

stainless
steel

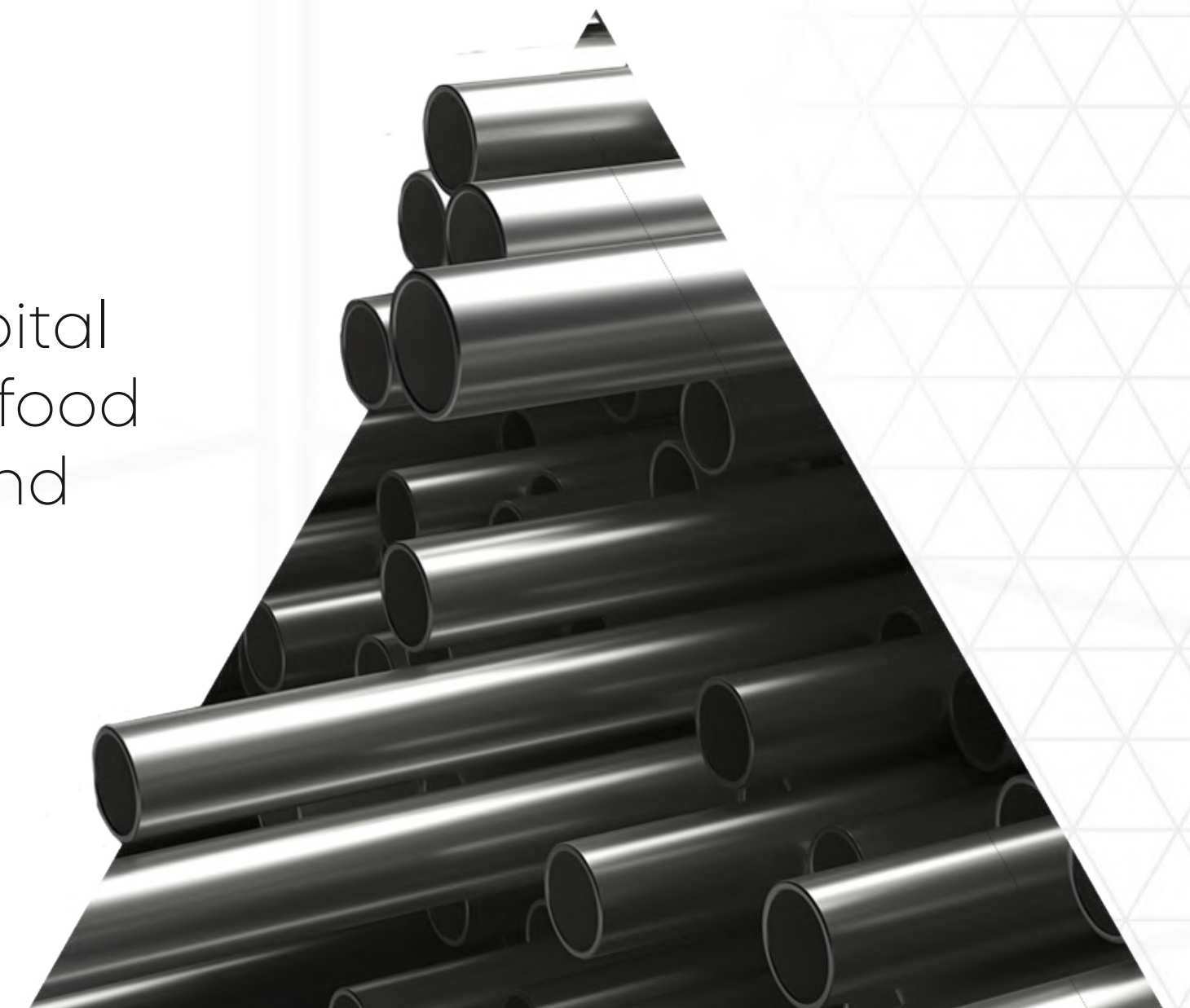


Stainless Steel

Stainless steel is an alloy of iron and chromium that may also contain nickel, molybdenum, and other elements, with physicochemical properties superior to those of ordinary steels. Its main characteristic is the oxidation resistance. Some of its other characteristics are:

- ▶ Resistance to high temperatures;
- ▶ Easy cleaning;
- ▶ Hygienic material;
- ▶ Highly resistance to corrosion;
- ▶ Durability;
- ▶ 100% recyclable.

The main markets that use stainless steels are: Household utensils; hospital equipment, production of vehicle parts such as exhausts; construction; food industry, chemical and petroleum industry; and the sector of facades and visual signs.















THE CHEMICAL AND MECHANICAL COMPOSITION

	AISI	ASTM (UNSO)	DIN	DIN EQUIVALENTS	C	Mn	Si	P	S	Cr	Ni	Mo	N2	Others	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation 50mm(%)	HBR ³ HARDNESS
AUSTENITIC	301	S30100	14,310	X12 Cr Ni 17 7	0.15	2.00	1.0	0.045	0.03	16,0 a 18,0	6,0 a 8,0	-	0.10	-	750	250	40	95
	304	S30400	14,301	X5 Cr Ni 18 9	0.07	2.00	0.75	0.045	0.03	17,5 a 19,5	8,0 a 10,5	-	0.10	-	700	300	54	92
	304	S30400	14,301	X5 Cr Ni 18 9	0.07	2.00	0.75	0.045	0.03	17,5 a 19,5	8,0 a 10,5	-	0.10	-	600	280	58	92
	304L	S30403	14,307	X2 Cr Ni 18 9	0.03	2.00	0.75	0.045	0.03	17,5 a 19,5	8,0 a 12,0	-	0.10	-	600	240	45	92
	304H	S30409	-	X5 Cr Ni 18 9	0,04 a 0,10	2.00	0.75	0.045	0.03	18,0 a 20,0	8,0 a 10,5	-	-	-	530	240	50	92
	310S	S31008	14,845	X8 Cr Ni 25 21	0.08	2.00	1.5	0.045	0.03	24,0 a 26,0	19,0 a 22,0	-	-	-	515	205	40	95
	316	S31600	14,401	X5 Cr Ni Mo 18 10	0.08	2.00	0.75	0.045	0.03	16,0 a 18,0	10,0 a 14,0	2,0 a 3,0	0.10	-	620	300	52	95
	316L	S31603	14,404	X5 Cr Ni Mo 18 10	0.03	2.00	0.75	0.045	0.03	16,0 a 18,0	10,0 a 14,0	2,0 a 3,0	0.10	-	530	260	45	95
	321	S32100	14,541	X10 Cr Ni Ti 18 9	0.08	2.00	0.75	0.045	0.03	17,0 a 19,0	9,0 a 12,0	-	0.10	5(C+N2)≤Ti≤ 0,70	530	240	40	95
	317L	S31703	-	X2 Cr Ni Mo 18 15 4	0.03	2.00	0.75	0.045	0.03	18,0 a 20,0	11,0 a 15,0	3,0 a 4,0	0.1	-	5515	205	40	95
347/347H	S34709	-	X10 Cr Ni Mb 18 9	0,04 a 0,10	2.00	0.75	0.045	0.03	17 a 19,0	9,0 a 13,0	-	-	Nb 8xC min. 1,00 máx.	515	205	40	92	
FERRITIC	-	S41003	14,003	-	0.03	1.50	1.0	0.04	0.03	10,5 a 12,5	1.5	-	0.03	-	455	275	18	20 HRC
	409	S40910	14,512	X2 Cr Ti 12	0.03	1.00	1.0	0.04	0.02	10,50 a 11,7	0.50	-	0.030	6(C+N2)≤ Ti≤0,50	330	200	32	88
	430	S43003	14,016	X6 Cr 17	0.12	1.00	1.0	0.04	0.03	16,0 a 18,0	0.75	-	-	-	450	250	22	89
	-	S43000	14,016	-	0.12	1.00	1.0	0.04	0.03	16,0 a 18,0	0.75	-	-	Nb = 0,60 máx.	450	250	28	89
	-	S43932	-	-	0.03	1.00	1.0	0.04	0.03	17,0 a 19,0	0.50	-	0.030	0,20 + 4(C+N2) ≤ Ti + Nb ≤ 0,75	420	240	28	89
	-	-	14,509	-	0.03	1.00	1.0	0.04	0.015	17,5 a 18,5	0.50	-	0.030	3C + 0,30 ≤ Nb ≤ 1,00 Ti= 0,10 a 0,60	440	250	20	0
-	S44400	-	-	0.025	1.00	1.0	0.04	0.03	17,5 a 19,5	1.00	1,75 a 2,50	0.035	0,20 + 4(C+N2) ≤ Ti + Nb ≤ 0,80	490	337	32	96	
MARTENSITIC	420	S42000	-	-	0,15 Min.	1.00	1.0	0.04	0.03	12,0 a 14,0	0.75	0.50	-	-	530	300	20	96
	-	-	14,116	-	0,42 a 0,47	0.50	0,30 a 0,70	0.035	0.006	14,0 a 14,5	-	0,50 a 0,55	0,020 a 0,040	V = 0,10 a 0,20	0	0	0	0
DUPLEX	-	S32304	14,362	-	0.03	2.50	1.0	0.04	0.03	21,5 a 24,5	3,0 a 5,5	0,05 a 0,6	0,05 a 0,020	-	600	400	25	32 HRC
	-	S32205/ S31803	14,462	-	0.03	2.00	1.0	0.03	0.02	22,0 a 23,0	4,5 a 6,5	3,0 a 3,50	0,14 a 0,20	-	655	450	25	31 HRC
	201	S20100	14,618	-	0.15	5,50 a 7,50	1.0	0.06	0.03	16,0 a 18,0	3,5 a 5.5	-	0.25	-	515	260	40	95













ROUND, SQUARE AND HEX ROUND BARS

parte 1/2

Gauge		Kg/m			Gauge		Kg/m			Gauge		Kg/m			Gauge		Kg/m		
In.	mm				In.	mm				In.	mm				In.	mm			
1/8	3,17	0,062	-	-	1	31,75	3,97	5,06	4,38	1.15/16	49,21	14,92	18,99	16,45	2.7/8	73,02	32,85	41,82	36,22
5/32	3,97	0,097	-	-	1.1/16	31,75	4,49	5,71	4,95	2	50,8	15,9	20,24	17,53	2.15/16	74,61	34,29	43,66	37,81
3/16	4,76	0,140	0,18	0,15	1.1/8	31,75	5,03	6,4	5,55	2.1/16	53,39	16,91	21,52	18,64	3	76,20	35,77	45,54	39,43
1/4	6,35	0,25	0,32	0,27	1.3/16	31,75	5,60	7,14	6,18	2.1/8	53,97	17,95	22,85	19,79	3.1/8	79,38	38,81	49,41	42,79
5/196	7,94	0,39	0,49	0,43	1.1/4	31,75	6,21	7,91	6,85	2.3/16	55,56	19,02	24,21	20,97	3.1/4	82,55	41,88	53,44	46,34
3/8	9,53	0,56	0,71	0,62	1.5/16	31,75	6,85	8,72	7,55	2.1/4	57,15	20,12	25,62	22,19	3.3/8	85,73	42,27	57,63	49,98
7/16	11,11	0,76	0,97	0,84	1.3/8	31,75	7,51	9,57	8,29	2.6/16	58,74	21,25	27,06	23,44	3.1/2	88,90	48,68	61,98	53,74
1/2	12,7	0,99	1,22	1,10	1.7/16	31,75	8,21	10,46	9,06	2.3/8	60,32	22,42	28,54	24,72	3.5/8	92,08	52,22	66,49	-
9/16	14,29	1,26	1,60	1,39	1.1/2	31,75	8,94	11,39	9,86	2.7/16	61,91	23,61	30,06	26,03	3.3/4	95,25	55,88	71,15	-
5/8	15,87	1,55	1,98	1,71	1.9/16	31,75	9,70	12,35	10,7	2.1/2	63,50	24,84	31,62	27,38	3.7/8	94,43	60,67	75,98	-
11/16	17,46	1,88	2,36	2,07	1.5/8	31,75	10,49	13,36	11,57	2.9/16	65,09	26,10	33,22	28,78	4	101,6	63,58	80,96	-
3/4	19,05	2,24	2,85	2,46	1.11/16	31,75	11,32	14,41	12,48	2.5/8	66,67	27,38	34,87	30,79	4.1/8	104,78	67,62	86,10	-
13/16	20,64	2,62	3,34	2,89	1.3/4	31,75	12,17	15,5	13,42	2.11/16	68,26	28,70	36,55	31,67					
7/8	22,22	3,04	3,87	3,35	1.13/16	31,75	13,06	16,62	14,4	2.3/4	69,85	30,05	38,27	33,14					
15/16	23,81	3,49	4,45	3,85	1.7/8	31,75	13,97	17,79	15,41	2.13/16	71,44	31,44	40,02	34,22					

ROUND, SQUARE AND HEX ROUND BARS

parte 2/2

Gauge		Kg/m			Gauge		Kg/m			Gauge		Kg/m			Gauge		Kg/m		
In.	mm				In.	mm				In.	mm				In.	mm			
4.1/4	107,95	71,78	91,39	-	7.1/4	184,15	209,70	266,20	-	11	279,40	481,20	612,80	-	19	482,60	1434,60	1826,60	-
4.3/8	111,13	76,06	96,85	-	7.1/2	190,50	223,80	285,00	-	11.1/4	285,75	503,40	641,00	-	20	508,00	1589,50	2023,90	-
4.1/2	114,30	80,47	102,46	-	7.3/4	196,85	238,90	304,00	-	11.1/2	292,70	526,00	669,80	-	21	533,40	1752,61	2230,60	-
4.5/8	117,48	85,01	108,23	-	8	203,20	254,60	324,00	-	11.3/4	298,45	549,00	699,20	-	22	558,80	1932,50	2448,09	-
4.3/4	120,65	89,66	114,16	-	8.1/4	209,55	270,70	345,00	-	12	304,80	572,70	729,30	-	23	584,20	2102,34	2675,71	-
4.7/8	123,83	94,44	120,25	-	8.1/2	215,90	287,40	365,90	-	12.1/2	317,50	620,90	790,60	-	24	609,60	2289,13	2913,43	-
5	127,00	99,80	126,50	-	8.3/4	222,25	304,60	388,50	-	13	330,20	672,60	855,80	-	25	635,00	2483,86	3161,28	-
5.1/4	133,35	109,50	139,50	-	9	228,60	322,10	410,20	-	13.1/2	342,90	724,30	922,20	-	26	660,40	2686,54	3419,24	-
5.1/2	139,70	120,20	153,10	-	9.1/4	234,95	340,30	433,50	-	14	355,60	779,70	992,60	-	27	685,80	2897,18	3687,32	-
5.3/4	146,05	131,40	167,20	-	9.1/2	241,30	359,00	457,10	-	14.1/2	368,30	835,50	1063,80	-	28	711,20	3115,76	3965,51	-
6	152,40	143,10	182,50	-	9.3/4	247,65	378,10	481,40	-	15	381,00	894,90	1139,50	-	29	736,60	3342,29	4253,82	-
6.1/4	158,75	155,20	197,80	-	10	254,00	397,80	506,50	-	15.1/2	393,70	954,70	1215,60	-	30	762,00	3576,76	4552,24	-
6.1/2	165,10	167,90	213,50	-	10.1/4	260,35	417,90	532,00	-	16	406,50	1017,30	1295,30	-					
6.3/4	171,45	181,10	231,00	-	10.1/2	266,70	438,50	558,40	-	17	431,80	1148,60	1462,30	-					
7	177,80	194,70	284,10	-	10.3/4	273,05	459,70	585,30	-	18	457,20	1287,60	1639,40	-					

ANGLES BRACKETS

parte 1/1

Gauge	Kg/m	Gauge	Kg/m
1/8" x 3/4"	0,86	1/4" x 1.1/4"	2,86
1/8" x 1"	1,27	1/4" x 1.1/2"	3,48
1/8" x 1.1/4"	1,52	1/4" x 2"	4,75
1/8" x 1.1/2"	1,83	1/4" x 2.1/2"	6,10
1/8" x 2"	2,46	1/4" x 3"	7,29
3/16" x 1"	1,73	5/16" x 2"	5,83
3/16" x 1.1/4"	2,19	5/16" x 3"	8,99
3/16" x 1.1/2"	2,66	3/8" x 2"	6,99
3/16" x 2"	3,63	3/8" x 2.1/2"	8,78
3/16" x 2.1/2"	4,57	3/8" x 3"	10,69
1/4" x 1"	2,24	3/8" x 4"	14,41

RECTANGULAR BARS

parte 1/1

Gauge	Kg/m	Gauge	Kg/m	Gauge	Kg/m	Gauge	Kg/m	Gauge	Kg/m
1/8" x 3/4"	0,47	1/4" x 1.1/2"	1,89	3/8" x 2"	3,79	5/8" x 2.1/2"	7,91	1.1/4" x 3"	18,87
1/8" x 1"	0,63	1/4" x 2"	2,53	3/8" x 2.1/2"	4,74	5/8" x 3"	9,48	1.1/4" x 4"	23,30
1/8" x 1.1/4"	0,79	1/4" x 2.1/2"	3,16	3/8" x 3"	5,69	5/8" x 4"	12,65	1.1/2" x 4"	15,20
1/8" x 1.1/2"	0,94	1/4" x 3"	3,79	3/8" x 4"	7,60	3/4" x 1"	3,80	1.1/2" x 2"	22,80
1/8" x 2"	1,26	1/4" x 4"	5,06	1/2" x 3/4"	1,90	3/4" x 1.1/4"	4,75	1.1/2" x 3"	30,40
1/8" x 3"	1,90	5/16" x 3/4"	1,20	1/2" x 1"	2,53	3/4" x 1.1/2"	5,70	2" x 3"	30,30
1/8" x 4"	2,54	5/16" x 1"	1,58	1/2" x 1.1/4"	3,16	3/4" x 2"	7,59		
3/16" x 3/4"	0,71	5/16" x 1.1/4"	1,97	1/2" x 1.1/2"	3,79	3/4" x 2.1/2"	9,48		
3/16" x 1"	0,94	5/16" x 1.1/2"	2,37	1/2" x 1.3/4"	4,42	3/4" x 3"	11,58		
3/16" x 1.1/4"	1,18	5/16" x 2"	3,16	1/2" x 2"	5,06	3/4" x 4"	15,18		
3/16" x 1.1/2"	1,42	5/16" x 2.1/2"	4,00	1/2" x 2.1/2"	6,32	1" x 1.1/2"	7,59		
3/16" x 2"	1,89	5/16" x 3"	4,80	1/2" x 3"	7,59	1" x 1.3/4"	8,86		
3/16" x 3"	2,85	5/16" x 4"	6,33	1/2" x 4"	10,10	1" x 2"	10,12		
3/16" x 4"	3,80	3/8" x 3/4"	1,42	5/8" x 1"	3,16	1" x 2.1/2"	12,65		
1/4" x 3/4"	0,94	3/8" x 1"	1,98	5/8" x 1.1/4"	3,95	1" x 3"	15,18		
1/4" x 1"	1,26	3/8" x 1.1/4"	2,37	5/8" x 1.1/2"	4,74	1" x 4"	20,24		
1/4" x 1.1/4"	1,58	3/8" x 1.1/2"	2,84	5/8" x 2"	6,32	1.1/4" x 2"	12,65		

N° (USG)	Thickness		Weight per m ²	Theoretical weight per sheets				
	mm			2 x 1 m	2 x 1,2 m	3 x 1 m	3 x 1,2 m	3 x 1,5 m
-	50,80		406,40	812,80	975,36	1219,20	1463,04	1828,8
-	44,45		355,60	711,20	853,44	1066,80	1280,16	1600,20
-	38,10		304,80	609,60	731,52	914,40	1097,28	1371,60
-	31,75		254,00	508,00	609,60	762,00	914,40	1143,00
-	25,40		202,27	405,00	486,00	607,00	728,00	910,00
-	22,22		176,99	354,00	425,00	531,00	637,00	796,00
-	19,05		152,40	304,80	365,76	457,20	548,64	685,80
-	15,87		136,43	273,00	327,00	410,00	491,00	614,00
-	12,70		101,13	203,00	243,00	304,00	364,00	455,00
-	11,11		88,49	177,00	212,00	566,00	318,00	398,00
-	9,53		75,84	152,00	182,00	228,00	273,00	341,00
-	7,93		63,20	127,00	152,00	190,00	227,00	284,00
3	6,35		53,50	107,00	128,00	161,00	192,00	240,00
5	5,66		44,24	89,00	106,00	133,00	159,00	199,00
7	4,76		37,92	76,00	91,00	114,00	136,00	170,00

N° (USG)	Thickness		Weight per m ²	Theoretical weight per sheets				
	mm			2 x 1 m	2 x 1,2 m	3 x 1 m	3 x 1,2 m	3 x 1,5 m
8	4,37		35,32	71,00	85,00	106,00	127,00	159,00
9	3,97		32,10	65,00	77,00	97,00	115,00	144,00
10	3,57		28,90	58,00	69,00	86,00	104,00	130,00
11	3,18		25,66	52,00	62,00	77,00	92,00	115,00
12	2,78		22,48	45,00	54,00	67,00	81,00	101,00
13	2,37		19,27	38,00	46,00	57,00	69,00	86,00
14	1,98		15,80	32,00	38,00	48,00	57,00	71,00
15	1,79		14,44	29,00	35,00	43,00	52,00	65,00
16	1,56		12,24	25,00	30,00	37,00	44,00	55,00
17	1,43		11,56	23,00	28,00	35,00	41,00	52,00
18	1,27		10,27	20,50	25,00	30,80	36,90	46,00
19	1,11		8,99	18,00	22,00	27,00	32,30	40,00
20	0,95		7,71	15,40	18,00	23,10	27,70	34,60
21	0,87		7,06	14,10	17,00	21,20	25,40	31,70
22	0,79		6,42	12,80	15,00	19,30	23,10	27,90

Thickness		Weight per m ²	Theoretical weight per sheets				
N° (USG)	mm		2 x 1 m	2 x 1,2 m	3 x 1 m	3 x 1,2 m	3 x 1,5 m
23	0,71	5,77	11,60	14,00	17,30	20,70	25,90
24	0,64	5,14	10,30	12,00	15,40	18,50	23,10
25	0,56	4,49	9,00	11,00	13,50	16,20	20,20
26	0,46	3,85	7,70	9,00	11,60	13,90	17,30
27	0,44	3,63	7,00	8,70	10,60	13,10	16,30
28	0,40	3,20	6,40	7,70	9,60	11,50	14,40

SQUARE AND RECTANGULAR PIPES

parte 1/2

Outer Measurements (mm)		Wall Thickness - mm							
Squares	Rectangular	1,0	1,2	1,5	2,0	2,5	2,8	3,8	3,5
15 x 15	10 x 20	0,5	0,6	0,7	-	-	-	-	-
20 x 20	15 x 25	0,6	0,7	0,9	1,2	-	-	-	-
25 x 25	15 x 35	0,8	0,9	1,1	1,5	1,8	-	-	-
	20 x 30								
-	20 x 35	0,8	1,0	1,2	1,6	2,0	2,1	2,4	-
30x 30	20 x 40	0,9	1,1	1,4	1,8	2,2	2,4	2,6	-
	25 x 35								
35 x 35	20 x 50	1,1	1,3	1,6	2,1	2,6	2,8	3,1	-
	30 x 40								
-	25 x 50	1,2	1,4	1,7	2,3	2,8	3,0	3,3	-
	30 x 50								
40 x 40	20 x 70	1,4	1,7	2,1	2,7	3,4	3,0	4,0	-
	30 x 60								
	40 x 50								

SQUARE AND RECTANGULAR PIPES

parte 2/2

Outer Measurements (mm)		Wall Thickness - mm							
Squares	Rectangular								
-	25 x 70	1,5	1,8	2,2	2,9	3,6	3,7	4,2	4,9
	35 x 60								
50x 50	30 x 70	-	1,8	2,3	3,0	3,8	4,1	4,5	5,2
	30 x 90								
60 x 60	40 x 80	-	2,2	2,8	3,7	4,5	5,0	5,4	6,3
	50 x 70								
	40 x 100								
70 x 70	50 x 90	-	2,6	3,2	4,3	5,3	6,0	6,4	7,6
	60 x 80								
80 x 80	60 x 100	-	3,0	3,7	4,9	6,1	6,8	7,4	8,7
-	100 x 50	-	-	3,5	4,7	5,8	-	7,0	-
90 x 90	100 x 80	-	-	-	5,6	7,0	-	8,4	-
100 x 100	120 x 80	-	-	-	6,3	7,8	-	9,4	-