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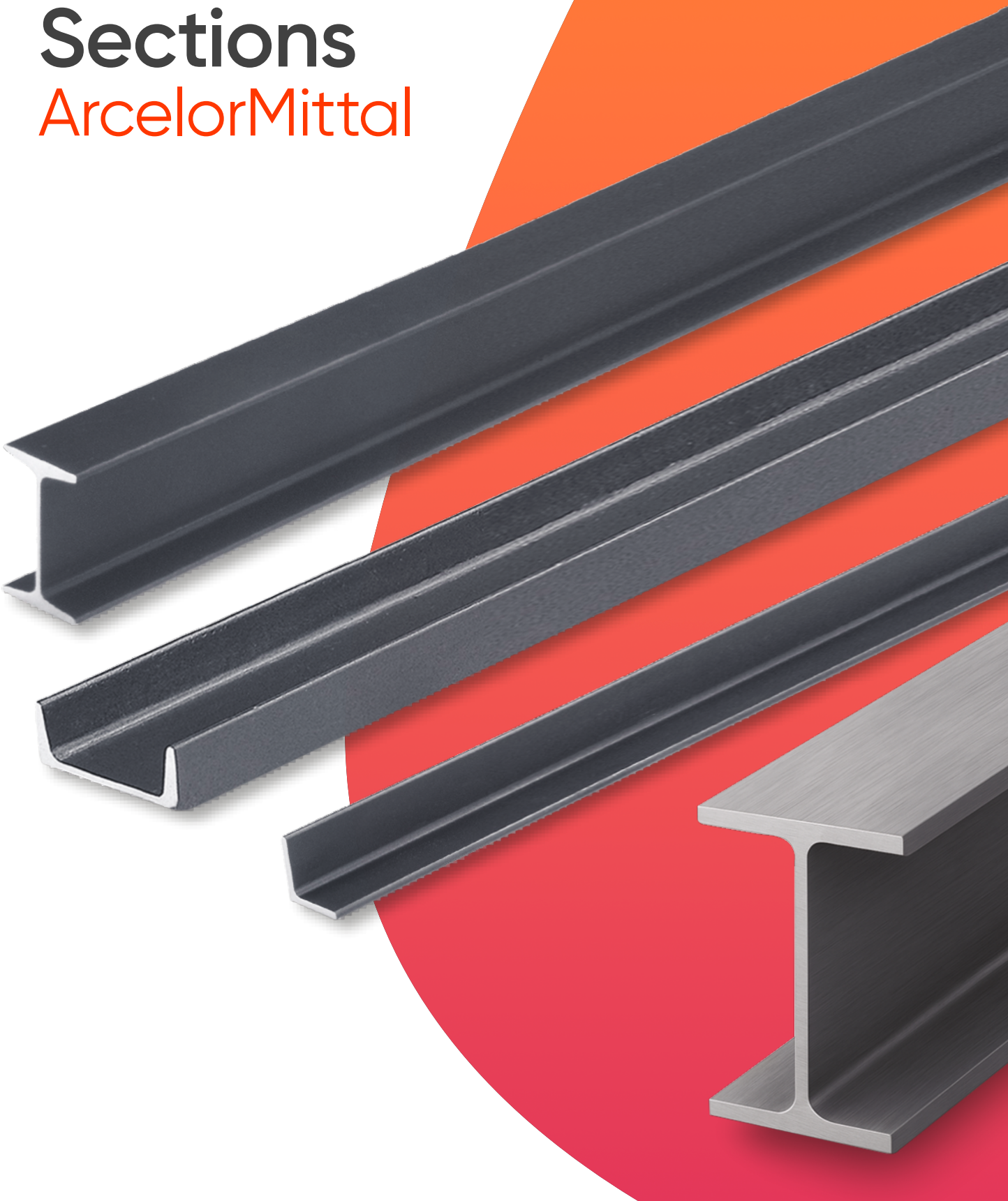
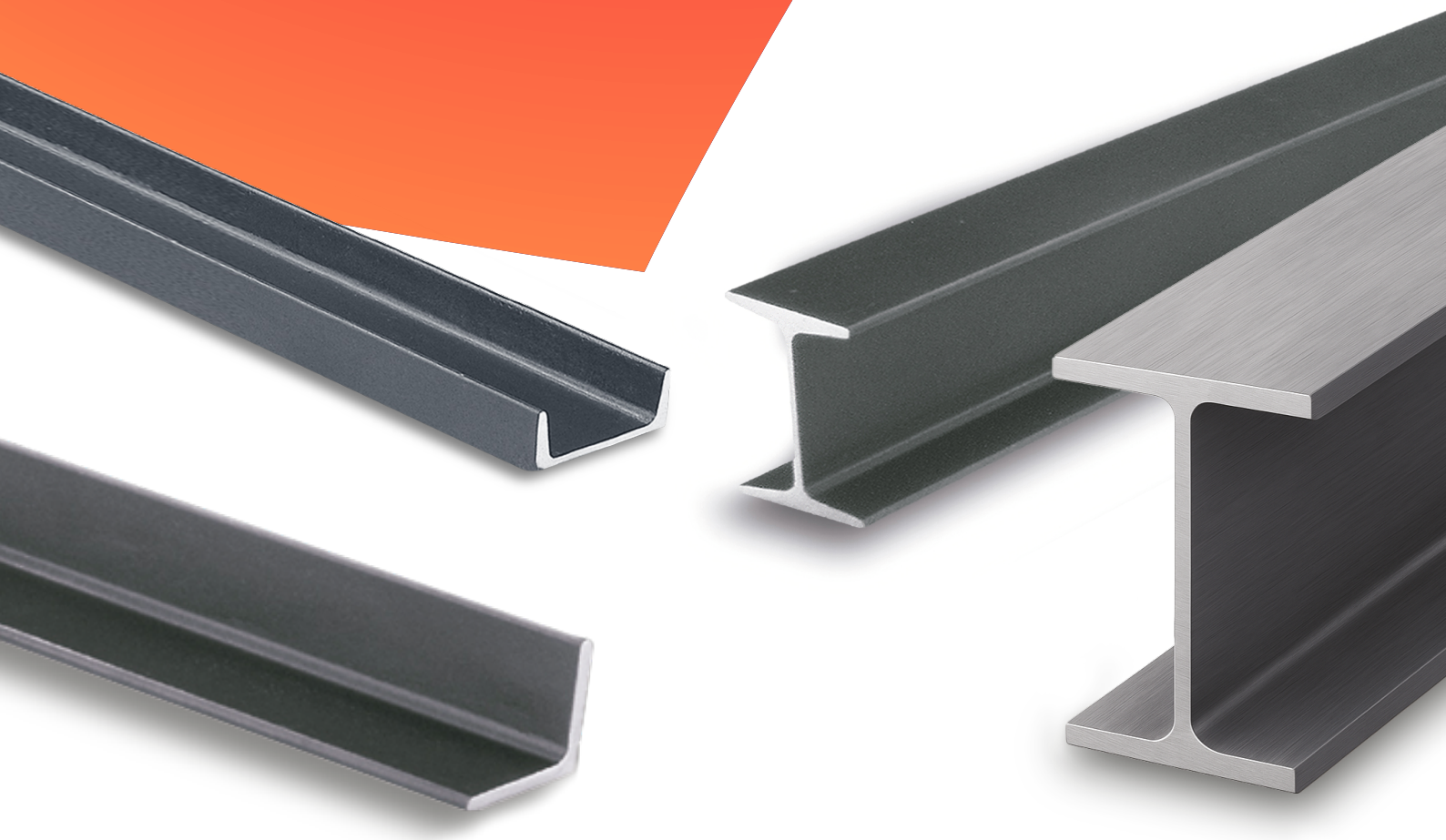
Sections
ArcelorMittal



Sections
ArcelorMittal

ArcelorMittal Sections stand out for their excellence and safety. Manufactured in accordance with ABNT NBR 7007, ASTM A36, and ASTM A572 standards, they guarantee superior quality. The reduction in weight in structures when using these sections increases productivity and reduces project costs.

ArcelorMittal's Quality Certificates guarantee product reliability, ensuring uniformity in chemical composition, weldability, and standardization of bundles, facilitating the mechanical transformation process.



ArcelorMittal Rolled Sections fully comply with international standards, now specified in Brazilian standards, and can be verified in the information provided in the Quality Certificates that accompany the products. Thus, confirming its great concern for quality and safety in the applications of all its products, ArcelorMittal discloses to its customers the Brazilian Standard for Carbon and Microalloyed Steels for Hot-Rolled Bars and Sections for structural use – ABNT NBR 7007:2022.

Mechanical Properties

The table below shows the mechanical properties of the grades defined in ABNT NBR 7007:2022 and their similarity to ASTM Standards:

NBR 7007	ASTM	Minimum yield strength (MPa)	Tensile strength (MPa)	Min. elongation Lo = 200mm (%)
MR 250	A36	250	400 to 550	20
AR 350	A572 G50	345	min. 450	18
AR 415	A572 G60	415	min. 520	16

Note: when rectangular test specimens are used, reductions in the specified elongation value are permitted in accordance with Table of Standard ABNT NBR 7007:2022, due to the effect of geometry.

Chemical Composition

The chemical composition of the steels, verified during the heat chemical analysis, must have the contents indicated in the table below:

	NBR 7007:2022											
Grade	C (%)	Mn** (%)	Si (%)	P (%)	S (%)	Cu (%)	V (%)	Nb (%)	Cr (%)	Ni (%)	Mo (%)	Ti (%)
MR 250	≤ 0.23	– ***	≤ 0.40	≤ 0.04	≤ 0.05	≤ 0.40	– ***	– ***	≤ 0.35	≤ 0.35	≤ 0.05	– ***
AR 350	≤ 0.23	0.50 to 1,35	0.10 to 0.40	≤ 0.04	≤ 0.05	≤ 0.40	≤ 0.15	≤ 0.05	≤ 0.35	≤ 0.35	≤ 0.05	≤ 0.04
AR 415*	≤ 0.26	0,50 to 1.35	0.10 to 0.40	≤ 0.04	≤ 0.05	≤ 0.40	≤ 0.15	≤ 0.05	≤ 0.35	≤ 0.35	≤ 0.05	≤ 0.04

* Nb + V + Ti ≥ 0.010%
** For each 0.01% reduction in the specified maximum carbon content, a 0.06% increase in manganese content above the specified level will be permitted up to a maximum limit of 1.50%.
*** Not specified.

Angles

Quality, safety, and excellence to ensure the best results.

ArcelorMittal Equal Leg Angles are essential for strengthening structures, reinforcing safety, and improving the finish of your projetcs. Their strength, toughness, and durability make them ideal for a wide range of uses. In addition to the quality and excellence of ArcelorMittal steel, the products are manufactured in accordance with ABNT NBR 7007 standard, ensuring compliance with the most demanding technical standards.

Main Applications

Equal Leg Angles are suitable for a variety of uses:

- Electrical power and telecommunications transmission towers
- Metal structures
- Metalwork
- Agricultural, road, and railway implements
- Sugar and alcohol mill equipment
- Mechanical industry in general

Check out the specifications below, choose the best option for your needs, and ensure greater safety and quality in your projects:

Dimensions x Linear Mass (kg/m)

Series in inches (ABNT NBR 15980/24)

Thickness		Width															
in		1/2"	5/8"	3/4"	7/8"	1"	1.1/4"	1.1/2"	1.3/4"	2"	2.1/2"	3"	3.1/2"	4"	5"	6"	8"
	mm	12.70	15.87	19.05	22.22	25.40	31.75	38.10	44.45	50.80	63.50	76.20	88.90	101.60	127.00	152.40	203.20
	2.50	0.45	0.57	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-
	3.00	0.53	0.68	0.83	-	-	-	-	-	-	-	-	-	-	-	-	-
1/8"	3.17	0.55	0.71	0.87	1.04	1.19	1.53	1.84	2.16	2.46	-	-	-	-	-	-	-
	4.50	-	-	-	-	-	-	2.53	-	3.43	4.33	5.22	-	-	-	-	-
3/16"	4.76	-	-	-	-	1.73	2.22	2.69	3.17	3.63	4.57	5.52	-	-	-	-	-
	6.00	-	-	-	-	-	-	3.31	-	4.50	5.70	6.90	-	9.29	-	-	-
1/4"	6.35	-	-	-	-	2.22	2.86	3.50	4.14	4.75	6.10	7.29	8.62	9.82	12.34	-	-
5/16"	7.94	-	-	-	-	-	-	-	-	5.83	7.45	9.07	10.71	12.23	15.33	-	-
3/8"	9.53	-	-	-	-	-	-	-	-	6.99	8.78	10.71	-	14.58	18.31	22.09	-
7/16"	11.11	-	-	-	-	-	-	-	-	-	-	-	-	16.81	21.28	-	-
1/2"	12.70	-	-	-	-	-	-	-	-	-	11.46	14.00	-	19.05	24.11	29.12	-
5/8"	15.87	-	-	-	-	-	-	-	-	-	-	-	-	23.36	29.68	48.68	48.68
3/4"	19.05	-	-	-	-	-	-	-	-	-	-	-	-	27.60	35.14	42.73	57.93

Dimensions x Linear Mass (kg/m)

Metric Series (ABNT NBR 16952/21)

Thickness mm	Width mm							
mm	40.00	45.00	50.00	60.00	65.00	75.00	90.00	100.00
3.00	1.85	2.09	2.30	-	-	-	-	-
4.00	2.42	2.74	3.06	3.66	4.00	-	-	-
5.00	2.98	3.38	3.78	4.53	4.98	5.78	-	-
6.00	-	-	4.48	5.38	5.91	6.87	8.25	9.27
7.00	-	-	-	-	-	7.95	9.51	10.76
8.00	-	-	-	-	-	8.96	10.85	12.21
9.00	-	-	-	-	-	-	-	13.63
10.00	-	-	-	-	-	-	-	15.07
12.00	-	-	-	-	-	-	-	17.86

Technical specifications

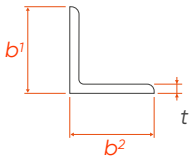
- NBR 7007 MR 250 (ASTM A36)
- NBR 7007 AR 350 (ASTM A572 – Grade 50)
- NBR 7007 AR 415 (ASTM A572 – Grade 60)
- Standard lengths: 6 m and 12 m
- Other upon request

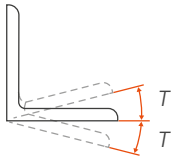
Pay attention to the dimensional information for each product and choose the one that best suits your project:

Dimensional Tolerance for Angle

(ABNT NBR 15980/24)

Trade name mm (in)	Width *b* mm	Thickness *t* mm	Out of square *T* degrees	Max. difference between leg widths *[b1-b2]* mm	Maximum warping *E* mm/m
b < 50.80 (2")	± 1.60	± 0.30	± 1.50	1.50	4.00
50.80 (2") ≤ *b* < 76.20 (3")		± 0.40		2.00	
76.20 (3") ≤ *b* ≤ 101.60 (4")	+ 3,00 - 2.50	-		3.00	2.50
101.60 (4") < *b* ≤ 152.40 (6")	± 3.20	-		3.20	
b > 152.40 (6")	+ 5.00 - 3.20	-			





C-Channel

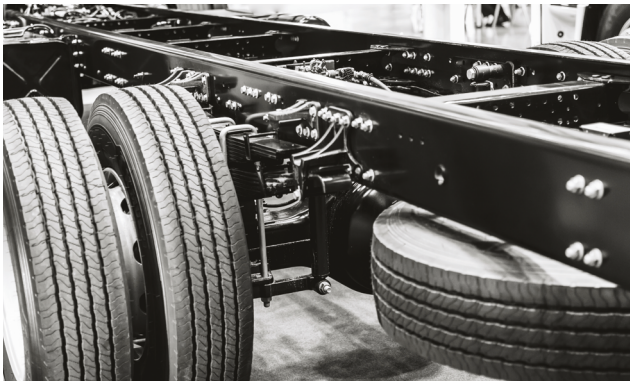
Greater strength, stability, and safety for steel structures.

ArcelorMittal's C-channel is a key product in metal constructions as part of beams, pillars, and other support elements, offering strenght, stability, and helping to distribute the load efficiently. With a monosymmetric configuration and non-parallel leg faces, it has a slight slope between 9° and 10° on the inner surface of the flanges and is produced in steel in accordance with ABNT NBR 7007 MR 250. A product designed for various types of use, such as metalwork, metal structures, bus bodies, agricultural implements, civil construction, and much more.

Main Applications

Check out the different uses of channels:

- Metal structures
- Transportation equipment
- Monorails and girders
- Machine components
- Truck, pickup truck, and bus chassis
- Agricultural and road implements
- Mechanical industry in general
- Civil construction



Pay attention to gauge and weight specifications when planning your project:

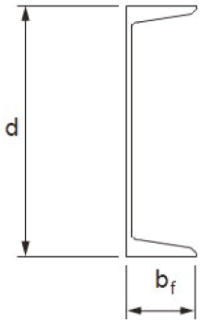
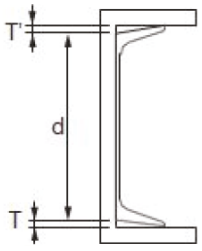
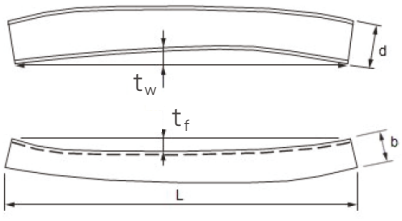
Dimensions and Mass

Series in inches(ABNT NBR 15980/24)

Designation in x lb/ft	Depth (d) mm	Flange width (b) mm	Web thickness (ea) mm	Linear weight kg/m
3" x 4.10	76.20	35.81	4.32	6.10
3" x 5.00		38.05	6.55	7.44
4" x 5.40	101.60	40.23	4.67	8.04
4" x 6.25		41.83	6.27	9.30
4" x 7.26		43.70	8.13	10.80
6" x 8.20	152.40	48.77	5.08	12.20
6" x 10.50		51.66	7.98	15.62
6" x 13.04		54.80	11.10	19.40
8" x 11.50	203.20	57.40	5.59	17.10
8" x 13.78		59.51	7.70	20.50

Dimensional tolerance of the C-channel

(ABNT NBR 15980/24)

Type	Figure	Parameters	Tolerance mm
Depth d		76.20 ≤ d < 177.80	+2.40 -1.60
		177.80 ≤ d ≤ 254.00	+3.20 -2.40
Flange width bf		76.20 ≤ d < 177.80	±3.20
		177.80 ≤ d ≤ 254.00	+3.20 -4.00
Out of square T		Flange width bf	T + T' ≤ 0.03 x bf
Camber E		Web tw	2.5 mm/m
		Flange tf	2.5 mm/m

S-Beam

Versatility and stability for various types of metal projects.

ArcelorMittal's S-beam is a structural element widely employed in civil construction due to its high load-bearing capacity and ability to provide stability across a range of applications. Manufactured in steel in accordance with ABNT NBR 7007 MR 250, its configuration is doubly symmetrical, with non-parallel leg faces that have an inclination between 9° and 10° on the inner surface of the legs. Due to its versatility, it is used in metalwork, metal structures, bus bodies, agricultural implements, civil contruction, among others.

Main applications

Designed for a wide range of uses:

- Metal structures
- Transportation equipment
- Monorails and girders
- Machine components
- Truck, pickup truck, and bus chassis
- Agricultural and road implements
- Mechanical industry in general
- Civil construction

Keep an eye on the product's gauge specifications and dimensional information:

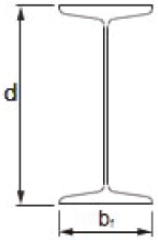
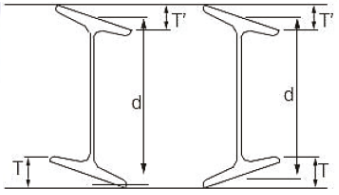
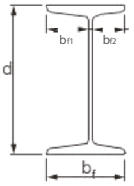
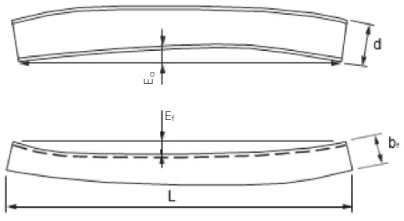
Dimensions and Mass

Series in inches (ABNT NBR 15980/24)

Designation in x lb/ft	Depth (d) mm	Flange width (bf) mm	Web thickness (ea) mm	Linear weight kg/m
3" x 5.70	76.20	59.18	4.32	8.48
3" x 6.50		61.24	6.38	9.68
4" x 7.70	101.60	67.60	4.90	11.46
4" x 8.50		69.20	6.43	12.65
4" x 9.50		71.02	8.28	14.14
5" x 10.00	127.00	76.30	5.44	14.88
6" x 12.50	152.40	84.63	5.89	18.60
6" x 14.78		87.50	8.71	22.00
6" x 17.25		90.55	11.81	25.67

Dimensional Tolerance of the S-beam

(ABNT NBR 15980/24)

Type	Figure	Parameters	Tolerance mm
Depth d		Measurement on the web plane	+2.4 -1.6
Flange width bf		Measurement parallel to the flange	± 3.20
Out-of-square T		Width bf	T + T' ≤ 0.03 x bf
Web asymmetry A		$A = \frac{(bf1 - bf2)}{2}$	A ≤ 5.00
Camber E		Web Tw	2.5 mm/m
		Flange Tf	2.5 mm/m

Heavy Profiles

ArcelorMittal

Greater strength, stability, and safety for metal structures

The Heavy Sections sold by ArcelorMittal are produced in accordance with Brazillian Standards "NBR 15980:2024 - Rolled steel sections for structural use - Dimensions and tolerances" and "NBR 7007:2022 - Carbon steels and micro-alloy steels for hot-rolled bars and sections for structural use - Requirements", as well as complying with the main international standards, including the traditional ASTM A572.

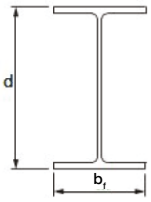
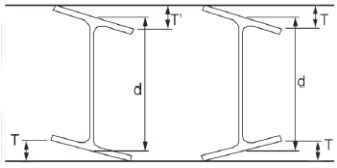
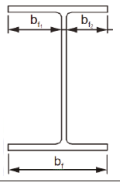
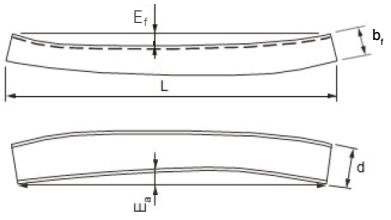
Available in ASTM A572 Grade 50 steel (NBR 7007 AR350), with standard lengths of 6 and 12 meters, these sections have a double symmetrical configuration, with parallel leg faces, and the web thickness is less than the leg thickness.

Main Applications

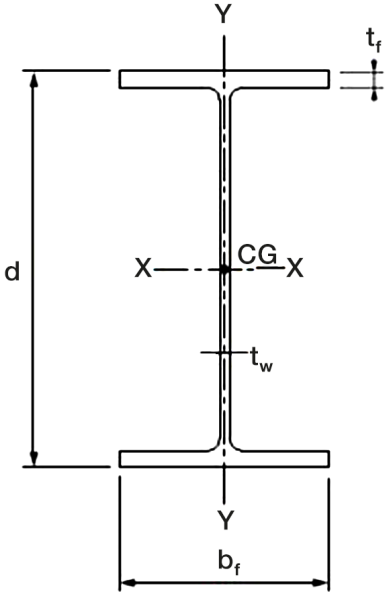
- Metal structures
- Heavy industrial machinery and equipment
- Bridges and monorails

Keep an eye on the gauge specifications and dimensional information of the product:

Dimensional Tolerance Wide Flange Section

Type	Figure	Parameters	Tolerances (mm)
Depth d		Measured along the web plane	+ 4.00 - 3.00
Flange width bf		Measured parallel to flange	+ 6.00 - 5.00
Out of square T		Nominal depth d ≤ 310	T + T' ≤ 6.00
		Nominal depth d > 310	T + T' ≤ 8.00
Web asymmetry A		$A = \frac{(bf1 - bf2)}{2}$	A ≤ 5.00
Camber E		Web Ea	1.00 mm/m
		Flange Ef bf < 150	2.00 mm/m
		Flange Ef bf ≥ 150	1.00 mm/m

Wide Flange Section



The masses of sections with at least one dimension greater than 76 mm may not vary by more than 2.5% of the specified theoretical mass, except for sections weighing less than 150 kg/m, where the variation must be between -2.5 and +3.0% of the specified theoretical mass.

The standard supply lengths are 6.00 m and 12.00 m.
The cutting tolerance must comply with the minimum nominal length measurement up to 100 mm of this lenght.

Dimensions and Mass (ABNT NBR 15980/24)

Dimension		Type	Linear Mass	Web		Table	
				Depth d	Thickness tw	Width bf	Thickness tf
mm x kg/m	in x lb/ft		kg/m	mm	mm	mm	mm
150 x 13	6 x 8.5	I	13.0	148	4.3	100	4.9
150 x 18	6 x 12	I	18.0	153	5.8	102	7.1
150 x 22.5	6 x 15	H	22.5	152	5.8	152	6.6
150 x 24	6 x 16	I	24.0	160	6.6	102	10.3
150 x 29.8	6 x 20	H	29.8	157	6.6	153	9.3
150 x 37.1	6 x 25	H	37.1	162	8.1	154	11.6
200 x 15	8 x 10	I	15.0	200	4.3	100	5.2
200 x 19.3	8 x 13	I	19.3	203	5.8	102	6.5
200 x 22.5	8 x 15	I	22.5	206	6,2	102	8.0
200 x 26.6	8 x 18	I	26.6	207	5.8	133	8.4
200 x 31.3	8 x 21	I	31.3	210	6.4	134	10.2
200 x 35.9	8 x 24	H	35.9	201	6.2	165	10.2
200 x 41.7	8 x 28	H	41.7	205	7.2	166	11.8
200 x 46.1	8 x 31	H	46.1	203	7.2	203	11.0
200 x 52	8 x 35	H	52.0	206	7.9	204	12.6
200 x 53	8 x 36	HP	53.0	204	11.3	207	11.3
200 x 59	8 x 40	H	59.0	210	9.1	205	14.2
200 x 71	8 x 48	H	71.0	216	10.2	206	17.4
200 x 86	8 x 58	H	86.0	222	13.0	209	20.6
200 x 100	8 x 67	H	100.0	229	14.5	210	23.7
250 x 17.9	10 x 12	I	17.9	251	4.8	101	5.3
250 x 22.3	10 x 15	I	22.3	254	5.8	102	6.9
250 x 25.3	10 x 17	I	25.3	257	6.1	102	8.4
250 x 28.4	10 x 19	I	28.4	260	6.4	102	10.0
250 x 32.7	10 x 22	I	32.7	258	6.1	146	9.1
250 x 38.5	10 x 26	I	38.5	262	6.6	147	11.2
250 x 44.8	10 x 30	I	44.8	266	7.6	148	13.0
250 x 62	10 x 42	HP	62.0	246	10.5	256	10.7
250 x 73	10 x 49	H	73.0	253	8.6	254	14.2
250 x 80	10 x 54	H	80.0	256	9.4	255	15.6
250 x 85	10 x 57	HP	85.0	254	14.4	260	14.4
250 x 89	10 x 60	H	89.0	260	10.7	256	17.3
250 x 101	10 x 68	H	101.0	264	11.9	257	19.6
250 x 115	10 x 77	H	115.0	269	13.5	259	22.1
250 x 131	10 x 88	H	131.0	275	15.4	261	25.1
250 x 149	10 x 100	H	149.0	282	17.3	263	28.4
250 x 167	10 x 12	H	167.0	289	19.2	265	31.8
310 x 21	12 x 14	I	21.0	303	5.1	101	5.7
310 x 23.8	12 x 16	I	23.8	305	5.6	101	6.7
310 x 28.3	12 x 19	I	28.3	309	6.0	102	8.9
310 x 32.7	12 x 22	I	32.7	313	6.6	102	10.8
310 x 38.7	12 x 26	I	38.7	310	5.8	165	9.7
310 x 44.5	12 x 30	I	44.5	313	6.6	166	11.2
310 x 52	12 x 35	I	52.0	317	7.6	167	13.2
310 x 79	12 x 53	HP	79.0	299	11.0	306	11.0
310 x 93	12 x 63	HP	93.0	303	13.1	308	13.1
310 x 97	12 x 65	H	97.0	308	9.9	305	15.4
310 x 107	12 x 72	H	107.0	311	10.9	306	17.0
310 x 110	12 x 74	HP	110.0	308	15.4	310	15.5
310 x 117	12 x 79	H	117.0	314	11.9	307	18.7
310 x 125	12 x 84	HP	125.0	312	17.4	312	17.4

Dimension		Type	Linear Mass	Web		Table	
				Depth d	Thickness tw	Width bf	Thickness tf
mm x kg/m	in x lb/ft		kg/m	mm	mm	mm	mm
310 x 129	12 x 87	H	129.0	318	13.1	308	20.6
310 x 143	12 x 96	H	143.0	323	14.0	309	22.9
310 x 158	12 x 106	H	158.0	327	15.5	310	25.1
310 x 179	12 x 120	H	179.0	333	18.0	313	28.1
360 x 32.9	14 x 22	I	32.9	349	5.8	127	8.5
360 x 39	14 x 26	I	39.0	353	6.5	128	10.7
360 x 44.6	14 x 30	I	44.6	352	6.9	171	9.8
360 x 51	14 x 34	I	51.0	355	7.2	171	11.6
360 x 58	14 x 38	I	58.0	358	7.9	172	13.1
360 x 64	14 x 43	I	64.0	347	7.7	203	13.5
360 x 72	14 x 48	I	72.0	350	8.6	204	15.1
360 x 79	14 x 53	I	79.0	354	9.4	205	16.8
360 x 91	14 x 61	H	91.0	353	9.5	254	16.4
360 x 101	14 x 68	H	101.0	357	10.5	255	18.3
360 x 110	14 x 74	H	110.0	360	11.4	256	19.9
360 x 122	14 x 82	H	122.0	363	13.0	257	21.7
410 x 38.8	16 x 26	I	38.8	399	6.4	140	8.8
410 x 46.1	16 x 31	I	46.1	403	7.0	140	11.2
410 x 53	16 x 36	I	53.0	403	7.5	177	10.9
410 x 60	16 x 40	I	60.0	407	7.7	178	12.8
410 x 67	16 x 45	I	67.0	410	8.8	179	14.4
410 x 75	16 x 50	I	75.0	413	9.7	180	16.0
410 x 85	16 x 57	I	85.0	417	10.9	181	18.2
460 x 52	18 x 35	I	52.0	450	7.6	152	10.8
460 x 60	18 x 40	I	60.0	455	8.0	153	13.3
460 x 68	18 x 46	I	68.0	459	9.1	154	15.4
460 x 74	18 x 50	I	74.0	457	9.0	190	14.5
460 x 82	18 x 55	I	82.0	460	9.9	191	16.0
460 x 89	18 x 60	I	89.0	463	10.5	192	17.7
460 x 97	18 x 65	I	97.0	466	11.4	193	19.0
460 x 106	18 x 71	I	106.0	469	12.6	194	20.6
530 x 66	21 x 44	I	66.0	525	8.9	165	11.4
530 x 72	21 x 48	I	72.0	524	9.0	207	10.9
530 x 74	21 x 50	I	74.0	529	9.7	166	13.6
530 x 82	21 x 55	I	82.0	528	9.5	209	13.3
530 x 85	21 x 57	I	85.0	535	10.3	166	16.5
530 x 92	21 x 62	I	92.0	533	10.2	209	15.6
530 x 101	21 x 68	I	101.0	537	10.9	210	17.4
530 x 109	21 x 73	I	109.0	539	11.6	211	18.8
610 x 82	24 x 55	I	82.0	599	10.0	178	12.8
610 x 92	24 x 62	I	92.0	603	10.9	179	15.0
610 x 101	24 x 68	I	101.0	603	10.5	228	14.9
610 x 113	24 x 76	I	113.0	608	11.2	228	17.3
610 x 125	24 x 84	I	125.0	612	11.9	229	19.6
610 x 140	24 x 94	I	140.0	617	13.1	230	22.2
610 x 155	24 x 104	I	155.0	611	12.7	324	19.0
610 x 174	24 x 117	I	174.0	616	14.0	325	21.6
610 x 217	24 x 146	I	217.0	628	16.5	328	27.7

In accordance with key market standards

ArcelorMittal sections follow the brand's standard of excellece and are produced in accordance with ABNT standards "NBR 15980:2024 - Rolled steel sections for structural use - Dimencions and tolerances" and "NBR 7007:2022 - Carbon and microalloyed steels for hot-rolled bars and sections for structural use - Requirements", in addition to complying with the main international standars, including the traditional ASTM A36.
The standard supply lengths are 6.000 mm and 12.000 mm. The cutting tolerance must comply with the minimum nominal length measurement up to 100 mm of that length.
The masses of sections with at least one dimension greater than 76 mm cannot vary by more than 2.5% of the specified theoretical mass, except for sections weighing less than 150 kg/m, where the variation must be between -2.5% and +3.0% of the specified theoretical mass.
The existence of discontinuities, such as cracks, folds, cavities, and scratches, is permitted, provided that the depth of these discontinuities is less than that specified. For sections with a nominal thickness less than or equal to 10 mm, the maximum depth allowed is 0.2 mm times the nominal thickness. For sections with a nominal thickness greater than 10mm, the maximum depth allowed is 2.0 mm.

Note: Stricter requirements for warping and defect depth are available upon request.

Safety considerations

Each category of section is subject to strict quality and safety guidelines.
These components are manufactured with extreme precision to ensure their suitability for specific applications, following production standards established by the mills. In this way, they fully comply with the standards defined for each type, ensuring their reliability and performance as required.

Warranty policy

The materials supplied by ArcelorMittal are produced, tested, and approved in accordance with the requirements of the requested standard or technical specification. If you have any questions, please **contact or Customer Service at 0800 015 1221** or visit **brasil.arcelormittal.com**

Differentials and Advantages of ArcelorMittal Sections

The excellence of our Sections is supported by the management of chemical composition and mechanical properties. Each product batch is manufactured strictly in accordance with ABNT NBR 7007, ensuring compliance with the most demanding technical standards.
Chemical composition plays a critical role in determining the fundamental characteristics of the material. This precise control enables properties such as strength, toughness, and durability, providing an effective response to varied structural demands.
Mechanical properties are optimized to ensure superior perfirmance in specific applications. High tensile strength, controlled yield strength, and balanced toughness are intrinsic factors that give our sections and angles a significant technical advantage. This commitment to mechanical properties not only enhances structural integrity but also allows for a wider range of applications and design solutions.

Our products comply with the requirements of the main national and international standards

ArcelorMittal Rolled Sections are produced in accordance with international standards, which are now specified in Brazilian standards. You can check the information in the Quality Certificates that accompany the products and confirm our great concern for quality and safety in their applications and uses.

Customer Service Center
0800 015 1221
brasil.arcelormittal.com