UDC 669.14-122.4-423.1

March 1994

Hot rolled I and H sections
(IPB and IB series)
Dimensions, mass and static parameters

DIN 1025 Part 2

Warmgewalzte I-Träger, breite I-Träger, IPB- und IB-Reihe; Maße, Masse, statische Werte

This standard, together with DIN EN 10 034, supersedes October 1963 edition.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

Dimensions in mm

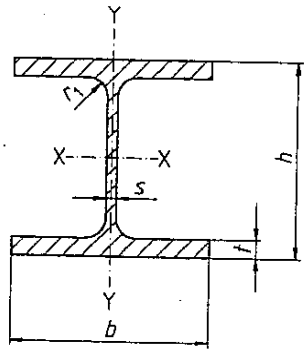
1 Scope and field of application

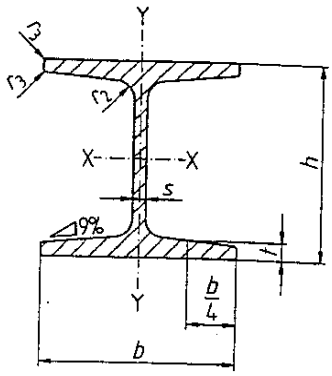
This standard specifies hot rolled I and H sections ('H sections', for short) that have either parallel flanges and the dimensions specified in table 1 (IPB series), or tapered flanges and the dimensions specified in table 2 (IB series), preferably made from DIN EN 10 025 steel.

This standard does not cover:

a) hot rolled I sections (I series, with a smaller ratio of flange width to web height; cf. DIN 1025 Part 1);
b) hot rolled I and H sections (IPBl series, with thinner webs and flanges; cf. DIN 1025 Part 3);
c) hot rolled I and H sections (IPBv series, with thicker webs and flanges; cf. DIN 1025 Part 4);
d) hot rolled I and H sections (IPE series, with narrower flanges; cf. DIN 1025 Part 5).

2 Designation





The standard designation shall give, in the following order:

a) name of product (H section);
b) DIN number (DIN 1025);
c) material designation or number;
d) section symbol in accordance with table 1 or 2.

EXAMPLE:

A hot rolled H section complying with this standard, made from steel grade S235JR (material number 1.0037) as specified in DIN EN 10 025, of the IPB series, with a height, *h*, of 360 mm shall be designated:

H section DIN 1025 – S235JR – IPB 360
or H section DIN 1025 – 1.0037 – IPB 360

Continued on pages 2 to 4.

Table 1: Dimensions, mass and static parameters for sections with parallel flanges (IPB series)

Section symbol*) IPB	Dimensions for					Section area, F, in cm^2	Mass, G, in kg/m	Surface area, U, in m^2/m	Static parameters[1]						S_x[2]	s_x[3]
									x-x			y-y				
	h	b	s	t	r_1				I_x cm^4	W_x cm^3	i_x cm	I_y cm^4	W_y cm^3	i_y cm	cm^3	cm
100	100	100	6	10	12	26,0	20,4	0,567	450	89,9	4,16	167	33,5	2,53	52,1	8,63
120	120	120	6,5	11	12	34,0	26,7	0,686	864	144	5,04	318	52,9	3,06	82,6	10,5
140	140	140	7	12	12	43,0	33,7	0,805	1 510	216	5,93	550	78,5	3,58	123	12,3
160	160	160	8	13	15	54,3	42,6	0,918	2 490	311	6,78	889	111	4,05	177	14,1
180	180	180	8,5	14	15	65,3	51,2	1,04	3 830	426	7,66	1 360	151	4,57	241	15,9
200	200	200	9	15	18	78,1	61,3	1,15	5 700	570	8,54	2 000	200	5,07	321	17,7
220	220	220	9,5	16	18	91,0	71,5	1,27	8 090	736	9,43	2 840	258	5,59	414	19,6
240	240	240	10	17	21	106	83,2	1,38	11 260	938	10,3	3 920	327	6,08	527	21,4
260	260	260	10	17,5	24	118	93,0	1,50	14 920	1 150	11,2	5 130	395	6,58	641	23,3
280	280	280	10,5	18	24	131	103	1,62	19 270	1 380	12,1	6 590	471	7,09	767	25,1
300	300	300	11	19	27	149	117	1,73	25 170	1 680	13,0	8 560	571	7,58	934	26,9
320	320	300	11,5	20,5	27	161	127	1,77	30 820	1 930	13,8	9 240	616	7,57	1 070	28,7
340	340	300	12	21,5	27	171	134	1,81	36 660	2 160	14,6	9 690	646	7,53	1 200	30,4
360	360	300	12,5	22,5	27	181	142	1,85	43 190	2 400	15,5	10 140	676	7,49	1 340	32,2
400	400	300	13,5	24	27	198	155	1,93	57 680	2 880	17,1	10 820	721	7,40	1 620	35,7
450	450	300	14	26	27	218	171	2,03	79 890	3 550	19,1	11 720	781	7,33	1 990	40,1
500	500	300	14,5	28	27	239	187	2,12	107 200	4 290	21,2	12 620	842	7,27	2 410	44,5
550	550	300	15	29	27	254	199	2,22	136 700	4 970	23,2	13 080	872	7,17	2 800	48,9
600	600	300	15,5	30	27	270	212	2,32	171 000	5 700	25,2	13 530	902	7,08	3 210	53,2
650	650	300	16	31	27	286	225	2,42	210 600	6 480	27,1	13 980	932	6,99	3 660	57,5
700	700	300	17	32	27	306	241	2,52	256 900	7 340	29,0	14 400	963	6,87	4 160	61,7
800	800	300	17,5	33	30	334	262	2,71	359 100	8 980	32,8	14 900	994	6,68	5 110	70,2
900	900	300	18,5	35	30	371	291	2,91	494 100	10 980	36,5	15 820	1 050	6,53	6 290	78,5
1 000	1 000	300	19	36	30	400	314	3,11	644 700	12 890	40,1	16 280	1 090	6,38	7 430	86,8

*) EURONORM 53-62 uses different symbols to designate sections, but they are equivalent to those specified here (i. e. an HE 300 B section complying with EU 53-62 is the same as an IPB 300 section complying with this standard).

1) I = moment of inertia, W = section modulus, i = radius of gyration (subscripts x and y denoting the relevant axis).

2) S_x = moment of first order of half the cross section.

3) $s_x = I_x : S_x$ = distance between centre of pressure and centre of tension.

The values specified for cross-sectional area, mass, surface area and static parameters have been specified as a function of the other dimensions.

Table 2: Dimensions, mass and static parameters for sections with tapered flanges (IB series)

Section symbol IB	Dimensions for h	b	s	t	r_2	r_3	Section area, F, in cm^2	Mass, G, in kg/m	Surface area, U, in m^2/m	Static parameters[1] x-x I_x cm^4	W_x cm^3	i_x cm	y-y I_y cm^4	W_y cm^3	i_y cm	S_x[2] cm^3	s_x[3] cm
100	100	100	7,5	10,25	10	1,5	26,8	21,0	0,556	447	89,4	4,09	151	30,1	2,37	53	8,4
120	120	120	8	11	11	1,5	34,6	27,2	0,665	852	142	4,96	276	46,0	2,82	82	10,4
140	140	140	8	12	12	–	43,3	34,0	0,780	1 490	213	5,86	475	67,8	3,31	122	12,2
160	160	160	9	14	14	–	57,4	45,0	0,883	2 580	322	6,70	831	104	3,81	184	14,0
180	180	180	9	14	14	–	64,7	50,8	1,018	3 750	417	7,62	1 170	130	4,25	237	15,9

1) I = moment of inertia, W = section modulus, i = radius of gyration (subscripts x and y denoting the relevant axis).
2) S_x = moment of first order of half the cross section.
3) $s_x = I_x : S_x$ = distance between centre of pressure and centre of tension.
The values specified for cross-sectional area, mass, surface area and static parameters have been specified as a function of the other dimensions.

3 Dimensions and mass

3.1 Hot rolled H sections with parallel flanges shall have the dimensions specified in table 1, those with tapered flanges, as specified in table 2.

3.2 The nominal length shall be specified at the time of ordering.

3.3 The values of mass specified in tables 1 and 2 have been calculated taking the density as 7,85 kg/dm³.

4 Tolerances on shape and dimensions

The dimensions of sections are subject to the tolerances specified in DIN EN 10 034.

5 Material

Sections shall preferably be made from DIN EN 10 025 steel, the particular steel grade being specified at the time of ordering.

Standards referred to

DIN EN 10 025	Hot rolled unalloyed structural steel products; technical delivery conditions
DIN EN 10 034	Structural steel I and H sections; tolerances on shape and dimensions
EURONORM 53-62	Wide-flanged steel beams with parallel flanges; dimensions

Other relevant standards

DIN 1025 Part 1	Steel sections; hot rolled I beams; dimensions, mass, limit deviations and static values
DIN 1025 Part 3	Hot rolled I and H sections (IPBl series); dimensions, mass and static parameters
DIN 1025 Part 4	Hot rolled I and H sections (IPBv series); dimensions, mass and static parameters
DIN 1025 Part 5	Hot rolled I and H sections (IPE series); dimensions, mass and static parameters

Previous editions

DIN 1612: 09.24, 01.32, 03.43x; DIN 1025 Part 2: 04.26, 10.28, 12.29, 03.32, 09.39, 07.40x, 07.59, 10.63.

Amendments

In comparison with the October 1963 edition, the following amendments have been made.

a) All specifications with regard to tolerances have been deleted, a reference being made instead to DIN EN 10 034.

b) The references to standards have been updated.

Explanatory notes

With the publication of European Standard EN 10 034, it became necessary to revise the DIN Standards on I and H sections. Since the European Standard deals with tolerances on shape and dimensions, the scope of the present standard has been restricted to nominal sizes and the associated static parameters, these having been taken without revision from the previous edition. At the European level, ECISS/TC 11 is currently reviewing standardized sizes for sections and bearing piles with parallel flanges. Upon publication of the relevant European Standard, DIN 1025 Parts 2 to 5 will be withdrawn.

International Patent Classification

F 16 S 003/00
E 04 B 001/24
E 04 C 003/04