
aluminum

Aluminum

Aluminum is the most abundant metallic element in Earth's crust. Its properties give it a high versatility. In most applications, two or more of these characteristics come into play, for example: low weight combined with mechanical strength; high corrosion resistance and high thermal conductivity. Some of its characteristics are:

- Lightness
- High energy conduction
- Impermeability
- High strength-to-weight ratio
- Beauty
- Durability
- Malleability and Weldability
- Corrosion Resistance
- Strength and Hardness
- Infinitely Recyclable

The density of aluminum is about one-third that of steel or copper. It is very malleable, and its high ductility makes it an excellent choice for machining and casting. y fundición.

MAIN ALLOYS, SHAPES, CHARACTERISTICS AND APPLICATIONS

part 1/5

Alloys	Shapes	Characteristics	Applications
1050	Sheets Coils Tubes	High resistance to corrosion. Good formability and weldability. Low mechanical resistance. Suitable for decorative anodizing.	Reflectors, fixtures, household items, structural vessels and vats for the chemical and food industries, heat exchangers.
1100	Sheets Coils	High resistance to corrosion. Good formability and weldability. Low mechanical resistance. Suitable for decorative anodizing. Decorative panels, metal labels,	Decorative panels, metal labels, household items, reflectors, fins.
1200	Sheets Coils		
1350	Rods Flat Bars Tubes	Suitable for decorative anodizing. High weldability and corrosion resistance. High electrical conductivity. Good formability.	Electrical Conductors.
2011	Rods	High mechanical resistance. Good machinability. Medium corrosion resistance. Not recommended for welding.	Parts machined on automatic lathe.
3003	Sheets Coils	High resistance to corrosion. Good formability. Good weldability.	Heat exchangers, thermal insulation, chemical industry, household items, bodies.
3104	Sheets Bobinas	Good resistance to corrosion. Good formability. Moderate mechanical resistance	Bus and truck bodies, household items, equipment for the chemical and food industry, beverage and food cans, covers, gutters.

MAIN ALLOYS, SHAPES, CHARACTERISTICS AND APPLICATIONS

part 2/5

Alloys	Shapes	Characteristics	Applications
3105	Sheets Coils Checkered Sheets	Good mechanical resistance. High resistance to corrosion. Good formability. Good weldability.	Bus and truck bodies, anti-skid flooring.
5052	Sheets Coils Blocks	High mechanical and corrosion resistance. High weldability. Good formability.	Bus and truck bodies, signs, naval industry, shutters, eyelets, stamped parts with high mechanical stress, railway wagons, anti-skid flooring, coverings.
5083	Sheets Blocks	Material with excellent acceptance for anodizing and welding processes, free of internal stresses.	Thermoplastic molding - (injection, blowing, RIM, ABS, PVC, PE, PU and others); Automotive molding; Footwear molding; Agricultural molding; Prototypes; Metal-mechanical; Arms industry; Marine industry; Textile industry; Aeronautical industry; Others.
5754	Sheets Anti-skid Sheets	Excellent corrosion resistance, particularly in industrial environments. It has reasonable mechanical strength and good anodizing properties.	Marine and automotive industry, fishing equipment, food industry, welded structures, architectural applications.
6060	Rods Flat Bars Tubes Profiles	High resistance to corrosion. Medium mechanical resistance. Good formability. Suitable for decorative matte anodizing.	Profiles in general, irrigation pipes, furniture, lighting, and ornamental pieces.

MAIN ALLOYS, SHAPES, CHARACTERISTICS AND APPLICATIONS

Alloys	Shapes	Characteristics	Applications
6061	Tubes	High mechanical and corrosion resistance. Good formability and weldability.	Structures, shipbuilding, vehicles, furniture industry, rivets, wagons, pipelines.
	Rods		
	Sheets		
	Profiles		
6063	Rods	High resistance to corrosion. Medium mechanical resistance. Good formability. Suitable for decorative matte anodizing.	Profiles in general, irrigation pipes, furniture, lighting, and ornamental pieces.
	Flat Bars		
	Tubes		
	Profiles		
6082	Rods	Medium to high resistance. Offers good weldability, brazability, some corrosion resistance, formability, and machinability.	Piping; railings; furniture; architectural extrusions; truck and trailer flooring; doors; windows; irrigation. Structural engineering, shipbuilding, vehicles and equipment, parts machined on automatic lathes, cold forging.
	Bars		
	Tubes		
	Profiles		
6101	Rods	High electrical conductivity. Good corrosion resistance. Medium mechanical resistance.	Electrical conductors and busbars.
	Bars		
	Tubes		
	Profiles		

MAIN ALLOYS, SHAPES, CHARACTERISTICS AND APPLICATIONS

Alloys	Shapes	Characteristics	Applications
6261	Round bars	Good mechanical resistance. High resistance to corrosion. Good formability. Medium industry.	Vehicle bodies, structures and equipment.
	Tubes		
	Profiles		
6262	Rods	Excellent machinability. High mechanical resistance. High resistance to corrosion. Suitable for decorative anodizing.	Parts machined on automatic lathe.
	Profiles		
6351	Rods	High mechanical resistance. High resistance to corrosion. Good formability. Good machinability.	Structural engineering, shipbuilding, vehicles and equipment, parts machined on automatic lathes, cold forging.
	Tubes		

MAIN ALLOYS, SHAPES, CHARACTERISTICS AND APPLICATIONS

part 5/5

Alloys	Shapes	Characteristics	Applications
7021	Blocks	Extremely low internal stress. Good shape stability. High resistance. Good homogeneity.	Thermoplastic molding - (injection, blowing, RIM, TPU, PP, PE, among others), automotive molding, footwear molding, agricultural molding, prototype molding, metal-mechanical, arms industry, aeronautical industry.
7028	Sheets	Corrosion resistance. Good machinability. Good polishing.	Parts that require a high degree of machining, base sheets or sheets for workbenches of all types, thermoplastic injection molding for prototypes, blowing molding, cast resins molding, storage blocks and support resistant to high impacts and load, chassis for machinery, bottle (PET) sealing machines, automobile molding, footwear molding, agricultural molding, arms and aeronautical industries, among others.
	Blocks		
7075	Sheets	Highest mechanical strength value; Medium corrosion resistance; Good forgeability; Good machinability; Hardness 150 to 180HB; Highest mechanical strength value. Medium corrosion resistance. Good forgeability. Good machinability. Hardness 150 to 180HB. Fast response to polishing.	Parts subjected to the highest mechanical stress, military industry, aeronautical industry, machinery and equipment, plastic injection molding, development of tools.
	Round bar		
8011	Coils	High weldability. Good corrosion resistance. Good formability. Low mechanical resistance.	Packaging for pharmaceutical, food, and flexible products in general, lids, disposable plates and trays, cooling fins, helical pipes.
	Foils		
	Profiles		

CHEMICAL COMPOSITION OF ALUMINUM

part 1/3

Alloy	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Others
ABNT/ ASTM	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Each (%)	Total (%)
1050	99.50 mín.	0.25	0.40	0.05	0.05	0.05	-	0.05	0.03	0.03	-
1100	99.00 mín.	0,95 (Si+Fe)		0.05 – 0.20	0.05			0.10		0.05	0.15
1200	99.00 mín.	1,00 (Si+Fe)		0.05	0.05			0.10	0.05	0.05	0.15
1350	99.50 mín.	0.10	0.40	0.05	0.01		0.01	0.05		0.03	0.10
2011	restante	0.40	0.70	5.00 – 6.00				0.30		0.05	0.15
3003	restante	0.60	0.70	0.05 – 0.20	1.00 – 1.50			0.10		0.05	0.15
3104	restante	0.60	0.80	0.05 – 0.25	0.80 – 1.40	0.80 – 1.30		0.25	0.10	0.05	0.15

CHEMICAL COMPOSITION OF ALUMINUM

part 2/3

Alloy	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Others
ABNT/ ASTM	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Each (%)	Total (%)
3105	restante	0.60	0.70	0.30	0.30 0.80	0.20 0.80	0.20	0.40	0.10	0.05	0.15
5052	Balanço	0,25	0,40	0,10	1,00	2,20-2,80	0,15-0,35	0,10	--	--	--
5083	Restante	0,40	0,40	0,10	1,00	4,90	0,25	0,25	0,15	--	--
5754	Restante	0,25	0,40	0,10	0,10	2,80	0,35	0,10	--	--	--
6061	restante	0.40 0.80	0.70	0.15 0.40	0.15	0.80 1.20	0.04 0.35	0.25	0.15	0.05	0.15
6063	restante	0.20 0.60	0.35	0.10	0.10	0.45 0.90	0.10	0.10	0.10	0.05	0.15
6082	Restante	1,30	0,50	0,10	1,00	1,20	0,25	0,20	0,10	--	--
6101	restante	0.30 0.70	0.50	0.10	0.03	0.35 0.80	0.03	0.10		0.03	0.10
6262	restante	0.40 0.80	0.70	0.15 0.40	0.15	0.80 1.20	0.04 0.14	0.25	0.15	0,05*	0,15*

CHEMICAL COMPOSITION OF ALUMINUM

part 3/3

Alloy	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Others
ABNT/ ASTM	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Each (%)	Total (%)
6351	restante	0.70	0.50	0.10	0.40	0.40		0.20	0.20	0.05	0.15
		1.30			0.80	0.80					
7021	restante	0.25	0.40	0.25	0.10	1.20	0.05	5.00	0.10	0.05	0.15
						1.80		6.00			
7028	restante	0.35	0.50	0.10	0.15	1.50	0.20	4.50	0.05	0.05	0.15
				0.30	0.60	2.30		5.20			
7075	restante	-	0.35	1.20	0.20	2.10	0.18	5.10	0.30	0.05	0.15
		0.30		1.60		2.50	0.23	5.60			
8011	restante	0.50	0.60	0.10	0.20	0.05	0.05	0.10		0.05	0.15
		0.90	1.00								

* Bismuto (Bi) y Plomo (Pb) que van desde 0,4% a 0,7% cada uno, no incluidos en otros elementos.

Los grados:

1. Los valores mencionados representan límites máximos por elemento químico, excepto cuando se indiquen intervalos entre el mínimo y el máximo.
2. Composición química equivalente a la norma ASTM B-221 (ABNT-NBR 6834).
3. Los valores indicados no implican garantía formal.

MECHANICAL PROPERTIES OF ALUMINUM

part 1/3

Alloy ABNT ASTM	DIN	Tempe-ring	Tensile Strength Limit Mpa (N/mm²)Min	Tensile Strength Limit Mpa (N/mm²)Max	Yield Strenght Mpa (N/mm²)Min	Minimum Elongation “50mm”(%)	Brinell Hardness (HB)
1050	Al 99,5	O	55	95	15	22	20
		Temper-ing	95	130	70	3	26
1100	–	O	75	105	25	22	23
		(N/mm²) Min	110	145	95	3	32
1200	Al 99,0	O	75	105	25	22	23
		(N/mm²) Max	110	145	95	3	32
1350	E-Al	O	55	95	-	22	20
		Mpa (N/mm²)Min	95	130	-	3	30
2011	Al Cu Pb Bi	T4	275	–	125	16	–
			370	–	275	10	100
3003	Al Mn Cu	O	95	130	35	22	28
		H14	140	180	115	3	40
3104	Al Mn	O	150	200	60	15	45
		H32	190	240	145	3	58
			220	265	170	3	66

MECHANICAL PROPERTIES OF ALUMINUM

part 2/3

Aleación ABNT ASTM	DIN	Tempe-ring	Tensile Strength Limit Mpa (N/mm²)Min	Tensile Strength Limit Mpa (N/mm²)Max	Yield Strenght Mpa (N/mm²)Min	Minimum Elongation “50mm”(%)	Brinell Hardness (HB)
3105	Al Mn0,5 Mg0,5	O	95	145	35	19	28
		H14	150	200	125	2	40
5052	Al Mg2,5	O	170	215	65	17	47
		H34	235	285	180	4	68
5083	DIN (AlMg4,5Mn)	H111	285	--	135	10	70
		O	275	350	125	16	60
		F	280	360	125	--	68
5754	AlMg3	H111	190	260	80	10	55
6060	Al Mg Si0,5	T5	145	–	105	8	60
6061	Al Mg Si Cu	T4	180	–	110	16	65
		T6	260	–	240	8	95
6063	Al Mg Si0,5	T5	145	–	105	8	60
6082	--	T-6	300	--	255	--	90-110
6101	E-Al Mg Si0,5	T6	200	–	172	8	78
6262	–	T6	260	–	240	10	90

MECHANICAL PROPERTIES OF ALUMINUM

part 3/3

Aleación ABNT ASTM	DIN	Tempe-ring	Tensile Strength Limit Mpa (N/mm²)Min	Tensile Strength Limit Mpa (N/mm²)Max	Yield Strenght Mpa (N/mm²)Min	Minimum Elongation “50mm”(%)	Brinell Hardness (HB)
6351	Al Mg Si1,0	T6	290	–	255	10	95
7021	Al Zn5,5 Mg1,5	T6	350	380	310	2.5	110
7028	Al Zn5,5 Mg1,5		300	320	240	3	100
7075	Al Zn5,6 Mg2,5 Cu1,6 Fe0,35 Cr0,23 Mn0,20 Si0,30 Ti0,30	T651	480	540	390	4	150
8011	Al Fe Si	O	80	120	50	12	28
		H14/H24	120	210	110	4	35

Notes:

1. The indicated values do not imply a formal guarantee.

2. Stress data are expressed in megapascal units (Mpa), equivalent to 1N/mm2. To obtain the unit measurement in kgf/mm2, the indicated value is divided by 9.807.

Classification of Tempering:

O - Annealed: Applies to finished products, in the state in which they present the lowest value of mechanical resistance.

H - Hardened: Applies to non-heat treatable alloy products, i.e., alloys where the increase in mechanical strength is achieved only by cold plastic deformation (hardening).

F - As Manufactured: Applies to products obtained by forming processes in which no special control is employed over thermal or hardening conditions. Limits are not specified for the mechanical properties.

T - Heat Treated:

Applies to products that undergo heat treatment with or without complementary plastic deformation, which produces stable physical properties different from those obtained with “F”, “O”, and “H”.

3. For alloys with H114 tempering, use the limits specified in the “O” tempering.

4. For alloys with H154 tempering, use the limits specified in the “H14” tempering.

5. For rolled materials, the elongation values correspond to thicknesses from 0.63 to 1.20m.

6.

Mechanical Properties according to the ABNT-NBR 7823 (rolled) and ABNT-NBR 7000:2005 (extruded) standards.

PHYSICAL PROPERTIES OF ALUMINIUM

part 1/2

Alloy ABNT/ASTM	Density at 20 °C (p=Specific Weight) (g/cm³)	Melting Temperature (°C)	Specific Heat 0 to 100 °C (cal/g °C)	Coefficient of Thermal Expansion 20 ° at 100 °C (10-6 °C)	Thermal Conductivity at 25 °C (cal/cm/cm²/sec °C)	Electrical Conductivity at 20 °C (IACS %)	Modulus of Elasticity (MPA)	Modulus of Rigidity (MPA)
1050	2.7	650 - 660	0.22	24	0.50	60	70,000	26,500
1100	2.71	643 - 657	0.22	24	0.53	59	70,000	26,500
1350	2.7	650 - 660	0.22	23	0.54	62	70,000	26,500
2011	2.82	535 - 645	0.23	23	0.37	40	72,500	27,500
3003	2.73	640 - 655	0.22	23	0.38	43	70,000	26,500
3104	2.72	630 - 655	0.21	24	0.41	42	69,000	26,000
3105	2.71	635 - 654	0.22	24	0.41	45	70,000	26,500
5052	2.68	595 - 650	0.23	23	0.33	35	72,000	27,500
5083 - F	2,66	--	900	24	0,34	15-18	~ 70	--
5083 H111	2,66	--	900	24	0,34	15-18	~ 70	--
5083 - O	2,66	--	900	24	0,34	15-18	~ 70	--
5754	2,67	595°C	900	23,9	0,30	20-23	~ 70	--
6060	2.71	600 - 650	0.21	23	0.48	52	70,000	26,500

PHYSICAL PROPERTIES OF ALUMINIUM

part 2/2

Alloy ABNT/ASTM	Density at 20 °C (p=Specific Weight) (g/cm³)	Melting Temperature (°C)	Specific Heat 0 to 100 °C (cal/g °C)	Coefficient of Thermal Expansion 20 ° at 100 °C (10-6 °C)	Thermal Conductivity at 25 °C (cal/cm/cm²/sec °C)	Electrical Conductivity at 20 °C (IACS %)	Modulus of Elasticity (MPA)	Modulus of Rigidity (MPA)
6061	2.71	580 - 650	0.22	24	0.37	43	70,000	26,500
6063	2.71	600 - 650	0.21	23	0.48	52	70,000	26,500
6082	2,7	--	896	23,4	0,38	24-32	~ 70	--
6101	2.71	605 - 655	0.22	23	0.49	55	70,000	26,500
6262	2.71	582 - 652	0.21	23	0.37	44	70,000	26,700
6351	2.71	555 - 650	0.21	24	0.44	46	70,000	26,500
7021	2.80	510 - 630	0.21	23	0.33	37	70,000	26,500
7028	2.77	510 - 630	0.21	23	0.33	37	70,000	26,500
7075	2.75	475 - 630	0.22	23	0.35	40	73,000	27,500

Notas: Los valores indicados no darán lugar a garantía formal.

FLAT SHEET - WEIGHT PER M²

part 1/2

Inch	Millimeter	Line 1000	Line 5000	Line 6000	Line 7000
--	0,30	0,810	--	--	--
--	0,40	1,080	--	--	--
--	0,50	1,350	--	--	--
--	0,60	1,620	--	--	--
--	0,70	1,890	--	--	--
--	0,80	2,160	--	--	--
--	0,90	2,430	--	--	--
--	1,00	2,700	2,700	--	--
--	1,20	3,240	3,240	--	--
--	1,50	4,050	4,050	--	--
--	2,00	5,400	5,400	--	--
--	2,50	2,700	2,700	--	--
--	3,00	8,100	8,100	--	--
1/8”	3,17	8,559	8,559	--	--
--	4,00	10,800	10,800	--	--
3/16”	4,76	12,852	12,852	--	--

Pulgada	Millimeter	Line 1000	Line 5000	Line 6000	Line 7000
1/4”	6,35	---	17,145	--	17,780
5/16”	7,94	---	21,438	--	--
3/8”	9,53	---	25,731	--	26,684
1/2”	12,70	---	34,290	--	35,560
5/8”	15,87	---	42,849	--	44,436
3/4”	19,05	---	51,435	--	53,340
7/8”	22,22	---	59,994	--	62,216
1”	25,40	---	68,580	--	71,120
1.1/4”	31,75	---	85,725	--	88,900
1.1/2”	38,10	---	102,870	--	106,680
2”	50,80	---	137,160	--	142,240
2.1/4”	57,15	---	154,305	--	160,020
2.1/2”	63,50	---	171,450	--	177,800
3”	76,20	---	205,740	--	213,360

FLAT SHEET - WEIGHT PER M²

Inch	Millimeter	Line 1000	Line 5000	Line 6000	Line 7000
3.1/2”	88,90	---	240,030	--	248,920
4”	101,60	---	274,320	--	284,480
5”	127,00	---	342,900	--	355,600
6”	152,40	---	411,480	--	426,720
---	260,00	---	702,000	704,600	728,000
---	300,00	---	810,000	813,000	840,000

STUCCO SHEET WEIGHT/PIECE

Base Thickness (mm)	Square Meter	2000x1000mm	2000x1100mm	3000x1250mm
0,40	1,080	2,160	2,376	4,050
0,50	1,350	2,700	2,970	5,063
0,70	1,890	3,780	4,158	7,088
0,80	2,160	4,320	4,752	8,100
1,00	2,700	5,400	5,940	10,125
1,20	3,240	6,480	7,128	12,150

CHECKERED SHEET - WEIGHT/PIECE

Base Thickness (mm)	Height of Shoulders	M²	2500 X 1000mm	3000 X 1000mm	3000 X 1250mm
1,00	0,50 a 1,30	3,880	9,700	11,640	14,550
1,20	0,50 a 1,30	4,600	11,500	13,800	17,250
1,50	0,50 a 1,30	5,320	13,300	15,960	19,950
1,80	0,50 a 1,30	6,160	15,400	18,480	23,100
2,00	0,50 a 1,30	6,800	17,000	20,400	25,500
2,20	0,50 a 1,30	7,200	18,000	21,600	27,000
2,70	0,50 a 1,30	8,400	21,000	25,200	31,500

REBAR - WEIGHT/METER

part 1/3

Inch	Milimeter	●	■	⬢
1/4"	6,35	0,086	0,109	0,095
5/16"	7,94	0,134	0,171	---
3/8"	9,53	0,193	0,246	0,213
7/16"	11,11	0,263	0,335	0,290
1/2"	12,70	0,343	0,437	0,379
9/16"	14,28	0,434	---	0,479
5/8"	15,87	0,536	0,683	0,591
11/16"	17,46	0,649	---	---
3/4"	19,05	0,772	0,983	0,852
7/8"	22,22	1,051	1,338	1,159
1"	25,40	1,373	1,748	1,514
1.1/16"	26,97	1,548	---	1,707
1.1/8"	28,57	1,737	---	1,916
1.1/4"	31,75	2,146	2,732	2,366
1.3/8"	34,92	2,595	3,305	2,862
1.1/2"	38,10	3,090	3,934	3,407
1.5/8"	41,27	3,625	4,616	3,997

REBAR - WEIGHT/METER

part 2/3

Inch	Milimeter	●	■	⬢
1.3/4"	44,45	4,205	5,354	4,637
1.7/8"	47,62	4,827	---	5,322
2"	50,80	5,493	6,994	6,056
2.1/8"	53,97	6,200	---	---
2.1/4"	57,15	6,952	8,851	---
2.1/2"	63,50	8,582	10,927	9,463
2.3/4"	69,85	10,385	---	---
3"	76,20	12,359	15,735	---
3.1/4"	82,55	14,504	---	---
3.1/2"	88,90	16,821	21,418	---
4"	101,60	21,971	27,974	---
4.1/2"	114,30	27,807	---	---
5"	127,00	34,330	---	---
5.1/2"	139,70	41,539	---	---
6"	152,40	49,434	---	---
6.1/2"	165,10	58,017	---	---
7"	177,80	67,286	---	---

REBAR - WEIGHT/METER

parte 2/3

Inch	Milimeter	●	■	⬢
8"	203,20	4,205	---	---
9"	228,60	4,827	---	---
10"	254,00	5,493	---	---
11"	279,40	6,200	---	---
13"	330,20	6,952	---	---

ANGLE BRACKETS - EQUAL FLAPS (WEIGHT/METER)

parte 1/2

Width/thickness		1/16” 1,58 mm	3/32” 2,38 mm	1/8” 3,17 mm	3/16” 4,76 mm	1/4” 6,35 mm	1/2” 12,70 mm
1/2"	12,70	0,102	0,148	0,191	---	---	---
5/8"	15,87	0,129	---	0,245	---	---	---
3/4"	19,05	0,156	0,230	0,300	---	---	---
7/8"	22,22	---	0,271	0,355	---	---	---
1"	25,40	0,211	0,312	0,409	0,594	0,765	---
1.1/4"	31,75	---	---	0,518	0,758	---	---

ANGLE BRACKETS - EQUAL FLAPS (WEIGHT/METER)

part 2/2

Width/thickness		1/16” 1,58 mm	3/32” 2,38 mm	1/8” 3,17 mm	3/16” 4,76 mm	1/4” 6,35 mm	1/2” 12,70 mm
1.1/2"	38,10	0,320	---	0,627	0,922	1,202	---
2"	50,80	---	0,640	0,846	1,249	1,639	---
2.1/2"	63,50	---	---	1,064	---	2,076	---
3"	76,20	---	---	1,282	1,904	2,513	---
4"	101,60	---	---	1,718	---	3,387	6,556

FLAT BAR (WEIGHT/METER)

part 1/2

Width/thickness		1/8” 3,17 mm	3/16” 4,76 mm	1/4” 6,35 mm	3/8” 9,53 mm	1/2” 12,70 mm	5/8” 15,87 mm	3/4” 19,05 mm	1” 25,40 mm
3/8"	9,53	0,082	---	0,164	---	---	---	---	---
1/2"	12,70	0,109	0,164	0,219	0,328	---	---	---	---
5/8"	15,87	0,136	0,205	0,273	0,410	---	---	---	---
3/4"	19,05	0,164	0,246	0,328	0,492	0,656	---	---	---
7/8"	22,22	0,191	0,287	0,382	---	---	---	---	---

FLAT BAR (WEIGHT/METER)

part 1/2

Width/thickness		1/8” 3,17 mm	3/16” 4,76 mm	1/4” 6,35 mm	3/8” 9,53 mm	1/2” 12,70 mm	5/8” 15,87 mm	3/4” 19,05 mm	1” 25,40 mm
1"	25,40	0,218	0,328	0,437	0,656	0,874	1,092	1,311	---
1.1/4"	31,75	0,273	0,410	0,546	0,820	1,093	---	---	---
1.1/2"	38,10	0,327	0,491	0,656	0,984	1,311	1,639	1,967	2,623
2"	50,80	0,436	0,655	0,874	1,312	1,748	2,185	2,623	3,497
2.1/2"	63,50	0,546	0,819	1,093	1,640	2,185	3,277	3,278	---
3"	76,20	0,655	0,983	1,311	1,968	2,623	4,370	3,934	5,245
4"	101,60	0,873	1,311	1,748	2,624	3,497	5,462	5,245	6,994
5"	127,00	---	1,638	2,185	3,280	4,371	---	6,556	8,742
6"	152,40	---	---	2,623	3,936	5,245	---	7,868	10,490

ROUND PIPE (WEIGHT/METER)

part 1/2

Outside Diameter		Wall Thickness					
Inch	Milimeter	1/32” 0,79 mm	1,00 mm	1/16” 1,58 mm	2,00 mm	3/32” 2,38 mm	1/8” 3,17 mm
3/8"	9,53	0,059	0,073	0,107	---	---	---
1/2"	12,70	0,080	0,100	0,150	0,182	---	0,257
5/8"	15,87	0,101	0,127	0,192	0,236	0,273	0,343
3/4"	19,05	0,123	0,154	0,235	0,290	0,338	0,429
7/8"	22,22	0,144	0,181	0,278	0,344	0,402	0,514
1"	25,40	0,166	0,208	0,320	0,398	0,466	0,600
1.1/8"	28,57	0,187	0,235	0,363	---	---	0,686
1.1/4"	31,75	0,208	0,262	0,406	0,507	0,595	0,771
1.3/8"	34,93	0,230	---	0,449	---	---	---
1.1/2"	38,10	0,251	0,316	0,491	0,615	0,724	0,943
1.5/8"	41,27	0,272	---	0,534	0,669	0,788	---
1.3/4"	44,45	0,294	---	0,577	0,723	0,852	1,114
1.7/8"	47,62	0,315	---	0,619	0,777	---	---
2"	50,80	0,336	---	0,662	0,831	0,981	1,285

ROUND PIPE (WEIGHT/METER)

part 2/2

Outside Diameter		Wall Thickness					
Inch	Milimeter	1/32” 0,79 mm	1,00 mm	1/16” 1,58 mm	2,00 mm	3/32” 2,38 mm	1/8” 3,17 mm
2.1/4"	57,15	0,379	---	0,748	---	---	1,457
2.3/8"	60,32	0,400	---	0,790	---	---	---
2.1/2"	63,50	0,422	---	0,833	1,047	1,238	1,628
2.3/4"	69,85	0,464	---	---	---	---	1,800
3"	76,20	0,507	---	1,004	1,263	1,496	1,971
3.1/4"	82,55	0,550	---	---	---	---	2,142
3.1/2"	88,90	0,593	---	---	1,480	---	2,314
4"	101,60	0,678	---	---	1,696	2,010	2,656
4.1/2"	114,30	0,763	---	---	---	---	2,999
5"	127,00	0,849	---	---	2,128	---	3,342
5.1/2"	139,70	0,934	---	---	---	---	3,685
6"	152,40	1,020	---	---	2,561	---	4,028

PIPE SCHEDULE 40 (WEIGHT/METER)

Nominal Diameter (inch)	Outside Diameter (millimeter)	Inside Diameter (millimeter)	Wall thickness (millimeter)	Weight/meter
3/8"	17,15	12,52	2,31	0,292
1/2"	21,34	15,80	2,77	0,438
3/4"	26,67	20,93	2,87	0,582
1"	33,40	26,64	3,38	0,864
1.1/4"	42,16	35,05	3,56	1,170
1.1/2"	48,26	40,90	3,68	1,397
2"	60,33	52,51	3,91	1,878
2.1/2"	73,03	62,71	5,16	2,982
3"	88,90	77,92	5,49	3,899
3.1/2"	101,60	90,12	5,74	4,685
4"	114,30	102,26	6,02	5,550
4.1/2"	127,00	114,46	6,27	6,445
5"	141,30	128,20	6,55	7,514
6"	168,28	154,05	7,11	9,756

PIPE SCHEDULE 80 (WEIGHT/METER)

Nominal Diameter (inch)	Outside Diameter (millimeter)	Inside Diameter (millimeter)	Wall thickness (millimeter)	Weight/meter
3/8"	17,15	10,74	3,20	0,380
1/2"	21,34	13,87	3,73	0,559
3/4"	26,67	18,85	3,91	0,758
1"	33,40	24,31	4,55	1,118
1.1/4"	42,16	32,46	4,85	1,541
1.1/2"	48,26	38,10	5,08	1,868
2"	60,33	49,25	5,54	2,584
2.1/2"	73,03	59,00	7,01	3,940
3"	88,90	73,66	7,62	5,273
3.1/2"	101,60	85,45	8,08	6,433
4"	114,30	97,18	8,56	7,706
5"	141,30	122,25	9,53	10,691
6"	168,28	146,33	10,97	14,692

SQUARE PIPE (WEIGHT/METER)

Outside Diameter		Wall Thickness				
Inch	Milimeter	1,00 mm	1/16” 1,58 mm	2,00 mm	1/8” 3,17 mm	1/4 6,35mm
1/2"	12,70	---	0,190	---	---	---
5/8"	15,87	---	0,245	---	---	---
3/4"	19,05	0,196	0,299	0,370	0,546	---
1"	25,40	---	0,408	0,507	0,764	---
1.1/4"	31,75	---	0,517	0,645	---	---
1.1/2"	38,10	---	0,625	0,783	---	---
2"	50,80	---	---	1,058	1,637	---
2.1/2"	63,50	---	---	---	2,073	---
3"	76,20	---	---	---	---	---
4"	101,60	---	---	---	---	6,532

RECTANGULAR PIPE (WEIGHT/METER)

Dimensional				Wall Thickness		
Base		Height				
Inch	Milimeter	Inch	Milimeter	1/16” 1,58 mm	2,00 mm	1/8 3,17mm
1"	25,40	1/2"	12,70	0,299	---	---
1.1/2	38,10	1"	25,40	0,517	0,645	---
2"	50,80	1/2"	12,70	0,517	---	---
2"	50,80	1"	25,40	0,625	0,783	---
2"	50,80	1.1/2"	38,10	---	0,920	---
3"	76,20	1"	25,40	0,843	1,054	---
3"	76,20	1.1/2"	38,10	0,952	1,196	---
4"	101,60	1.1/2"	38,10	---	1,471	---
4"	101,60	2"	50,80	---	1,609	---
5"	127,00	2"	50,80	---	1,884	---
6"	152,40	1.1/2"	38,10	---	---	3,152
6"	152,40	3"	76,20	---	---	3,805

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“T” SECTION (WEIGHT / METER)

Side (S)			Thickness (T)	
In.	mm	1/16” 1,58 mm	1/8” 3,17 mm	3/16” 4,76 mm
1/2''	12,70	---	0,191	---
5/8"	15,87	---	0,245	---
3/4"	19,05	0,156	0,299	---
7/8"	22,22	---	0,353	---
1"	25,40	0,210	0,408	---
1.1/4"	31,75	---	0,516	0,755
1.1/2"	38,10	---	0,625	0,918
2"	50,80	---	0,842	---

“U” SECTION EQUAL FLAPS (WEIGHT/METER)

Side (S)			Thickness (T)	
In.	mm	1/16” 1,58 mm	3/32'' 2,38 mm	1/8” 3,17 mm
3/8"	9,53	0,108	---	0,190
1/2"	12,70	0,149	0,214	0,272
5/8"	15,87	0,190	---	0,353
3/4"	19,05	0,230	0,337	0,435
7/8"	22,22	---	0,398	0,516
1"	25,40	---	0,459	0,598
1.1/4"	31,75	---	---	0,761
1.1/2"	38,10	---	---	0,924

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“U” SECTION UNEQUAL FLAPS (WEIGHT/METER)

Base (B)		Height (H)	
Inches	mm	Pulgadas	mm
3/8"	9,53	1/2"	12,70
1/2"	12,70	3/8"	9,53
5/8"	15,87	1"	25,40
5/8"	15,87	3/8"	9,53
3/4"	19,05	1/2"	12,70
3/4"	19,05	3/8"	9,53
3/4"	19,05	1/2"	12,70
1"	25,40	3/8"	9,53
1"	25,40	1/2"	12,70
1.1/2"	38,10	1/2"	12,70
2"	50,80	1"	25,40
3"	76,20	1"	25,40
4"	101,60	1.1/2"	38,10
4"	101,60	2"	50,80

Thickness (T)		
1/16” 1,58 mm	3/32’’ 2,38 mm	1/8’’ 3,17 mm
0,135	---	---
0,122	---	---
0,271	---	---
---	0,194	---
0,176	---	---
---	0,214	---
---	0,255	---
---	-	0,326
---	-	0,381
---	0,377	---
---	---	0,815
---	---	1,033
---	---	---
---	---	---