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

DIN 1025 Part 4

Warmgewalzte I-Träger; breite I-Träger, verstärkte Ausführung, IPBv-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 parallel flanges and thicker webs and flanges than the sections specified in DIN 1025 Part 2 (IPBv series), preferably made from DIN EN 10 025 steel.

This standard does not cover:

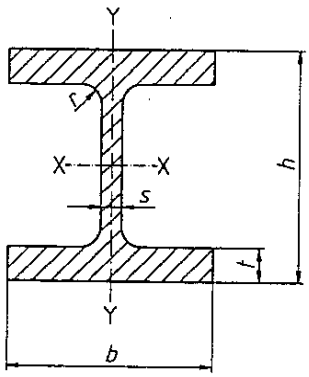
a) hot rolled I sections (I series, with a smaller ratio of flange width to web height; cf. DIN 1025 Part 1);

b) hot rolled I and H sections (IPB and IB series, with thinner webs and flanges and/or tapered flanges; cf. DIN 1025 Part 2);

c) hot rolled I and H sections (IPBl series, with thinner webs and flanges; cf. DIN 1025 Part 3);

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.

EXAMPLE:

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

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

Continued on pages 2 and 3.

Table 1: Dimensions, mass and static parameters for H sections (IPBv series)

Section symbol*) IPBv[1])	Dimensions for h	b	s	t	r	Section area, F, in cm^2	Mass, G, in kg/m	Surface area, U, in m^2/m	Static parameters[2]) $x-x$ 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[3]) cm^3	s_x[4]) cm
100	120	106	12	20	12	53,2	41,8	0,619	1 140	190	4,63	399	75,3	2,74	118	9,69
120	140	126	12,5	21	12	66,4	52,1	0,738	2 020	288	5,51	703	112	3,25	175	11,5
140	160	146	13	22	12	80,6	63,2	0,857	3 290	411	6,39	1 140	157	3,77	247	13,3
160	180	166	14	23	15	97,1	76,2	0,970	5 100	566	7,25	1 760	212	4,26	337	15,1
180	200	186	14,5	24	15	113	88,9	1,09	7 480	748	8,13	2 580	277	4,77	442	16,9
200	220	206	15	25	18	131	103	1,20	10 640	967	9,00	3 650	354	5,27	568	18,7
220	240	226	15,5	26	18	149	117	1,32	14 600	1 220	9,89	5 010	444	5,79	710	20,6
240	270	248	18	32	21	200	157	1,46	24 290	1 800	11,0	8 150	657	6,39	1 060	22,9
260	290	268	18	32,5	24	220	172	1,57	31 310	2 160	11,9	10 450	780	6,90	1 260	24,8
280	310	288	18,5	33	24	240	189	1,69	39 550	2 550	12,8	13 160	914	7,40	1 480	26,7
300	340	310	21	39	27	303	238	1,83	59 200	3 480	14,0	19 400	1 250	8,00	2 040	29,0
320/305	320	305	16	29	27	225	177	1,78	40 950	2 560	13,5	13 740	901	7,81	1 460	28,0
320	359	309	21	40	27	312	245	1,87	68 130	3 800	14,8	19 710	1 280	7,95	2 220	30,7
340	377	309	21	40	27	316	248	1,90	76 370	4 050	15,6	19 710	1 280	7,90	2 360	32,4
360	395	308	21	40	27	319	250	1,93	84 870	4 300	16,3	19 520	1 270	7,83	2 490	34,0
400	432	307	21	40	27	326	256	2,00	104 100	4 820	17,9	19 330	1 260	7,70	2 790	37,4
450	478	307	21	40	27	335	263	2,10	131 500	5 500	19,8	19 340	1 260	7,59	3 170	41,5
500	524	306	21	40	27	344	270	2,18	161 900	6 180	21,7	19 150	1 250	7,46	3 550	45,7
550	572	306	21	40	27	354	278	2,28	198 000	6 920	23,6	19 160	1 250	7,35	3 970	49,9
600	620	305	21	40	27	364	285	2,37	237 400	7 660	25,6	18 970	1 240	7,22	4 390	54,1
650	668	305	21	40	27	374	293	2,47	281 700	8 430	27,5	18 980	1 240	7,13	4 830	58,3
700	716	304	21	40	27	383	301	2,56	329 300	9 200	29,3	18 800	1 240	7,01	5 270	62,5
800	814	303	21	40	30	404	317	2,75	442 600	10 870	33,1	18 630	1 230	6,79	6 240	70,9
900	910	302	21	40	30	424	333	2,93	570 400	12 540	36,7	18 450	1 220	6,60	7 220	79,0
1 000	1 008	302	21	40	30	444	349	3,13	722 300	14 330	40,3	18 460	1 220	6,45	8 280	87,2

*) EURONORM 53-62 uses different symbols to designate sections, but they are equivalent to those specified here (i. e. an HE 400 M section complying with EU 53-62 is the same as an IPBv 400 section complying with this standard).The section with the symbol IPBv 320/305 here is equivalent to HE 300 C in EU 53-62.

1) The sizes are the same as those specified for the IPB series in DIN 1025 Part 2.

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

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

4) $s_x = I_x : S_x$ = 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 shall have the dimensions specified in table 1.

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

3.3 The values of mass specified in table 1 have been calculated taking the density as 7,85 kg/dm^3.

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 2	Hot rolled I and H sections (IPB and IB series); dimensions, mass and static parameters
DIN 1025 Part 3	Hot rolled I and H sections (IPBl 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 4: 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