EN 10219-1

Cold Formed Welded Structural Hollow Sections of Non-alloy and Fine Grain Steels

MATERIAL OF GRADE	(%) CHEMICAL COMPOSITION (Max)					MECHANICAL PROPERTIES (Min)				COLOR CODE
	C Max	Si Max	Mn Max	P Max	S Max	Yield Strength	Tensile Strength		Elongation	Material of Grade
						N/mm²(min)	N/mm²(min)		%	
							t <3 mm.	t >3 mm.		
S235jRH	0.170	-	1.400	0.045	0.045	235	360-510	340-370	24	-
S275j0H	0.200	-	1.500	0.040	0.040	275	430-580	410-560	20	-
S275j2H	0.200	-	1.500	0.035	0.035	275	430-580	410-560	20	-
S355j0H	0.220	0.550	1.600	0.040	0.040	355	510-680	490-630	20	-
S355j2H	0.220	0.550	1.600	0.035	0.035	355	510-680	490-630	20	-

NOMINAL SIZE		THICKNESS MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION
in	mm	Std.	Min	Max	Std.	Min	Max	STD	cm²	cm⁴	cm³	cm
1/2"	21.3	2.00	1.80	2.20	21.30	20.80	21.80	0.95	1.21	0.571	0.536	0.686
3/4"	26.9	2.00	1.80	2.20	26.90	26.40	27.40	1.23	1.56	1.22	0.907	0.883
		2.50	2.25	2.75	26.90	26.40	27.40	1.50	1.92	1.44	1.07	0.867
1"	33.7	2.00	1.80	2.20	33.70	33.20	34.20	1.56	1.99	2.51	1.49	1.12
		2.50	2.25	2.75	33.70	33.20	34.20	1.92	2.45	3.00	1.78	1.11
		3.00	2.70	3.30	33.70	33.20	34.20	2.27	2.89	3.44	2.04	1.09
1-1/4"	42.4	2.00	1.80	2.20	42.40	41.90	42.90	1.99	2.54	5.19	2.45	1.43
		2.50	2.25	2.75	42.40	41.90	42.90	2.46	3.13	6.26	2.95	1.41
		3.00	2.70	3.30	42.40	41.90	42.90	2.91	3.71	7.25	3.42	1.40
1-1/2"	48.3	2.00	1.80	2.20	48.30	47.80	48.80	2.28	2.91	7.81	3.23	1.64
		2.50	2.25	2.75	48.30	47.80	48.80	2.82	3.60	9.46	3.92	1.62
		3.00	2.70	3.30	48.30	47.80	48.80	3.35	4.27	11.00	4.55	1.61
2"	60.3	2.00	1.80	2.20	60.30	59.70	60.90	2.88	3.66	15.60	5.17	2.06
		2.50	2.25	2.75	60.30	59.70	60.90	3.56	4.54	19.00	6.30	2.05
		3.00	2.70	3.30	60.30	59.70	60.90	4.24	5.40	22.20	7.37	2.03
		4.00	3.60	4.40	60.30	59.70	60.90	5.55	7.07	28.20	9.34	2.00
		5.00	4.50	5.50	60.30	59.70	60.90	6.82	8.69	33.50	11.10	1.96
2-1/2"	76.1	2.00	1.80	2.20	76.10	75.34	76.86	3.65	4.66	32.00	8.40	2.62
		2.50	2.25	2.75	76.10	75.34	76.86	4.54	5.78	39.20	10.30	2.60
		3.00	2.70	3.30	76.10	75.34	76.86	5.41	6.89	46.10	12.10	2.59
		4.00	3.60	4.40	76.10	75.34	76.86	7.11	9.06	59.10	15.50	2.55
		5.00	4.50	5.50	76.10	75.34	76.86	8.77	11.20	70.90	18.60	2.52
		6.00	5.50	6.50	76.10	75.34	76.86	10.40	13.20	81.80	21.50	2.49

Dimension Tolerances

Outside Diameter	≤ 50 mm. : ± 0.5 mm. > 50 mm. : ± 1%
Thickness	≤ 5.0 mm. : ± 10% > 5.0 mm. : ± 0.5 mm.
Weight	± 6

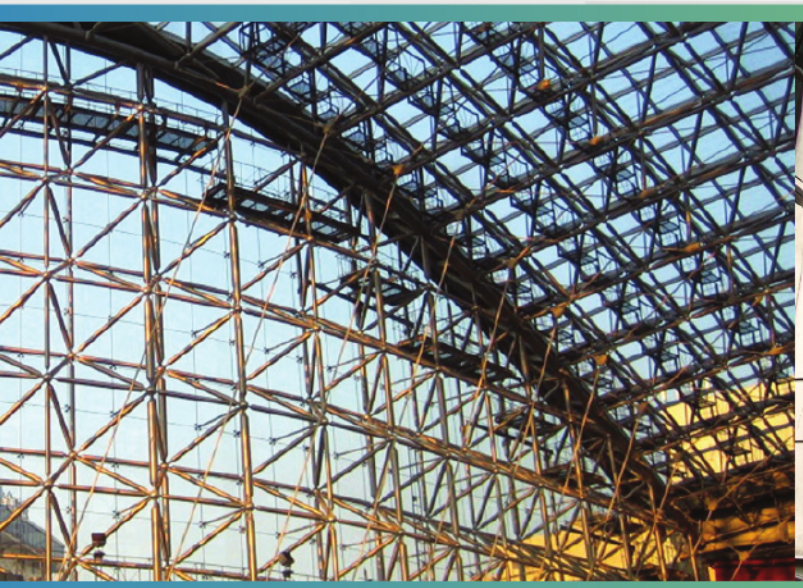
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Cold Formed Welded Structural Hollow Sections of Non-alloy and Fine Grain Steels

NOMINAL SIZE		THICKNESS MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA	MODULUS OF SECTION	
in	mm	Std.	Min	Max	Std.	Min	Max	STD	cm^2	cm^4	cm^3	
3"	88.9	2.00	1.80	2.20	88.90	88.01	89.79	4.29	5.46	51.60	11.60	
		2.50	2.25	2.75	88.90	88.01	89.79	5.33	6.79	63.40	14.30	
		3.00	2.70	3.30	88.90	88.01	89.79	6.36	8.10	74.80	16.80	
		4.00	3.60	4.40	88.90	88.01	89.79	8.38	10.70	96.30	21.70	
		5.00	4.50	5.50	88.90	88.01	89.79	10.30	13.20	116.00	26.20	
		6.00	5.50	6.50	88.90	88.01	89.79	12.30	15.60	135.00	30.40	
3 1/2"	101.6	2.00	1.80	2.20	101.60	100.58	102.62	4.91	6.26	77.60	15.30	
		2.50	2.25	2.75	101.60	100.58	102.62	6.11	7.78	95.60	18.80	
		3.00	2.70	3.30	101.60	100.58	102.62	7.29	9.29	113.00	22.30	
		4.00	3.60	4.40	101.60	100.58	102.62	9.63	12.30	146.00	28.80	
		5.00	4.50	5.50	101.60	100.58	102.62	11.90	15.20	177.00	34.90	
		6.00	5.50	6.50	101.60	100.58	102.62	14.10	18.00	207.00	40.70	
4"	114.3	2.50	2.25	2.75	114.30	113.16	115.44	6.89	8.78	137.00	24.00	
		3.00	2.70	3.30	114.30	113.16	115.44	8.23	10.50	163.00	28.40	
		4.00	3.60	4.40	114.30	113.16	115.44	10.90	13.90	211.00	36.90	
		5.00	4.50	5.50	114.30	113.16	115.44	13.50	17.20	257.00	45.00	
		6.00	5.50	6.50	114.30	113.16	115.44	16.00	20.40	300.00	52.50	
5"	139.7	3.00	2.70	3.30	139.70	138.30	141.10	10.10	12.90	301.00	43.10	
		4.00	3.60	4.40	139.70	138.30	141.10	13.40	17.10	393.00	56.20	
		5.00	4.50	5.50	139.70	138.30	141.10	16.60	21.20	481.00	68.80	
		6.00	5.50	6.50	139.70	138.30	141.10	19.80	25.20	564.00	80.80	
6"	168.3	3.00	2.70	3.30	168.30	166.62	169.98	12.20	15.60	532.00	63.30	
		4.00	3.60	4.40	168.30	166.62	169.98	16.20	20.60	697.00	82.80	
		5.00	4.50	5.50	168.30	166.62	169.98	20.10	25.70	856.00	102.00	
		6.00	5.50	6.50	168.30	166.62	169.98	24.00	30.60	1009.00	120.00	

Dimension Tolerances

Outside Diameter	≤ 50 mm. : ± 0.5 mm. > 50 mm. : ± 1%
Thickness	≤ 5.0 mm. : ± 10% > 5.0 mm. : ± 0.5 mm.
Weight	± 6





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						N/mm²(min)	N/mm²(min)		%	
							t <3 mm.	t >3 mm.		
S235jRH	0.170	-	1.400	0.045	0.045	235	360-510	340-370	24	-
S275j0H	0.200	-	1.500	0.040	0.040	275	430-580	410-560	20	-
S275j2H	0.200	-	1.500	0.035	0.035	275	430-580	410-560	20	-
S355j0H	0.220	0.550	1.600	0.040	0.040	355	510-680	490-630	20	-
S355j2H	0.220	0.550	1.600	0.035	0.035	355	510-680	490-630	20	-

NORMAL SIZE	THICKNESS MM			OUTSIDE DIAMETER MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA		MODULUS OF SECTION		RADIUS OF GYRATION	
mm	Std.	Min	Max	Std.	Min	Max	Std.	Min	Max	-	cm^2	I_x	I_y	Z_x	Z_y	r_x	r_y
												cm^4		cm^3		cm	
40 x 20	2.00	1.80	2.20	40.0	39.50	40.50	20.0	19.50	20.50	1.68	2.140	4.05	1.34	2.02	1.34	1.38	0.793
	2.50	2.25	2.75	40.0	39.50	40.50	20.0	19.50	20.50	2.03	2.590	4.69	1.54	2.35	1.54	1.35	0.770
	3.00	2.70	3.30	40.0	39.50	40.50	20.0	19.50	20.50	2.36	3.010	5.21	1.68	2.60	1.68	1.32	0.748
50 x 30	2.00	1.80	2.20	50.0	49.50	50.50	30.0	29.50	30.50	2.31	2.940	9.54	4.29	3.81	2.86	1.80	1.21
	2.50	2.25	2.75	50.0	49.50	50.50	30.0	29.50	30.50	2.82	3.590	11.30	5.05	4.52	3.37	1.77	1.19
	3.00	2.70	3.30	50.0	49.50	50.50	30.0	29.50	30.50	3.30	4.210	12.80	5.70	5.13	3.80	1.75	1.16
60 x 40	2.00	1.80	2.20	60.0	59.40	60.60	40.0	39.50	40.50	2.93	3.740	18.40	9.83	6.14	4.92	2.22	1.62
	2.50	2.25	2.75	60.0	59.40	60.60	40.0	39.50	40.50	3.60	4.590	22.10	11.70	7.36	5.87	2.19	1.60
	3.00	2.70	3.30	60.0	59.40	60.60	40.0	39.50	40.50	4.25	5.410	25.40	13.40	8.46	6.72	2.17	1.58
70 x 50	2.00	1.80	2.20	70.0	69.30	70.70	50.0	49.50	50.50	3.56	4.540	31.50	18.80	8.99	7.50	2.63	2.03
	2.50	2.25	2.75	70.0	69.30	70.70	50.0	49.50	50.50	4.39	5.590	38.00	22.60	10.90	9.04	2.61	2.01
	3.00	2.70	3.30	70.0	69.30	70.70	50.0	49.50	50.50	5.19	6.610	44.10	26.10	12.60	10.40	2.58	1.99
	4.00	3.60	4.40	70.0	69.30	70.70	50.0	49.50	50.50	6.71	8.550	54.70	32.20	15.60	12.90	2.53	1.94
80 x 40	2.00	1.80	2.20	80.0	79.20	80.80	40.0	39.50	40.50	3.56	4.540	37.40	12.70	9.34	6.36	2.87	1.67
	2.50	2.25	2.75	80.0	79.20	80.80	40.0	39.50	40.50	4.39	5.590	45.10	15.30	11.30	7.63	2.84	1.65
	3.00	2.70	3.30	80.0	79.20	80.80	40.0	39.50	40.50	5.19	6.610	52.30	17.60	13.10	8.78	2.81	1.63
	4.00	3.60	4.40	80.0	79.20	80.80	40.0	39.50	40.50	6.71	8.550	64.80	21.50	16.20	10.70	2.75	1.59
80 x 60	2.00	1.80	2.20	80.0	79.20	80.80	60.0	59.40	60.60	4.19	5.340	49.50	31.90	12.40	10.60	3.05	2.44
	2.50	2.25	2.75	80.0	79.20	80.80	60.0	59.40	60.60	5.17	6.590	60.10	38.60	15.00	12.90	3.02	2.42
	3.00	2.70	3.30	80.0	79.20	80.80	60.0	59.40	60.60	6.13	7.810	70.00	44.90	17.50	15.00	3.00	2.40
	4.00	3.60	4.40	80.0	79.20	80.80	60.0	59.40	60.60	7.97	10.100	87.90	56.10	22.00	18.70	2.94	2.35

Dimension Tolerances

Outside Diameter
≤ 50 mm. : ± 0.5 mm.
> 50 mm. : ± 1%
≥ 100 mm. : ± 0.8%

Thickness
≤ 5.0 mm. : ± 10%
> 5.0 mm. : ± 0.5 mm.

Weight
± 6%

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Cold Formed Welded Structural Hollow Sections of Non-alloy and Fine Grain Steels

NORMAL SIZE	THICKNESS MM			OUTSIDE DIAMETER MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA		MODULUS OF SECTION		RADIUS OF GYRATION	
mm	Std.	Min	Max	Std.	Min	Max	Std.	Min	Max	-	cm^2	I_x	I_y	Z_x	Z_y	r_x	r_y
												cm^4		cm^3		cm	
90 x 50	2.00	1.80	2.20	90.0	89.10	90.90	50.0	49.50	50.50	4.19	5.340	57.90	23.40	12.90	9.35	3.29	2.09
	2.50	2.25	2.75	90.0	89.10	90.90	50.0	49.50	50.50	5.17	6.590	70.30	28.20	15.60	11.30	3.27	2.07
	3.00	2.70	3.30	90.0	89.10	90.90	50.0	49.50	50.50	6.13	7.810	81.90	32.70	18.20	13.10	3.24	2.05
	4.00	3.60	4.40	90.0	89.10	90.90	50.0	49.50	50.50	7.97	10.100	103.00	40.70	22.80	16.30	3.18	2.00
100 x 40	2.50	2.25	2.75	100.0	99.20	100.80	40.0	39.50	40.50	5.17	6.590	79.30	18.80	15.90	9.39	3.47	1.69
	3.00	2.70	3.30	100.0	99.20	100.80	40.0	39.50	40.50	6.13	7.810	92.30	21.70	18.50	10.80	3.44	1.67
	4.00	3.60	4.40	100.0	99.20	100.80	40.0	39.50	40.50	7.97	10.100	116.00	26.70	23.10	13.30	3.38	1.62
100 x 50	2.50	2.25	2.75	100.0	99.20	100.80	50.0	49.50	50.50	5.56	7.090	91.20	31.10	18.20	12.40	3.59	2.09
	3.00	2.70	3.30	100.0	99.20	100.80	50.0	49.50	50.50	6.60	8.410	106.00	36.10	21.30	14.40	3.56	2.07
	4.00	3.60	4.40	100.0	99.20	100.80	50.0	49.50	50.50	8.59	10.900	134.00	44.90	26.80	18.00	3.50	2.03
100 x 60	2.50	2.25	2.75	100.0	99.20	100.80	60.0	59.40	60.60	5.96	7.590	103.00	46.90	20.60	15.60	3.69	2.49
	3.00	2.70	3.30	100.0	99.20	100.80	60.0	59.40	60.60	7.07	9.010	121.00	54.60	24.10	18.20	3.66	2.46
	4.00	3.60	4.40	100.0	99.20	100.80	60.0	59.40	60.60	9.22	11.700	153.00	68.70	30.50	22.90	3.60	2.42
	5.00	4.50	5.50	100.0	99.20	100.80	60.0	59.40	60.60	11.30	14.400	181.00	80.80	36.20	26.90	3.55	2.37
	6.00	5.50	6.50	100.0	99.20	100.80	60.0	59.40	60.60	13.20	16.800	205.00	91.20	41.10	30.40	3.49	2.33
100 x 80	2.50	2.25	2.75	100.0	99.20	100.80	80.0	79.20	80.80	6.74	8.590	127.00	90.20	25.40	22.50	3.84	3.24
	3.00	2.70	3.30	100.0	99.20	100.80	80.0	79.20	80.80	8.01	10.200	149.00	106.00	29.80	26.40	3.82	3.22
	4.00	3.60	4.40	100.0	99.20	100.80	80.0	79.20	80.80	10.50	13.300	189.00	134.00	37.90	33.50	3.77	3.17
	5.00	4.50	5.50	100.0	99.20	100.80	80.0	79.20	80.80	12.80	16.400	226.00	160.00	45.20	39.90	3.72	3.12
	6.00	5.50	6.50	100.0	99.20	100.80	80.0	79.20	80.80	15.10	19.200	258.00	182.00	51.70	45.50	3.67	3.08
120 x 60	2.50	2.25	2.75	120.0	119.04	120.96	60.0	59.40	60.60	6.74	8.590	161.00	55.20	26.90	18.40	4.33	2.53
	3.00	2.70	3.30	120.0	119.04	120.96	60.0	59.40	60.60	8.01	10.200	189.00	64.40	31.50	21.50	4.30	2.51
	4.00	3.60	4.40	120.0	119.04	120.96	60.0	59.40	60.60	10.50	13.300	241.00	81.20	40.10	27.10	4.25	2.47
	5.00	4.50	5.50	120.0	119.04	120.96	60.0	59.40	60.60	12.80	16.400	287.00	96.00	47.80	32.00	4.19	2.42
	6.00	5.50	6.50	120.0	119.04	120.96	60.0	59.40	60.60	15.10	19.200	328.00	109.00	54.70	36.30	4.13	2.38
120 x 80	3.00	2.70	3.30	120.0	119.04	120.96	80.0	79.20	80.80	8.96	11.400	230.00	123.00	38.40	30.90	4.49	3.29
	4.00	3.60	4.40	120.0	119.04	120.96	80.0	79.20	80.80	11.70	14.900	295.00	157.00	49.10	39.30	4.44	3.24
	5.00	4.50	5.50	120.0	119.04	120.96	80.0	79.20	80.80	14.40	18.400	353.00	188.00	58.90	46.90	4.39	3.20
	6.00	5.50	6.50	120.0	119.04	120.96	80.0	79.20	80.80	17.00	21.600	406.00	215.00	67.70	53.80	4.33	3.15
140 x 80	4.00	3.60	4.40	140.0	138.88	141.12	80.0	79.20	80.80	13.00	16.500	430.00	180.00	61.40	45.10	5.10	3.30
	5.00	4.50	5.50	140.0	138.88	141.12	80.0	79.20	80.80	16.00	20.400	517.00	216.00	73.90	54.00	5.04	3.26
	6.00	5.50	6.50	140.0	138.88	141.12	80.0	79.20	80.80	18.90	24.000	597.00	248.00	85.30	62.00	4.98	3.21
150 x 100	4.00	3.60	4.40	150.0	148.80	151.20	100.0	99.20	100.80	14.90	18.900	595.00	319.00	79.30	63.70	5.60	4.10
	5.00	4.50	5.50	150.0	148.80	151.20	100.0	99.20	100.80	18.30	23.400	719.00	384.00	95.90	76.80	5.55	4.05
	6.00	5.50	6.50	150.0	148.80	151.20	100.0	99.20	100.80	21.70	27.600	835.00	444.00	111.00	88.00	5.50	4.01

Dimension Tolerances

Outside Diameter	≤ 50 mm. : ± 0.5 mm. > 50 mm. : ± 1% ≥ 100 mm. : ± 0.8%
Thickness	≤ 5.0 mm. : ± 10% > 5.0 mm. : ± 0.5 mm.
Weight	± 6%

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S275j0H	0.200	-	1.500	0.040	0.040	275	430-580	410-560	20	-
S275j2H	0.200	-	1.500	0.035	0.035	275	430-580	410-560	20	-
S355j0H	0.220	0.550	1.600	0.040	0.040	355	510-680	490-630	20	-
S355j2H	0.220	0.550	1.600	0.035	0.035	355	510-680	490-630	20	-

NOMINAL SIZE	THICKNESS MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION
mm	Std.	Min	Max	Std.	Min	Max	STD	cm^2	cm^4	cm^3	cm
20 x 20	2.00	1.80	2.20	20.00	19.50	20.50	1.05	1.34	0.692	0.692	0.720
25 x 25	2.00	1.80	2.20	25.00	24.50	25.50	1.36	1.74	1.48	1.190	0.924
30 x 30	2.00	1.80	2.20	30.00	29.50	30.50	1.68	2.14	2.72	1.81	1.13
40 x 40	2.00	1.80	2.20	40.00	39.50	40.50	2.31	2.94	6.94	3.47	1.54
	2.50	2.25	2.75	40.00	39.50	40.50	2.82	3.59	8.22	4.11	1.51
	3.00	2.70	3.30	40.00	39.50	40.50	3.30	4.21	9.32	4.66	1.49
50 x 50	2.00	1.80	2.20	50.00	49.50	50.50	2.93	3.74	14.10	5.66	1.95
	2.50	2.25	2.75	50.00	49.50	50.50	3.60	4.59	16.90	6.78	1.92
	3.00	2.70	3.30	50.00	49.50	50.50	4.25	5.14	19.50	7.79	1.90
	4.00	3.60	4.40	50.00	49.50	50.50	5.45	6.95	23.70	9.49	1.85
60 x 60	2.00	1.80	2.20	60.00	59.40	60.60	3.56	4.54	25.10	8.38	2.35
	2.50	2.25	2.75	60.00	59.40	60.60	4.39	5.59	30.30	10.10	2.33
	3.00	2.70	3.30	60.00	59.40	60.60	5.19	6.61	35.10	11.70	2.31
	4.00	3.60	4.40	60.00	59.40	60.60	6.71	8.55	43.60	14.50	2.26
	5.00	4.50	5.50	60.00	59.40	60.60	8.13	10.40	50.50	16.80	2.21
	6.00	5.50	6.50	60.00	59.40	60.60	9.45	12.00	56.10	18.70	2.16
70 x 70	2.50	2.25	2.75	70.00	69.30	70.70	5.17	6.59	49.40	14.10	2.74
	3.00	2.70	3.30	70.00	69.30	70.70	6.13	7.81	57.50	16.40	2.71
	4.00	3.60	4.40	70.00	69.30	70.70	7.97	10.10	72.10	20.60	2.67
	5.00	4.50	5.50	70.00	69.30	70.70	9.70	12.40	84.60	24.20	2.62
	6.00	5.50	6.50	70.00	69.30	70.70	11.30	14.40	95.20	27.20	2.57

Dimension Tolerances

Outside Diameter
≤ 50 mm. : ± 0.5 mm.
> 50 mm. : ± 1%
≥ 100 mm. : ± 0.8%

Thickness
≤ 5.0 mm. : ± 10%
> 5.0 mm. : ± 0.5 mm.

Weight
± 6%

EN 10219-1

Cold Formed Welded Structural Hollow Sections of Non-alloy and Fine Grain Steels

NOMINAL SIZE	THICKNESS MM			OUTSIDE DIAMETER MM			WEIGHT (PLAIN END) KG/M	CROSS SECTIONAL AREA	GEOMETRICAL MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION
mm	Std.	Min	Max	Std.	Min	Max	STD	cm^2	cm^4	cm^3	cm
80 x 80	3.00	2.70	3.30	80.00	79.20	80.80	7.07	9.01	87.80	22.00	3.12
	4.00	3.60	4.40	80.00	79.20	80.80	9.22	11.70	111.00	27.80	3.07
	5.00	4.50	5.50	80.00	79.20	80.80	11.30	14.40	131.00	32.90	3.03
	6.00	5.50	6.50	80.00	79.20	80.80	13.20	16.80	149.00	37.30	2.98
90 x 90	3.00	2.70	3.30	90.00	89.10	90.90	8.01	10.20	127.00	28.30	3.53
	4.00	3.60	4.40	90.00	89.10	90.90	10.50	13.30	162.00	36.00	3.48
	5.00	4.50	5.50	90.00	89.10	90.90	12.80	16.40	193.00	42.90	3.43
	6.00	5.50	6.50	90.00	89.10	90.90	15.10	19.20	220.00	49.00	3.39
100 x 100	3.00	2.70	3.30	100.00	99.20	100.80	8.96	11.40	177.00	35.40	3.94
	4.00	3.60	4.40	100.00	99.20	100.80	11.70	14.90	226.00	45.30	3.89
	5.00	4.50	5.50	100.00	99.20	100.80	14.40	18.40	271.00	54.20	3.84
	6.00	5.50	6.50	100.00	99.20	100.80	17.00	21.60	311.00	62.30	3.79
120 x 120	3.00	2.70	3.30	120.00	119.04	120.96	10.80	13.80	312.00	52.10	4.76
	4.00	3.60	4.40	120.00	119.04	120.96	14.20	18.10	402.00	67.00	4.71
	5.00	4.50	5.50	120.00	119.04	120.96	17.50	22.40	485.00	80.90	4.66
	6.00	5.50	6.50	120.00	119.04	120.96	20.70	26.40	562.00	93.70	4.61

Dimension Tolerances

Outside Diameter	≤ 50 mm. : ± 0.5 mm. > 50 mm. : ± 1% ≥ 100 mm. : ± 0.8%
Thickness	≤ 5.0 mm. : ± 10% > 5.0 mm. : ± 0.5 mm.
Weight	± 6%