

# Hot rolled flat steel bars for general purposes — Dimensions and tolerances on shape and dimensions

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British Standard

ICS 77.140.60

## National foreword

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This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 10, an inside back cover and a back cover.

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English version

## Hot rolled flat steel bars for general purposes - Dimensions and tolerances on shape and dimensions

Plats en acier laminés à chaud pour usages généraux -  
Dimensions et tolérances sur la forme et les dimensions

Warmgewalzte Flachstäbe aus Stahl für allgemeine  
Verwendung - Maße, Formtoleranzen und Grenzabmaße

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## Foreword

This document (EN 10058:2003) has been prepared by Technical Committee ECISS/TC 11 "Structural steel sections and hot rolled steel bars for engineering use - Dimensions and tolerances", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2004, and conflicting national standards shall be withdrawn at the latest by April 2004.

This European Standard replaces:

EURONORM 58-78 *Hot rolled flats for general purposes.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

## EN 10058:2003 (E)

### 1 Scope

This European Standard specifies the nominal dimensions and the tolerances on dimensions and shape of hot-rolled steel flat bars for general purposes.

This standard is not applicable to spring leaves, see EN 10092-1.

### 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 10079:1992, *Definition of steel products*.

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*.

### 3 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 10079:1992 apply.

### 4 Designation

The designation of hot-rolled steel flat bars shall comprise:

- the term "flat bar";
- the number of this European Standard (EN 10058);
- dimensions in mm (width x thickness x length (M, F or E, see Table 3));
- the number of the quality standard and the steel name or steel number of the ordered steel.

#### EXAMPLE

Flat bar EN 10058 - 20x5x6000M

steel EN 10025 - S235JR

### 5 Dimensions

Hot rolled flat bars for general purposes complying with this European Standard shall be delivered with the specified dimensions range given in Table 1 and illustrated in Figure 1. The preferred dimensions are presented in Table 1.

NOTE For manufacturing reasons the corners are not sharp.

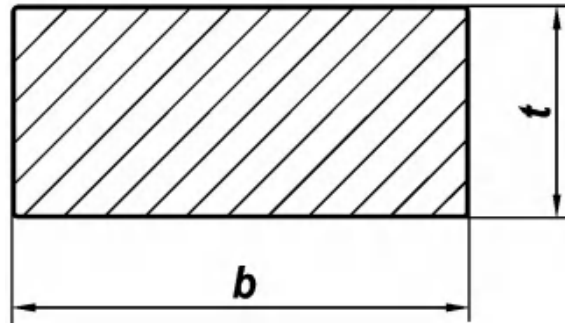


Figure 1 — Hot rolled steel flat bar

Table 1 — Preferred dimensions and mass of hot rolled flats for general purposes

Width <i>b</i> (mm)	Thickness, <i>t</i> (mm)													
	5	6	8	10	12	15	20	25	30	35	40	50	60	80
Mass (kg/m <sup>a,b</sup> )														
10	0,393													
12	0,471	0,565												
15	0,589	0,707	0,942	1,18										
16	0,628	0,754	1,00	1,26										
20	0,785	0,942	1,26	1,57	1,88	2,36								
25	0,981	1,18	1,57	1,96	2,36	2,94								
30	1,18	1,41	1,88	2,36	2,83	3,53	4,71							
35	1,37	1,65	2,20	2,75	3,30	4,12	5,50							
40	1,57	1,88	2,51	3,14	3,77	4,71	6,28	7,85	9,42					
45	1,77	2,12	2,83	3,53	4,24	5,30	7,07	8,83	10,60					
50	1,96	2,36	3,14	3,93	4,71	5,89	7,85	9,81	11,8					
60	2,36	2,83	3,77	4,71	5,65	7,07	9,42	11,8	14,1	16,5	18,8			
70	2,75	3,30	4,40	5,50	6,59	8,24	11,0	13,7	16,5	19,2	22,0			
80	3,14	3,77	5,02	6,28	7,54	9,42	12,6	15,7	18,8	22,0	25,1	31,4	37,7	
90	3,53	4,24	5,65	7,07	8,48	10,6	14,1	17,7	21,2	24,7	28,3	35,3	42,4	
100	3,93	4,71	6,28	7,85	9,42	11,8	15,7	19,6	23,6	27,5	31,4	39,3	47,1	
120		5,65	7,54	9,42	11,3	14,1	18,8	23,6	28,3	33,0	37,7	47,1	56,5	
150		7,06	9,42	11,8	14,1	17,7	23,6	29,4	35,3	41,2	47,1	58,9	70,7	94,2

<sup>a</sup> Calculated using density of 7,85 kg/dm<sup>3</sup>

<sup>b</sup> The masses of stainless steel bars shall be multiplied by the factors according to EN 10088-1.

## 6 Tolerances on dimensions and shape

### 6.1 Thickness ( $t$ )

The deviation from nominal thickness ( $t$ ) shall be within the tolerance given in Table 2.

### 6.2 Width ( $b$ )

The deviation from nominal width ( $b$ ) shall be within the tolerance given in Table 2.

### 6.3 Length ( $L$ )

Depending on the type of length, flat bars shall be cut to lengths within tolerances given in Table 3.

### 6.4 Straightness ( $q$ )

The straightness shall comply with the requirements given in Table 2. The requirements for waviness may be agreed at the time of enquiry and order.

### 6.5 Out-of-section ( $u$ )

The out-of-section ( $u$ ) shall be within the tolerance given in Table 2.



Table 2 — Tolerances on dimensions and shape of hot rolled flat bars for general purposes

Dimensions in mm

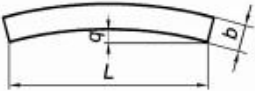
Width <i>b</i>	Nominal width	Limit deviation <sup>a</sup>
See Figure 1	$10 \leq b \leq 40$	$\pm 0,75$
	$40 < b \leq 80$	$\pm 1$
	$80 < b \leq 100$	$\pm 1,5$
	$100 < b \leq 120$	$\pm 2$
	$120 < b \leq 150$	$\pm 2,5$
Thickness <i>t</i>	Nominal thickness	Limit deviation <sup>a</sup>
See Figure 1	$t \leq 20$	$\pm 0,5$
	$20 < t \leq 40$	$\pm 1$
	$40 < t \leq 80$	$\pm 1,5$
Straightness <i>q</i>	Nominal cross-section	Tolerance in the plane of <i>b</i>
	$< 1\,000\text{ mm}^2$ $\geq 1\,000\text{ mm}^2$	$q \leq 0,4\% \text{ of } L$ $q \leq 0,25\% \text{ of } L$
		
Out-of-section <i>u</i>	Nominal thickness	Tolerance
See Figure 2	$10 \leq t \leq 25$	0,5
	$25 < t \leq 40$	1
	$40 < t \leq 80$	1,5
<sup>a</sup> When ordering, the total ranges for permissible deviations may, by agreement, be entirely on the plus side.		

Table 3 — Tolerances on lengths

Type of length <sup>a</sup>	Range (mm)	Limit deviation <sup>b</sup>
Manufacturing length (M)	3 000 to 13 000 with a range of 2 000 per order item.	10 % of bars supplied may be below the minimum for the ordered range but not less than 75 % of the minimum of the range.
Fixed length (F)	3 000 to 13 000	± 100 mm
Exact length (E)	< 6 000	± 25 mm
	≥ 6 000 to	± 50 mm
	≤ 13 000	
<sup>a</sup> The purchaser shall indicate in the enquiry and order the type of length required and the length range or length required. <sup>b</sup> If agreed during the enquiry and order, products may be delivered on plus tolerances.		

## 7 Measurement

### 7.1 Thickness and width

The thickness and width shall be measured at any point situated at least 100 mm from the end of the bar. Shearing may deform the bar ends, The condition of the ends may be agreed at time of enquiry and order.

### 7.2 Length

The length shall be measured as the longest length of the bar.

### 7.3 Straightness

The straightness shall be measured over the total length  $L$  of the bar.

### 7.4 Out-of-section

The out-of-section shall be measured according to Figure 2 as the difference  $u$  on the nominal width  $b$ .

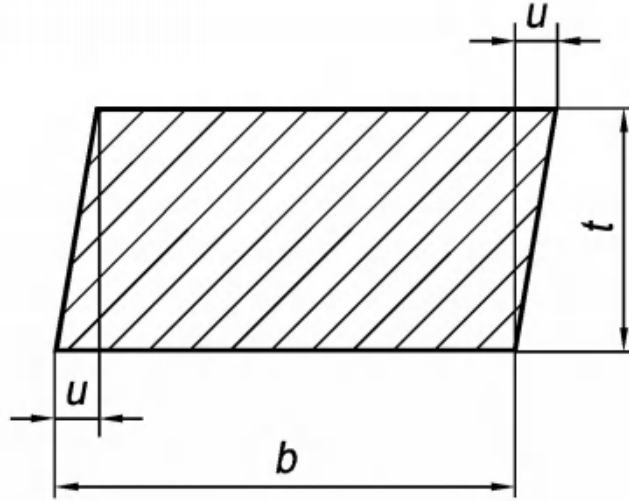


Figure 2 — Out-of-section

## Bibliography

- [1] EN 10092-1, *Hot rolled spring steel flat bars — Part 1: Flat bars - Dimensions and tolerances on shape and dimensions.*



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