



SLOVENSKI STANDARD

SIST EN 10092-1:2004

01-junij-2004

Hot rolled spring steel flat bars - Part 1: Flat bars - Dimensions and tolerances on shape and dimensions

Hot rolled spring steel flat bars - Part 1: Flat bars - Dimensions and tolerances on shape and dimensions

Warmgewalzte Flachstäbe aus Federstahl - Teil 1: Flachstäbe - Maße, Formtoleranzen und Grenzabmaße

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Plats laminés a chaud ou aciers a ressorts - Tolérances sur la forme et les dimensions - Partie 1: Plats en acier laminés a chaud pour lames de ressorts

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Ta slovenski standard je istoveten z: EN 10092-1:2003

ICS:

77.140.25	Vzmetna jekla	Spring steels
77.140.60	Jeklene palice in drogovi	Steel bars and rods

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10092-1

October 2003

ICS 77.140.25; 77.140.60

English version

Hot rolled spring steel flat bars - Part 1: Flat bars - Dimensions and tolerances on shape and dimensions

Hexagones en acier laminés à chaud - Partie 1:
Dimensions et tolérance sur la forme et les dimensions

Warmgewalzte Flachstäbe aus Federstahl - Teil 1:
Flachstäbe - Maße, Formtoleranzen und Grenzabmaße

This European Standard was approved by CEN on 12 September 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 10092-1:2003 (E)

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Foreword

This document (EN 10092-1:2003) 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.

The annex A of this European Standard is informative.

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.

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EN 10092-1:2003 (E)**1 Scope**

This Part of this European Standard specifies the nominal dimensions and the tolerances on dimensions and shapes of hot rolled steel flat bars for springs with three different types of profiles (A, B, and C). Formulas for calculation the moment of inertia are specified in annex A.

This standard is applicable only to spring steel flat bars produced from steel grades specified in EN 10089.

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 10089, *Hot-rolled steels for quenched and tempered springs.-Technical delivery conditions*.

iTeh STANDARD PREVIEW**3 Terms and definitions****(standards.iteh.ai)**

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

[SIST EN 10092-1:2004](#)

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4 Designation

[e81216630a06/sist-en-10092-1-2004](#)

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

- the term "Spring steel flat bar";
- the number of this European Standard (EN 10092-1);
- type of profile A, B, or C;
- dimensions in mm (width x thickness x length (M, F or E, see Table 5));
- the number of the quality standard (EN 10089) and the steel name or steel number of the ordered steel.

EXAMPLE

Spring steel flat bar EN 10092-1- B - 60x10x6800M

steel EN 10089 - 51CrV4

5 Dimensions

Hot rolled spring steel flat bars complying with this European Standard shall be delivered with the specified dimensions range given in Tables 1 to 3 and illustrated in Figures 1 to 3. The preferred dimensions are

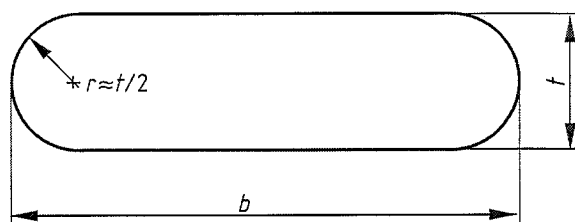


Figure 1 — Profile A: Hot rolled spring steel flat bar with halfrounded edges

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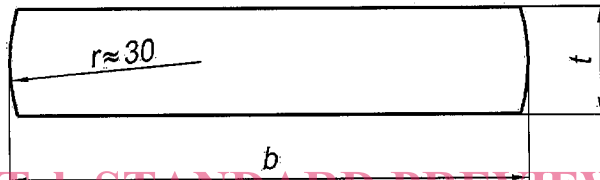
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Table 1 — Dimensions and mass (kg/m) of hot rolled spring steel flat bars. Profile A with halfrounded edges

Thickness <i>t</i> mm	Width, <i>b</i> mm										
	50	60	70	80	90	100	110	120	130	140	150
5	1,92	2,31	2,71	3,10							
6	2,29	2,77	3,24	3,71	4,18						
7	2,66	3,21	3,76	4,31	4,86	5,41	5,96				
8	3,03	3,66	4,29	4,92	5,54	6,17	6,80	7,43	8,06		
9	3,40	4,10	4,81	5,52	6,22	6,93	7,64	8,34	9,05	9,75	10,46
10	3,76	4,54	5,33	6,11	6,90	7,68	8,47	9,25	10,04	10,82	11,61
11	4,11	4,98	5,84	6,70	7,57	8,43	9,29	10,16	11,02	11,89	12,75
12	4,47	5,41	6,35	7,29	8,24	9,18	10,12	11,06	12,00	12,95	13,89
13	4,82	5,84	6,86	7,88	8,90	9,92	10,94	11,96	12,98	14,00	15,02
14	5,16	6,26	7,36	8,46	9,56	10,66	11,76	12,86	13,96	15,06	16,15
15	5,51	6,69	7,86	9,04	10,22	11,40	12,57	13,75	14,93	16,11	17,28
16	5,85	7,10	8,36	9,62	10,87	12,13	13,38	14,64	15,90	17,15	18,41
17	6,19	7,52	8,85	10,19	11,52	12,86	14,19	15,53	16,86	18,20	19,53
18	6,52	7,93	9,35	10,76	12,17	13,58	15,00	16,41	17,82	19,24	20,65
19	6,85	8,34	9,83	11,32	12,82	14,31	15,80	17,29	18,78	20,27	21,76
20	7,18	8,75	10,32	11,89	13,46	15,03	16,60	18,17	19,74	21,31	22,88
21		9,15	10,80	12,45	14,09	15,74	17,39	19,04	20,69	22,34	23,98
22		9,55	11,27	13,00	14,73	16,45	18,18	19,91	21,64	23,36	25,09
23		9,94	11,75	13,55	15,36	17,16	18,97	20,77	22,58	24,39	26,19
24		10,33	12,22	14,10	15,99	17,87	19,75	21,64	23,52	25,41	27,29
25			12,68	14,65	16,61	18,57	20,53	22,50	24,46	26,42	28,38
26			13,15	15,19	17,23	19,27	21,31	23,35	25,39	27,44	29,48
27			13,61	15,73	17,85	19,97	22,09	24,21	26,33	28,44	30,56
28			14,07	16,26	18,46	20,66	22,86	25,06	27,25	29,45	31,65
29			14,52	16,80	19,07	21,35	23,62	25,90	28,18	30,45	32,73
30			14,97	17,32	19,68	22,03	24,39	26,74	29,10	31,45	33,81
31				17,85	20,28	22,72	25,15	27,58	30,02	32,45	34,88
32				18,37	20,88	23,39	25,91	28,42	30,93	33,44	35,95
33				18,89	21,48	24,07	26,66	29,25	31,84	34,43	37,02
34				19,40	22,07	24,74	27,41	30,08	32,75	35,42	38,09
35				19,92	22,66	25,41	28,16	30,91	33,65	36,40	39,15
36					23,25	26,08	28,90	31,73	34,55	37,38	40,21
37					23,83	26,74	29,64	32,55	35,45	38,36	41,26
38					24,41	27,40	30,38	33,36	36,35	39,33	42,31
39					24,99	28,05	31,11	34,18	37,24	40,30	43,36
40					25,56	28,70	31,84	34,98	38,12	41,26	44,40

The calculation the cross-section is based on the formula: $A = b \times t \left[1 - \frac{t}{b} \times \left(1 - \frac{\pi}{4} \right) \right]$



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Figure 2 — Hot rolled spring steel flat bar Profile B with semirounded edges
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