International Standard 657/19

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Hot-rolled steel sections — Part 19 : Bulb flats (metric series) — Dimensions, sectional properties and tolerances

Profilés en acier laminés à chaud — Partie 19 : Plats à boudin (série métrique) — Dimensions, caractéristiques rapportées aux axes et tolérances

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FOREWORD

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

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It has been approved by the member bodies of the following countries :

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Japan
USA

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Hot-rolled steel sections — Part 19 : Bulb flats (metric series) — Dimensions, sectional properties and tolerances

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies dimensions, sectional properties and dimensional tolerances for metric series hot-rolled steel bulb flats.

2 DESIGNATION

Hot-rolled steel bulb flats shall be designated by the width, b, and thickness, t.

Example : 200 × 10

3 DIMENSIONS

The dimensions of bulb flats shall be as given in table 1.

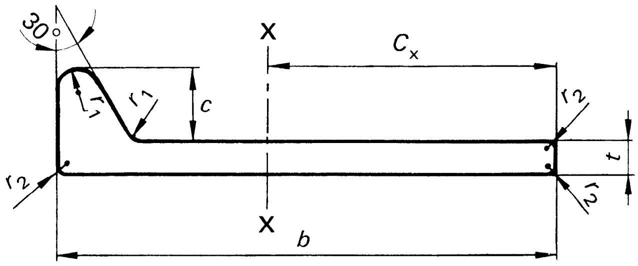

TABLE 1 — **Dimensions and sectional properties**

Designation	Mass	Sectional area	Dimensions				Surface area	Centroid	Sectional properties	
	M	A	b	t	c	r_1		C_x	I_x	Z_x
	kg/m	cm^2	mm	mm	mm	mm	m^2/m	cm	cm^4	cm^3
80 × 6	4,87	6,20	80	6	14	4	0,192	4,78	39,0	8,15
80 × 7	5,50	7,00	80	7	14	4	0,194	4,69	43,3	9,24
100 × 7	6,86	8,74	100	7	15,5	4,5	0,236	5,87	85,3	14,5
100 × 8	7,65	9,74	100	8	15,5	4,5	0,238	5,78	94,3	16,3
120 × 7	8,25	10,5	120	7	17	5	0,278	7,07	148	21,0
120 × 8	9,19	11,7	120	8	17	5	0,280	6,96	164	23,6
140 × 7	9,74	12,4	140	7	19	5,5	0,320	8,31	241	29,0
140 × 8	10,8	13,8	140	8	19	5,5	0,322	8,18	268	32,5
160 × 7	11,4	14,6	160	7	22	6	0,365	9,66	373	38,6
160 × 8	12,7	16,2	160	8	22	6	0,367	9,49	411	43,3
160 × 9	14,0	17,8	160	9	22	6	0,369	9,36	448	47,9
180 × 8	14,8	18,9	180	8	25	7	0,411	10,9	609	55,9
180 × 9	16,2	20,7	180	9	25	7	0,413	10,7	663	61,8
180 × 10	17,6	22,5	180	10	25	7	0,415	10,6	717	67,8
200 × 9	18,5	23,6	200	9	28	8	0,457	12,1	841	77,7
200 × 10	20,1	25,6	200	10	28	8	0,459	11,9	1020	85,0
200 × 11,5	22,5	28,6	200	11,5	28	8	0,462	11,7	1130	96,2
220 × 10	22,8	29,0	220	10	31	9	0,503	13,4	1400	105
220 × 11,5	25,4	32,3	220	11,5	31	9	0,506	13,1	1550	118
240 × 10	25,4	32,4	240	10	34	10	0,547	14,7	1860	126
240 × 11	27,4	34,9	240	11	34	10	0,549	14,6	2000	137
240 × 12	29,3	37,3	240	12	34	10	0,551	14,4	2130	148
260 × 10	28,3	36,1	260	10	37	11	0,593	16,2	2470	153
260 × 11	30,3	38,7	260	11	37	11	0,593	16,0	2610	162
260 × 12	32,4	41,3	260	12	37	11	0,595	15,8	2770	175
280 × 11	33,5	42,6	280	11	40	12	0,637	17,4	3330	191
280 × 12	35,7	45,5	280	12	40	12	0,639	17,2	3550	206
300 × 11	36,7	46,7	300	11	43	13	0,681	18,9	4190	222
300 × 12	39,0	49,7	300	12	43	13	0,683	18,7	4460	239
300 × 13	41,5	52,8	300	13	43	13	0,685	18,5	4720	256
320 × 12	42,5	54,2	320	12	46	14	0,728	20,1	5530	274
320 × 13	45,0	57,4	320	13	46	14	0,730	19,9	5850	294
340 × 12	46,1	58,8	340	12	49	15	0,772	21,5	6760	313
340 × 14	51,5	65,5	340	14	49	15	0,776	21,1	7540	357
370 × 13	54,6	69,6	370	13	53,5	16,5	0,840	23,5	9470	402
370 × 15	60,5	77,0	370	15	53,5	16,5	0,844	23,0	10400	455
400 × 14	63,9	81,4	400	14	58	18	0,908	25,5	12900	507
400 × 16	70,2	89,4	400	16	58	18	0,912	25,0	14200	568
430 × 15	73,9	94,1	430	15	62,5	19,5	0,976	27,4	17300	628
430 × 17	80,6	103	430	17	62,5	19,5	0,980	26,9	18900	700

4 TOLERANCES

4.1 Width and thickness

Tolerances on width (b) and thickness (t) shall be as given in table 2.

TABLE 2 — **Tolerance on width and thickness**

Dimensions in millimetres

Width, b		Thickness, t		Tolerance on width	Tolerance on thickness
Over	Up to and including	Including and over	Up to and including		
–	120	6,0	8,0	± 1,5	+ 0,7 – 0,3
120	180	7,0	10,0	± 2,0	+ 1 – 0,3
180	300	9,0	13,0	± 3,0	+ 1 – 0,4
300	430	12,0	17,0	± 4,0	+ 1,2 – 0,4

4.2 Radius at corner

The radius r_2 at corners shall be within the limits given in table 3.

TABLE 3 — **Radius at corner**

Values in millimetres

Thickness, t		Radius, r_2 max.
Over	Up to and including	
–	6	1,5
6	9	2,0
9	13	3,0
13	17	4,0

4.3 Camber

The maximum permissible camber when measured over the entire length is 0,35 % × length.

4.4 Length

The cutting tolerance on length is $^{+\,100}_{\quad 0}$ mm. The bulb flats may be supplied to tighter length tolerances subject to agreement between the purchaser and the supplier.

4.5 Mass

Where the tolerance on mass per unit length is to be specified as the rolling tolerance in lieu of thickness tolerance, such provision shall be included in the appropriate national standard.

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