

WIDE FLANGE (IWF)



Another variation of H-Beam under our range product is the Wide Flange. Wide Flange is a structural steel profile similar with H-Beam but with its flange length longer than its web. Wide flange are also internationally known as I-Beam / W-Beam / Universal Beam / Universal Column and it's widely used in the construction industry and are available in a variety of standard sizes. Steel beams have always been a preferred alternative to concrete because it offers better tension and compression thus resulting in lighter construction structure.

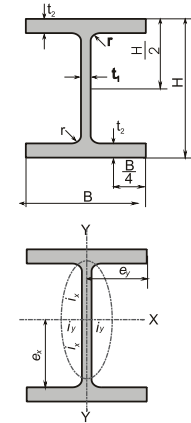
Gunung Garuda's hot rolled IWF comes with standard size range from 150x75 up to 600x200. Non standard IWF can be fabricated by welding steel plates together to form a welded beam that fits our customer's size requirements. We also provides free cut-to-length service for customers that required length below our standard length of 12m.

Size range	: 150x75 to 600x200
Standard length	: 12m
Flange thickness range	: 5mm to 11mm
Web thickness range	: 7mm to 17mm
Annual Capacity	: > 1.000.000 MT/Y
Standards	: JIS G 3101 SS400 (Mild Steel) JIS G 3101 SS540 (High Strength)

WIDE FLANGE (IWF)

Metric Size | JIS 3192

STANDARD SECTIONAL DIMENSIONS					SECTION AREA A	UNIT WEIGHT		INFORMATIVE REFERENCE						REMARKS
Nominal Dimensional	H x B	t1	t2	r				GEOMETRICAL MOMENT OF INERTIA		RADIUS OF GYRATION OF AREA		MODULUS OF SECTION		
					Ix	Iy	ix	iy	Zy	Zy				
mm	mm x mm	mm	mm	mm	cm ²	Kg/m	Kg/12m	cm ⁴	cm ⁴	cm	cm	cm ³	cm ³	
150 x 75	150 x 75	5	7	8	17.85	14.00	168	666	49.5	6.11	1.66	88.8	13.2	
■ 150 x 100	148 x 100	6	9	11	26.84	21.10	253.2	1,020	151	6.17	2.37	138	30.1	
200 x 100	198 x 99	4.5	7	11	23.18	18.20	218.4	1,580	114	8.26	2.21	160	23.0	
	200 x 100	5.5	8	11	27.16	21.30	255.6	1,840	134	8.24	2.22	184	26.8	
200 x 150	194 x 150	6	9	12	38.80	30.60	367.2	2,675	507	8.30	3.60	275.8	67.6	
250 x 125	248 x 124	5	8	12	32.68	25.70	308.4	3,540	255	10.4	2.79	285	41.1	
	250 x 125	6	9	12	37.66	29.60	355.2	4,050	294	10.4	2.79	324	47.0	
300 x 150	298 x 149	5.5	8	13	40.80	32.0	384	6,320	442	12.4	3.29	424	59.3	
350 x 175	300 x 150	6.5	9	13	46.78	36.70	440.4	7,210	508	12.4	3.29	481	67.7	
	346 x 174	6	9	14	52.68	41.40	469.8	11,100	792	14.5	3.88	641	91.0	
400 x 200	350 x 175	7	11	14	63.14	49.60	595.2	13,600	984	14.7	3.95	775	112	
	396 x 199	7	11	16	72.16	56.60	679.2	20,000	1,450	16.7	4.48	1,010	145	
450 x 200	400 x 200	8	13	16	84.1	66.0	792	23,700	1,740	16.8	4.54	1,190	174	
	450 x 200	9	14	18	96.8	76.0	912	33,500	1,870	18.6	4.40	1,490	187	
500 x 200	500 x 200	10	16	20	114.2	89.6	1075.2	47,800	2,140	20.5	4.43	1,910	214	
600 x 200	600 x 200	11	17	22	134.4	106	1272	77,600	2,280	24.0	4.12	2,590	228	
600 x 200	588 x 300	12	20	28	192.5	151	1812	181,000	9,020	24.80	6.85	4,020	601	

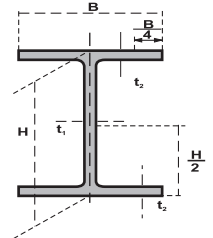
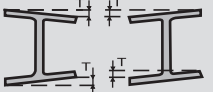
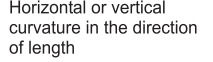
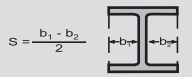
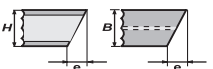


NOTE : ■ Non standard sizes are available upon request and subject to minimum quantity

TECHNICAL PROPERTIES FOR H-BEAM & WIDE FLANGE

DIMENSIONAL TOLERANCE

H-Beam & Wide Flange | JIS 3192

ITEM, mm (in.)		TOLERANCE	REMARKS
Depth (H)	FLANGE WIDTH, B	± 3.0 (0.118)	
	Nominal depths of under 400 (15.748) 400 to 600 (23.622), excl. 600 and over	± 3.0 (0.118) ± 4.0 (0.157) ± 5.0 (0.197)	
Thickness	Flange, t_2	Under 16 16 or over to and excl. 25 25 or over to and excl. 40 40 or over	± 1.5 (0.059) ± 2.0 (0.079) ± 2.5 (0.098) ± 3.0 (0.118)
	Web, t_1	Under 16 16 or over to and excl. 25 25 or over to and excl. 40 40 or over	± 1.0 (0.039) ± 1.5 (0.024) ± 2.0 (0.079) ± 2.5 (0.098)
Length	7 m or under	$+ 40$ (1.575) $- 0$	
	Over 7 m	40 (1.575) plus 5 (0.197) for each additional meter or fraction thereof	
Out-of-Square, (T)	Nominal depths 300 (11.811) or under in nominal depth	Not more than 1.2 percent of flange width B or 2.0 (0.079) at minimum	
	Nominal depths Over 300 (11.811) in nominal depth	Not more than 1.5 percent of flange width B or 2.0 (0.079) at minimum	
Camber of Sweep	Nominal depths 300 (11.811) and under	Not more than 0.20 percent of Length	Horizontal or vertical curvature in the direction of length
	Nominal depths over 300 (11.811)	Not more than 0.10 percent of Length	
Web Off Center, (S)	Nominal depths 300 (11.811) and under	± 3.0 (0.118)	
	Nominal depths over 300 (11.811)	± 4.5 (0.117)	
	Ends-out-square (e)	1.6 % or under of width B or of depth H, provided that 3.0 mm is the minimum	

CHEMICAL COMPOSITION

SYMBOL OF GRADE	CHEMICAL COMPOSITION (%)				
	C	Si	Mn	P	S
SS 400, 490	—	—	—	0.050 max	0.050 max
SS 540	0.3 max	—	1.60 max	0.040 max	0.040 max

CORRESPONDING SPECIFICATION

TYPE OF MATERIAL	CLASSIFIED BY	TENSILE STRENGTH	SPECIFICATIONS			
	Tensile strength Class (N/mm ²)	Special specification	JIS	ASTM	BS 4360	DIN
Steel Structure	400	—	G 3101 SS 400	A 36	Gr. 43A	ST 33

MECHANICAL PROPERTIES

CLASSIFICATION	YIELD POINT N/mm ²		TENSILE STRENGTH N/mm ²	ELONGATION %		
	Thickness (mm)			Thickness (mm)		
	≤16	> 16		≤5	5 to 16	> 16
Steel Structure	245 min	235 min	400 - 510	21 min	17 min	21 min
JIS G3106 SM 490 YA SM 490 YB	365 min	355 min	490 - 610	19 min	15 min	19 min