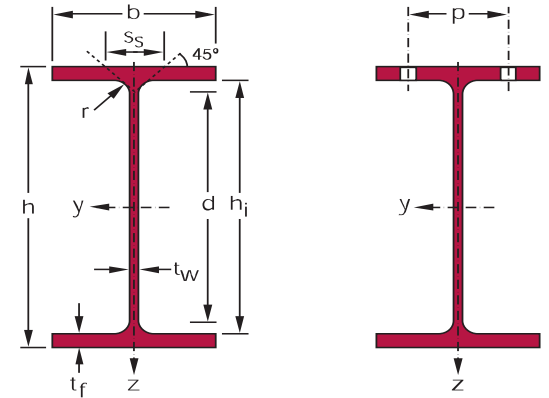
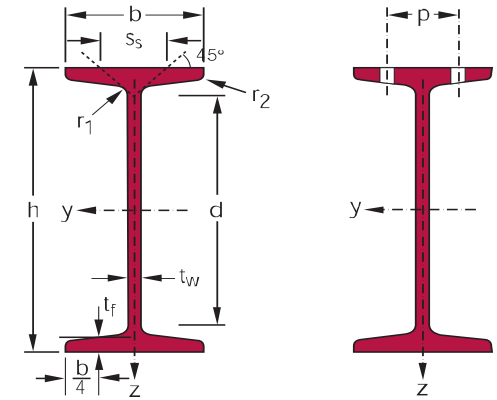


IPE



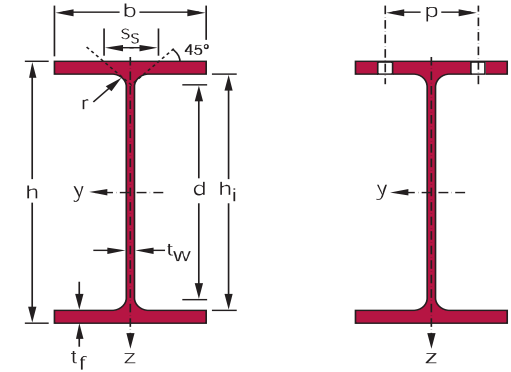
Denominación		Dimensiones					A	Dimensiones de construcción					Superficie		Denominación	Propiedades del perfil											Classification ENV 1993-1-1										
								h _i	d	Ø	p _{min}	p _{max}	A _L	A _G		eje fuerte y-y					eje débil z-z					Pure bending y-y			Pure compression								
G	kg/m	h	b	t _w	t _f	r	mm ² x10 ²	mm	mm	mm	mm	mm	m ² /m	m ² /t	G	kg/m	I _y	W _{el,y}	W _{pl,y} †	I _y	A _{vz}	I _z	W _{el,z}	W _{pl,z} †	I _z	s _s	I _t	I _w	mm	mm ⁴ x10 ⁴	mm ⁶ x10 ⁹	S235	S355	S460	S235	S355	S460
IPE 80	6.0	80	46	3.8	5.2	5	7.64	69.6	59.6	-	-	-	0.328	54.64	IPE 80	6.0	80.14	20.03	23.22	3.24	3.58	8.49	3.69	5.82	1.05	20.10	0.70	0.12	1	1	-	1	1	-			
IPE 100	8.1	100	55	4.1	5.7	7	10.3	88.6	74.6	-	-	-	0.400	49.33	IPE 100	8.1	171.0	34.20	39.41	4.07	5.08	15.92	5.79	9.15	1.24	23.70	1.20	0.35	1	1	-	1	1	-			
IPE 120	10.4	120	64	4.4	6.3	7	13.2	107.4	93.4	-	-	-	0.475	45.82	IPE 120	10.4	317.8	52.96	60.73	4.90	6.31	27.67	8.65	13.58	1.45	25.20	1.74	0.89	1	1	-	1	1	-			
IPE 140	12.9	140	73	4.7	6.9	7	16.4	126.2	112.2	-	-	-	0.551	42.70	IPE 140	12.9	541.2	77.32	88.34	5.74	7.64	44.92	12.31	19.25	1.65	26.70	2.45	1.98	1	1	-	1	1	-			
IPE 160	15.8	160	82	5	7.4	9	20.1	145.2	127.2	-	-	-	0.623	39.47	IPE 160	15.8	869.3	108.7	123.9	6.58	9.66	68.31	16.66	26.10	1.84	30.34	3.60	3.96	1	1	-	1	1	-			
IPE 180	18.8	180	91	5.3	8	9	23.9	164	146	M 10	48	48	0.698	37.13	IPE 180	18.8	1317	146.3	166.4	7.42	11.25	100.9	22.16	34.60	2.05	31.84	4.79	7.43	1	1	-	1	2	-			
IPE 200	22.4	200	100	5.6	8.5	12	28.5	183	159	M 10	54	58	0.768	34.36	IPE 200	22.4	1943	194.3	220.6	8.26	14.00	142.4	28.47	44.61	2.24	36.66	6.98	12.99	1	1	-	1	2	-			
IPE 220	26.2	220	110	5.9	9.2	12	33.4	201.6	177.6	M 12	60	62	0.848	32.36	IPE 220	26.2	2772	252.0	285.4	9.11	15.88	204.9	37.25	58.11	2.48	38.36	9.07	22.67	1	1	-	1	2	-			
IPE 240	30.7	240	120	6.2	9.8	15	39.1	220.4	190.4	M 12	66	68	0.922	30.02	IPE 240	30.7	3892	324.3	366.6	9.97	19.14	283.6	47.27	73.92	2.69	43.37	12.88	37.39	1	1	-	1	2	-			
IPE 270	36.1	270	135	6.6	10.2	15	45.9	249.6	219.6	M 16	72	72	1.041	28.86	IPE 270	36.1	5790	428.9	484.0	11.23	22.14	419.9	62.20	96.95	3.02	44.57	15.94	70.58	1	1	-	2	3	-			
IPE 300	42.2	300	150	7.1	10.7	15	53.8	278.6	248.6	M 16	72	86	1.160	27.46	IPE 300	42.2	8356	557.1	628.4	12.46	25.68	603.8	80.50	125.2	3.35	46.07	20.12	125.9	1	1	-	2	4	-			
IPE 330	49.1	330	160	7.5	11.5	18	62.6	307	271	M 16	78	96	1.254	25.52	IPE 330	49.1	11770	713.1	804.3	13.71	30.81	788.1	98.52	153.7	3.55	51.59	28.15	199.1	1	1	-	2	4	-			
IPE 360	57.1	360	170	8	12.7	18	72.7	334.6	298.6	M 22	88	88	1.353	23.70	IPE 360	57.1	16270	903.6	1019	14.95	35.14	1043	122.8	191.1	3.79	54.49	37.32	313.6	1	1	-	2	4	-			
IPE 400	66.3	400	180	8.6	13.5	21	84.5	373	331	M 22	96	98	1.467	22.12	IPE 400	66.3	23130	1156	1307	16.55	42.69	1318	146.4	229.0	3.95	60.20	51.08	490.0	1	1	-	3	4	-			
IPE 450	77.6	450	190	9.4	14.6	21	98.8	420.8	378.8	M 24	100	102	1.605	20.69	IPE 450	77.6	33740	1500	1702	18.48	50.85	1676	176.4	276.4	4.12	63.20	66.87	791.0	1	1	1	3	4	4			
IPE 500	90.7	500	200	10.2	16	21	116	468	426	M 24	102	112	1.744	19.23	IPE 500	90.7	48200	1928	2194	20.43	59.87	2142	214.2	335.9	4.31	66.80	89.29	1249	1	1	1	3	4	4			
IPE 550	106	550	210	11.1	17.2	24	134	515.6	467.6	M 24	110	122	1.877	17.78	IPE 550	106	67120	2441	2787	22.35	72.34	2668	254.1	400.5	4.45	73.62	123.2	1884	1	1	1	4	4	4			
IPE 600	122	600	220	12	19	24	156	562	514	M 27	116	118	2.015	16.45	IPE 600	122	92080	3069	3512	24.30	83.78	3387	307.9	485.6	4.66	78.12	165.4	2846	1	1	1	4	4	4			
IPE 750	147	753	265	13.2	17	17	188	719	685	M 27	104	164	2.51	17.06	IPE 750	147	166100	4411	5110	29.76	105.4	5289	399.2	630.8	5.31	67.12	161.5	7141	1	1	2	4	4	4			

IPN



Denominación		Dimensiones							Dimensiones de construcción				Superficie		Denominación		Propiedades del perfil												Classification ENV 1993-1-1				
																	eje fuerte y-y						eje débil z-z						Pure bending		Pure compression		
G	kg/m	h	b	t _w	t _f	r ₁	r ₂	A	d	∅	p _{min}	p _{max}	A _L	A _G	G	I _y	W _{el,y}	W _{pl,y} *	i _y	A _{vz}	I _z	W _{el,z}	W _{pl,z} *	i _z	s _s	I _T	I _w	S235	S355	S235	S355		
		mm	mm	mm	mm	mm	mm	mm ² x10 ²	mm	mm	mm	mm	m ² /m	m ² /t	kg/m	mm ⁴ x10 ⁴	mm ³ x10 ³	mm ³ x10 ³	mm	mm ² x10 ²	mm ⁴ x10 ⁴	mm ³ x10 ³	mm ³ x10 ³	mm	mm	mm ⁴ x10 ⁴	mm ⁶ x10 ⁹						
IPN 80*	5.9	80	42	3.9	5.9	3.9	2.3	7.58	59	-	-	-	0.304	51.09	IPN 80	5.9	77.8	19.5	22.8	3.20	3.41	6.29	3.00	5.00	0.91	21.6	0.87	0.09	4	4	4	4	
IPN 100*	8.3	100	50	4.5	6.8	4.5	2.7	10.6	75.7	-	-	-	0.370	44.47	IPN 100	8.3	171	34.2	39.8	4.01	4.85	12.2	4.88	8.10	1.07	25.0	1.60	0.27	1	1	1	1	
IPN 120*	11.1	120	58	5.1	7.7	5.1	3.1	14.2	92.4	-	-	-	0.439	39.38	IPN 120	11.1	328	54.7	63.6	4.81	6.63	21.5	7.41	12.4	1.23	28.4	2.71	0.69	1	1	1	1	
IPN 140*	14.3	140	66	5.7	8.6	5.7	3.4	18.3	109.1	-	-	-	0.502	34.94	IPN 140	14.3	573	81.9	95.4	5.61	8.65	35.2	10.7	17.9	1.40	31.8	4.32	1.54	1	1	1	1	
IPN 160*	17.9	160	74	6.3	9.5	6.3	3.8	22.8	125.8	-	-	-	0.575	32.13	IPN 160	17.9	935	117	136	6.40	10.83	54.7	14.8	24.9	1.55	35.2	6.57	3.14	1	1	1	1	
IPN 180*	21.9	180	82	6.9	10.4	6.9	4.1	27.9	142.4	-	-	-	0.640	29.22	IPN 180	21.9	1450	161	187	7.20	13.35	81.3	19.8	33.2	1.71	38.6	9.58	5.92	1	1	1	1	
IPN 200*	26.2	200	90	7.5	11.3	7.5	4.5	33.4	159.1	-	-	-	0.709	27.04	IPN 200	26.2	2140	214	250	8.00	16.03	117	26.0	43.5	1.87	42.0	13.5	10.5	1	1	1	1	
IPN 220*	31.1	220	98	8.1	12.2	8.1	4.9	39.5	175.8	M 10	50	56	0.775	24.99	IPN 220	31.1	3060	278	324	8.80	19.06	162	33.1	55.7	2.02	45.4	18.6	17.8	1	1	1	1	
IPN 240*	36.2	240	106	8.7	13.1	8.7	5.2	46.1	192.5	M 10	54	60	0.844	23.32	IPN 240	36.2	4250	354	412	9.59	22.33	221	41.7	70.0	2.20	48.9	25.0	28.7	1	1	1	1	
IPN 260*	41.9	260	113	9.4	14.1	9.4	5.6	53.3	208.9	M 12	62	62	0.906	21.65	IPN 260	41.9	5740	442	514	10.40	26.08	288	51.0	85.9	2.32	52.6	33.5	44.1	1	1	1	1	
IPN 280*	47.9	280	119	10.1	15.2	10.1	6.1	61.0	225.1	M 12	68	68	0.966	20.17	IPN 280	47.9	7590	542	632	11.10	30.18	364	61.2	103	2.45	56.4	44.2	64.6	1	1	1	1	
IPN 300*	54.2	300	125	10.8	16.2	10.8	6.5	69.0	241.6	M 12	70	74	1.03	19.02	IPN 300	54.2	9800	653	762	11.90	34.58	451	72.2	121	2.56	60.1	56.8	91.8	1	1	1	1	
IPN 320*	61.0	320	131	11.5	17.3	11.5	6.9	77.7	257.9	M 12	70	80	1.09	17.87	IPN 320	61.0	12510	782	914	12.70	39.26	555	84.7	143	2.67	63.9	72.5	129	1	1	1	1	
IPN 340*	68.0	340	137	12.2	18.3	12.2	7.3	86.7	274.3	M 12	78	86	1.15	16.90	IPN 340	68.0	15700	923	1080	13.50	44.27	674	98.4	166	2.80	67.6	90.4	176	1	1	1	1	
IPN 360*	76.1	360	143	13	19.5	13	7.8	97.0	290.2	M 12	78	92	1.21	15.89	IPN 360	76.1	19610	1090	1276	14.20	49.95	818	114	194	2.90	71.8	115	240	1	1	1	1	
IPN 380*	84.0	380	149	13.7	20.5	13.7	8.2	107	306.7	M 16	84	86	1.27	15.12	IPN 380	84.0	24010	1260	1482	15.00	55.55	975	131	221	3.02	75.4	141	319	1	1	1	1	
IPN 400*	92.4	400	155	14.4	21.6	14.4	8.6	118	322.9	M 16	86	92	1.33	14.36	IPN 400	92.4	29210	1460	1714	15.70	61.69	1160	149	253	3.13	79.3	170	420	1	1	1	1	
IPN 450*	115	450	170	16.2	24.3	16.2	9.7	147	363.6	M 16	92	106	1.48	12.83	IPN 450	115	45850	2040	2400	17.70	77.79	1730	203	345	3.43	88.9	267	791	1	1	1	1	
IPN 500*	141	500	185	18	27	18	10.8	179	404.3	M 20	102	110	1.63	11.60	IPN 500	141	68740	2750	3240	19.60	95.60	2480	268	456	3.72	98.5	402	1400	1	1	1	1	
IPN 550*	166	550	200	19	30	19	11.9	212	445.6	M 22	112	118	1.80	10.80	IPN 550	166	99180	3610	4240	21.60	111.3	3490	349	592	4.02	107.3	544	2390	1	1	1	1	
IPN 600*	199	600	215	21.6	32.4	21.6	13	254	485.8	M 24	126	128	1.97	9.89	IPN 600	199	138800	4627	5452	23.39	138.0	4674	435	752	4.29	117.6	787	3814	1	1	1	1	

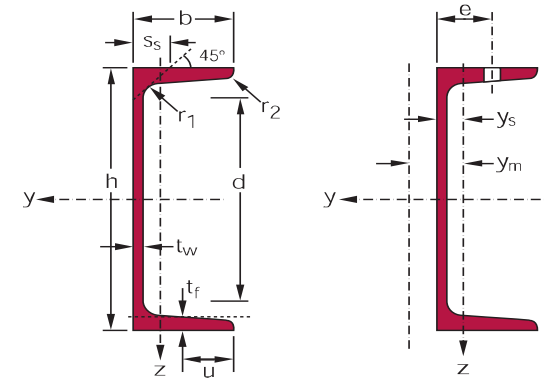
HE



Denominación		Dimensiones						Dimensiones de construcción						Superficie		Denominación		Propiedades del perfil												Classification ENV 1993-1-1					
																		eje fuerte y-y						eje débil z-z											
G kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A mm ² x10 ²	h _i mm	d mm	Ø mm	P _{min} mm	P _{max} mm	A _L m ² /m	A _G m ² /t	G kg/m	I _y mm ⁴ x10 ⁴	W _{el,y} mm ³ x10 ³	W _{pl,y} ★ mm ³ x10 ³	i _y mm x10	A _{vz} mm ² x10 ²	I _z mm ⁴ x10 ⁴	W _{el,z} mm ³ x10 ³	W _{pl,z} ★ mm ³ x10 ³	i _z mm x10	s _s mm	I _t mm ⁴ x10 ⁴	I _w mm ⁶ x10 ⁹	Pure bending y-y			Pure compression					
																											S235	S355	S460	S235	S355	S460			
HE 100 A	16.7	96	100	5	8	12	21.2	80	56	M 10	54	58	0.561	33.68	HE 100 A	16.7	349.2	72.76	83.01	4.06	7.56	133.8	26.76	41.14	2.51	35.06	5.24	2.58	1	1	-	1	1	-	
HE 100 B	20.4	100	100	6	10	12	26.0	80	56	M 10	56	58	0.567	27.76	HE 100 B	20.4	449.5	89.91	104.2	4.16	9.04	167.3	33.45	51.42	2.53	40.06	9.25	3.38	1	1	-	1	1	-	
HE 100 M	41.8	120	106	12	20	12	53.2	80	56	M 10	62	64	0.619	14.82	HE 100 M	41.8	1143	190.4	235.8	4.63	18.04	399.2	75.31	116.3	2.74	66.06	68.21	9.93	1	1	-	1	1	-	
HE 120 A	19.9	114	120	5	8	12	25.3	98	74	M 12	58	68	0.677	34.06	HE 120 A	19.9	606.2	106.3	119.5	4.89	8.46	230.9	38.48	58.85	3.02	35.06	5.99	6.47	1	1	-	1	1	-	
HE 120 B	26.7	120	120	6.5	11	12	34.0	98	74	M 12	60	68	0.686	25.71	HE 120 B	26.7	864.4	144.1	165.2	5.04	10.96	317.5	52.92	80.97	3.06	42.56	13.84	9.41	1	1	-	1	1	-	
HE 120 M	52.1	140	126	12.5	21	12	66.4	98	74	M 12	66	74	0.738	14.16	HE 120 M	52.1	2018	288.2	350.6	5.51	21.15	702.8	111.6	171.6	3.25	68.56	91.66	24.79	1	1	-	1	1	-	
HE 140 A	24.7	133	140	5.5	8.5	12	31.4	116	92	M 16	64	76	0.794	32.21	HE 140 A	24.7	1033	155.4	173.5	5.73	10.12	389.3	55.62	84.85	3.52	36.56	8.13	15.06	1	2	-	1	2	-	
HE 140 B	33.7	140	140	7	12	12	43.0	116	92	M 16	66	76	0.805	23.88	HE 140 B	33.7	1509	215.6	245.4	5.93	13.08	549.7	78.52	119.8	3.58	45.06	20.06	22.48	1	1	-	1	1	-	
HE 140 M	63.2	160	146	13	22	12	80.6	116	92	M 16	72	82	0.857	13.56	HE 140 M	63.2	3291	411.4	493.8	6.39	24.46	1144	156.8	240.5	3.77	71.06	120.0	54.33	1	1	-	1	1	-	
HE 160 A	30.4	152	160	6	9	15	38.8	134	104	M 20	78	84	0.906	29.78	HE 160 A	30.4	1673	220.1	245.1	6.57	13.21	615.6	76.95	117.6	3.98	41.57	12.19	31.41	1	2	-	1	2	-	
HE 160 B	42.6	160	160	8	13	15	54.3	134	104	M 20	80	84	0.918	21.56	HE 160 B	42.6	2492	311.5	354.0	6.78	17.59	889.2	111.2	170.0	4.05	51.57	31.24	47.94	1	1	-	1	1	-	
HE 160 M	76.2	180	166	14	23	15	97.1	134	104	M 20	86	90	0.970	12.74	HE 160 M	76.2	5098	566.5	674.6	7.25	30.81	1759	211.9	325.5	4.26	77.57	162.4	108.1	1	1	-	1	1	-	
HE 180 A	35.5	171	180	6	9.5	15	45.3	152	122	M 24	86	92	1.024	28.83	HE 180 A	35.5	2510	293.6	324.9	7.45	14.47	924.6	102.7	156.5	4.52	42.57	14.80	60.21	1	3	-	1	3	-	
HE 180 B	51.2	180	180	8.5	14	15	65.3	152	122	M 24	88	92	1.037	20.25	HE 180 B	51.2	3831	425.7	481.4	7.66	20.24	1363	151.4	231.0	4.57	54.07	42.16	93.75	1	1	-	1	1	-	
HE 180 M	88.9	200	186	14.5	24	15	113.3	152	122	M 24	94	98	1.089	12.25	HE 180 M	88.9	7483	748.3	883.4	8.13	34.65	2580	277.4	425.2	4.77	80.07	203.3	199.3	1	1	-	1	1	-	
HE 200 A	42.3	190	200	6.5	10	18	53.8	170	134	M 27	98	100	1.136	26.89	HE 200 A	42.3	3692	388.6	429.5	8.28	18.08	1336	133.6	203.8	4.98	47.59	20.98	108.0	1	3	-	1	3	-	
HE 200 B	61.3	200	200	9	15	18	78.1	170	134	M 27	100	100	1.151	18.78	HE 200 B	61.3	5696	569.6	642.5	8.54	24.83	2003	200.3	305.8	5.07	60.09	59.28	171.1	1	1	-	1	1	-	
HE 200 M	103	220	206	15	25	18	131.3	170	134	M 27	106	106	1.203	11.67	HE 200 M	103	10640	967.4	1135	9.00	41.03	3651	354.5	543.2	5.27	86.09	259.4	346.3	1	1	-	1	1	-	
HE 220 A	50.5	210	220	7	11	18	64.3	188	152	M 27	98	118	1.255	24.85	HE 220 A	50.5	5410	515.2	568.5	9.17	20.67	1955	177.7	270.6	5.51	50.09	28.46	193.3	1	3	3	1	3	3	
HE 220 B	71.5	220	220	9.5	16	18	91.0	188	152	M 27	100	118	1.270	17.77	HE 220 B	71.5	8091	735.5	827.0	9.43	27.92	2843	258.5	393.9	5.59	62.59	76.57	295.4	1	1	1	1	1	1	
HE 220 M	117	240	226	15.5	26	18	149.4	188	152	M 27	108	124	1.322	11.27	HE 220 M	117	14600	1217	1419	9.89	45.31	5012	443.5	678.6	5.79	88.59	315.3	572.7	1	1	-	1	1	-	
HE 240 A	60.3	230	240	7.5	12	21	76.8	206	164	M 27	104	138	1.369	22.70	HE 240 A	60.3	7763	675.1	744.6	10.05	25.18	2769	230.7	351.7	6.00	56.10	41.55	328.5	1	3	3	1	3	3	
HE 240 B	83.2	240	240	10	17	21	106.0	206	164	M 27	108	138	1.384	16.63	HE 240 B	83.2	11260	938.3	1053	10.31	33.23	3923	326.9	498.4	6.08	68.60	102.7	486.9	1	1	1	1	1	1	
HE 240 M	157	270	248	18	32	21	199.6	206	164	M 27	116	146	1.460	9.318	HE 240 M	157	24290	1799	2117	11.03	60.07	8153	657.5	1006	6.39	106.6	627.9	1152	1	1	1	1	1	-	
HE 260 A	68.2	250	260	7.5	12.5	24	86.8	225	177	M 27	110	158	1.484	21.77	HE 260 A	68.2	10450	836.4	919.8	10.97	28.76	3668	282.1	430.2	6.50	60.62	52.37	516.4	2	3	3	2	3	3	
HE 260 B	93	260	260	10	17.5	24	118.4	225	177	M 27	114	158	1.499	16.12	HE 260 B	93	14920	1148	1283	11.22	37.59	5135	395.0	602.2	6.58	73.12	123.8	753.7	1	1	2	1	1	2	
HE 260 M	172	290	268	18	32.5	24	219.6	225	177	M 27	122	166	1.575	9.133	HE 260 M	172	31310	2159	2524	11.94	66.89	10450	779.7	1192	6.90	111.1	719.0	1728	1	1	1	1	1	1	

Denominación		Dimensiones					A	Dimensiones de construcción					Superficie		Denominación	G	Propiedades del perfil											Classification ENV 1993-1-1								
																	eje fuerte y-y					eje débil z-z														
	G kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A mm ² x10 ²	h _i mm	d mm	Ø	p _{min} mm	p _{max} mm	A _L m ² /m	A _G m ² /t		G kg/m	I _y mm ⁴ x10 ⁴	W _{el.y} mm ³ x10 ³	W _{pl.y} * mm ³ x10 ³	I _y mm	A _{vz} mm ² x10 ²	I _z mm ⁴ x10 ⁴	W _{el.z} mm ³ x10 ³	W _{pl.z} * mm ³ x10 ³	I _z mm	S _s mm	I _t mm ⁴ x10 ⁴	I _w mm ⁶ x10 ⁹	Pure bending y-y			Pure compression				
																															S235	S355	S460	S235	S355	S460
HE 280 A	76.4	270	280	8	13	24	97.3	244	196	M 27	112	178	1.603	20.99	HE 280 A	76.4	13670	1013	1112	11.86	31.74	4763	340.2	518.1	7.00	62.12	62.10	785.4	2	3	4	2	3	4		
HE 280 B	103	280	280	10.5	18	24	131.4	244	196	M 27	114	178	1.618	15.69	HE 280 B	103	19270	1376	1534	12.11	41.09	6595	471.0	717.6	7.09	74.62	143.7	1130	1	1	2	1	1	2		
HE 280 M	189	310	288	18.5	33	24	240.2	244	196	M 27	122	186	1.694	8.984	HE 280 M	189	39550	2551	2966	12.83	72.03	13160	914.1	1397	7.40	112.6	807.3	2520	1	1	1	1	1	1		
HE 300 A	88.3	290	300	8.5	14	27	112.5	262	208	M 27	118	198	1.717	19.43	HE 300 A	88.3	18260	1260	1383	12.74	37.28	6310	420.6	641.2	7.49	68.13	85.17	1200	2	3	3	2	3	3		
HE 300 B	117	300	300	11	19	27	149.1	262	208	M 27	120	198	1.732	14.80	HE 300 B	117	25170	1678	1869	12.99	47.43	8563	570.9	870.1	7.58	80.63	185.0	1688	1	1	3	1	1	3		
HE 300 M	238	340	310	21	39	27	303.1	262	208	M 27	132	208	1.832	7.699	HE 300 M	238	59200	3482	4078	13.98	90.53	19400	1252	1913	8.00	130.6	1408	4386	1	1	1	1	1	1		
HE 320 A	97.6	310	300	9	15.5	27	124.4	279	225	M 27	118	198	1.756	17.98	HE 320 A	97.6	22930	1479	1628	13.58	41.13	6985	465.7	709.7	7.49	71.63	108.0	1512	1	3	3	1	3	3		
HE 320 B	127	320	300	11.5	20.5	27	161.3	279	225	M 27	122	198	1.771	13.98	HE 320 B	127	30820	1926	2149	13.82	51.77	9239	615.9	939.1	7.57	84.13	225.1	2069	1	1	2	1	1	2		
HE 320 M	245	359	309	21	40	27	312.0	279	225	M 27	132	204	1.866	7.616	HE 320 M	245	68130	3796	4435	14.78	94.85	19710	1276	1951	7.95	132.6	1501	5004	1	1	1	1	1	1		
HE 340 A	105	330	300	9.5	16.5	27	133.5	297	243	M 27	118	198	1.795	17.13	HE 340 A	105	27690	1678	1850	14.40	44.95	7436	495.7	755.9	7.46	74.13	127.2	1824	1	3	3	1	3	3		
HE 340 B	134	340	300	12	21.5	27	170.9	297	243	M 27	122	198	1.810	13.49	HE 340 B	134	36660	2156	2408	14.65	56.09	9690	646.0	985.7	7.53	86.63	257.2	2454	1	1	1	1	1	1		
HE 340 M	248	377	309	21	40	27	315.8	297	243	M 27	132	204	1.902	7.670	HE 340 M	248	76370	4052	4718	15.55	98.63	19710	1276	1953	7.90	132.6	1506	5584	1	1	1	1	1	1		
HE 360 A	112	350	300	10	17.5	27	142.8	315	261	M 27	120	198	1.834	16.36	HE 360 A	112	33090	1891	2088	15.22	48.96	7887	525.8	802.3	7.43	76.63	148.8	2177	1	2	3	1	2	3		
HE 360 B	142	360	300	12.5	22.5	27	180.6	315	261	M 27	122	198	1.849	13.04	HE 360 B	142	43190	2400	2683	15.46	60.60	10140	676.1	1032	7.49	89.13	292.5	2883	1	1	1	1	1	1		
HE 360 M	250	395	308	21	40	27	318.8	315	261	M 27	132	204	1.934	7.730	HE 360 M	250	84870	4297	4989	16.32	102.4	19520	1268	1942	7.83	132.6	1507	6137	1	1	1	1	1	1		
HE 400 A	125	390	300	11	19	27	159.0	352	298	M 27	120	198	1.912	15.32	HE 400 A	125	45070	2311	2562	16.84	57.33	8564	570.9	872.9	7.34	80.63	189.0	2942	1	1	3	1	2	3		
HE 400 B	155	400	300	13.5	24	27	197.8	352	298	M 27	124	198	1.927	12.41	HE 400 B	155	57680	2884	3232	17.08	69.98	10820	721.3	1104	7.40	93.13	355.7	3817	1	1	1	1	1	1		
HE 400 M	256	432	307	21	40	27	325.8	352	298	M 27	132	202	2.004	7.835	HE 400 M	256	104100	4820	5571	17.88	110.2	19340	1260	1934	7.70	132.6	1515	7410	1	1	1	1	1	1		
HE 450 A	140	440	300	11.5	21	27	178.0	398	344	M 27	122	198	2.011	14.39	HE 450 A	140	63720	2896	3216	18.92	65.78	9465	631.0	965.5	7.29	85.13	243.8	4148	1	1	1	1	2	3		
HE 450 B	171	450	300	14	26	27	218.0	398	344	M 27	124	198	2.026	11.84	HE 450 B	171	79890	3551	3982	19.14	79.66	11720	781.4	1198	7.33	97.63	440.5	5258	1	1	1	1	1	2		
HE 450 M	263	478	307	21	40	27	335.4	398	344	M 27	132	202	2.096	7.959	HE 450 M	263	131500	5501	6331	19.80	119.8	19340	1260	1939	7.59	132.6	1529	9251	1	1	1	1	1	1		
HE 500 A	155	490	300	12	23	27	197.5	444	390	M 27	122	198	2.110	13.60	HE 500 A	155	86970	3550	3949	20.98	74.72	10370	691.1	1059	7.24	89.63	309.3	5643	1	1	1	1	3	4		
HE 500 B	187	500	300	14.5	28	27	238.6	444	390	M 27	124	198	2.125	11.34	HE 500 B	187	107200	4287	4815	21.19	89.82	12620	841.6	1292	7.27	102.1	538.4	7018	1	1	1	1	2	2		
HE 500 M	270	524	306	21	40	27	344.3	444	390	M 27	132	202	2.184	8.079	HE 500 M	270	161900	6180	7094	21.69	129.5	19150	1252	1932	7.46	132.6	1539	11190	1	1	1	1	1	1		
HE 550 A	166	540	300	12.5	24	27	211.8	492	438	M 27	122	198	2.209	13.29	HE 550 A	166	111900	4146	4622	22.99	83.72	10820	721.3	1107	7.15	92.13	351.5	7189	1	1	1	2	4	4		
HE 550 B	199	550	300	15	29	27	254.1	492	438	M 27	124	198	2.224	11.15	HE 550 B	199	136700	4971	5591	23.20	100.1	13080	871.8	1341	7.17	104.6	600.3	8856	1	1	1	1	2	3		
HE 550 M	278	572	306	21	40	27	354.4	492	438	M 27	132	202	2.280	8.195	HE 550 M	278	198000	6923	7933	23.64	139.6	19160	1252	1937	7.35	132.6	1554	13520	1	1	1	1	1	1		
HE 600 A	178	590	300	13	25	27	226.5	540	486	M 27	122	198	2.308	12.98	HE 600 A	178	141200	4787	5350	24.97	93.21	11270	751.4	1156	7.05	94.63	397.8	8978	1	1	1	2	4	4		
HE 600 B	212	600	300	15.5	30	27	270.0	540	486	M 27	126	198	2.323	10.96	HE 600 B	212	171000	5701	6425	25.17	110.8	13530	902.0	1391	7.08	107.1	667.2	10970	1	1	1	1	3	4		
HE 600 M	285	620	305	21	40	27	363.7	540	486	M 27	132	200	2.372	8.308	HE 600 M	285	237400	7660	8772	25.55	149.7	18980	1244	1930	7.22	132.6	1564	15910	1	1	1	1	1	1		
HE 650 A	190	640	300	13.5	26	27	241.6	588	534	M 27	124	198	2.407	12.69	HE 650 A	190	175200	5474	6136	26.93	103.2	11720	781.6	1205	6.97	97.13	448.3	11030	1	1	1	3	4	4		
HE 650 B	225	650	300	16	31	27	286.3	588	534	M 27	126	198	2.422	10.77	HE 650 B	225	210600	6480	7320	27.12	122.0	13980	932.3	1441	6.99	109.6	739.2	13360	1	1	1	2	3	4		
HE 650 M	293	668	305	21	40	27	373.7	588	534	M 27	132	200	2.468	8.411	HE 650 M	293	281700	8433	9657	27.45	159.7	18980	1245	1936	7.13	132.6	1579	18650	1	1	1	1	1	2		
HE 700 A	204	690	300	14.5	27	27	260.5	636	582	M 27	124	198	2.505	12.25	HE 700 A	204	215300	6241	7032	28.75	117.0	12180	811.9	1257	6.84	100.1	513.9	13350	1	1	1	3	4	4		
HE 700 B	241	700	300	17	32	27	306.4	636	582	M 27	126	198	2.520	10.48	HE 700 B	241	256900	7340	8327	28.96	137.1	14440	962.7	1495	6.87	112.6	830.9	16060	1	1	1	2	4	4		
HE 700 M	301	716	304	21	40	27	383.0	636	582	M 27	132	200	2.560	8.513	HE 700 M	301	329300	9198	10540	29.32	169.8	18800	1237	1929	7.01	132.6	1589	21400	1	1	1	1	2	3		
HE 800 A	224	790	300	15	28	30	285.8	734	674	M 27	130	198	2.698	12.03	HE 800 A	224	303400	7682	8699	32.58	138.8	12640	842.6	1312	6.65	106.1	596.9	18290	1	1	1	4	4	4		
HE 800 B	262	800	300	17.5	33	30	334.2	734	674	M 27	134	198	2.713	10.34	HE 800 B																					

UPN



Denominación		Dimensiones					A mm ² x10 ²	Dimensiones de construcción					Superficie		Denominación	Propiedades del perfil										Classification ENV 1993-1-1								
																eje fuerte y-y					eje débil z-z					Pure bending		Pure compression						
G kg/m	h mm	b mm	t _w mm	t _f mm	r mm	A mm ² x10 ²	h _i mm	d mm	Ø mm	p _{min} mm	p _{max} mm	A _L m ² /m	A _G m ² /t	G kg/m	I _y mm ⁴ x10 ⁴	W _{el,y} mm ³ x10 ³	W _{pl,y} † mm ³ x10 ³	i _y mm x10	A _{vz} mm ² x10 ²	I _z mm ⁴ x10 ⁴	W _{el,z} mm ³ x10 ³	W _{pl,z} † mm ³ x10 ³	i _z mm x10	s _s mm	I _T mm ⁴ x10 ⁴	I _w mm ⁶ x10 ⁹	y _s mm x10	y _m mm x10	S235	S355	S235	S355		
UPN 80*	8.65	80	45	6	8	4	11.02	-	-	-	-	0.321	37.10	UPN 80	8.65	106	26.6	32.3	3.10	4.90	19.4	6.38	11.9	1.33	19.4	2.20	0.18	1.42	2.65	1	1	1	1	
UPN 100*	10.6	100	50	6	8.5	4.5	13.50	-	-	-	-	0.372	35.10	UPN 100	10.6	206	41.2	49.0	3.91	6.46	29.3	8.49	16.2	1.47	20.3	2.81	0.41	1.55	2.93	1	1	1	1	
UPN 120	13.4	120	55	7	9	4.5	17.00	-	-	-	-	0.434	32.52	UPN 120	13.4	364	60.7	72.6	4.62	8.80	43.2	11.1	21.2	1.59	22.2	4.15	0.90	1.60	3.03	1	1	1	1	
UPN 140	16.0	140	60	7	10	5	20.40	-	-	M 12	33	37	0.489	30.54	UPN 140	16.0	605	86.4	103	5.45	10.41	62.7	14.8	28.3	1.75	23.9	5.68	1.80	1.75	3.37	1	1	1	1
UPN 160	18.8	160	65	7.5	10.5	5.5	24.00	-	-	M 12	34	42	0.546	28.98	UPN 160	18.8	925	116	138	6.21	12.60	85.3	18.3	35.2	1.89	25.3	7.39	3.26	1.84	3.56	1	1	1	1
UPN 180	22.0	180	70	8	11	5.5	28.00	-	-	M 16	38	41	0.611	27.80	UPN 180	22.0	1350	150	179	6.95	15.09	114	22.4	42.9	2.02	26.7	9.55	5.57	1.92	3.75	1	1	1	1
UPN 200	25.3	200	75	8.5	11.5	6	32.20	-	-	M 16	39	46	0.661	26.15	UPN 200	25.3	1910	191	228	7.70	17.71	148	27.0	51.8	2.14	28.1	11.9	9.07	2.01	3.94	1	1	1	1
UPN 220	29.4	220	80	9	12.5	6.5	37.40	-	-	M 16	40	51	0.718	24.46	UPN 220	29.4	2690	245	292	8.48	20.62	197	33.6	64.1	2.30	30.3	16.0	14.6	2.14	4.20	1	1	1	1
UPN 240	33.2	240	85	9.5	13	6.5	42.30	-	-	M 20	46	50	0.775	23.34	UPN 240	33.2	3600	300	358	9.22	23.71	248	39.6	75.7	2.42	31.7	19.7	22.1	2.23	4.39	1	1	1	1
UPN 260	37.9	260	90	10	14	7	48.30	-	-	M 22	50	52	0.834	22.00	UPN 260	37.9	4820	371	442	9.99	27.12	317	47.7	91.6	2.56	33.9	25.5	33.3	2.36	4.66	1	1	1	1
UPN 280	41.8	280	95	10	15	7.5	53.30	-	-	M 22	52	57	0.890	21.27	UPN 280	41.8	6280	448	532	10.9	29.28	399	57.2	109	2.74	35.6	31.0	48.5	2.53	5.02	1	1	1	1
UPN 300	46.2	300	100	10	16	8	58.80	-	-	M 24	55	59	0.950	20.58	UPN 300	46.2	8030	535	632	11.7	31.77	495	67.8	130	2.90	37.3	37.4	69.1	2.70	5.41	1	1	1	1
UPN 320*	59.5	320	100	14	17.5	8.75	75.80	-	-	M 22	58	62	0.982	16.50	UPN 320	59.5	10870	679	826	12.1	47.11	597	80.6	152	2.81	43.0	66.7	96.1	2.60	4.82	1	1	1	1
UPN 350	60.6	350	100	14	16	8	77.30	-	-	M 22	56	62	1.047	17.25	UPN 350	60.6	12840	734	918	12.9	50.84	570	75.0	143	2.72	40.7	61.2	114	2.40	4.45	1	1	1	1
UPN 380*	63.1	380	102	13.5	16	8	80.40	-	-	M 24	59	60	1.110	17.59	UPN 380	63.1	15760	829	1014	14.0	53.23	615	78.7	148	2.77	40.3	59.1	146	2.38	4.58	1	1	1	1
UPN 400*	71.8	400	110	14	18	9	91.50	-	-	M 27	61	62	1.182	16.46	UPN 400	71.8	20350	1020	1240	14.9	58.55	846	102	190	3.04	44.0	81.6	221	2.65	5.11	1	1	1	1