cm	cm^4	cm^3	cm^3	
147.4	187.8	7.8	-	57	1429	6.5	1.67	166076	4408	29.7	5328	401	5.3	157	5113	633
160.5	204.5	6.9	-	54.7	1552	6.6	1.48	186055	4900	30.2	6077	457	5.5	208	5670	719
173.2	220.7	6.2	-	53.1	1647	6.7	1.32	205201	5391	30.5	6826	513	5.6	268	6194	806
184.9	235.5	5.7	-	51.6	1744	6.8	1.21	223100	5817	30.7	7534	564	5.7	333	6686	885
197	251.0	5.3	-	49.3	1911	6.8	1.13	240165	6227	31	8158	610	5.7	405	7161	957
257.3	327.8	7	-	46.5	2148	10	0.75	341309	8833	32.3	24891	1308	8.7	637	9914	2016
284.1	362.0	6.4	-	43.2	2488	10.1	0.68	381683	9800	32.5	28012	1467	8.8	857	11028	2261
314	400.0	5.7	-	39.9	2917	10.1	0.61	428717	10865	32.8	31509	1639	8.9	1161	12274	2524
175.7	223.9	7.8	-	59.7	1303	7.2	1.52	245576	5883	33	7784	534	5.9	221	6801	841
194	247.1	6.7	-	57.1	1424	7.3	1.32	279290	6653	33.5	90074	621	6.1	307	7653	975
210.7	268.4	6	-	55	1535	7.4	1.18	310091	7341	34	10240	700	6.2	404	8423	1096
226.4	388.4	5.5	-	52.7	1672	7.5	1.08	339644	7980	34.3	11363	773	6.3	516	9160	1211
299.3	381.3	6.9	-	47.1	2093	10.5	0.73	478665	11209	35.6	31176	1560	9	853	12651	2409
329.2	419.4	6.2	-	43.8	2421	10.5	0.66	532774	12405	35.8	34963	1737	9.1	1145	14011	2687
359.1	457.4	5.7	-	41.2	2736	10.6	0.61	591047	13585	35.8	28793	1934	9.2	1490	15387	2982
201.1	256.1	7.6	-	59.3	1321	7.4	1.48	324659	7194	35.6	9365	618	6	291	8341	978
223.9	283.2	6.4	-	57.4	1410	7.6	1.25	376272	8259	36.3	11238	739	6.3	420	9521	1162
238	303.2	5.9	-	55.4	1513	7.7	1.16	405824	8882	36.6	12279	805	6.4	516	10225	1267
253.2	322.6	5.5	-	53.2	1641	7.7	1.08	437042	9504	36.8	13319	872	6.4	629	10947	1373
271.5	345.8	5.1	-	50.1	1850	7.7	1	470400	10209	36.8	14444	944	6.5	766	11766	1486
288.7	367.8	4.8	-	47.7	2041	7.8	0.94	503638	10881	37	15609	1014	6.5	924	12569	1601
313	398.7	4.5	-	44.2	2377	7.8	0.87	549424	11782	37.1	17107	1106	6.6	1165	13650	1753
342.4	436.2	6.3	-	47.1	2085	10.9	0.68	624345	13716	37.8	39126	1868	9.5	1190	15453	2884
365.2	465.2	6.1	-	45.1	2283	11	0.64	670130	14666	38.1	42039	2016	9.5	1440	16551	3114
387.4	493.6	5.8	-	43.2	2488	11	0.6	720078	15617	38.1	45369	2163	9.6	1727	17698	3343
417.3	531.6	5.3	-	41.3	2723	11.1	0.55	786673	16879	38.4	49950	2360	9.7	2190	19173	3654
447.2	569.7	5	-	38.9	3069	11.2	0.52	844947	18190	38.6	54110	2556	9.7	2672	20648	3950

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

Designacion TR <i>d</i> x peso		Perfil de origen Designacion IR <i>d</i> x peso		Peralte	Alma	Patin		Distancia
				<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>	<i>k</i>
mm**xkg/m	in.xlb/ft	mm**xkg/m	in.xlb./ft.	mm	mm	mm	mm	mm
102 x 7,5	4x5	203x15	8x10	100	4.3	100	5.2	15.9
x 9,7	x6,5	x19,4	x13	101	5.8	102	6.5	17.5
x 11,2	x7,5	x22,5	x15	103	6.2	102	8	19
102 x 13,3	4x9	203x26,6	8x18	103	5.8	133	8.4	19
x 15,6	x10,5	x31,2	x21	105	6.4	134	10.8	20.6
102 x 17,9	4x12	203x35,9	8x24	101	6.2	165	10.2	22
x 20,9	x14	x41,8	x28	102	7.2	166	11.8	23.8
102 x 23,1	4x15,5	203x46,2	8x31	102	7.2	203	11	23.8
x 26	x17,5	x52,2	x35	103	7.9	204	12.6	25.4
x 29,7	x20	x59,2	x40	105	9.1	205	14.2	27
x 35,7	x24	x71,4	x48	108	10.2	206	17.4	30.2
x 43,3	x29	x86,6	x58	111	13	209	20.6	33.3
x 49,8	x33,5	x99,8	x99,8	114	14.5	210	23.7	36.5

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

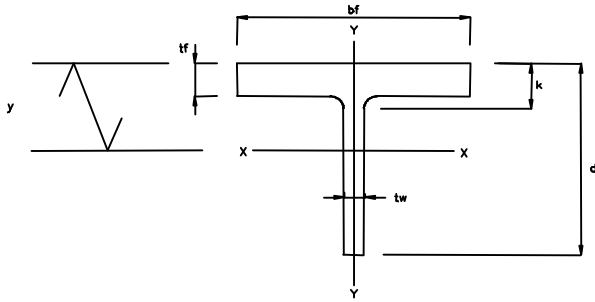
** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
PROPIEDADES

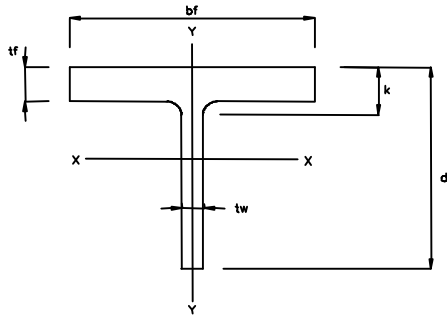


Peso	Area	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E}{Q_s Q_a F_y}} \quad Q_a = 1.0$ $F_y = 2530 \text{ kg/cm}^2$		Constante de torsion J
			I	S	r	y	I	S	r	Q_s	C'_c	
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm			
kg/m	cm ²											
7.5	9.5	23.2	89	11.8	3.05	2.4	44	8.7	2.13	0.913	132	0.95
9.7	12.4	17.4	120	16	3.11	2.6	57	11.2	2.14	-	-	1.84
11.2	14.3	17.6	137	17.6	3.07	2.52	71	13.9	2.22	-	-	3.03
13.3	17	17.7	142	17.2	2.89	2.12	166	24.9	3.12	-	-	3.61
15.6	19.9	16.5	162	19.3	2.85	2.11	204	30.3	3.19	-	-	6.12
17.9	22.8	16.1	147	17.7	2.53	1.76	380	46	4.07	-	-	7.4
20.9	26.6	14.2	176	21	2.57	1.86	450	54.2	4.11	-	-	11.3
23.1	29.4	14	178	21	2.46	1.7	770	76	5.12	-	-	11.3
26	33.2	13.1	200	23.4	2.46	1.75	887	86	5.17	-	-	16.1
29.7	37.9	11.5	238	27.7	2.51	1.87	1020	99.6	5.19	-	-	23.7
35.7	45.5	10.6	258	32.3	2.5	1.97	1270	123.2	5.28	-	-	41
43.3	55.2	8.5	380	42.7	2.62	2.22	1561	149.6	5.32	-	-	69.7
49.8	63.5	7.9	454	50	2.67	2.38	1844	175.3	5.39	-	-	105

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

Designacion TR <i>d</i> x peso		Perfil de origen Designacion IR <i>d</i> x peso		Peralte	Alma	Patin		Distancia
				<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>	<i>k</i>
mm**xkg/m	in.xlb/ft	mm**xkg/m	in.xlb./ft.	mm	mm	mm	mm	mm
127 x 9	5 x 6.0	254 x 17.9	10 x 12	125	4.8	101	5.3	15.9
x 11.2	x 7.5	x 22.3	x 15	127	5.8	102	6.9	17.5
x 12.7	x 8.5	x 25.3	x 17	128	6.1	102	8.4	19
x 14.2	x 9.5	x 28.5	x 19	130	6.4	102	10	20.6
127 x 16.4	5 x 11.0	254 x 32.9	10 x 22	129	6.1	1465	9.1	19
x 19.3	x 13.0	x 38.5	x 26	131	6.6	147	11.2	22.2
x 22.5	x 15.0	x 44.8	x 30	133	7.6	148	13	23.8
127 x 24.6	5 x 16.5	254 x 49.2	10 x 33	124	7.4	202	11	27
x 29	x 19.5	x 58.2	x 39	126	8	203	13.5	28.6
x 33.6	x 22.5	x 67.4	x 45	128	8.9	204	15.7	31.8
127 x 36.5	5 x 24.5	254 x 72.9	10 x 49	127	8.6	254	14.2	30.2
x 40	x 27.0	x 80	x 54	128	9.4	255	15.6	31.8
x 44.7	x 30.0	x 89.1	x 60	130	10.7	256	17.3	33.3
x 50.6	x 34.0	x 101.3	x 68	132	11.9	257	19.6	34.9
x 57.2	x 38.5	x 114.5	x 77	135	13.5	259	22.1	38.1
x 65.3	x 44.0	x 131.2	x 88	138	15.4	261	25.1	41.3
x 74.4	x 50.0	x 148.9	x 100	141	17.3	263	28.4	44.5
x 83.6	x 56.0	x 166.6	x 112	144	19.2	265	31.8	47.6

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

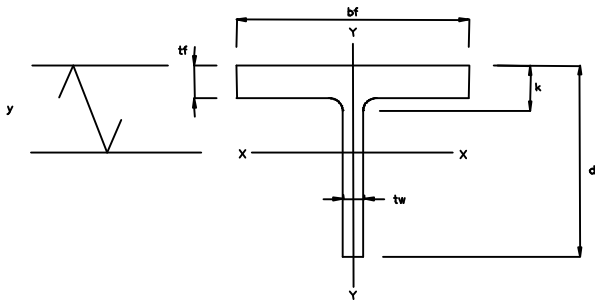
** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
PROPIEDADES

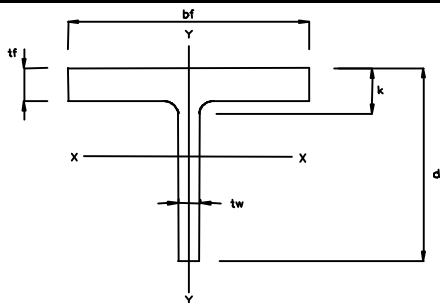


Peso kg/m	Area cm ²	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E_s}{Q_5 Q_a F_y} Q_a = 1.0}$ $F_y = 2530 \text{ kg/cm}^2$		Constante de torsion J cm ⁴
			I	S	r	y	I	S	r	Q _s	C' _c	
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm			
9	11.4	26	181	20	3.98	3.44	45	9	1.99	0.793	142	0.19
11.2	14.3	21.7	227	24.6	3.99	3.47	60	11.8	2.06	0.997	128	2.2
12.7	16.1	21.1	252	26.6	3.94	3.32	74	14.6	2.14	-	-	3.45
14.2	18.1	20.5	278	28.5	3.91	3.23	89	17.5	2.22	-	-	5.09
16.4	20.9	21.2	286	28.1	3.69	2.71	238	32.6	3.36	0.999	126	5.21
19.3	24.6	19.8	327	31.3	3.64	2.68	293	40	3.45	-	-	8.63
22.4	28.5	17.5	386	36.8	3.68	2.78	348	47	3.49	-	-	13.2
24.6	31.3	16.8	321	31.6	3.2	2.2	762	75.4	4.92	-	-	12.4
29	37	15.7	368	35.5	3.15	2.22	937	92.4	5.03	-	-	20.6
33.6	42.8	14.5	425	40.5	3.15	2.3	1111	109	5.09	-	-	31.5
36.5	46.5	14.6	416	39.2	2.99	2.05	1944	153.1	6.46	-	-	29
40	51	13.6	462	43.3	3.01	2.12	2152	168.8	6.5	-	-	37.9
44.7	56.9	12.2	537	49.9	3.06	2.25	2418	188.5	6.51	-	-	52
50.6	64.5	11.1	620	57.2	3.1	2.37	2780	216.3	6.57	-	-	74.2
57.2	72.9	9.9	724	66.3	3.15	2.51	3190	247.5	6.61	-	-	107
65.3	83.2	8.9	866	78.2	3.22	2.69	3717	285.1	6.67	-	-	156
74.4	94.8	8.1	1020	91.1	3.28	2.88	4287	327.7	6.74	-	-	227
83.6	106.5	7.5	1190	105	3.35	3.07	4912	370.3	6.8	-	-	315

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

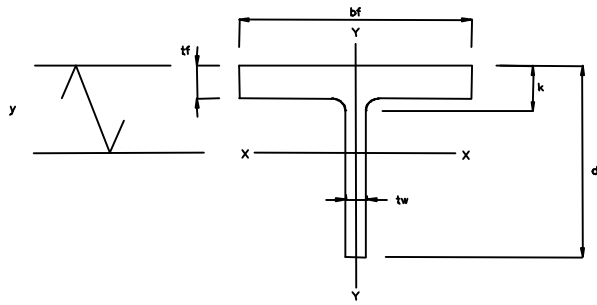
Designacion TR		Perfil		Peralte	Alma	Patin		Distancia
d x peso				d	tw	bf	tf	k
mm**xkg/m	n.xlb/ft	mm**xkg/m	inxlb./ft.	mm	mm	mm	mm	mm
152 x 10.5	6 x 7	305 x 21.1	12 x 14	151	5.1	101	5.7	17.5
x 12	x 8	x 23.9	x 16	152	5.6	101	6.7	19
x 14.1	x 9.5	x 28.2	x 19	154	6	102	8.9	20.6
x 16.4	x 11	x 32.8	x 22	156	5.6	102	10.8	22.2
152 x 19.3	6 x 13	305 x 38.7	12 x 26	155	5.8	165	9.7	22.2
x 22.3	x 15	x 44.5	x 30	157	6.6	166	11.2	23.8
x 26.2	x 17.5	x 52.2	x 35	159	7.6	167	13.2	25.4
152 x 29.8	6 x 20	305 x 59.8	12 x 40	152	7.5	203	13.1	31.8
x 33.5	x 22.5	x 66.9	x 45	153	8.5	204	14.6	31.8
x 37.2	x 25	x 74.4	x 50	155	9.4	205	16.3	35
152 x 39.4	6 x 26.5	305 x 79	12 x 53	153	8.8	254	14.6	31.8
x 43.1	x 29	x 86.1	x 58	155	9.1	254	16.3	35
152 x 48.3	6 x 32.5	305 x 96.7	12 x 65	154	9.9	305	15.4	33.3
x 53.7	x 36	x 106.9	x 72	156	10.9	306	17	35
x 58.7	x 39.5	x 117.5	x 79	157	11.9	307	18.7	36.5
x 64.8	x 43.5	x 129.7	x 87	159	13.1	308	20.6	38.1
x 71.4	x 48	x 142.8	x 96	161	14	309	22.9	41.3
x 79	x 53	x 158	x 106	164	15.5	310	25.1	42.9
x 89.1	x 60	x 178.8	x 120	167	18	313	28.1	46
x 101.3	x 68	x 202.1	x 136	170	20.1	315	31.8	49.2
x 113.4	x 76	x 226.4	x 152	174	22.1	317	35.6	54
x 126.6	x 85	x 253.3	x 170	178	24.4	319	39.6	57.2
x 141.3	x 95	x 282.6	x 190	183	26.9	322	44.1	61.9
x 156.5	x 105	x 313	x 210	187	30	325	48.3	66.7
x 171.7	x 115	x 342.9	x 230	191	32.6	328	52.6	69.8
x 187.4	x 126	x 375.3	x 252	196	35.4	330	57.2	74.6
x 207.7	x 139.5	x 414.8	x 279	201	38.9	334	62.7	81
x 226.9	x 152.5	x 453.8	x 305	207	41.3	336	68.7	87.3
x 250.2	x 168	x 500.4	x 336	214	45.1	340	75.1	93.7

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



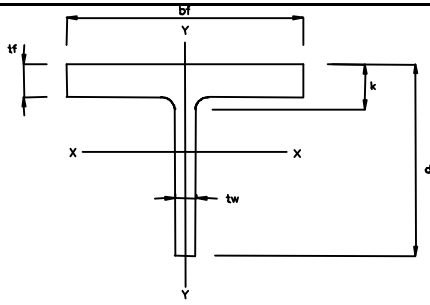
TR*
PERFIL T RECTANGULAR
PROPIEDADES

Peso kg/m	Area cm ²	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E_s}{Q_s Q_a F_y}} \quad Q_a = 1.0$ $F_y = 2530 \text{ kg/cm}^2$		Constante de torsion J
			I	S	r	y	I	S	r	Q _s	C' _c	cm ⁴
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm			
10.5	13.4	29.8	319	30.1	4.87	4.41	49	9.7	1.9	0.626	159	1.64
12	15.2	27.3	362	33.6	4.87	4.38	59	11.6	1.96	0.741	146	2.32
14.1	18	25.9	420	37.4	4.82	4.16	78	15.4	2.08	0.797	141	3.98
16.4	20.9	23.7	477	42.4	4.82	4.12	97	19	2.15	0.891	134	6.34
19.3	24.6	26.5	487	39.3	4.43	3.15	360	43.8	3.81	0.767	144	6.5
22.3	28.4	23.7	562	45.1	4.44	3.21	425	51.1	3.86	0.891	134	9.76
26.2	33.4	20.9	666	52.9	4.45	3.3	508	61.1	3.9	-	-	16
29.8	38	20.2	599	48.4	3.98	2.75	916	90.3	4.92	-	-	19.8
33.5	42.6	18	691	55.5	4.02	2.87	1041	101.8	4.93	-	-	27.9
37.2	47.4	16.5	778	62.1	4.05	2.96	1174	114.2	4.97	-	-	37.4
39.4	50.2	17.5	737	58	3.83	2.6	1994	157	6.29	-	-	33.4
43.1	55	17	795	61.7	3.79	2.62	2227	175.3	6.36	-	-	44.1
48.3	61.6	15.5	857	66.6	3.73	2.5	3630	237.6	7.67	-	-	45.5
53.7	68.4	14.2	966	74.4	3.76	2.59	4058	265.5	7.71	-	-	62
58.7	74.8	13.2	1074	82.4	3.79	2.69	4495	293.3	7.75	-	-	80.6
64.8	82.6	12.2	1203	91.8	3.82	2.79	4995	326.1	7.79	-	-	106
71.4	91	11.6	1332	100	3.82	2.88	5619	363.8	7.86	-	-	142
79	100.7	10.6	1511	113	3.88	3.02	6285	404.8	7.9	-	-	191
89.1	113.6	9.2	1806	135	3.98	3.25	7159	458.8	7.94	-	-	270
101.3	129	8.5	2106	155	4.04	3.44	8283	526	8.02	-	-	384
113.4	144.5	7.8	2435	177	4.1	3.64	9448	596.5	8.1	-	-	537
126.6	161.3	7.3	2822	202	4.18	3.86	10780	675.1	8.17	-	-	741
141.3	180	6.7	3288	232	4.27	4.11	12279	762	8.26	-	-	1020
156.5	199.4	6.2	3833	268	4.38	4.37	13819	850.4	8.34	-	-	1350
171.7	218.7	5.8	4412	303	4.48	4.62	15442	942.3	8.42	-	-	1730
187.4	238.7	5.5	5036	343	4.59	4.88	17232	1042.2	8.51	-	-	2230
207.6	264.5	5.1	5869	394	4.72	5.2	19521	1168.4	8.61	-	-	2960
226.9	289	5	6743	443	4.83	5.5	21852	1300	8.71	-	-	3840
250.2	318.7	4.7	7908	511	4.99	5.86	24682	1452	8.83	-	-	5010

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

Designacion TR <i>d</i> x peso		Perfil de origen Designacion IR <i>d</i> x peso		Peralte	Alma	Patin		Distancia <i>k</i>	
				<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>		
mm**xkg/m	in.xlb/ft	mm**xkg/m	in.xlb./ft.	mm	mm	mm	mm	mm	
178 x	16.5	7 x 11.0	356 x 32.9	14 x 22	174	5.8	127	8.5	22.2
	19.5	x 13.0	x 38.9	x 26	177	6.8	128	10.7	23.8
178 x	22.4	7 x 15.0	356 x 44.8	14 x 30	176	6.9	171	9.8	23.8
	25.3	x 17.0	x 50.6	x 34	178	7.2	171	11.6	25.4
	28.3	x 19.0	x 56.7	x 38	179	7.8	172	13.1	42.9
178 x	32.0	7 x 21.5	356 x 63.8	14 x 43	173	7.8	203	13.5	33.3
	35.8	x 24.0	x 71.4	x 48	175	8.6	204	15.1	35
	39.6	x 26.5	x 79.0	x 53	177	9.4	205	16.8	36.5
178 x	45.4	7 x 30.5	356 x 90.7	14 x 61	176	9.5	254	16.4	36.5
	50.6	x 34.0	x 101.3	x 68	178	10.5	255	18.3	38.1
	55.2	x 37.0	x 110.4	x 74	180	11.4	256	19.9	40
	60.8	x 41.0	x 122.1	x 82	182	13	257	21.7	41.3
178 x	66.9	7 x 45.0	356 x 134.2	14 x 90	178	11.2	369	18	35
	74.0	x 49.5	x 147.4	x 99	180	12.3	370	19.8	36.5
	81.0	x 54.5	x 162.1	x 109	182	13.3	371	21.8	40
	89.6	x 60.0	x 178.8	x 120	184	15	373	23.9	41.3
	98.3	x 66.0	x 196.5	x 132	186	16.4	374	26.2	42.9

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

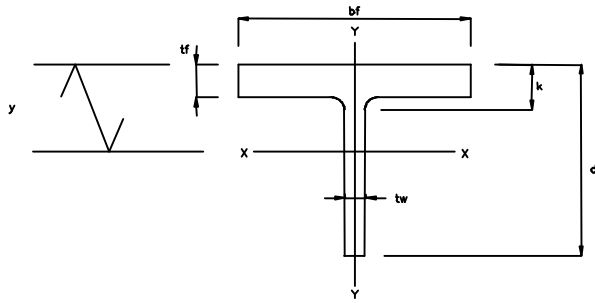
** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
PROPIEDADES



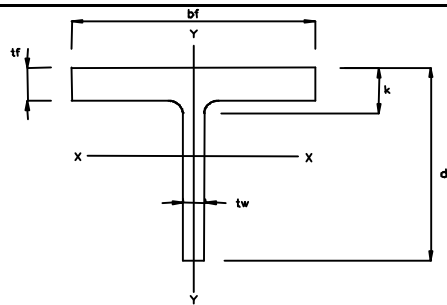
Peso	Area	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E_s}{Q_5 Q_a F_y}} \quad Q_a = 1.0$	Constante de torsion	
			I	S	r	y	I	S	r			
kg/m	cm ²		cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	$F_y = 2530 \text{ kg/cm}^2$ Q_s	C'_c	J cm ⁴
16.5	21	29.9	616	47.6	5.42	4.46	146	22.9	2.63	0.621	160	4.49
19.5	24.8	27.3	720	54.3	5.39	4.36	185	29	2.73	0.737	147	7.61
22.4	28.5	25.7	791	58.2	5.24	3.98	407	47.7	3.77	0.81	140	8.35
25.3	32.2	24.5	870	62.8	5.18	3.88	487	56.5	3.87	0.857	136	12.3
28.3	36	22.7	970	69.2	5.18	3.9	554	64.6	3.92	0.934	130	17.1
32	40.7	22.4	912	65.2	4.71	3.32	941	92.6	4.78	0.947	130	23.5
35.8	45.6	20.3	1036	73.5	4.74	3.42	1070	104.9	4.82	-	-	31.9
39.6	50.4	18.8	1149	81	4.75	3.49	1199	117.3	4.86	-	-	43.3
45.4	57.8	18.5	1203	83.1	4.54	3.15	2235	175.3	6.19	-	-	48.5
50.6	64.5	16.9	1357	93.3	4.57	3.26	2527	198.3	6.24	-	-	65.5
55.2	70.3	15.7	1498	102	4.6	3.35	2785	218	6.28	-	-	83.3
60.8	77.4	14	1715	117	4.68	3.53	3088	239.3	6.29	-	-	110
66.9	85.2	15.9	1515	101	4.21	2.78	7534	409.7	9.39	-	-	85.5
74	94.2	14.6	1702	113	4.25	2.89	8366	452.3	9.43	-	-	112
81	103.2	13.6	1886	124	4.27	2.98	9282	501.4	9.48	-	-	148
89.6	114.2	12.3	2152	141	4.34	3.14	10281	552.3	9.5	-	-	196
98.3	125.2	11.4	2406	157	4.39	3.27	11405	609.6	9.55	-	-	256

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

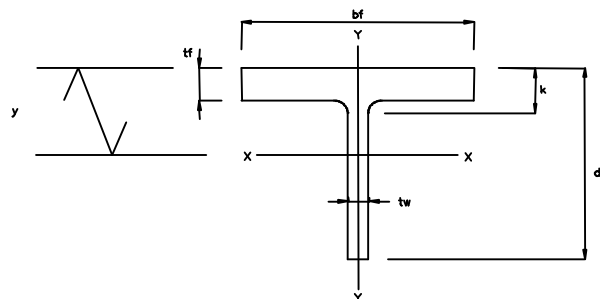
Designacion TR <i>d</i> x peso		Perfil de origen Designacion IR <i>d</i> x peso		Peralte	Alma	Patin		Distancia
				<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>	<i>k</i>
mm**xkg/m	in.xlb/ft	mm**xkg/m	in.xlb./ft.	mm	mm	mm	mm	mm
203 x 19.4	8 x 13	406 x 38.9	16 x 26	199	6.4	140	8.8	27
				202	7	140	11.2	28.6
203 x 26.7	8 x 18	406 x 53.7	16 x 36	201	7.5	177	10.9	28.6
				203	7.8	178	12.8	30.2
				205	8.8	179	14.4	31.8
				207	9.7	180	16	33.4
				209	10.9	181	18.2	34.9
203 x 42.4	x 28.5	x 85.1	x 57					
203 x 49.8	8 x 33.5	406 x 99.8	16 x 66	207	10	260	16.9	35
				210	11.6	261	19.3	36.5
				213	13.3	263	22.2	39.7
				216	14.9	265	25	42.9
229 x 26.1	9 x 17.5	457 x 52.2	18 x 35	225	7.6	152	10.8	28.6
				227	8	153	13.3	30.2
				229	9.1	154	15.4	31.8
229 x 37.1	9 x 25	457 x 74.4	18 x 50	228	9	190	14.5	31.8
				230	9.9	191	16	33.3
				232	10.5	192	17.7	35
				233	11.4	193	19.1	36.5
				235	12.6	194	20.6	38.1
229 x 56.7	9 x 38	457 x 112.9	18 x 76	231	10.8	280	17.3	35
				234	12.2	282	19.6	36.5
				236	13.6	283	22.1	39.7
				238	15	284	23.9	41.3
				241	16.6	286	26.9	44.5

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
PROPIEDADES

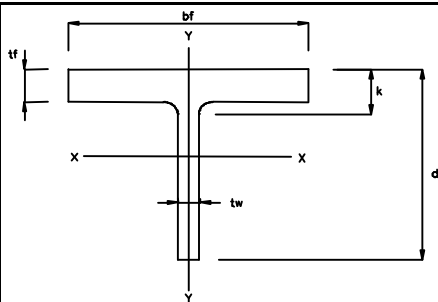
Peso	Area	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E_s}{Q_s Q_a F_y} Q_a}$ $F_y = 2530 \text{ kg/cm}^2$		Constante de torsion
			I	S	r	y	I	S	r	Q_s	C'_c	
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm			cm ⁴
19.4	24.8	31.4	978	67.2	6.24	5.21	200	28.5	2.81	0.563	168	6.7
23.1	29.4	28.8	1140	76.1	6.19	5.06	258	36.7	2.94	0.668	154	11.1
26.7	34.1	26.9	1274	82.9	6.07	4.72	508	57.4	3.84	0.754	145	12.8
29.8	38	26.3	1378	87.8	5.98	4.54	600	67.5	3.94	0.784	142	18.9
33.6	42.8	23.4	1573	99.9	6.03	4.68	683	76.5	3.97	0.904	133	25.7
37.3	47.6	21.4	1761	111	6.05	4.76	774	86.2	4.01	0.99	127	34.5
42.4	54.1	19.1	2027	127	6.09	4.89	900	99.3	4.05			50.3
49.8	63.5	20.7	2023	121	5.62	3.96	2477	190	6.22			52.6
57.2	72.9	18.2	2368	141	5.68	4.12	2880	219.6	6.26			78.7
66.3	84.5	15.9	2797	165	5.74	4.31	3384	257.3	6.32			118
74.4	94.8	14.5	3197	187	5.78	4.46	3875	293.3	6.37			168
26.1	33.2	29.5	1679	102	7.05	6	319	42	3.08	0.338	158	11.9
29.8	37.9	28.4	1865	110	6.97	5.73	397	52	3.21	0.69	152	19.3
34.3	43.7	25.1	2139	128	7.01	5.86	470	61	3.26	0.831	138	28.1
37.1	47.3	25.3	2227	128	6.83	5.34	832	87.7	4.17	0.823	139	28.4
41	52.3	23.2	2477	141	6.86	5.43	937	97.8	4.21	0.913	132	37.3
44.7	56.9	22	2693	152	6.85	5.45	1041	108.6	4.26	0.964	128	48.1
48.4	61.6	20.4	2943	166	6.88	5.55	1140	118.3	4.28			61.2
52.7	67.1	18.7	3255	184	6.93	5.7	1253	129.3	4.31			76.9
56.7	72.3	21.4	2989	161	6.42	4.56	3172	226	6.26	0.99	127	61.7
64.3	81.9	19.2	3430	184	6.46	4.7	3646	259	6.66			89.5
72.4	92.3	17.4	3904	208	6.49	4.83	4162	295	6.72			126
79	100.7	15.9	4329	231	6.55	4.98	4579	322.8	6.74			162
88.6	112.9	14.5	4953	261	6.59	5.13	5245	368.7	6.81			228

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

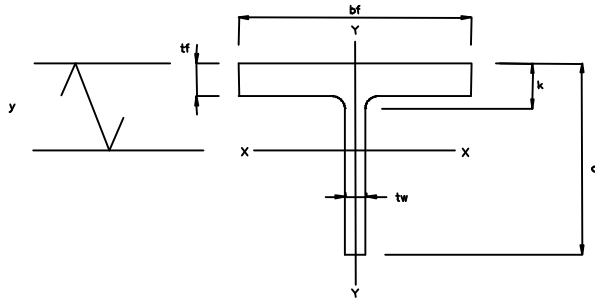
Designacion TR <i>d</i> x peso		Perfil de origen Designacion IR		Peralte	Alma	Patin		Distancia
mm**xkg/m	in.xlb/ft	mm**xkg/m	in.xlb./ft.	<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>	<i>k</i>
267 x 32.9	10.5 x 22	533 x 65.8	21 x 44	262	8.9	165	11.4	30.2
x 37.3	x 25	x 74.4	x 50	265	9.7	166	13.6	33.3
x 42.4	x 28.5	x 84.6	x 57	267	10.3	166	16.5	35
267 x 46.2	10.5 x 31	533 x 92.7	21 x 62	267	10.2	209	15.6	35
x 50.6	x 34	x 101.3	x 68	268	10.9	210	17.4	36.5
x 54.2	x 36.5	x 108.9	x 73	270	11.6	211	18.8	38.1
x 61.8	x 41.5	x 123.1	x 83	272	13.1	212	21.2	39.7
x 69.4	x 46.5	x 138.3	x 93	275	14.7	214	23.6	42.9
267 x 75.5	10.5 x 50.5	533 x 150.9	21 x 101	271	12.7	312	20.3	39.7
x 82.6	x 55.5	x 165.6	x 111	273	14	313	22.2	41.3
x 90.7	x 61	x 181.8	x 122	275	15.2	315	24.4	42.9
x 98.3	x 66	x 196.5	x 132	277	16.5	316	26.3	46
x 109.4	x 73.5	x 218.8	x 147	280	18.3	318	29.2	47.6
305 x 41	12 x 27.5	610 x 82	24 x 55	299	10	178	12.8	33.3
x 46.1	x 31	x 92.2	x 62	301	10.9	179	15	35
305 x 50.6	12 x 34	610 x 101.8	24 x 68	301	10.5	228	14.9	35
x 56.7	x 38	x 113.4	x 76	304	11.2	228	17.3	36.5
x 62.8	x 42	x 125.1	x 84	306	11.9	229	19.6	39.7
x 69.9	x 47	x 140.3	x 94	309	13.1	230	22.2	41.3
305 x 77.5	12 x 52	610 x 155	24 x 104	306	12.7	324	19.1	38.1
x 87.1	x 58.5	x 174.2	x 117	308	14	325	21.6	41.3
x 97.7	x 65.5	x 195	x 131	311	15.4	327	24.4	44.5
x 108.9	x 73	x 217.8	x 146	314	16.5	328	27.7	47.6
x 121	x 81	x 241.6	x 162	318	17.9	329	31	50.8
343 x 62.8	13.5 x 42	686 x 125.6	27 x 84	339	11.7	253	16.3	35
x 69.9	x 47	x 140.3	x 94	342	12.4	254	18.9	36.5
x 79	x 51	x 151.9	x 102	344	13.1	254	21.1	39.7
x 85.1	x 57	x 169.7	x 114	347	14.5	256	23.6	41.3
343 x 108.9	13.5 x 73	686 x 217.3	21 x 146	348	15.4	355	24.8	42.9
x 120	x 80.5	x 240.1	x 161	350	16.8	356	27.4	46
x 132.2	x 89	x 264.9	x 178	353	18.4	358	30.2	47.6

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



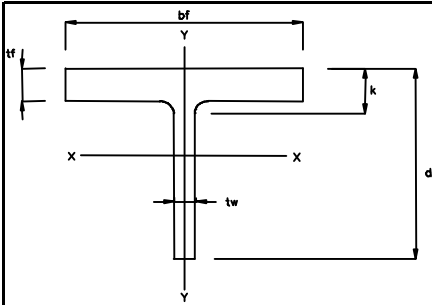
TR*
PERFIL T RECTANGULAR
PROPIEDADES

Peso kg/m	Area cm ²	d/tw	Eje X-X				Eje Y-Y			$C'_c = \frac{\sqrt{2x^2 E_s} Q_a}{Q_s Q_a F_y} Q_a$		Constan te de J cm ⁴
			I	S	r	y	I	S	r	Fy = 2530 kg/cm ²		
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm	Q _s	C' _c	
32.9	41.9	29.5	2960	159	8.37	7.48	429	52.1	3.19	0.638	158	18.1
37.3	47.5	27.5	3342	176	8.36	7.37	520	62.6	3.29	0.733	147	26.1
42.4	54	26	3763	193	8.32	7.18	637	76.5	3.43	0.793	142	39.6
46.2	58.9	26.2	3904	195	8.12	6.52	1195	114.2	4.49	0.784	142	40.7
50.6	64.5	24.6	4287	211	8.12	6.54	1349	128.3	4.55	0.853	137	53.6
54.2	69	23.3	4578	226	8.11	6.55	1469	139.5	4.59	0.908	132	67.2
61.8	78.7	20.8	5386	258	8.17	6.73	1694	160	4.64	-	-	94.6
69.4	88.4	18.6	5994	293	8.22	6.92	1931	180	4.67	-	-	132
75.5	96.1	21.4	5619	259	7.62	5.51	5161	331	7.31	0.99	127	113
82.6	105.2	19.5	6243	288	7.67	5.65	5702	363.8	7.35	-	-	146
90.7	115.5	18.1	6909	317	7.7	5.76	6327	403	7.39	-	-	193
98.3	125.2	16.8	7533	346	7.75	5.9	6909	437.5	7.42	-	-	241
109.4	139.4	15.3	8401	388	7.79	6.07	7825	491.6	7.48	-	-	230
41	52.3	29.9	4870	231	9.61	8.78	604	68	3.39	0.626	159	27.7
46	58.8	27.6	5453	256	9.61	8.7	716	80.3	3.48	0.724	148	39
50.6	64.5	28.6	5702	256	9.37	7.72	1465	128.6	4.74	0.681	153	42.5
56.7	72.3	27.2	6285	277	9.31	7.56	1719	150.4	4.86	0.741	146	49.8
62.8	80	25.6	6909	300	9.29	7.51	1965	172.1	4.95	0.81	140	81.2
69.9	89	23.6	7742	334	9.29	7.55	2268	196.6	5.02	0.896	133	116
77.5	98.7	24.1	7867	328	8.89	6.55	5411	332.7	7.36	0.874	135	104
87.1	111	22	8824	365	8.9	6.62	6202	378.5	7.45	0.96	129	146
97.7	124.5	20.2	9906	407	8.9	6.7	7076	434.3	7.53	-	-	207
108.9	138.7	19	10988	445	8.87	6.73	8116	496.5	7.64	-	-	289
121	154.2	17.7	12196	490	8.88	6.83	9199	560.4	7.73	-	-	395
62.8	80	29	8991	459	10.6	8.81	2198	173.7	5.24	0.664	155	60.4
69.9	89	27.5	9948	390	10.5	8.64	2581	203.2	5.38	0.728	148	85.9
76	96.8	26.3	10738	415	10.5	6.55	2897	227.8	5.47	0.78	143	112
85.1	108.4	23.9	12029	464	10.5	8.68	3305	259	5.53	0.883	134	154
108.9	138.7	22.6	13985	512	10	7.47	9240	519.5	8.16	0.938	130	230
120	152.9	20.9	15484	564	10.1	7.58	10323	588	8.22	-	-	307
132.2	168.4	19.2	17232	625	10.1	7.74	11571	645.7	8.28	-	-	411

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

NOTA:

Los espesores sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



TR*
PERFIL T RECTANGULAR
DIMENSIONES

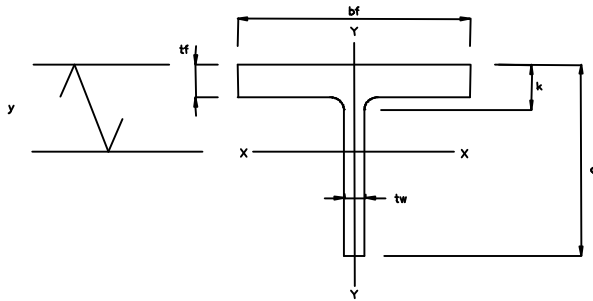
Designacion TR <i>d x peso</i>		Perfil de origen Designacion IR		Peralte	Alma	Patin		Distancia
mm**xkg/m	in.xlb/ft	mm**xkg/m	inxlb./ft.	<i>d</i>	<i>tw</i>	<i>bf</i>	<i>tf</i>	<i>k</i>
mm	in.	mm	in.	mm	mm	mm	mm	mm
381 x 73.4	15 x 49.5	762 x 147.4	30 x 99	377	13.2	265	17	36.5
x 80.5	x 54	x 160.5	x 108	379	13.8	266	19.3	40
x 86.6	x 58.8	x 73.2	x 116	381	14.4	267	21.6	41.3
x 92.2	x 62	x 184.9	x 124	383	14.9	267	23.6	42.9
x 98.3	x 66	x 197	x 134	385	15.6	268	25.4	44.5
381 x 128.6	15 x 86.5	762 x 257.3	30 x 173	387	16.6	381	27.1	47.6
x 142.3	x 95.5	x 284.1	x 191	390	18	382	30.1	49.2
x 157	x 105.5	x 314	x 211	393	19.7	384	33.4	54
419 x 87.6	16.5 x 59	838 x 175.7	33 x 118	417	14	292	18.8	40
x 97.2	x 65	x 194	x 130	420	14.7	294	21.7	42.9
x 105.3	x 7.5	x 210.7	x 141	423	15.4	293	24.4	44.5
x 113.4	x 76	x 226.4	x 152	425	16.1	294	26.8	47.6
419 x 149.4	16.5 x 100.5	838 x 299.3	33 x 201.1	428	18.2	400	29.2	49.2
x 164.6	x 110.5	x 329.2	x 221	431	19.7	401	32.4	52.4
x 179.3	x 120.5	x 359.1	x 240	434	21.1	403	35.6	55.6
457 x 100.8	18 x 67.5	914 x 201.1	36 x 135	451	15.2	304	20.1	42.9
x 111.9	x 75	x 223.9	x 150	455	15.9	304	23.9	47.6
x 119	x 80	x 238	x 160	457	16.5	305	25.9	49.2
x 126.6	x 85	x 253.2	x 170	459	17.3	306	27.9	50.8
x 135.7	x 91	x 271.5	x 182	461	18.4	307	30	54
x 144.3	x 97	x 288.7	x 194	463	19.4	308	32	55.6
x 156.5	x 105	x 313	x 210	466	21.1	309	34.5	58.7
457 x 171.2	18 x 115	914 x 342.4	36 x 230	456	19.3	418	32	60.3
x 182.3	x 122.5	x 365.2	x 245	458	20.3	419	34.3	63.5
x 193.5	x 130	x 387.4	x 260	461	21.3	420	36.6	65.1
x 208.7	x 140	x 417.3	x 280	464	25.5	422	39.9	68.3
x 223.3	x 150	x 447.2	x 300	467	24	423	42.7	71.4

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

** Redondeado al milimetro

NOTA:

Los espesores sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



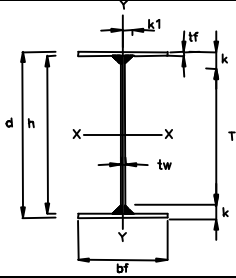
TR*
PERFIL T RECTANGULAR
PROPIEDADES

Peso kg/m	Area cm ²	d/tw	Eje X-X				Eje Y-Y			$C'_c = \sqrt{\frac{2x^2 E_s}{Q_s Q_a F_v}} Q$ $F_y = 2530 \text{ kg/cm}^2$		Const ante J cm ⁴
			I	S	r	y	I	S	r	Q _s	C' _c	
			cm ⁴	cm ³	cm	cm	cm ⁴	cm ³	cm			
73.4	93.6	28.5	13403	492	11.9	10.4	2660	200	5.32	0.685	152	80.3
80.5	102.6	27.4	14526	525	11.9	10.2	3038	227.8	5.45	0.733	147	106
86.6	110.3	26.5	15525	553	11.9	9.99	3417	257.3	5.57	0.767	144	136
92.2	117.4	25.8	16483	579	11.8	9.88	3763	281.9	5.66	0.801	141	168
98.3	125.2	24.6	17523	614	11.8	9.89	4079	304.8	5.7	0.853	137	206
128.6	163.9	23.2	20687	684	11.2	8.41	12445	653.8	8.71	0.913	132	321
142.3	181.3	21.6	22851	750	11.2	8.49	13985	732.5	8.8	0.981	127	432
157	200	20	25390	827	11.3	8.62	15733	821	8.87	-	-	585
87.6	111.6	29.9	19521	643	13.2	11.3	3896	867	5.9	0.621	160	113
97.2	123.9	28.5	21353	691	13.1	11.1	4537	310	6.06	0.685	152	156
105.3	134.2	27.5	22974	732	13.1	10.9	5120	349	6.19	0.728	148	204
113.4	144.5	26.4	24641	777	13.1	10.8	5661	387	6.27	0.775	143	262
149.4	190.3	23.5	30117	909	12.6	9.59	15609	780	9.05	0.896	133	430
164.6	209.7	21.9	33257	996	12.6	9.68	17482	871.8	9.13	0.968	128	579
179.3	228.4	20.6	36254	1080	12.6	9.76	19396	963.7	9.22	-	-	750
100.8	128.4	29.6	26472	814	14.4	12.6	4703	309.7	6.05	0.634	158	148
111.9	142.6	28.7	29053	871	14.3	12.1	5619	368.7	6.28	0.677	153	213
119	151.6	27.7	30801	914	14.2	12	6119	403.1	6.36	0.72	149	259
126.6	161.3	26.6	32716	965	14.2	12	6660	436	6.43	0.767	144	318
135.7	172.9	25.1	35171	1030	14.3	12.1	7642	472	6.47	0.831	138	388
144.3	183.9	23.9	37502	1100	14.3	12.2	7784	506.4	6.52	0.887	134	464
156.5	199.4	22.1	41000	1200	14.3	12.4	8574	554	6.56	0.96	129	588
171.2	218.1	23.6	38876	1100	13.3	10.2	19563	935.7	9.46	0.896	133	604
182.3	232.3	22.5	41415	1160	13.3	10.2	21103	1006.2	9.53	0.943	130	729
193.5	246.5	21.6	44120	1230	13.3	10.3	22685	1080	9.58	0.981	127	878
208.7	265.8	20.6	47450	1310	13.3	10.3	24932	1183	9.68	-	-	1110
223.4	284.5	19.4	51196	1410	13.4	10.5	26972	1275	9.74	-	-	1340

* Este perfil se obtiene cortando un perfil IR a la mitad de su peralte.

NOTA:

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



IS
PERFIL I SOLDADO
DIMENSIONES



Designación $\frac{b_f \cdot X t_f}{h \cdot X t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
<u>mm x mm*</u>	<u>in. x in.</u>	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
406 x 16 1118 x 8	16 x 0.625 44 x 0.312	6	5	171.7	115.4	1149	1105	21.8	9.9
406 x 19 1118 x 8	16 x 0.75 44 x 0.312	6	5	191.1	128.4	1156	1105	25.0	9.9
406 x 22 1118 x 8	16 x 0.875 44 x 0.312	8	7	212.3	142.7	1162	1101	30.2	11.9
406 x 25 1118 x 8	16 x 1 44 x 0.312	8	7	233.1	156.6	1168	1101	33.4	11.9
406 x 32 1118 x 8	16 x 1.25 44 x 0.312	8	7	273.3	183.6	1181	1101	39.7	11.9
406 x 38 1118 x 8	16 x 1.5 44 x 0.312	10	8	314.1	211.0	1194	1097	48.1	13.9
406 x 44 1118 x 8	16 x 1.75 44 x 0.312	10	8	354.3	238.1	1206	1097	34.4	13.9
406 x 16 1219 x 10	16 x 0.625 44 x 0.312	6	5	192.6	129.4	1251	1207	21.8	10.7
406 x 19 1219 x 10	16 x 0.75 44 x 0.312	6	5	213.4	143.4	1257	1207	25.0	10.7
406 x 22 1219 x 10	16 x 0.875 44 x 0.312	8	7	233.2	156.7	1264	1203	30.2	12.7
406 x 25 1219 x 10	16 x 1 44 x 0.312	8	7	254.0	170.7	1270	1203	33.4	12.7
406 x 32 1219 x 10	16 x 1.25 44 x 0.312	8	7	294.2	197.7	1283	1203	39.7	12.7
406 x 38 1219 x 10	16 x 1.5 44 x 0.312	10	8	334.9	225.0	1295	1199	48.1	14.7
406 x 44 1219 x 10	16 x 1.75 44 x 0.312	10	8	376.6	253.1	1308	1199	54.4	14.7

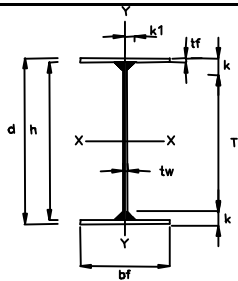
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergida

* Redondeado al milímetro

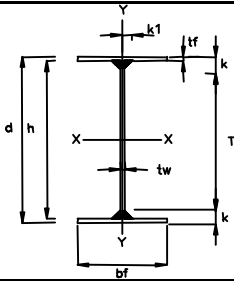


**IS
PERFIL I SOLDADO
PROPIEDADES**

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
171.7	218.1	10.59	1.78	507802	8816	48.3	17764	874.2	9.0	125.0	9813	1333
191.1	243.9	10.74	1.49	591048	10258	49.2	21316	1049.0	9.3	201.4	11300	1595
212.3	269.7	10.87	1.29	678457	11683	50.2	24868	1223.8	9.6	307.2	12796	1857
233.1	295.5	10.97	1.13	765865	13126	50.9	28419	1298.6	9.8	446.8	14299	2119
273.3	347.1	11.13	0.92	944845	13993	52.2	35523	1748.2	10.1	844.8	17331	2644
314.1	398.7	11.20	0.77	1127987	18845	53.2	42626	2097.7	10.3	1359.4	20396	3168
354.3	450.3	11.28	0.67	1311129	21794	54.0	49730	2447.3	10.5	2230.0	23493	3698
192.6	245.2	10.29	1.94	636834	10159	51.0	17768	874.4	8.5	142.0	11507	1338
213.4	271.0	10.49	1.63	736729	11733	52.1	21320	1049.2	8.9	218.6	13241	1600
238.2	296.8	10.64	1.40	840787	13289	53.2	24872	1224.0	9.2	324.4	14752	1863
254.0	322.6	10.77	1.23	944845	14863	54.1	28424	1298.9	9.4	464.5	16387	2125
294.2	374.2	10.95	1.00	1152961	18025	55.5	35527	1748.3	9.7	863.5	19680	2649
334.9	425.8	11.05	0.84	1369401	21139	56.7	42631	2098.0	10.0	1448.9	23007	3174
376.6	477.4	11.15	0.72	1585841	24252	57.6	49735	2447.6	10.2	2252.2	26366	3698

Nota:

El peso nominal incluye el peso de soldadura.



IS
PERFIL I SOLDADO
DIMENSIONES

Designación $\frac{b_f \cdot X t_f}{h \cdot X t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
<u>mm x mm*</u>	<u>in. x in.</u>	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
406 x 51 1219 x 10	16 x 2 48 x 0.375	10	8	416.8	280.1	1320	1199	60.8	14.7
406 x 57 1219 x 10	16 x 2.25 48 x 0.375	13	10	458.0	307.8	1333	1193	70.1	17.7
457 x 16 1321 x 10	18 x 0.625 52 x 0.375	6	5	213.4	143.4	1352	1308	21.8	10.7
457 x 19 1321 x 10	18 x 0.75 52 x 0.375	6	5	236.7	159.1	1358	1308	25.0	10.7
457 x 22 1321 x 10	18 x 0.875 52 x 0.375	8	7	258.5	173.7	1363	1304	30.2	12.7
457 x 25 1321 x 10	18 x 1 52 x 0.375	8	7	282.3	189.7	1371	1304	33.4	12.7
457 x 32 1321 x 10	18 x 1.25 52 x 0.375	8	7	326.9	219.7	1384	1304	39.7	12.7
457 x 38 1321 x 10	18 x 1.5 52 x 0.375	10	8	373.6	251.0	1397	1300	48.1	14.7
457 x 44 1321 x 10	18 x 1.75 52 x 0.375	10	8	418.3	281.1	1409	1300	54.4	14.7
457 x 51 1321 x 10	18 x 2 52 x 0.375	10	8	464.4	312.1	1422	1300	60.8	14.7
457 x 57 1321 x 10	18 x 2.25 52 x 0.375	13	10	511.6	343.8	1435	1294	70.1	17.7
457 x 16 1422 x 11	18 x 0.625 56 x 0.438	6	5	238.7	160.4	1454	1410	21.8	11.5
457 x 19 1422 x 11	18 x 0.75 56 x 0.438	6	5	261.0	175.4	1460	1410	25.0	11.5
457 x 22 1422 x 11	18 x 0.875 56 x 0.438	8	7	283.8	190.7	1466	1406	30.2	13.5

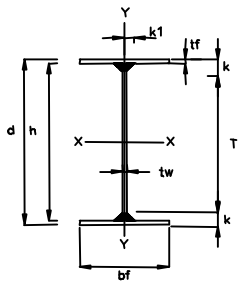
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergida

* Redondeado al milímetro

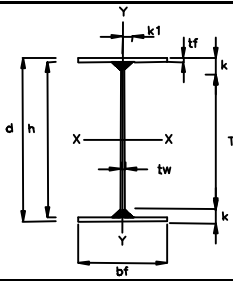


IS
PERFIL I SOLDADO
PROPIEDADES

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
416.8	529.0	11.23	0.64	1810606	27366	58.5	56838	2197.1	10.4	3302.8	29758	4222
458.0	580.6	11.28	0.57	2035371	30479	59.2	63942	3146.8	10.5	4628.3	33183	1747
213.4	271.0	11.63	1.86	832462	12290	55.4	25296	1106.6	9.7	158.5	13855	1689
236.7	300.0	11.86	1.56	965656	14191	56.7	30353	1327.8	10.1	244.9	15823	2021
258.5	329.0	12.01	1.34	1098851	16108	57.8	35410	1549.0	10.4	364.7	17801	2352
282.3	358.1	12.14	1.18	1236207	18025	58.6	40467	1770.2	10.6	522.9	19787	2684
326.9	416.1	12.34	0.95	1510920	21794	60.3	50582	2212.7	11.0	974.8	23787	3348
373.6	474.2	12.47	0.80	1789795	25662	61.4	60696	2655.1	11.3	1639.1	27825	4012
418.3	532.3	12.57	0.69	2076994	29396	62.5	70810	3097.6	11.5	2552.5	31886	4675
464.4	590.3	12.65	0.61	2368356	33265	63.3	80925	3540.0	11.7	3749.7	36010	5339
511.6	645.2	12.70	0.55	2663881	37198	64.3	91039	3982.5	11.9	5263.4	39936	5966
238.7	303.2	11.30	2.00	1015604	13994	57.9	25302	1106.8	9.1	186.1	16053	1701
261.0	332.3	11.56	1.68	1169610	16042	59.3	30360	1328.1	9.6	272.7	18168	2033
283.8	361.3	11.76	1.44	1327778	18025	60.6	35417	1549.3	9.9	392.8	20293	2364

Nota:

El peso nominal incluye el peso de soldadura.



**IS
PERFIL I SOLDADO
DIMENSIONES**

Designación $\frac{b_f \cdot X t_f}{h \cdot X t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
mm x mm*	in. x in.	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
457 x 25 1422 x 11	18 x 1 56 x 0.438	8	7	307.6	206.7	1473	1406	33.4	13.5
457 x 32 1422 x 11	18 x 1.25 56 x 0.438	8	7	352.2	236.7	1485	1406	39.7	13.5
457 x 38 1422 x 11	18 x 1.5 56 x 0.438	10	8	398.9	268.0	1498	1402	48.1	15.5
457 x 44 1422 x 11	18 x 1.75 56 x 0.438	10	8	445.0	299.0	1511	1402	54.4	15.5
457 x 51 1422 x 11	18 x 2 56 x 0.438	10	8	489.7	329.1	1524	1402	60.8	15.5
457 x 63 1422 x 11	18 x 2.5 56 x 0.438	13	10	581.5	390.7	1549	1409	76.5	18.5
508 x 19 1524 x 11	20 x 0.75 60 x 0.438	6	5	284.8	191.4	1562	1512	25.0	11.5
508 x 22 1524 x 11	20 x 0.875 60 x 0.438	8	7	310.5	208.6	1568	1508	30.2	13.5
508 x 25 1524 x 11	20 x 1 60 x 0.438	8	7	335.8	225.6	1574	1508	33.4	13.5
508 x 32 1524 x 11	20 x 1.25 60 x 0.438	8	7	386.4	259.6	1587	1508	39.7	13.5
508 x 38 1524 x 11	20 x 1.5 60 x 0.438	10	8	437.6	294.1	1600	1504	48.1	15.5
508 x 44 1524 x 11	20 x 1.75 60 x 0.438	10	8	488.2	328.1	1612	1504	54.4	15.5
508 x 51 1524 x 11	20 x 2 60 x 0.438	10	8	538.8	362.1	1625	1504	60.8	15.5
508 x 63 1524 x 11	20 x 2.5 60 x 0.438	13	10	641.0	430.7	1651	1498	76.3	18.5

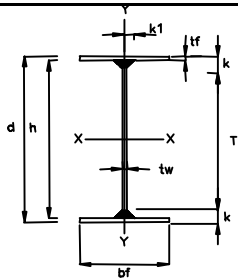
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergida

* Redondeado al milímetro

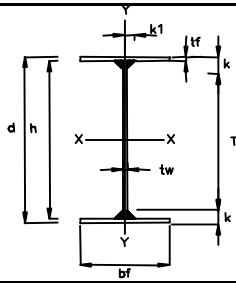


IS
PERFIL I SOLDADO
PROPIEDADES

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
307.6	390.3	11.91	1.27	1481783	20156	61.6	40474	1770.5	10.2	552.3	22427	2696
352.2	448.4	12.14	1.02	1802282	24252	63.4	50588	2212.9	10.6	1004.2	26722	2360
398.9	506.5	12.29	0.86	2122780	28349	64.7	60703	2655.4	10.9	1669.9	31054	4024
445.0	564.5	12.42	0.74	2451603	32446	65.9	70817	3097.9	11.2	2585.4	35424	4687
489.7	622.6	12.50	0.66	2788750	36543	66.9	80932	3540.3	11.4	3785.3	39830	5351
581.5	741.9	12.65	0.54	3475532	44900	68.4	101161	4425.2	11.7	7167.9	48992	6715
284.8	362.6	12.90	1.61	1481783	19008	63.9	41641	1639.4	10.7	300.8	21353	2498
310.5	394.8	13.11	1.39	1677412	21467	65.2	48578	1912.5	11.1	434.6	23877	2908
335.8	427.1	13.28	1.22	1877203	23761	66.3	55515	2185.6	11.4	611.5	26412	3318
386.4	491.6	13.54	0.98	2280948	28677	68.1	69389	2731.9	11.9	1117.2	31512	4137
439.6	556.1	13.68	0.83	2688855	34248	69.5	83264	3278.1	12.2	1861.9	36653	4956
488.2	20.6	13.82	0.71	3105086	38509	70.7	97138	3824.3	12.5	2887.5	41835	5776
538.8	683.9	13.92	0.63	3529642	43425	71.8	111013	4370.6	12.7	4233.9	46957	6579
641.0	812.9	14.07	0.51	4412053	53257	73.7	138761	5463.0	13.1	8039.7	57526	8217

Nota:

El peso nominal incluye el peso de soldadura.



**IS
PERFIL I SOLDADO
DIMENSIONES**

Designación $\frac{b_f \cdot X t_f}{h \cdot X t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
mm x mm*	in. x in.	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
mm x mm*	In. x in.								
559 x 19 1676 x 13	22 x 0.75 66 x 0.5	6	5	333.9	224.4	1714	1664	25.0	12.3
559 x 22 1676 x 13	22 x 0.875 66 x 0.5	8	7	362.6	243.7	1720	1660	30.2	14.3
559 x 25 1676 x 13	22 x 1 66 x 0.5	8	7	390.9	262.7	1727	1660	35.4	14.3
559 x 32 1676 x 13	22 x 1.25 66 x 0.5	8	7	446.0	313.1	1739	1660	39.7	14.3
559 x 38 1676 x 13	22 x 1.5 66 x 0.5	10	8	503.1	338.1	1752	1656	48.1	16.3
559 x 44 1676 x 13	22 x 1.75 66 x 0.5	10	8	558.1	375.0	1765	1656	54.4	16.3
559 x 51 1676 x 13	22 x 2 66 x 0.5	10	8	613.2	412.0	1778	1536	60.8	16.3
559 x 63 1676 x 13	22 x 2.5 66 x 0.5	13	10	725.8	487.7	1803	1650	76.5	19.3
559 x 76 1676 x 13	22 x 3 66 x 0.5	13	10	837.5	562.8	1828	1650	89.2	19.3
610 x 22 1829 x 14	24 x 0.875 72 x 0.563	8	7	417.7	280.7	1873	1812	30.2	15.1
610 x 25 1829 x 14	24 x 1 72 x 0.563	8	7	448.9	301.6	1879	1812	33.4	15.1
610 x 32 1829 x 14	24 x 1.25 72 x 0.563	8	7	510.0	342.7	1892	1812	39.7	15.1
610 x 38 1829 x 14	24 x 1.5 72 x 0.563	10	8	570.1	383.1	1905	1808	48.1	17.1
610 x 44 1829 x 14	24 x 1.75 72 x 0.563	10	8	631.1	424.1	1917	1808	54.4	17.1

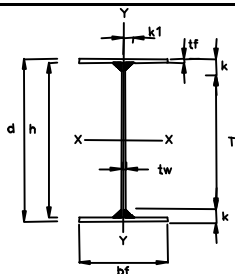
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergido

* Redondeado al milímetro

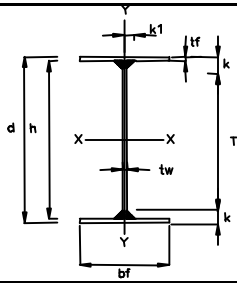


IS
PERFIL I SOLDADO
PROPIEDADES

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
333.9	425.8	13.97	1.61	2027047	23597	69.0	55429	1982.9	11.4	369.4	26971	3041
362.6	461.3	14.22	1.39	2289272	26547	70.4	66662	2385.9	12.0	517.2	30018	3537
390.9	496.8	14.43	1.22	2555661	29496	71.7	73896	2644.8	12.2	712.8	33077	4033
446.0	567.7	14.73	0.98	3088437	35559	73.8	92363	3305.8	12.8	1272.3	39228	5024
503.1	638.7	14.94	0.82	3629538	41459	75.4	110829	3966.7	13.2	2097.3	45424	6016
558.1	710.0	15.09	0.71	4162314	47358	76.6	129296	4627.6	13.5	3235.0	51666	7007
615.2	780.6	15.21	0.63	4745038	53257	78.0	147763	5288.6	13.8	4730.7	57952	7998
725.8	922.6	15.39	0.51	5868863	65056	79.8	184697	6610.5	14.1	8967.4	70661	9981
837.5	1064.5	15.49	0.43	7034311	77019	81.3	221630	7932.4	14.4	15130.7	83549	11964
417.7	532.3	15.32	1.38	3050976	32610	75.7	83957	2754.5	12.6	619.2	37013	4219
448.9	571.0	15.54	1.21	3388123	36051	77.0	95944	3147.8	13.0	833.4	40645	4809
510.0	645.2	15.90	0.98	4079068	43097	79.5	119919	3934.4	13.6	1446.8	47645	5940
570.1	722.6	16.15	0.82	4786661	50144	81.4	143894	4720.9	14.1	2352.2	59994	7120
631.1	800.0	16.33	0.71	5494254	57190	82.9	167869	5507.5	14.5	3602.0	62391	8299

Nota:

El peso nominal incluye el peso de soldadura.



**IS
PERFIL I SOLDADO
DIMENSIONES**

Designación $\frac{b_f \cdot X t_f}{h \cdot t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
<u>mm x mm*</u> mm x mm*	<u>in. x in.</u> In. x in.	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
610 x 51 1829 x 14	24 x 2 72 x 0.563	10	8	692.1	465.1	1930	1808	60.8	17.1
610 x 63 1829 x 14	24 x 2.5 72 x 0.563	13	10	815.1	547.7	1955	1802	76.5	20.1
610 x 75 1829 x 14	24 x 3 72 x 0.563	13	10	935.7	628.8	1981	1802	89.2	20.1
660 x 22 1981 x 16	26 x 0.875 78 x 0.625	8	7	477.2	320.7	3025	1965	30.2	15.9
660 x 25 1981 x 16	26 x 1 78 x 0.625	8	7	511.4	343.6	2032	1965	33.4	15.9
660 x 32 1981 x 16	26 x 1.25 78 x 0.625	8	7	576.9	387.7	2044	1965	39.7	15.9
660 x 38 1981 x 16	26 x 1.5 78 x 0.625	10	8	643.0	432.1	2057	1961	48.1	17.9
660 x 44 1981 x 16	26 x 1.75 78 x 0.625	10	8	708.5	476.1	2070	1961	54.4	17.9
660 x 51 1981 x 16	26 x 2 78 x 0.625	10	8	774.0	520.1	2082	1961	60.8	17.9
660 x 63 1981 x 16	26 x 2.5 78 x 0.625	13	10	907.4	609.7	2108	1955	76.5	20.9
660 x 76 1981 x 16	26 x 3 78 x 0.625	13	10	1038.4	697.8	2134	1955	76.5	20.9
711 x 25 2134 x 16	28 x 1 84 x 0.625	8	7	550.1	369.3	2184	2118	89.2	15.9
711 x 32 2134 x 16	28 x 1.25 84 x 0.625	8	7	620.1	416.7	2197	2118	33.4	15.9
711 x 38 2134 x 16	28 x 1.5 84 x 0.625	10	8	692.1	465.1	2210	2114	48.1	17.9

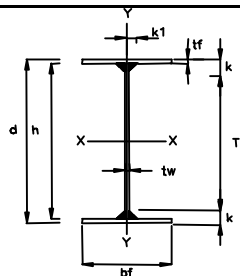
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergido

* Redondeado al milímetro

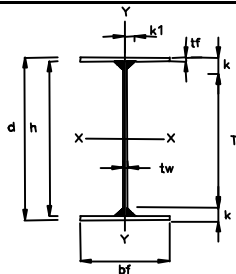


**IS
PERFIL I SOLDADO
PROPIEDADES**

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástica	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
692.1	877.4	16.48	0.62	6201848	64237	84.01	191844	6294.1	14.8	5246.9	69838	9479
815.1	1032.3	16.69	0.50	7658658	78330	86.1	239794	7867.3	15.2	9914.7	84879	11839
935.7	1187.1	16.81	0.43	9157091	92423	87.8	287744	9440.4	15.6	16721.2	100117	14199
477.2	607.7	16.36	1.38	3975010	39165	80.9	106753	3233.0	13.3	736.2	43787	4966
511.4	651.6	16.64	1.21	4412053	44081	82.3	121994	3694.5	13.7	951.1	49398	5690
576.9	735.5	17.04	0.98	5286139	51619	84.8	152476	4617.7	14.4	1597.8	57947	7075
643.0	819.4	17.35	0.82	6160225	59812	86.7	182958	5540.8	14.9	2553.8	66548	8459
708.5	903.2	17.55	0.70	7034311	68170	88.3	213440	6464.0	15.4	3991.2	75203	9844
774.0	987.1	17.73	0.62	7950020	76363	89.7	243922	7387.1	15.7	5785.3	83912	11229
907.4	1154.8	17.98	0.50	9781438	92914	92.0	304886	9233.4	16.2	10883.9	101488	13998
1038.4	1322.6	18.14	0.43	11696103	109465	94.0	365850	11079.6	16.6	18333.2	119277	16768
550.1	696.8	17.93	1.21	5494254	50308	88.8	152356	4284.4	14.8	1052.2	56719	6500
620.1	787.1	18.36	0.97	6575456	59812	91.4	190428	5355.1	15.6	1772.3	66612	8106
692.1	877.4	18.67	0.81	7658658	69481	93.4	228499	6425.7	16.1	2836.9	76562	9712

Nota:

El peso nominal incluye el peso de soldadura.



**IS
PERFIL I SOLDADO
DIMENSIONES**

Designación $\frac{b_f \cdot X t_f}{h \times t_w}$		Soldadura mínima recomendada		Peso		Peralte	Distancia		
		Man.	Aut.			d	h	k	k ₁
<u>mm x mm*</u>	<u>in. x in.</u>	mm	mm	kg/m	lb./ft.	mm	mm	mm	mm
711 x 44 2134 x 16	28 x 1.75 84 x 0.625	10	8	763.5	513.0	2222	2113	54.4	17.9
711 x 51 2134 x 16	28 x 2 84 x 0.625	10	8	833.5	560.1	2235	2113	60.8	17.9
711 x 63 2134 x 16	28 x 2.5 84 x 0.625	13	10	975.8	655.7	2260	2107	76.5	20.9
711 x 76 2134 x 16	28 x 3 84 x 0.625	13	10	1118.7	751.7	2286	2107	89.2	20.9
762 x 25 2286 x 17	30 x 1 90 x 0.688	8	7	618.6	415.7	2336	2270	33.4	16.7
762 x 32 2286 x 17	30 x 1.25 90 x 0.688	8	7	694.5	466.7	2349	2270	39.7	16.7
762 x 38 2286 x 17	30 x 1.5 90 x 0.688	10	8	771.0	518.1	2362	2266	48.1	18.7
762 x 44 2286 x 17	30 x 1.75 90 x 0.688	10	8	847.9	569.8	2374	2266	54.4	18.7
762 x 51 2286 x 17	30 x 2 90 x 0.688	10	8	922.8	520.1	2387	2266	60.8	18.7
762 x 63 2286 x 17	30 x 2.5 90 x 0.688	13	10	1075.6	722.8	2413	2266	76.5	21.7
762 x 76 2286 x 17	30 x 3 90 x 0.688	13	10	1227.4	824.8	2438	2266	89.2	21.7

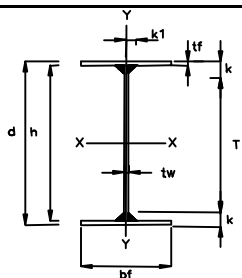
Notas:

El peso nominal incluye el peso de la soldadura.

Man. es soldadura aplicada manualmente

Aut. es soldadura de arco sumergido

* Redondeado al milímetro

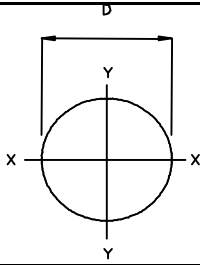


IS
PERFIL I SOLDADO
PROPIEDADES

Peso	Area	r_T	$\frac{d}{A_f}$	Eje X-X			Eje Y-Y			Constante de torsión	Módulo de sección plástico	
				I	S	r	I	S	r		J	Z_x
kg/m	cm ²	cm	cm ⁻¹	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm ³
763.5	967.7	18.92	0.70	8782483	78985	95.30	266570	7496.3	16.6	4308.9	86569	11318
833.5	1058.1	19.10	0.62	9906308	88654	96.8	304642	8567.0	17.0	6249.6	96934	12924
975.8	1238.7	19.35	0.50	12195581	107826	99.2	380784	10708.2	17.5	11771.4	116936	16136
1118.7	1419.4	19.53	0.42	14526477	126999	101.2	456927	12849.5	17.9	19852.0	137467	19348
618.6	787.1	18.97	1.21	6909411	59157	93.7	187406	4918.8	15.4	1231.4	67626	7558
694.5	883.9	19.48	0.97	8241382	70136	96.6	234232	6147.8	16.3	2005.5	78964	9402
771.0	980.6	19.84	0.81	9573322	81115	98.8	281058	7376.9	16.9	3150.4	90364	11245
847.9	1077.4	20.12	0.70	10946886	92095	100.8	327884	8605.9	17.4	4734.6	101825	13089
922.8	1174.2	23.32	0.62	12320450	103074	102.4	374710	9834.9	17.9	6824.4	113347	14932
1075.6	1367.7	20.62	0.50	15109201	125197	105.1	468362	12293.0	18.5	13425.3	136576	18619
1227.4	1361.3	20.83	0.42	17939375	147155	107.2	562014	14751.0	19.0	21500.7	160051	22306

Nota:

El peso nominal incluye el peso de soldadura.

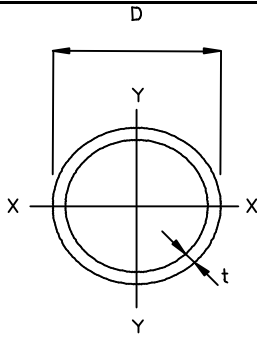


OS
REDONDO SOLIDO LISO
DIMENSIONES Y PROPIEDADES

Designacion diametro <i>D</i>		Peso		Area	Ejes X-X y Y-Y		
					<i>I</i>	<i>S</i>	<i>r</i>
mm	in.	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm
6.3	1/4	0.249	0.167			0.025	0.158
7.9	5/16	0.388	0.261	0.495	0.019	0.048	0.198
9.5	3/8	0.559	0.376	0.713	0.04	0.084	0.238
11.1	7/16	0.76	0.511	0.97	0.075	0.134	0.278
12.7	1/2	0.994	0.668	1.267	0.128	0.201	0.318
14.3	9/16	1.257	0.845	1.603	0.205	0.287	0.358
15.9	5/8	1.552	1.043	1.979	0.314	0.395	0.398
17.5	11/16	1.878	1.262	2.395	0.46	0.526	0.438
19.1	3/4	2.235	1.502	2.85	0.653	0.684	0.478
20.6	13/16	2.622	1.762	3.345	0.884	0.858	0.515
22.2	7/8	3.045	2.046	3.879	1.192	1.074	0.555
23.8	15/16	3.491	2.346	4.453	1.575	1.324	0.595
25.4	1	3.973	2.669	5.067	2.043	1.609	0.635
27	1 1/16	4.484	3.013	5.72	2.61	1.932	0.675
28.6	1 1/8	5.022	3.375	6.413	3.284	2.297	0.715
30.2	1 3/16	5.605	3.767	7.145	4.083	2.704	0.755
31.8	1 1/4	6.208	4.172	7.917	5.02	3.157	0.795
33.3	1 5/16	6.845	4.599	8.729	6.036	3.625	0.833
34.9	1 3/8	7.514	5.049	9.58	7.282	4.173	0.873
36.5	1 7/16	8.212	5.518	10.471	8.712	4.774	0.913
38.1	1 1/2	9	6.048	11.401	10.343	5.43	0.953
41.3	1 5/8	10.49	7.049	13.38	14.281	6.916	1.033
44.5	1 3/4	12.17	8.178	15.518	19.25	8.651	1.113
47.7	1 7/8	13.97	9.388	17.813	25.412	10.655	1.193
50.8	2	15.89	10.678	20.268	32.69	12.87	1.27
57.2	2 1/4	20.11 f		25.652	52.547	18.373	1.43
60.3	2 3/8	22.41 f		28.58	64.9	21.525	1.508
63.5	2 1/2	24.83	16.686	31.668	79.81	25.138	1.588
66.7	2 5/8	27.38	18.4	34.913	97.156	29.133	1.668
69.9	2 3/4	30.04	20.187	38.32	117.186	33.53	1.748
73	2 7/8	32.84	22.072	41.881	139.4	38.192	1.825
76.2	3	35.75	24.024	45.605	165.5	43.438	1.905
82.5	3 1/4	41.97	28.206	53.518	227.4	55.127	2.063
88.9	3 1/2	48.68	32.712	62.069	306.6	68.977	2.223
95.2	3 3/4	55.88	37.552	71.253	403.194	84.706	2.38
101.6	4	63.58	42.726	81.073	523.048	102.963	2.54

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



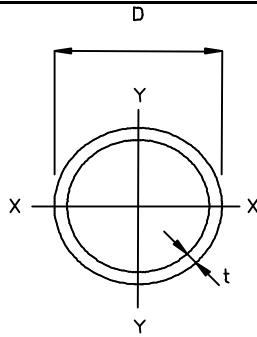
OC
TUBO CIRCULAR
DIMENSIONES Y PROPIEDADES

Designación D x t		Diametro nominal	Diametro interior	Peso	Area	Ejes X-X y Y-Y			Denominación
						<i>I</i>	<i>S</i>	<i>r</i>	
mm x mm	in. x in.	in.	mm	kg/m	cm ²	cm ⁴	cm ³	cm	
21 x 2.77	0.84 x 0.110	1/2	15.76	1.27	1.61	0.71	0.66	0.66	40 E
x 3.73	x 0.147		13.84	1.62	2.06	0.83	0.78	0.64	80 XE
27 x 2.87	1.05 x 0.113	3/4	20.96	1.69	2.15	1.55	1.16	0.85	40 E
x 3.91	x 0.154		18.88	2.2	2.8	1.87	1.40	0.82	80 XE
33 x 3.38	1.315 x 0.133	1	26.64	2.5	3.19	3.64	2.18	1.07	40 E
x 4.55	x 0.179		24.3	3.24	4.12	4.40	2.63	1.03	80 XE
42 x 3.56	1.66 x 0.140	1 1/4	35.08	3.39	4.32	8.13	3.85	1.37	40 E
x 4.85	x 0.191		32.5	4.47	5.69	10.09	4.78	1.33	80 XE
48 x 3.68	1.9 x 0.145	1 1/2	40.94	4.05	5.16	12.93	5.35	1.58	40 E
x 5.08	x 0.200		38.14	5.41	6.9	16.33	6.76	1.54	80 E
60 x 3.91	2.375 x 0.154	2	52.48	5.44	6.93	27.66	9.18	2.00	40 E
x 5.54	x 0.218		49.22	7.48	9.53	36.09	11.97	1.95	80 XE
x 8.74	x 0.344		42.82	11.11	14.16	48.40	16.05	1.85	160
x 11.07	x 0.436		38.16	13.44	17.12	54.49	18.07	1.78	XXE
73 x 5.16	2 7/8 x 0.203	2 1/2	62.68	8.63	11	63.63	17.43	2.41	40 E
x 7.01	x 0.276		58.98	11.41	14.53	80.00	21.92	2.35	80 XE
x 9.53	x 0.375		53.94	14.92	19	97.85	26.81	2.27	160
x 14.02	x 0.552		44.96	20.39	25.98	119.34	32.70	2.14	XXE
89 x 5.49	3.5 x 0.216	3	77.92	11.29	14.39	125.65	28.27	2.96	40 E
x 7.62	x 0.300		73.66	15.27	19.46	162.09	36.47	2.89	80 XE
x 11.13	x 0.438		66.64	21.35	27.19	209.80	47.20	2.78	160
x 15.24	x 0.600		58.42	27.68	35.27	249.43	56.11	2.66	XXE
102 x 5.74	4 x 0.226	3 1/2	90.12	13.57	17.29	199.27	39.23	3.40	40 E
x 8.08	x 0.318		85.44	18.64	23.74	261.47	51.47	3.32	80 XE

Se recomienda que al ordenar tubos de acero se especifique la norma oficial mexicana, el diametro exterior y el espesor de pared.

Se fabrican tubos de otros diametros y espesores que no aparecen en esta tabla, por lo que deberan consultarse los catalogos de los fabricantes.

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad. Redondeado al milimetro.



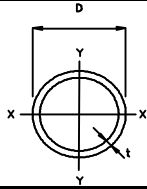
OC
TUBO CIRCULAR
DIMENSIONES Y PROPIEDADES

Designacion D x t		Diametro nominal	Diametro interior	Peso	Area	Ejes X-X y Y-Y			Denominaci ón
						I	S	r	
mm x mm	in. x in.	in.	mm	kg/m	cm2	cm4	cm3	cm	
114 x 6.02 x 8.56 x 11.13 x 13.49 x 17.12	4.5 x 0.237 x 0.337 x 0.438 x 0.531 x 0.674	4	102.26	16.08	20.48	301.05	52.68	3.83	40 E
			97.18	22.32	28.44	400.03	70.00	3.75	80 XE
			92.04	28.32	36.07	485.56	84.96	3.67	120
			87.32	33.54	42.72	552.45	96.67	3.60	160
			80.06	41.03	52.27	636.16	111.31	3.49	XXE
141 x 6.55 x 9.53 x 12.7 x 15.88 x 19.05	5.56 x 0.258 x 0.375 x 0.500 x 0.652 x 0.750	5	128.2	21.77	27.73	630.83	89.29	4.77	40 E
			122.24	30.97	39.45	860.73	121.83	4.67	80 XE
			115.9	40.28	51.31	1071.03	151.60	4.57	120
			109.54	49.12	62.57	1250.02	176.93	4.47	160
			103.2	57.43	73.16	1399.98	198.16	4.37	XXE
168 x 7.11 x 10.97 x 14.27 x 18.26 x 21.95	6.63 x 0.280 x 0.432 x 0.562 x 0.719 x 0.864	6	154.08	28.26	36	1171.63	139.23	5.70	40 E
			146.36	42.56	54.22	1685.81	200.33	5.58	80 XE
			139.76	54.21	69.05	2065.43	245.45	5.47	120
			131.78	67.57	86.07	2457.92	292.09	5.34	160
			124.4	79.22	100.92	2762.70	328.31	5.23	XXE
219 x 6.35 x 7.04 x 8.18 x 10.31 x 12.7 x 15.09 x 18.25 x 20.62 x 22.23	8.63 x 0.250 x 0.277 x 0.322 x 0.406 x 0.500 x 0.594 x 0.719 x 0.812 x 0.875	8	206.4	33.32	42.44	2403.40	219.39	7.53	20
			205.02	36.82	46.9	2639.28	240.92	7.50	30
			202.74	42.55	54.2	3018.69	275.55	7.46	40 E
			198.48	53.09	67.63	3694.07	337.20	7.39	60
			193.7	64.64	82.35	4401.83	401.81	7.31	80 XE
			188.92	75.92	96.71	5059.09	461.81	7.23	100
			182.6	90.4	115.16	5854.75	534.44	7.13	120
			177.86	100.93	128.57	6399.72	584.18	7.06	140
			174.64	107.93	137.49	6745.91	615.78	7.00	XXE
273 x 6.35 x 7.8 x 9.27 x 12.7 x 15.09 x 18.26 x 21.44	10.75 x 0.250 x 0.307 x 0.365 x 0.500 x 0.594 x 0.719 x 0.844	10	260.4	41.77	53.21	4735.77	346.82	9.43	20
			257.5	51.03	65.01	5724.55	419.23	9.38	30
			254.56	60.31	76.83	6693.37	490.18	9.33	40 E
			247.7	81.56	103.89	8827.05	646.43	9.22	60
			242.92	96.02	122.31	10212.70	747.91	9.14	80 XE
			236.58	114.76	146.19	11928.50	873.56	9.03	100
			230.22	133.06	169.51	13516.60	989.86	8.93	120

Se recomienda que al ordenar tubos de acero se especifique la norma oficial mexicana, el diametro exterior y el espesor de pared.

Se fabrican tubos de otros diametros y espesores que no aparecen en esta tabla, por lo que deberan consultarse los catalogos de los fabricantes.

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad. Redondeado al milimetro.



OC
TUBO CIRCULAR
DIMENSIONES Y PROPIEDADES



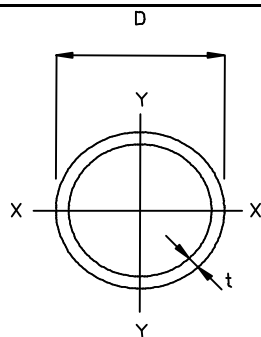
Designacion <i>D x t</i>		Diametro nominal	Diametro interior	Peso	Area	Ejes X-X y Y-Y			Denomina ción			
						<i>I</i>	<i>S</i>	<i>r</i>				
mm x mm	in. x in.	in.	mm	kg/m	cm ²	cm ⁴	cm ³	cm				
324	x 6.35	12.75	x 0.250	12	311.2	49.73	63.35	7989.09	493.24	11.23	20	
	x 8.38				x 0.330	307.14	65.21	83.03	10344.0	638.7	11.2	30
	x 9.53				x 0.375	304.84	73.88	94.12	11637.8	718.6	11.1	E
	x 10.31				x 0.406	303.28	79.73	101.57	12498.8	771.8	11.1	40
	x 12.7				x 0.500	298.5	97.47	124.16	15055.8	929.7	11.0	XE
	x 14.27				x 0.562	295.36	108.96	138.81	16669.9	1029.3	11.0	60
	x 17.48				x 0.668	288.94	132.09	168.27	19813.5	1223.4	10.9	80
	x 21.44				x 0.844	281.02	159.92	203.72	23413.4	1445.7	10.7	100
356	x 6.35	14	x 0.250	14	342.9	54.69	69.67	10626.3	597.7	12.4	10	
	x 7.92				x 0.312	339.76	67.91	86.51	13078.2	735.6	12.3	20
	x 9.53				x 0.375	336.54	81.33	103.61	15522.9	873.1	12.2	30 E
	x 11.13				x 0.438	333.34	94.55	120.45	17883.9	1005.8	12.2	40
	x 12.7				x 0.500	320.2	107.4	136.81	20135.5	1132.5	12.1	XE
	x 15.09				x 0.594	325.42	126.72	161.42	23441.8	1318.4	12.1	60
	x 19.05				x 0.750	317.5	158.11	201.42	28608.4	1609.0	11.9	80
	x 23.83				x 0.938	309.94	194.97	248.37	34350.0	1932.0	11.8	100
406	x 6.35	16	x 0.250	16	393.7	62.65	79.81	15969.6	785.9	14.2	10	
	x 7.92				x 0.312	390.56	77.83	99.15	19686.9	968.8	14.1	20
	x 9.53				x 0.375	387.34	93.27	118.82	23407.2	1151.9	14.0	30 E
	x 12.7				x 0.500	381	123.31	157.08	30465.7	1499.3	13.9	40 XE
	x 16.66				x 0.659	373.08	160.13	203.99	38801.9	1909.5	13.8	60
	x 21.44				x 0.844	363.52	203.54	259.29	48181.1	2371.1	13.6	80
457	x 6.35	18	x 0.250	18	444.3	70.57	89.9	22826.9	999.0	15.9	10	
	x 7.92				x 0.312	441.16	87.72	111.74	28177.3	1233.1	15.9	20
	x 11.13				x 0.438	434.74	122.38	155.9	38766.1	1696.6	15.8	30
	x 12.7				x 0.500	431.6	139.16	177.27	43777.3	1915.9	15.7	XE
	x 14.27				x 0.562	428.46	155.81	198.48	48680.2	2130.4	15.7	40
	x 19.05				x 0.750	418.9	205.75	262.1	62958.0	2755.3	15.5	60
	x 23.83				x 0.938	409.34	254.57	324.29	76291.1	3338.8	15.3	80
	508				x 6.35	20	x 0.250	20	495.3	78.56	100.07	31485.0
x 9.53		x 0.375	488.94	117.15	149.24				46369.3	1825.6	17.6	20
x 12.7		x 0.500	482.6	155.13	197.62				60639.4	2387.4	17.5	30 XE
x 15.09		x 0.594	477.82	183.43	233.67				71032.8	2796.6	17.4	40
x 20.62		x 0.812	466.76	247.84	315.72				93913.6	3697.4	17.3	60
610	x 6.35	24	x 0.250	24	597.3	94.53	120.42	54857.4	1798.6	21.3	10	
	x 9.53				x 0.375	590.94	141.12	179.77	81045.4	2657.2	21.2	20 E
	x 12.7				x 0.500	584.6	187.07	238.31	106325.0	3486.1	21.1	XE
	x 14.27				x 0.562	581.46	209.65	267.07	118543.0	3886.1	21.1	30
	x 17.48				x 0.668	575.04	255.42	325.38	142917.0	4685.8	21.0	40
	x 24.61				x 0.969	560.78	655.28	452.59	194210.0	6367.5	20.7	60

Se recomienda que al ordenar tubos de acero se especifique la norma oficial mexicana, el diametro exterior y el espesor de pared.

Se fabrican tubos de otros diametros y espesores que no aparecen en esta tabla, por lo que deberan consultarse los catalogos de los fabricantes.

Los espesores sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

*Redondeado al milimetro.



OC
TUBO CIRCULAR
DIMENSIONES Y PROPIEDADES

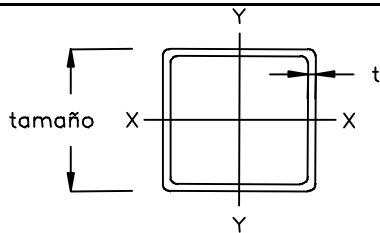
Designación <i>D x t</i>		Diámetro nominal	Diámetro interior	Peso	Area	Ejes X-X y Y-Y			Denominación
						<i>I</i>	<i>S</i>	<i>r</i>	
mm* x mm	in. x in.	in.	mm	kg/m	cm2	cm4	cm3	cm	
762 x 6.35	30 x 0.250	30	794.3	118.34	150.75	107602.64	2824.25	26.72	10
x 7.92	x 0.312		749.16	147.29	187.63	133377.27	3500.75	26.66	E
x 9.53	x 0.375		742.94	176.85	225.28	159472.79	4185.68	26.61	20 XE
x 12.7	x 0.500		736.6	234.68	298.96	209870.86	5508.48	26.50	30
x 15.88	x 0.625		730.24	292.2	372.23	259137.17	6801.47	26.39	-
x 19.05	x 0.750		723.9	349.04	444.64	306983.94	8057.40	26.28	-
914 x 7.92	36 x 0.312	36	898.16	176.97	225.45	231373.96	5062.94	32.04	10
x 9.53	x 0.375		894.94	212.57	270.79	276936.94	6059.94	31.98	E
x 12.7	x 0.500		888.6	282.29	359.6	365219.98	7991.77	31.87	20 XE
x 15.88	x 0.625		882.24	351.73	448.06	451903.63	9888.58	31.76	30
x 19.05	x 0.750		875.9	420.45	535.6	536468.85	11739.04	31.65	40
x 22.23	x 0.875		869.54	488.89	622.79	619475.74	13555.41	31.54	-
1067 x 9.53	42 x 0.375	42	1047.94	248.53	316.6	442576.97	8295.81	37.39	E
x 12.7	x 0.500		1041.6	330.29	420.65	584542.15	10956.85	37.28	XE
x 15.88	x 0.625		1035.24	411.64	524.39	524374.22	13577.91	37.17	-
x 19.05	x 0.750		1028.9	492.33	627.17	861225.01	16143.09	37.06	-
x 22.23	x 0.875		1022.54	572.77	729.64	995989.12	18669.15	36.95	-
x 25.4	x 1.000		1016.2	652.46	831.16	1127849.85	21140.79	36.84	-
1219 x 9.53	48 x 0.375	48	1199.94	284.25	363.11	66158.02	10864.07	42.76	E
x 12.7	x 0.500		1193.6	377.81	481.29	875536.62	14364.98	42.65	XE
x 15.88	x 0.625		1187.24	471.17	600.22	1086199.17	17821.83	42.54	-
x 19.05	x 0.750		1180.9	563.74	718.14	1292856.59	21211.97	42.43	-
x 22.23	x 0.875		1174.54	656.1	835.8	146848.48	24558.88	42.32	-
x 25.4	x 1.000		1168.2	747.67	952.45	169627.35	27841.59	42.21	-
1422 x 9.53	56 x 0.375	56	1402.94	331.96	422.88	1054646.33	14833.43	49.94	-
x 12.7	x 0.500		1396.6	441.39	562.29	1386065.58	19635.44	49.83	-
x 15.88	x 0.625		1390.24	550.67	701.49	1733921.85	24387.33	49.72	-
x 19.05	x 0.750		1393.9	659.11	839.63	2066132.19	29059.82	49.61	-
x 22.23	x 0.875		1377.54	767.39	977.57	2394834.49	33682.97	49.50	-
x 25.4	x 1.000		1371.2	874.83	1114.44	2718003.02	38228.88	49.39	-
1524 x 9.53	60 x 0.375	60	1504.94	355.94	453.42	1300015.71	17060.75	53.55	-
x 12.7	x 0.500		1498.6	473.34	602.98	1721642.25	22593.96	53.43	-
x 15.88	x 0.625		1492.24	560.62	752.38	2139256.32	28074.52	53.32	-
x 19.05	x 0.750		1485.9	707.03	900.67	2550276.41	33468.54	53.21	-
x 22.23	x 0.875		1479.54	823.31	1048.8	2957340.72	38810.64	53.10	-
x 25.4	x 1.000		1473.2	938.73	1195.83	3356933.74	44067.82	52.99	-

Se recomienda que al ordenar tubos de acero se especifique la norma oficial mexicana, el diámetro exterior y el espesor de pared.

Se fabrican tubos de otros diámetros y espesores que no aparecen en esta tabla, por lo que deberán consultarse los catálogos de los fabricantes.

Los espesores sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

*Redondeado al milímetro.

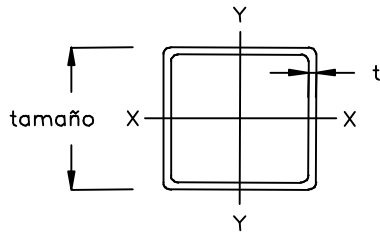


OR
TUBO CUADRADO
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor <i>t</i>		Peso		Area	Ejes X-X y Y-Y		
					<i>I</i>	<i>S</i>	<i>r</i>
mm x mm	in. x in.	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm
25 x 2.4	1 x 0.095	1.62	1.09	2.07	1.75	1.38	0.92
x 3.4	x 0.133	2.10	1.41	2.68	2.01	1.58	0.87
38 x 2.8	1.5 x 0.110	2.95	1.98	3.74	7.56	3.96	1.42
x 3.2	x 0.125	3.29	2.21	4.17	8.21	4.30	1.40
51 x 2.8	2 x 0.110	4.00	2.69	5.11	19.04	7.49	1.93
x 3.2	x 0.125	4.54	3.05	5.79	21.40	8.42	1.92
x 4.0	x 0.156	5.45	3.55	6.97	24.70	9.72	1.88
x 4.8	x 0.188	6.45	4.32	8.19	27.80	10.95	1.84
x 6.4	x 0.250	8.05	5.41	10.26	31.88	12.55	1.76
64 x 3.2	2.5 x 0.125	5.84	3.92	7.40	44.07	13.88	2.44
x 3.6	x 0.141	6.47	4.35	8.26	48.30	15.20	2.42
x 4.8	x 0.188	8.32	5.59	10.58	59.10	18.68	2.36
x 6.4	x 0.250	10.58	7.11	13.48	70.34	22.12	2.28
76 x 3.2	3 x 0.125	7.12	4.78	9.01	79.83	20.71	2.95
x 4.8	x 0.188	10.20	6.85	13.00	108.00	28.30	2.90
x 6.4	x 0.250	13.11	8.81	16.71	131.53	34.41	2.79
x 7.9	x 0.313	15.74	10.58	20.10	149.00	39.17	2.72
89 x 3.2	3.5 x 0.125	8.39	5.64	10.62	128.53	28.91	3.47
x 4.0	x 0.156	10.20	6.85	13.00	154.00	34.60	3.45
x 4.8	x 0.188	12.10	8.13	15.40	179.00	40.10	3.40
x 6.3	x 0.250	15.64	10.51	19.90	220.20	50.00	3.33
x 7.9	x 0.313	18.90	12.70	24.06	253.50	57.05	3.25
102 x 4.8	4 x 0.188	14.02	9.42	17.87	274.30	54.08	3.91
x 6.3	x 0.250	18.17	12.21	23.16	342.14	67.35	3.84
x 7.9	x 0.313	22.07	14.83	28.13	498.75	78.49	3.76
x 9.5	x 0.375	25.70	17.27	32.77	445.37	87.67	3.68
x 12.7	x 0.500	32.19	21.63	41.03	511.96	100.45	3.53
127 x 4.8	5 x 0.188	17.81	11.97	22.71	557.75	87.93	4.95
x 6.3	x 0.250	23.25	15.62	29.61	703.43	111.10	4.88
x 7.9	x 0.313	28.39	19.08	36.19	83.66	131.42	4.80
x 9.5	x 0.375	33.29	22.37	42.45	949.00	149.29	4.72
x 12.7	x 0.500	42.31	28.43	53.94	1123.82	177.00	4.57
152 x 4.8	6 x 0.188	21.62	14.53	27.55	990.63	129.95	5.99
x 6.3	x 0.250	28.30	19.02	36.10	1261.18	165.51	5.92
x 7.9	x 0.313	34.73	23.34	44.26	1510.92	198.28	5.84
x 9.5	x 0.375	40.89	27.48	52.13	1731.52	227.78	5.77
x 12.7	x 0.500	52.44	35.24	67.10	2101.97	275.30	5.61

Nota:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

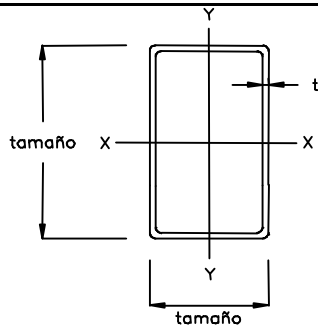


OR
TUBO CUADRADO
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor <i>t</i>		Peso		Area	Ejes X-X y Y-Y			
					<i>I</i>	<i>S</i>	<i>r</i>	
mm x mm	in. x in.	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	
178	x 4.8	7 x 0.188	25.42	17.08	32.39	1602.49	180.26	7.04
	x 6.4	x 0.250	33.36	22.42	42.52	2056.18	231.10	6.96
	x 7.9	x 0.313	41.06	27.59	52.32	2476.58	278.58	6.88
	x 9.5	x 0.375	48.48	32.58	61.81	2859.51	321.19	6.81
	x 12.7	x 0.500	62.58	42.05	80.00	3251.32	396.57	6.65
203	x 4.8	8 x 0.188	29.21	19.63	37.23	2422.47	239.25	8.08
	x 6.4	x 0.250	38.42	25.82	48.97	3125.90	308.10	8.00
	x 7.9	x 0.313	47.38	31.84	60.39	3783.54	372.00	7.92
	x 9.5	x 0.375	56.10	37.69	71.61	4412.10	432.62	7.85
	x 12.7	x 0.500	72.70	48.85	92.90	5452.63	539.13	7.69
	x 15.8	x 0.625	88.28	59.28	112.28	6368.34	627.62	7.52
254	x 6.4	10 x 0.250	48.56	32.63	61.87	6285.00	493.23	10.10
	x 7.9	x 0.313	60.00	40.35	76.77	7617.00	601.41	9.98
	x 9.5	x 0.375	71.28	47.90	90.97	8907.00	703.00	9.91
	x 12.7	x 0.500	92.95	62.46	118.71	11280.00	881.18	9.75
	x 15.8	x 0.625	113.60	76.33	144.52	13361.00	1052.00	9.60
305	x 6.4	12 x 0.250	58.68	39.43	74.84	11030.00	722.67	12.14
	x 7.9	x 0.313	72.71	48.86	92.90	13486.00	884.90	12.06
	x 9.5	x 0.375	86.46	58.10	110.32	15817.00	1039.00	12.00
	x 12.7	x 0.500	113.20	76.07	144.52	20187.00	1325.71	11.84
356	x 7.9	14 x 0.313	85.56	57.36	109.00	21727.00	1222.48	14.15
	x 9.5	x 0.375	101.66	68.31	129.68	25598.00	1440.42	14.07
	x 12.7	x 0.500	133.46	89.68	170.32	32924.00	1851.74	13.92
406	x 7.9	16 x 0.313	98.00	65.87	125.16	32841.00	1615.76	16.21
	x 9.5	x 0.375	116.85	78.52	149.00	38751.00	1900.90	16.13
	x 12.7	x 0.500	153.73	103.30	196.13	44948.00	2458.00	15.98

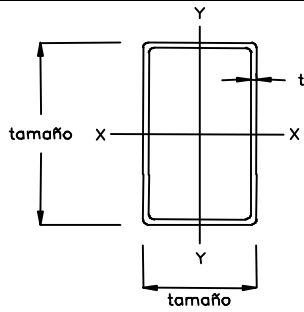
Nota:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.



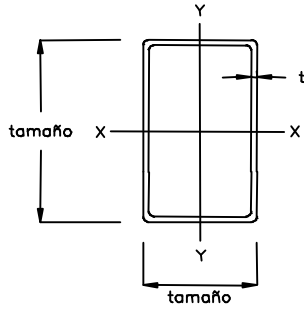
OR
TUBO RECTANGULAR
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor <i>t</i>		Peso		Área	Eje X-X			Eje Y-Y				
					<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>		
mm x mm x mm	in. x in x in	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm		
76 x 51	x 3.20	3 x	x 0.125	5.84	3.92	7.4	57.41	15.07	2.78	15.07	12.02	2.03
	x 3.60	2 x	x 0.141	6.47	4.35	8.26	63.3	16.6	2.77	16.6	13.2	2.01
	x 4.80	x	x 0.188	10.58	7.11	10.58	77.42	20.32	2.69	40.67	16	1.96
	x 6.40	x	x 0.25	8.32	5.59	13.48	92	24.1	1.62	47.87	18.85	1.88
102 x 51	x 3.20	4 x 2	x 0.125	7.12	4.78	9.01	117.34	23.09	3.6	39.69	15.62	2.09
	x 4.80	x	x 0.188	10.2	6.85	13	161	31.8	3.51	53.7	21.1	2.03
	x 6.40	x	x 0.25	13.11	8.81	16.71	195.27	38.51	3.43	64.1	25.24	1.96
	x 7.90	x	x 0.313	15.74	10.58	20.1	221.44	43.6	3.33	71.18	28.02	1.89
102 x 72	x 3.20	4 x 3	x 0.125	8.39	5.64	10.62	156.41	20.79	3.93	100.45	26.36	3.07
	x 4.00	x	x 0.156	10.2	6.85	13	187	36.9	3.81	120	31.5	3.05
	x 4.80	x	x 0.188	21.1	8.13	15.4	218	42.9	3.76	139	36.5	3
	x 6.40	x	x 0.25	15.6	10.48	19.9	269	52.9	3.67	171	44.8	2.93
	x 7.90	x	x 0.313	18.9	12.7	24.1	310.1	60.96	3.58	196	51.46	2.84
127 x 51	x 4.80	5 x 2	x 0.188	12.13	8.15	15.42	286.78	45.6	4.32	66.6	26.22	2.06
	x 6.40	x	x 0.25	15.64	10.54	19.94	352.96	55.55	4.22	79.92	31.46	1.98
	x 7.90	x	x 0.313	18.9	12.7	24.1	405.51	63.91	4.11	89.91	35.4	1.93
127 x 76	x 4.80	5	3 x 0.188	14	9.42	17.87	377.11	59.32	4.6	169.82	44.57	3.07
	x 6.40	x	x 0.25	18.17	12.21	23.16	470.34	74.4	4.5	210.2	55.22	3.02
	x 7.90	x	x 0.313	22.1	14.83	28.13	549.43	86.36	4.42	243.5	63.91	2.95
	x 9.50	x	x 0.375	25.7	17.27	21.77	611.86	95.52	4.32	269.72	70.79	2.37
	x 12.70	x	x 0.5	32.2	21.63	41.03	703.43	110.61	4.14	305.1	80	2.72
127 x 102	x 4.80	5 x 4	x 0.188	15.92	10.7	20.26	166.18	73.58	4.8	331.32	65.22	4.04
	x 6.40	x	x 0.25	20.7	13.91	26.39	586.88	92.6	4.72	415.4	81.77	3.96
	x 7.90	x	x 0.313	25.24	16.96	32.13	690.44	108.97	4.65	487	95.86	3.89
	x 9.50	x	x 0.375	29.59	19.38	37.61	778.35	122.9	4.55	549.43	107.83	3.81
152 x 51	x 4.80	6 x 2	x 0.188	14.1	9.42	17.87	462	60.63	5.08	79.1	31.35	2.11
	x 6.40	x	x 0.25	18.17	12.21	23.16	547.4	75.38	4.98	96.15	37.85	2.04
	x 7.90	x	x 0.313	22.1	14.83	28.13	666	87.51	4.88	109.1	42.93	1.97
	x 9.50	x	x 0.375	27.7	17.27	32.77	740.9	97.34	4.75	118.24	46.54	1.9
152 x 76	x 4.80	6 x 3	x 0.188	15.92	10.7	20.26	595.21	78	5.41	201	52.77	3.15
	x 6.40	x	x 0.25	20.7	13.91	26.39	745.1	98	5.31	249.74	65.55	3.07
	x 7.90	x	x 0.313	25.24	16.96	32.13	878.25	115.2	5.23	290.53	76.2	3
	x 9.50	x	x 0.375	29.5	19.82	37.61	990.23	129.78	5.13	323.83	85	2.95



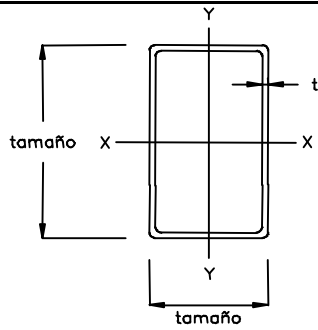
OR
TUBO RECTANGULAR
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor t				Peso		Área	Eje X-X			Eje Y-Y		
							<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>
mm x mm x mm		in. x in x in		kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
152 x 102	x 4.8	6 x 4	x 0.188	17.81	11.97	22.71	724.24	95.21	5.66	397.93	76.36	4.14
	x 6.40		x 0.25	23.24	15.62	29.61	919.87	120.61	5.56	487	96.19	4.06
	x 7.90		x 0.313	28.39	19.08	36.19	1090.53	142.9	5.49	574.4	133.4	3.99
	x 9.50		x 0.375	19.087	22.37	42.45	1236.9	162.23	5.41	649.32	128.15	3.91
	x 12.70		x 0.5	42.31	28.43	53.94	1469.3	193.37	5.23	765.87	150.92	3.76
178 x 76	x 4.80	7 x 3	x 0.188	17.81	11.97	22.71	878.25	98.65	6.22	231.84	60.8	3.2
	x 6.40		x 0.25	23.25	15.62	29.61	1107.18	124.71	6.12	289.28	75.87	3.12
	x 7.90		x 0.313	28.4	19.08	36.19	1311.13	147.48	6.02	337.56	88.65	3.05
	x 9.50		x 0.375	33.3	22.37	42.45	1486	167.15	5.92	278	99.14	2.99
178 x 102	x 4.80	7 x 4	x 0.188	19.72	13.25	25.1	1057.23	118.97	6.48	445.37	87.51	4.22
	x 6.40		x 0.25	25.77	17.32	32.84	1344.43	151.22	6.4	561.91	110.61	4.14
	x 7.90		x 0.313	31.56	21.21	40.19	1602.5	180.23	6.32	666	130.77	4.06
	x 9.50		x 0.375	37.1	24.93	47.29	1831.41	206.48	6.22	753.38	148.47	3.99
178 x 127	x 4.80	7 x 5	x 0.188	21.62	17.53	27.55	1210.37	139.3	6.71	736.73	116.35	5.18
	x 6.40		x 0.25	28.3	19.02	20.1	1581.68	178.62	6.63	94.68	148.14	5.1
	x 7.90		x 0.313	34.73	23.34	44.26	1893.85	213.03	6.55	1119.66	177	5.03
	x 9.50		x 0.375	40.89	27.48	52.13	2172.73	244.17	6.45	1282	201.56	4.95
	x 12.70		x 0.5	52.44	35.24	67.1	2643.1	296.61	6.3	1548.4	244.17	4.83
203 x 51	x 4.80	8 x 2	x 0.188	17.81	11.97	22.71	994.8	97.83	6.6	105	41.3	2.15
	x 6.40		x 0.25	23.25	15.62	29.61	1252.86	123.23	6.5	128.2	50.47	2.08
	x 7.90		x 0.313	28.4	19.08	36.19	1477.63	145.35	6.38	146.51	57.68	2.01
	x 9.50		x 0.375	33.3	22.37	42.45	1669.1	163.87	6.27	160.25	63.1	1.94
203 x 76	x 4.80	8 x 3	x 0.188	19.72	13.25	25.1	1232	121.9	7.01	262.64	69	3.23
	x 6.40		x 0.25	25.77	17.32	32.84	1565	154	6.91	328.82	86.2	3.18
	x 7.90		x 0.313	31.56	21.21	40.19	1861	184.5	6.81	385	100.91	3.1
	x 9.50		x 0.375	37.1	24.83	47.29	2122.8	280.12	6.71	432.88	113.4	3.02



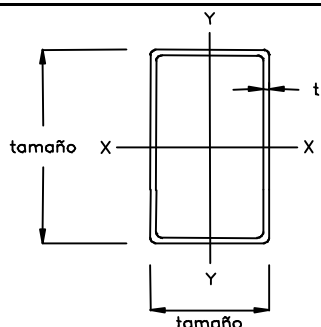
OR
TUBO RECTANGULAR
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor t		Peso		Área	Eje X-X			Eje Y-Y			
					<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>	
mm x mm x mm	in. x in x in	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	
203 x 102 x	4.8	8 x 4 x 0.188	21.62	14.53	27.55	1469.3	144.7	7.32	449.48	98.65	4.27
	6.40	0.25	28.3	19.02	36.06	1877.2	185.17	7.21	636.83	126	4.19
	7.90	0.313	34.73	23.34	44.26	2243.49	221.23	7.11	753.38	148.3	4.11
	9.50	0.375	40.89	27.48	52.13	2576.47	254	7.03	857.44	168.79	4.06
	12.70	0.5	52.44	35.24	67.1	3125.9	308.08	6.83	1023.93	201.56	3.91
203 x 152 x	4.80	8 x 6 x 0.188	25.42	17.08	32.39	1984	191.73	7.75	1252.86	163.87	6.22
	6.40	0.25	33.36	22.42	42.52	2510.6	245.81	7.68	1606.65	211.4	6.15
	7.90	0.313	41.06	27.59	52.32	3013.52	296.61	7.6	1931.31	254	6.07
	9.50	0.375	48.48	32.58	61.81	3483.86	342.48	7.52	2226.84	291.7	6
	12.70	0.5	62.58	42.05	80	4287.18	422.79	7.34	2734.64	358.88	5.87
254 x 51 x	4.80	10 x 2 x 0.188	21.62	14.53	27.55	1818.93	143.22	8.13	130.7	51.46	2.18
	6.40	0.25	28.3	19.02	36.1	2310.1	181.9	8	160.25	63.1	2.11
	7.90	0.313	34.73	23.34	44.26	2751.3	261.31	7.87	183.97	72.43	2.04
	9.50	0.375	40.89	27.48	52.13	3138.38	247.45	7.77	201.87	79.48	1.97
254 x 102 x	4.80	10 x 4 x 0.188	25.42	17.08	32.39	2568.15	201.56	8.91	616.02	121.1	4.37
	6.40	0.25	33.36	22.42	42.52	3300.72	260.55	8.81	782.52	153.87	1.3
	7.90	0.313	11.09	27.59	52.32	3954.2	313	8.71	932.36	183.54	4.22
	9.50	0.375	48.48	32.58	61.81	4578.55	360.52	8.61	1061.4	209.75	4.14
	12.70	0.5	52.28	42.05	80	5660.75	444.1	8.4	1282	252.36	4.01
254 x 152 x	4.80	10 x 6 x 0.188	29.21	19.63	37.23	3321.53	262.2	9.45	1519.24	199.92	6.38
	6.40	0.25	38.42	25.82	48.97	4287.18	337.57	9.37	1952.13	255.64	6.32
	7.90	0.313	47.38	31.84	60.39	5202.9	409.68	9.27	2351.71	308.1	6.25
	9.50	0.375	56.1	37.69	71.61	6035.36	475.22	9.19	2722.15	357.24	6.17
	12.70	0.5	72.7	48.85	92.9	7533.8	593.21	9.01	3363.15	440.81	6.02



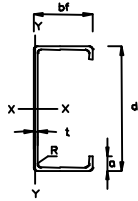
OR
TUBO RECTANGULAR
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor t			Peso		Área	Eje X-X			Eje Y-Y		
						<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>
mm x mm x mm	in. x in x in		kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm
305 x 51 x 4.8	12 x 2 x 0.188	x 0.188	25.42	17.08	32.39	2996.9	196.64	9.62	156.5	61.62	2.2
			33.36	22.42	42.52	3837.65	252.36	9.5	192.3	75.71	2.13
305 x 102 x 4.80	12 x 4 x 0.188	x 0.188	29.22	19.63	37.23	4087.4	268.75	10.5	728.4	143.39	4.42
			38.42	25.82	48.97	5286.14	345.77	10.39	928.2	181.9	4.34
			47.38	37.69	60.39	6368.34	2507.22 _{ij}	10.29	1107.18	217.95	4.82 _{ij}
			56.1	37.69 ^{***}	71.61	7408.92	485.1	10.19	1269.51	249.1	4.22
			72.7	48.58	92.9	9198.71	603	9.96	1535.89	303.16	4.06
305 x 152 x 4.80	12 x 6 x 0.188	x 0.188	33	22.18	42.06	5161.27	339.21	11.11	1781.47	234.34	6.5
			43.5	29.23	55.42	6701.33	440.81	11	2297.6	301.52	6.43
			53.72	36.1	68.39	8158.14	534.2	10.92	2772.1	363.8	6.38
			63.68	42.79	81.29	9490	624.35	10.82	3213.31	421.15	6.3
			82.83	55.66	105.81	11915.84	783.3	10.64	3995.82	524.4	6.15
305 x 203 x 6.40	12 x 8 x 0.25	x 0.25	48.56	32.63	61.87	8158.14	534.22	11.48	4370.43	431	8.41
			60.05	40.35	76.77	9947.93	652.21	11.4	5327.76	524.4	8.33
			71.28	47.9	90.97	11612.86	762	11.3	6201.85	611.24	8.28
			92.95	62.46	118.71	14693	965.2	11.15	7825.15	768.56	8.13
			113.59	76.33	144.52	17398.47	1142.18	10.97	9198.71	906.2	7.98
356 x 102 x 6.40	14 x 4 x 0.25	x 0.25	43.5	29.23	55.42	7866.77	442.45	11.19	1073.88	211.4	4.39
			53.72	36.1	68.39	9573.32	537.5	11.81	1286.16	252.36	4.34
			63.68	46.79	81.29	11113.38	625.98	11.7	1473.46	290.1	4.27
			82.83	55.66	105.81	13943.75	783.3	11.48	1783.96	352.32	4.11
356 x 152 x 6.40	14 x 6 x 0.25	x 0.25	48.56	32.63	61.87	9864.68	553.9	12.62	2638.91	345.77	6.53
			60.05	40.35	76.77	11987.47	675.15	12.52	3192.5	419.51	6.45
			71.28	47.9	90.97	14027	788.22	12.42	3708.62	486.7	6.4
			92.95	62.46	118.71	17731.46	996.33	12.24	4620.17	608	6.25



OR
TUBO RECTANGULAR
DIMENSIONES Y PROPIEDADES

Designación tamaño y espesor t		Peso		Área	Eje X-X			Eje Y-Y				
					<i>I</i>	<i>S</i>	<i>r</i>	<i>I</i>	<i>S</i>	<i>r</i>		
mm x mm x mm	in. x in x in	kg/m	lb./ft.	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm		
356 x 254 x	14 x 10 x	7.9	0.313	72.71	48.86	92.9	16857.37	948.81	13.49	10072.8	793.13	10.49
		9.50	0.375	86.46	58.1	110.32	19812.62	1114.32	13.41	11821	930.8	10.36
		12.70	0.5	113.2	76.07	144.52	25306.87	1424	13.26	15026	1184.78	10.21
406 x 102 x	16 x 4 x	7.90	0.313	60.05	40.35	76.77	13610.77	670.23	13.33	1451	288.41	4.37
		9.50	0.375	71.28	47.9	90.97	15900	783.3	13.23	1681.58	331	4.29
		12.70	0.5	92.95	62.46	118.71	20020.73	986.5	13	2052	403.12	4.17
406 x 203 x	16 x 8 x	7.90	0.313	72.71	48.86	92.9	20020.73	984.86	14.7	6867.82	675.15	8.61
		9.50	0.375	86.46	58.1	110.32	23517	1156.93	14.6	8033.27	789.86	8.53
		12.70	0.5	113.2	76.07	144.52	30052	1478.11	14.43	10156	999.61	8.38
406 x 305 x	16 x 12 x	7.90	0.313	85.36	57.36	109	26430.7	1301.13	15.6	17023.9	1117.6	12.52
		9.50	0.375	101.66	68.31	129.68	31134.11	1532.2	15.51	20062.4	1315.88	12.45
		12.70	0.5	133.46	89.68	170.32	40041.46	1966.45	15.34	25723.1	1687.87	12.28
457 x 152 x	18 x 6 x	7.90	0.313	72.71	48.86	92.9	22726.24	994.7	15.67	4037.44	529.3	6.6
		9.50	0.375	86.46	58.1	110.32	26680.43	1168.4	15.57	4703.42	616.15	6.53
		12.70	0.5	113.2	76.07	144.52	34047.73	1489.58	15.37	5868.86	773.47	6.4
508 x 102 x	20 x 4 x	7.90	0.313	72.71	48.86	92.9	24807.4	976.67	16.36	1818.93	357.24	4.42
		9.50	0.375	86.46	58.1	110.32	29094.58	1145.46	16.26	2093.64	411.32	4.37
		12.70	0.5	113.2	76.7	144.52	37002.97	1456.81	16.03	2564	504.72	4.22
508 x 203 x	20 x 8 x	7.90	0.313	85.36	57.36	109	34880.2	1373.24	17.9	8407.87	825.91	8.79
		9.50	0.375	101.66	68.31	129.67	41123.67	1619	17.83	9823.1	968.48	8.71
		12.70	0.5	133.46	89.68	170.32	52861.4	2081.16	17.63	12486.9	1230.67	8.59
508 x 305 x	20 x 12 x	7.90	0.313	98.02	65.87	125.16	44953	1769.8	18.93	20603.5	1352	12.85
		9.50	0.375	116.85	78.52	149	53277.62	2097.54	18.9	24266.3	1593	12.78
		12.70	0.5	153.73	103.3	196.13	68678.2	2703.87	18.72	31217.4	2048.4	12.62



CF
PERFIL C FORMADO EN FRIO
DIMENSIONES

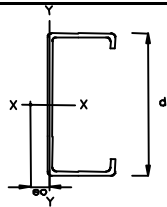


Designación d x cal.		Peso kg/m	Peralte	Espesor	Patín	a	R
mm*xcal.	in.xcal.		d	t	bf		
			mm	mm	mm	mm	mm
76 x 18	3 x 18	1.68	76.2	1.21	4.45	10.2	2.4
x 16	x 16	2.15	76.20	1.52	4.45	12.7	2.4
x 14	x 14	2.66	76.20	1.90	4.45	12.7	2.4
x 12	x 12	3.77	76.20	2.66	4.45	17.8	4.8
89 x 18	3 1/2 x 18	1.97	88.90	1.21	50.80	12.7	2.4
x 16	x 16	2.45	88.90	1.52	50.80	12.7	2.4
x 14	x 14	3.12	88.90	1.90	50.80	15.2	2.4
x 12	x 12	4.31	88.90	2.66	50.80	17.8	4.8
x 10	x 10	5.44	88.90	3.42	50.80	17.8	4.8
102 x 18	4 x 18	2.09	101.60	1.21	50.80	123.7	2.4
x 16	x 16	2.61	101.60	1.52	50.80	12.7	2.4
x 14	x 14	3.31	101.60	1.90	50.80	15.2	2.4
x 12	x 12	4.57	101.60	2.66	50.80	17.8	4.8
x 10	x 10	5.78	101.60	3.42	50.80	17.8	4.8
127 x 18	5 x 18	2.33	127.00	1.21	50.80	12.7	2.4
x 16	x 16	2.91	127.00	1.52	50.80	12.7	2.4
x 14	x 14	3.69	127.00	1.90	50.80	15.2	2.4
x 12	x 12	5.11	127.00	2.66	50.80	17.8	4.8
x 10	x 10	6.47	127.00	3.42	50.80	17.8	4.8
152 x 16	6 x 16	3.58	152.40	1.52	63.50	15.2	2.4
x 14	x 14	4.53	152.40	1.90	63.50	17.8	2.4
x 12	x 12	6.17	152.40	2.66	63.50	17.8	4.8
x 10	x 10	7.84	152.40	3.42	63.50	17.8	4.8
178 x 16	7 x 16	4.04	177.80	1.52	69.90	15.2	2.4
x 14	x 14	5.10	177.80	1.90	69.90	17.8	2.4
x 12	x 12	7.08	177.80	2.66	69.90	20.3	4.8
x 10	x 10	9.01	177.80	3.42	69.90	20.3	4.8
203 x 16	8 x 16	4.50	203.20	1.52	76.20	15.2	2.4
x 14	x 14	5.67	203.20	1.90	76.20	17.8	2.4
x 12	x 12	7.88	203.20	2.66	76.20	20.3	4.8
x 10	x 10	10.17	203.20	3.42	76.20	22.9	4.8
229 x 16	9 x 16	4.96	228.60	1.52	82.60	15.2	2.4
x 14	x 14	6.24	228.60	1.90	82.60	17.8	2.4
x 12	x 12	8.68	228.60	2.66	82.60	20.3	4.8
x 10	x 10	11.34	228.60	3.42	82.60	25.4	4.8
254 x 14	10 x 14	6.82	254.00	1.90	88.90	17.8	2.4
x 12	x 12	9.59	254.00	2.66	88.90	22.9	4.8
x 10	x 10	12.37	254.00	3.42	88.90	25.4	4.8
305 x 12	12 x 12	10.66	304.80	2.66	88.90	22.9	4.8
x 10	x 10	13.74	304.80	3.42	88.90	25.4	4.8

NOTA:

Los perfiles sombreados no son de fabricación común, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milímetro.



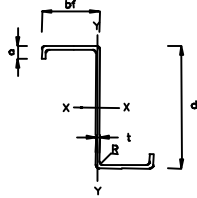
CF
PERFIL C FORMADO EN FRIO
PROPIEDADES



Peso	Área	Eje X-X			Eje Y-Y			e_o	Sx	col.Qs
		I	S	r	I	S	r			
kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm		
1.68	2.12	20.58	5.40	3.11	5.45	1.87	1.60	2.15	5.22	0.83
2.15	2.77	25.94	6.81	3.09	7.22	2.55	1.63	2.21	6.80	0.91
2.66	3.37	31.72	8.33	3.07	8.72	3.08	1.61	2.19	8.33	0.95
3.77	4.78	42.31	11.10	2.98	12.25	4.54	1.60	2.38	11.10	1.00
1.97	2.79	32.86	7.39	3.63	8.63	2.61	1.86	2.47	6.89	0.77
2.45	3.11	40.65	9.15	3.62	10.58	3.20	1.85	2.45	8.98	0.86
3.12	3.94	50.75	11.42	3.59	13.74	4.26	1.87	2.51	11.42	0.92
4.31	5.45	67.31	15.14	3.51	18.19	5.75	1.83	2.62	15.14	0.99
5.44	6.88	83.29	18.74	3.48	22.06	6.97	1.79	2.58	18.74	1.00
2.09	2.65	44.58	8.78	4.11	9.10	2.67	1.85	2.39	8.21	0.73
2.61	3.30	55.21	10.87	4.06	11.15	3.28	1.84	2.39	10.68	0.82
3.31	4.18	69.09	13.60	4.06	14.51	4.36	1.86	2.43	13.60	0.88
4.57	5.79	92.18	18.10	3.99	19.37	5.92	1.83	2.53	18.15	0.97
5.78	7.32	114.38	22.52	3.95	23.52	7.19	1.79	2.49	22.52	1.00
2.33	2.95	74.53	11.74	5.02	9.87	2.76	1.83	2.26	11.04	0.67
2.91	3.69	92.45	14.56	5.01	12.11	3.39	1.81	2.24	14.33	0.74
3.69	4.67	116.10	18.28	4.99	15.79	4.51	1.84	2.31	18.28	0.81
5.11	6.46	156.19	24.60	4.92	21.32	6.19	1.82	2.38	24.60	0.91
6.47	8.19	194.62	30.65	4.88	25.93	7.53	1.78	2.32	30.65	0.96
3.58	4.53	166.50	21.85	6.06	23.73	5.34	2.29	2.81	20.42	0.67
4.53	5.73	209.02	27.43	6.04	30.77	7.05	2.32	2.87	26.91	0.76
6.17	7.82	278.93	36.60	5.97	39.47	9.00	2.25	2.89	36.61	0.86
7.84	9.92	349.47	45.86	5.93	48.45	11.05	2.21	2.84	45.89	0.92
4.04	5.11	253.23	28.48	7.04	31.60	6.33	2.49	3.00	25.91	0.61
5.10	6.46	318.70	35.79	7.02	40.95	8.33	2.52	3.05	34.43	0.70
7.08	8.96	433.37	48.75	6.95	55.83	11.48	2.50	3.15	48.75	0.81
9.01	11.40	544.78	61.28	6.91	68.89	14.17	2.46	3.10	61.28	0.87
4.50	5.69	364.86	35.91	8.01	40.80	7.37	2.68	3.18	31.86	0.56
5.67	7.18	458.63	45.14	7.99	52.83	9.68	2.71	3.25	42.54	0.65
7.88	9.98	626.90	61.71	7.93	72.33	13.38	2.69	3.33	61.71	0.77
10.70	12.88	801.37	78.87	7.89	94.13	17.66	2.70	3.36	78.87	0.83
4.96	6.27	505.05	44.19	8.97	51.69	8.51	2.87	3.38	38.28	0.52
6.24	7.90	634.98	55.55	8.96	66.86	11.14	2.91	3.44	51.26	0.60
8.68	10.99	870.54	76.16	8.90	91.84	15.44	2.89	3.53	75.88	0.73
11.34	14.35	1128.07	98.69	8.86	124.91	21.51	2.95	3.63	98.69	0.80
6.82	8.63	850.22	96.95	9.93	82.83	12.67	3.10	3.63	60.53	0.56
9.59	12.40	1883.61	93.20	9.87	119.41	18.62	3.14	3.80	92.05	0.70
12.37	15.65	1514.78	119.27	9.84	155.00	24.44	3.15	3.82	119.27	0.77
10.66	13.49	1820.11	119.43	11.61	126.59	19.05	3.06	3.57	118.07	0.64
13.74	17.39	2333.44	153.10	11.58	164.52	25.00	3.08	3.59	152.10	0.70

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.



ZF
PERFIL Z FORMADO EN FRIO
DIMENSIONES

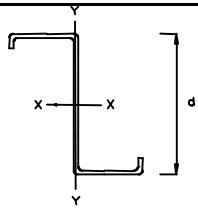


Designación d x cal.		Peso	Peralte	Esesor	Patín	a	R
			d	t	bf		
mm*xcal.	in.xcal.	kg/m	mm	mm	mm	mm	mm
76 x 18	3 x 18	1.68	76.20	1.21	4.45	10.20	2.40
x 16	x 16	2.15	76.20	1.52	4.45	12.70	2.40
x 14	x 14	2.66	76.20	1.90	4.45	12.70	2.40
x 12	x 12	3.77	76.20	2.66	4.45	17.80	4.80
89 x 18	3 1/2 x 18	1.97	88.90	1.21	50.80	12.70	2.40
x 16	x 16	2.45	88.90	1.52	50.80	12.70	2.40
x 14	x 14	3.12	88.90	1.90	50.80	15.20	2.40
x 12	x 12	4.31	88.90	2.66	50.80	17.80	4.80
x 10	x 10	5.44	88.90	3.42	50.80	17.80	4.80
102 x 18	4 x 18	2.09	101.60	1.21	50.80	123.70	2.40
x 16	x 16	2.61	101.60	1.52	50.80	12.70	2.40
x 14	x 14	3.31	101.60	1.90	50.80	15.20	2.40
x 12	x 12	4.57	101.60	2.66	50.80	17.80	4.80
x 10	x 10	5.78	101.60	3.42	50.80	17.80	4.80
127 x 18	5 x 18	2.33	127.00	1.21	50.80	12.70	2.40
x 16	x 16	2.91	127.00	1.52	50.80	12.70	2.40
x 14	x 14	2.69	127.00	1.90	50.80	15.20	2.40
x 12	x 12	5.11	127.00	2.66	50.80	17.80	4.80
x 10	x 10	6.47	127.00	3.42	50.80	17.80	4.80
152 x 16	6 x 16	3.58	152.40	1.52	63.50	15.20	2.40
x 14	x 14	4.53	152.40	1.90	63.50	17.80	2.40
x 12	x 12	6.17	152.40	2.66	63.50	17.80	4.80
x 10	x 10	7.84	152.40	3.42	63.50	17.80	4.80
178 x 16	7 x 16	4.04	177.80	1.52	69.90	15.20	2.40
x 14	x 14	5.10	177.80	1.90	69.90	17.80	2.40
x 12	x 12	7.08	177.80	2.66	69.90	20.30	4.80
x 10	x 10	9.01	177.80	3.42	69.90	20.30	4.80
203 x 16	8 x 16	4.50	203.20	1.52	76.20	15.20	2.40
x 14	x 14	5.67	203.20	1.90	76.20	17.80	2.40
x 12	x 12	7.88	203.20	2.66	76.20	20.30	4.80
x 10	x 10	10.17	203.20	3.42	76.20	22.90	4.80
229 x 16	9 x 16	4.96	228.60	1.52	82.60	15.20	2.40
x 14	x 14	6.24	228.60	1.90	82.60	17.80	2.40
x 12	x 12	8.68	228.60	2.66	82.60	20.30	4.80
x 10	x 10	11.34	228.60	3.42	82.60	25.40	4.80
254 x 14	10 x 14	6.82	254.00	1.90	88.90	17.80	2.40
x 12	x 12	9.59	254.00	2.66	88.90	22.90	4.80
x 10	x 10	12.37	254.00	3.42	88.90	25.40	4.80
305 x 12	12 x 12	10.66	304.80	2.66	88.90	22.90	4.80
x 10	x 10	13.74	304.80	3.42	88.90	25.40	4.80

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.

* Redondeado al milimetro.



ZF
PERFIL Z FORMADO EN FRIO
PROPIEDADES



Peso	Área	Eje X-X			Eje Y-Y			e_o	Sx	col.Qs
		I	S	r	I	S	r			
kg/m	cm ²	cm ⁴	cm ³	cm	cm ⁴	cm ³	cm	cm		
1.68	2.12	20.58	5.40	3.11	5.45	1.87	1.60	2.15	5.22	0.83
2.15	2.77	25.94	6.81	3.09	7.22	2.55	1.63	2.21	6.80	0.91
2.66	3.37	31.72	8.33	3.07	8.72	3.08	1.61	2.19	8.33	0.95
3.77	4.78	42.31	11.10	2.98	12.25	4.54	1.60	2.38	11.10	1.00
1.97	2.79	32.86	7.39	3.63	8.63	2.61	1.86	2.47	6.89	0.77
2.45	3.11	40.65	9.15	3.62	10.58	3.20	1.85	2.45	8.98	0.86
3.12	3.94	50.75	11.42	3.59	13.74	4.26	1.87	2.51	11.42	0.92
4.31	5.45	67.31	15.14	3.51	18.19	5.75	1.83	2.62	15.14	0.99
5.44	6.88	83.29	18.74	3.48	22.06	6.97	1.79	2.58	18.74	1.00
2.09	2.65	44.58	8.78	4.11	9.10	2.67	1.85	2.39	8.21	0.73
2.61	3.30	55.21	10.87	4.06	11.15	3.28	1.84	2.39	10.68	0.82
3.31	4.18	69.09	13.60	4.06	14.51	4.36	1.86	2.43	13.60	0.88
4.57	5.79	92.18	18.10	3.99	19.37	5.92	1.83	2.53	18.15	0.97
5.78	7.32	114.38	22.52	3.95	23.52	7.19	1.79	2.49	22.52	1.00
2.33	2.95	74.53	11.74	5.02	9.87	2.76	1.83	2.26	11.04	0.67
2.91	3.69	92.45	14.56	5.01	12.11	3.39	1.81	2.24	14.33	0.74
3.69	4.67	116.10	18.28	4.99	15.79	4.51	1.84	2.31	18.28	0.81
5.11	6.46	156.19	24.60	4.92	21.32	6.19	1.82	2.38	24.60	0.91
6.47	8.19	194.62	30.65	4.88	25.93	7.53	1.78	2.32	30.65	0.96
3.58	4.53	166.50	21.85	6.06	23.73	5.34	2.29	2.81	20.42	0.67
4.53	5.73	209.02	27.43	6.04	30.77	7.05	2.32	2.87	26.91	0.76
6.17	7.82	278.93	36.60	5.97	39.47	9.00	2.25	2.89	36.61	0.86
7.84	9.92	349.47	45.86	5.93	48.45	11.05	2.21	2.84	45.89	0.92
4.04	5.11	253.23	28.48	7.04	31.60	6.33	2.49	3.00	25.91	0.61
5.10	6.46	318.70	35.79	7.02	40.95	8.33	2.52	3.05	34.43	0.70
7.08	8.96	433.37	48.75	6.95	55.83	11.48	2.50	3.15	48.75	0.81
9.01	11.40	544.78	61.28	6.91	68.89	14.17	2.46	3.10	61.28	0.87
4.50	5.69	364.86	35.91	8.01	40.80	7.37	2.68	3.18	31.86	0.56
5.67	7.18	458.63	45.14	7.99	52.83	9.68	2.71	3.25	42.54	0.65
7.88	9.98	626.90	61.71	7.93	72.33	13.38	2.69	3.33	61.71	0.77
10.70	12.88	801.37	78.87	7.89	94.13	17.66	2.70	3.36	78.87	0.83
4.96	6.27	505.05	44.19	8.97	51.69	8.51	2.87	3.38	38.28	0.52
6.24	7.90	634.98	55.55	8.96	66.86	11.14	2.91	3.44	51.26	0.60
8.68	10.99	870.54	76.16	8.90	91.84	15.44	2.89	3.53	75.88	0.73
11.34	14.35	1128.07	98.69	8.86	124.91	21.51	2.95	3.63	98.69	0.80
6.82	8.63	850.22	96.95	9.93	82.83	12.67	3.10	3.63	60.53	0.56
9.59	12.40	1883.61	93.20	9.87	119.41	18.62	3.14	3.80	92.05	0.70
12.37	15.65	1514.78	119.27	9.84	155.00	24.44	3.15	3.82	119.27	0.77
10.66	13.49	1820.11	119.43	11.61	126.59	19.05	3.06	3.57	118.07	0.64
13.74	17.39	2333.44	153.10	11.58	164.52	25.00	3.08	3.59	152.10	0.70

NOTA:

Los perfiles sombreados no son de fabricacion comun, por lo que se recomienda consultar con el proveedor su disponibilidad.