

Data Material

Mutu Baja	f_r MPa	E MPa	G MPa	L mm	C_b	k_n	Pada daerah geser	f_u^b MPa	t_p mm	f_{uw} MPa
BJ 37	70	200,000	80,000	5,000	1.56	5	tanpa ulir	825	5	410

Data output dengan diameter baut = 16 mm dan jarak tepi baut (S_1) = 60 mm

Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	Perbesar Diameter Baut				
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	Perbesar Diameter Baut				
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

Data output dengan diameter baut = 18 mm dan jarak tepi baut (S_1) = 60 mm

Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	16	69.57	6.49	End Plate with Knee	Not Ok
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	Perbesar Diameter Baut				
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

Data output dengan diameter baut = 20 mm dan jarak tepi baut (S_1) = 60 mm

Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	16	69.57	6.49	End Plate with Knee	Not Ok
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	20	64.56	8.12	End Plate with Knee	Not Ok
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

Data output dengan diameter baut = 22 mm dan jarak tepi baut (S_1) = 60 mm

Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	16	69.57	6.49	End Plate with Knee	Not Ok
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	20	64.56	8.12	End Plate with Knee	Not Ok
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

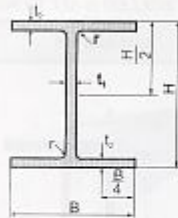
Data output dengan diameter baut = 24 mm dan jarak tepi baut (S_1) = 60 mm

Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	16	69.57	6.49	End Plate with Knee	Not Ok
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	20	64.56	8.12	End Plate with Knee	Not Ok
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

Data output dengan diameter baut = 26 mm dan jarak tepi baut (S_1) = 60 mm

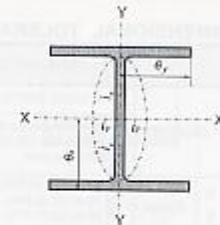
Profil Balok	Jumlah Baut	Jarak antar baut (S)	Tebal las	Jenis End Plate	Tebal End Plate
100 x 100 x 6 x 8	8	34.00	4.00	End Plate with Knee	Ok
125 x 125 x 6.5 x 9	8	50.33	4.18	End Plate with Knee	Ok
150 x 75 x 5 x 7	4	70.00	4.64	End Plate	Ok
150 x 100 x 6 x 9	8	65.33	4.14	End Plate with Knee	Ok
150 x 150 x 7 x 10	8	66.33	4.54	End Plate with Knee	Ok
175 x 175 x 7.5 x 11	12	49.40	5.00	End Plate with Knee	Ok
200 x 100 x 4.5 x 7	12	59.60	3.00	End Plate with Knee	Ok
200 x 100 x 5.5 x 8	12	60.20	4.00	End Plate with Knee	Ok
200 x 200 x 8 x 12	12	59.00	5.28	End Plate with Knee	Ok
250 x 125 x 5 x 8	16	56.57	4.00	End Plate with Knee	Ok
250 x 125 x 6 x 9	16	57.00	4.00	End Plate with Knee	Ok
250 x 250 x 9 x 14	16	55.71	6.10	End Plate with Knee	Ok
300 x 150 x 5.5 x 8	16	70.71	4.00	End Plate with Knee	Ok
300 x 150 x 6.5 x 9	16	71.14	4.00	End Plate with Knee	Ok
300 x 300 x 10 x 15	16	69.57	6.49	End Plate with Knee	Not Ok
350 x 175 x 6 x 9	20	65.44	4.00	End Plate with Knee	Ok
350 x 175 x 7 x 11	20	66.11	5.00	End Plate with Knee	Ok
350 x 350 x 12 x 19	20	64.56	8.12	End Plate with Knee	Not Ok
400 x 200 x 7 x 11	24	62.27	5.00	End Plate with Knee	Ok
400 x 200 x 8 x 13	24	62.82	5.15	End Plate with Knee	Ok
450 x 200 x 9 x 14	24	71.64	6.00	End Plate with Knee	Ok
500 x 200 x 10 x 16	28	68.00	6.32	End Plate with Knee	Ok
600 x 200 x 11 x 17	32	72.07	6.64	End Plate with Knee	Not Ok
600 x 300 x 12 x 20	32	69.87	8.17	End Plate with Knee	Not Ok

WIDE FLANGE SHAPE



Geometrical moment of inertia $I = Ai^2$
 Radius of gyration of area $i = \sqrt{I/A}$
 Modulus of section $z = I/e$

(A = sectional area)



ACCORDING JIS 1993

METRIC SIZE

STANDARD SECTIONAL DIMENSION					SECTIONAL AREA	UNIT WEIGHT	INFORMATIVE REFERENCE					
Nominal Dimensional	H x B	t ₁	t ₂	r			A	GEOMETRICAL MOMENT OF INERTIA		RADIUS OF GYRATION OF AREA		MODULUS OF SECTION
mm	mm	mm	mm	mm	cm ²	kg/m	I _x	I _y	i _x	i _y	Z _x	Z _y
							cm ⁴	cm ⁴	cm	cm	cm ³	cm ³
100 x 100	100 x 100	6	8	10	21.90	17.20	383	134	4.18	2.47	76.5	26.7
125 x 125	125 x 125	6.5	9	10	30.31	23.80	847	293	5.29	3.11	136	47.0
150 x 75	150 x 75	5	7	8	17.85	14.00	666	49.5	6.11	1.66	88.8	13.2
150 x 100	145 x 100	6	9	11	26.84	21.10	1 020	151	6.17	2.37	138	30.1
150 x 150	150 x 150	7	10	11	40.14	31.50	1 640	563	6.39	3.75	219	75.1
175 x 175	175 x 175	7.5	11	12	51.21	40.20	2 880	984	7.50	4.38	330	112
200 x 100	198 x 99	4.5	7	11	23.18	18.20	1 580	114	8.26	2.21	160	23.0
	200 x 100	5.5	8	11	27.16	21.30	1 840	134	8.24	2.22	184	26.8
200 x 200	200 x 200	8	12	13	63.63	49.90	4 720	1 600	8.62	5.02	472	160
250 x 125	248 x 124	5	8	12	32.88	25.70	3 540	255	10.4	2.79	285	41.1
	250 x 125	6	9	12	37.66	29.60	4 050	294	10.4	2.79	324	47.0
250 x 250	250 x 250	9	14	16	92.18	72.40	10 800	3 650	10.8	6.29	867	292
300 x 150	298 x 149	5.5	8	13	40.80	32.0	6 320	442	12.4	3.29	424	59.3
	300 x 150	6.5	9	13	46.78	36.70	7 210	508	12.4	3.29	481	67.7
300 x 300	300 x 300	10	15	18	119.80	94.0	20 400	6 750	13.1	7.51	1 390	450
350 x 175	346 x 174	6	9	14	52.88	41.40	11 100	792	14.5	3.88	641	91.0
	350 x 175	7	11	14	63.14	49.60	13 600	984	14.7	3.95	775	112
350 x 350	350 x 350	12	19	20	173.9	137.0	40 300	13 600	15.2	8.84	2 300	776
400 x 200	396 x 199	7	11	16	72.16	56.80	20 000	1 450	16.7	4.48	1 010	146
400 x 200	400 x 200	8	13	16	84.1	66.0	23 700	1 740	16.8	4.54	1 190	174
* 400 x 400	400 x 400	13	21	22	218.7	172	66 600	22 400	17.5	10.1	3 330	1 120
450 x 200	450 x 200	9	14	18	96.8	76.0	33 500	1 970	18.6	4.40	1 490	187
500 x 200	500 x 200	10	16	20	114.2	89.6	47 800	2 140	20.5	4.33	1 910	214
600 x 200	600 x 200	11	17	22	134.4	106	77 600	2 280	24.0	4.12	2 590	228
600 x 300	588 x 300	12	20	28	192.5	151	118 000	9 020	24.8	6.85	4 020	601
* 700 x 300	700 x 300	13	24	28	235.5	185	201 000	10 800	29.3	6.78	5 760	722
* 800 x 300	800 x 300	14	26	28	267.4	210	292 000	11 700	33.0	6.62	7 290	762

NOTE: * Dimensions are import product

**HEAD OFFICE
AND FACTORY**

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 Fax. 62-21-8900555, URL : <http://www.grdsteel.com>, E-mail : gunung@grdsteel.com



PRIMARY BOLT CONNECTION

BOLT CAPACITIES

NOMINAL BOLT DIAMETER	TENSION ($F_t = 35 \text{ kN/mm}^2$) (Min)	SHEAR ($T_v = 15 \text{ N/mm}^2$) (Min)	
		SINGLE	DOUBLE
mm	kN	kN	kN
M 12	25.29	12.64	25.28
M 16	47.10	23.56	47.08
M 20	73.50	36.76	73.48
M 22	90.90	45.44	90.92
M 24	105.90	52.96	105.92



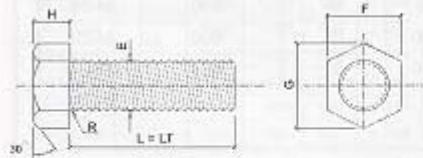
NOTES :

1. Tension : Tensile Stress areas are taken from BS 4190 and BS 3692
2. Shear : Bearing Type Connection with Threads included in Shear Plane
3. All bolts are machine bolts of grade : 4.6 - Zinc Plating.
4. Material Specification : JIS B 1051

DIMENSIONAL PROPERTIES

Metric Size

NOMINAL BODY DIAMETER	E		F		G	H		R	AVAILABLE BOLT LENGTH "L" AND THREAD LENGTH "LT"		WEIGHT (kg)	AVAILABLE BOLT LENGTH "L" AND THREAD LENGTH "LT"		WEIGHT (kg)
	Max.	Min.	Max.	Min.	Approx.	Max.	Min.	Min.	L	LT		L	LT	
M 12	12.0	11.8	19.0	18.65	21.9	8.2	7.8	0.6	40	FULL	0.06	-	-	-
M 16	16.0	15.8	24.0	23.65	27.7	10.2	9.8	0.6	55	40	0.13	75	55	0.15
M 20	20.0	19.8	30.0	29.65	34.6	13.2	12.8	0.8	60	50	0.21	75	65	0.23
M 22	22.0	21.8	32.0	31.60	37.0	14.2	13.8	0.8	65	50	0.29	85	70	0.36
M 24	24.0	23.8	36.0	35.60	41.6	15.2	14.8	0.8	85	70	0.41	110	90	0.91



SECONDARY BOLT CONNECTION

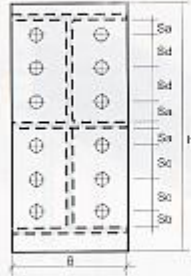
NOMINAL BOLT DIA. (mm)	E		F		G	H		R	LT	L	WEIGHT (kg)	TENSION (kN)	SHEAR (kN)	
	BODY DIAMETER (mm)		WIDTH ACROSS FLATS (mm)		WIDTH ACROSS CORNERS (mm)	HEIGHT (mm)		RADIUS OF FILLET (mm)	THREAD LENGTH (mm)	AVAILABLE BOLT LENGTH (mm)			SINGLE	DOUBLE
	Max.	Min.	Max.	Min.	Approx.	Max.	Min.	Min.	mm	mm				
M12	12.0	11.8	19.0	18.65	21.9	8.2	7.8	0.6	FULL	40	0.07	10.95	5.4	10.8

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END PLATE

FOR HAUNCH



METRIC SIZE

PART NO.	H mm	B mm	THICK- NESS mm	NO. BOLT	HOLE DIA. mm	Sa mm	Sb mm	Sc mm	Sd (mm)					WEIGHT kg	FOR IWF
									$\alpha=0^\circ$	$\alpha=5^\circ$	$\alpha=10^\circ$	$\alpha=15^\circ$	$\alpha=20^\circ$		
EPH - 01.00	315	75	10	8	18	12	45	51	72	73	74	77	82	1.855	IWF 150x75x5x7
EPH - 01.01	315	75	12	8	18	32	45	51	72	73	74	77	82	2.225	
EPH - 02.00	411	99	10	12	18	32	45	48	60	60	62	63	66	3.194	IWF 198x99x4.5x7
EPH - 02.01	411	99	12	12	18	32	45	48	60	60	62	63	66	3.833	
EPH - 03.00	414	100	10	12	18	32	45	48	60	60	62	64	66	3.250	IWF 200x100x5.5x8
EPH - 03.01	414	100	12	12	18	32	45	48	60	60	62	64	66	3.900	
EPH - 04.00	512	124	10	16	18	30	45	48	57	58	59	60	63	4.984	IWF 248x124x5x8
EPH - 04.01	512	124	12	16	18	30	45	48	57	58	59	60	63	5.981	
EPH - 05.00	515	125	12	16	18	30	45	48	57	58	59	60	63	6.084	IWF 250x125x6x9
EPH - 06.00	614	149	12	20	18	32	45	48	55	55	56	57	59	8.618	IWF 298x149x5.5x8
EPH - 06.01	614	149	12	12	22	40	55	67	101	102	103	106	111	8.618	
EPH - 07.00	617	150	12	20	18	32	45	48	55	55	56	57	59	8.718	IWF 300x150x6.5x9
EPH - 07.01	617	150	12	12	22	40	55	67	101	102	103	106	111	8.718	
EPH - 07.01	617	150	14	20	18	32	45	48	55	55	56	57	59	10.171	
EPH - 07.01	617	150	14	12	22	40	55	67	101	102	103	106	111	10.171	
EPH - 08.00	721	174	12	16	22	40	55	73	83	83	84	87	90	11.818	IWF 346x174x6x9
EPH - 08.00	721	174	12	16	24	44	60	70	80	80	82	84	87	11.818	
EPH - 08.01	721	174	14	16	22	40	55	73	83	83	84	87	90	13.787	
EPH - 08.01	721	174	14	16	24	44	60	70	80	80	82	84	87	13.787	
EPH - 09.00	727	175	14	16	22	40	55	73	83	83	84	87	90	13.982	IWF 350x175x7x11
EPH - 09.00	727	175	14	16	24	44	60	70	80	80	82	84	87	13.982	
EPH - 10.00	820	199	14	20	22	40	55	66	74	74	75	77	80	17.933	IWF 396x199x7x11
EPH - 10.00	820	199	14	16	24	44	60	65	85	96	97	100	104	17.933	

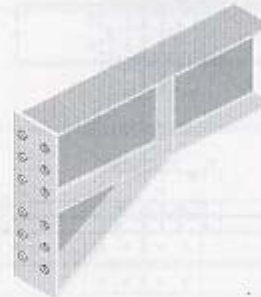
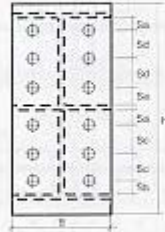
TOLERANCE (mm)	
t	H, B
± 0.5	± 2

NOTES :

- Material specification as per JIS G 3101 ; SS 400
- Other specification and standard size on request can be supplied.

END PLATE

FOR HAUNCH



METRIC SIZE

PART NO.	H mm	B mm	THICK- NESS mm	NO. BOLT	HOLE DIA. mm	Sa mm	Sb mm	Sc mm	Sd (mm)					WEIGHT (kg)	FOR IWF
									$\alpha=0^\circ$	$\alpha=5^\circ$	$\alpha=10^\circ$	$\alpha=15^\circ$	$\alpha=20^\circ$		
EPH - 11.00	827	200	14	20	22	40	55	66	74	74	75	77	80	18.18	IWF 400x200x8x13
EPH - 11.00	827	200	14	16	24	44	60	85	95	96	97	100	104	18.18	
EPH - 11.01	827	200	16	20	22	40	55	66	74	74	75	77	80	20.77	
EPH - 11.01	827	200	16	16	24	44	60	85	95	96	97	100	104	20.77	
EPH - 12.00	927	200	16	24	22	40	55	62	68	69	70	72	74	23.29	IWF 450x200x9x14
EPH - 12.00	927	200	16	20	24	44	60	75	84	84	85	87	91	23.29	
EPH - 12.00	927	200	16	20	26	48	65	73	82	82	83	85	89	23.29	
EPH - 12.01	927	200	18	24	22	40	55	62	68	69	70	72	74	26.20	
EPH - 12.01	927	200	18	20	24	44	60	75	84	84	85	87	91	26.20	
EPH - 12.01	927	200	18	20	26	48	65	73	82	82	83	85	89	26.20	
EPH - 13.00	1026	200	16	24	22	40	55	71	78	78	79	81	84	25.77	IWF 500x200x10x16
EPH - 13.00	1026	200	16	24	24	44	60	69	76	76	78	80	82	25.77	
EPH - 13.00	1026	200	16	20	26	48	65	84	93	93	95	97	101	25.77	
EPH - 13.01	1026	200	18	24	22	40	55	71	78	78	79	81	84	28.99	
EPH - 13.01	1026	200	18	24	24	44	60	69	76	76	78	80	82	28.99	
EPH - 13.01	1026	200	18	20	26	48	65	84	93	93	95	97	101	28.99	
EPH - 14.00	1230	200	18	32	22	40	55	64	69	70	71	72	75	34.76	IWF 600x200x11x17
EPH - 14.00	1230	200	18	28	24	44	60	73	80	80	81	83	86	34.76	
EPH - 14.00	1230	200	18	24	26	48	65	66	94	94	96	98	102	34.76	
EPH - 14.01	1230	200	20	32	22	40	55	64	69	70	71	72	75	38.62	
EPH - 14.01	1230	200	20	28	24	44	60	73	80	80	81	83	86	38.62	
EPH - 14.01	1230	200	20	24	26	48	65	66	94	94	96	98	102	38.62	
EPH - 15.00	1196	300	20	32	22	40	55	61	67	67	68	70	72	56.33	IWF 600x300x12x20
EPH - 15.00	1196	300	20	28	24	44	60	69	77	77	78	80	83	56.33	
EPH - 15.00	1196	300	20	24	26	48	65	81	90	91	92	95	98	56.33	

TOLERANCE (mm)	
t	H, B
+ 0.5	+ 2

NOTES:

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**HEAD OFFICE
AND FACTORY**

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