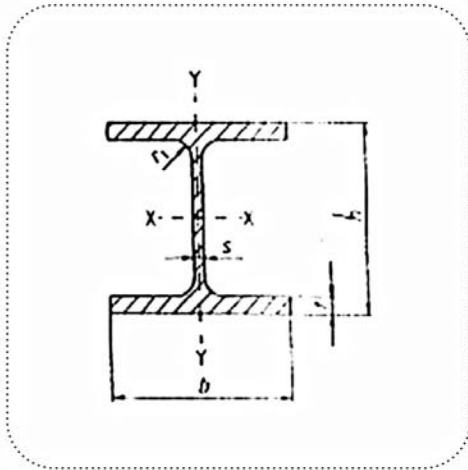


Wide Parallel Flange Beam (H-Beam)Light/Medium



Wide Parallel Flange Beams (IPB) - Medium type equivalent to following standards:

- Dimension as per DIN 1025-2
- Technical Specification as per EN 10025-2
- Permissible Variation as per EN 10034 according to Iranian National Standard No. 14484

Table 1. Physical Specification of Medium H-Beam.

Size	Height (h)		Flange width (b)		Web thickness (s)		Flange thickness (t)		Radius of curvature (r)	Cross Section F cm ²	Unit weight G (kg/m)		Unit surface area U m ² /m
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance			Nominal	Tolerance %	
14	140		140		7		12		12	43	33.7		0.805
16	160	+3	160	+4	8		13	+2.5	15	54.3	42.6	±6	0.918
18	180	-2	180	-2	8.5	±1	14	-1.5	15	65.3	51.2		1.04
20	200	+4	200		9		15		18	78.1	61.3		1.15

Table2. Section Data of Medium H-Beam.

Size	Static value						Static moment of half cross section S_x cm ³	Distance Between center of compression & tension axis S_x cm
	x-x			y-y				
	Moment of inertia J_x cm ⁴	Section module W_x cm ³	Radius of gyration i_x cm	Moment of inertia J_y cm ⁴	Section module W_y cm ³	Radius of gyration i_y cm		
14	1510	216	5.93	550	78.5	3.58	123	12.3
16	2490	311	6.78	889	111	4.05	177	14.1
18	3830	426	7.66	1360	151	4.57	241	15.9
20	5700	570	8.54	2000	200	5.07	321	17.7

Wide Parallel Flange Beams (IPBL) - Light type equivalent to following standards:

- Dimension Standard as per DIN 1025-3
- Technical Specification as per EN 10025-2
- Permissible Variation as per EN 10034 according to Iranian National Standard No. 13781

Table1. Physical Specification of Light H-Beam.

Size	Height (h)		Flange width (b)		Web thickness (s)		Flange thickness (t)		Radius of curvature (r)	Unit weight W (kg/m)	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance		Nominal	Tolerance (%)
14	123		140		5.5		8.5		12	24.7	±6
16	152	+3	160	+4	6.0	±0.7	9.0	+2	15	30.4	
18	171	-2	180		6.0		9.5	-1	15	35.5	
20	190	+4	200	6.5	10.0	+2.5	-1.5	18	42.3		

Table2. Static Data of Light H-Beam.

Size	Sectional area (A) cm ²	Unit surface area (U) m ² /m	Static value						Static moment of half cross section S_x cm ³	Distance Between center of compression & tension axis S_x cm
			x-x			y-y				
			Moment of inertia J_x cm ⁴	Section module W_x cm ³	Radius of gyration i_x cm	Moment of inertia J_y cm ⁴	Section module W_y cm ³	Radius of gyration i_y cm		
14	31.4	0.794	1030	155	5.73	389	55.6	3.52	86.7	11.9
16	38.8	0.906	1670	220	6.57	616	76.9	3.98	123	13.6
18	45.3	1.02	2510	294	7.45	925	103	4.52	162	15.5
20	53.8	1.14	3690	389	8.28	1340	134	4.98	215	17.2



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Technical Specification of (H-Beam)

3. chemical analysis of H beams

Steel grade	Weight of elements (%)						Max. carbon equivalent (%)
	C (max)	Si	Mn	S(max)	P(max)	N(max)	
ST37 (S235JR)	0.19	0.12-0.35	0.25-1.50	0.045	0.045	0.014	0.35
ST44 (S275JR)	0.23	0.15-0.45	0.40-1.60	0.045	0.045	0.014	0.40
ST52 (S355JR)	0.26	≤0.60	≤1.70	0.045	0.045	0.014	0.45

4. Mechanical properties of H beams

Steel grade	Tensile test			Cold bend test at angel of 180°
	Min. yield point N/(mm) ²	Tensile strength N/(mm) ²	Min. Elongation $L_0=5.65\sqrt{S_0}$	Bend mandrel diameter in terms of specimen thickness (t)
ST37 (S235JR)	235	360-510	26	1t
ST44 (S275JR)	275	410-560	23	2.5t
ST52 (S355JR)	355	470-630	22	2.5t