



SLOVENSKI STANDARD

SIST EN 10132-4:2001

01-november-2001

Hladno valjani ozki jekleni trakovi za toplotno obdelavo - Tehnični dobavni pogoji - 4. del: Vzmetna jekla in druga uporaba

Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 4: Spring steels and other applications

Kaltband aus Stahl für eine Wärmebehandlung - Technische Lieferbedingungen - Teil 4: Federstähle und andere Anwendungen

Feuillards laminés a froid pour traitement thermique - Conditions techniques de livraison - Partie 4: Aciers a ressorts et autres applications

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Ta slovenski standard je istoveten z: **EN 10132-4:2000**

ICS:

77.140.10	Jekla za toplotno obdelavo	Heat-treatable steels
77.140.25	Vzmetna jekla	Spring steels
77.140.50	Ploščati jekleni izdelki in polizdelki	Flat steel products and semi-products

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10132-4

February 2000

ICS 77.140.10; 77.140.25; 77.140.50

English version

Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 4: Spring steels and other applications

Feuillards laminés à froid pour traitement thermique -
Conditions techniques de livraison - Partie 4: Aciers à
ressorts et autres applications

Kaltband aus Stahl für eine Wärmebehandlung -
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andere Anwendungen

This European Standard was approved by CEN on 3 January 2000.

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 Central Secretariat 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 Central Secretariat 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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 23 "Steels for heat treatment, alloy steels and free-cutting steels - Qualities and dimensions", the secretariat of which is held by DIN.

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 August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The European Standard EN 10132 "Cold rolled narrow steel strip for heat-treatment - Technical delivery conditions" is subdivided as follows:

Part 1: General;

Part 2: Case hardening steels;

Part 3: Steels for quenching and tempering;

Part 4: Spring steels and other special applications.

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1 Scope

1.1 This part of EN 10132 applies to

- non-alloy and alloy cold rolled narrow steel strip thicknesses up to 6 mm,
- non-alloy and alloy cold rolled narrow steel strip in the quenched and tempered condition in thicknesses between 0,30 mm and 3,00 mm

for springs and for other special applications.

1.2 This EN 10132-4 is complemented by EN 10132-1.

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.

EN 10020, *Definition and classification of grades of steel*

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EN 10132-1, *Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 1: General*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 10132-1 apply.

4 Classification and designation

4.1 Classification

All steels covered by this European Standard are classified according to EN 10020. Steel grades C55S, C60S, C67S, C75S, C85S, C90S, C100S and C125S are non-alloy special steels, steel grades 48Si7, 56Si7, 51CrV4, 80CrV2, 75Ni8, 125Cr2 and 102Cr6 are alloy special steels.

4.2 Designation

See EN 10132-1.

5 Information to be supplied by the purchaser

See EN 10132-1.

6 Manufacturing process

See EN 10132-1.

7 Requirements

7.1 General

See EN 10132-1.

7.2 Method of delivery

See EN 10132-1.

7.3 Delivery condition

Cold rolled narrow steel strip covered by EN 10132-4 shall be supplied in one of the following delivery conditions:

- annealed or annealed and skin passed (+A or +LC)
- cold rolled (+CR)
- quenched and tempered (+QT)

NOTE The delivery condition - annealed to achieve spheroidised carbides (+AC) - may be agreed. In such cases, limits on spheroidisation and mechanical properties may also be agreed at the time of enquiry and order.

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7.4 Chemical composition

7.4.1 Cast analysis

The chemical composition shall be in accordance with the values specified in table 1 for the cast analysis.

7.4.2 Product analysis

In cases where a product analysis is requested, the admissible deviations from the values specified for the cast analysis are indicated in table 2.

7.5 Mechanical properties

7.5.1 Tensile properties and hardness

The mechanical properties of the strip shall be in accordance with the values given in table 3. For thicknesses outside this range, mechanical properties shall be agreed

between the customer and the supplier.

NOTE 1 For those customers who specify Rockwell hardness rather than Vickers hardness or tensile strength, a table is given in A.1, showing Rockwell hardness values for information.

NOTE 2 The steels may be quenched in oil or isothermally heat treated. For information, the minimum hardness values given in table A.2 show the minimum values after quenching, without tempering.

NOTE 3 For spring applications, the preferred hardness range (HV) for steels according to table 3 in the quenched and tempered condition are given in table A.3 for information.

7.5.2 Bend test

Requirements for the bend test for steels in the annealed condition (+A) may be agreed at the time of enquiry and order.

7.6 Structure

7.6.1 Grain size

See EN 10132-1.

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7.6.2 Non-metallic inclusions

See EN 10132-1. [SIST EN 10132-4:2001
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7.6.3 Decarburisation

For silicon alloyed steels, decarburisation shall not exceed 3% of the material thickness per side, for non silicon alloyed steels, decarburisation shall not exceed 2% of the material thickness per side when measured at a distance of 5 mm from the strip edge (see also EN 10132-1).

7.7 Surface finish

The surface finish of cold rolled narrow steel strip shall be bright as produced by rolling and annealing in a controlled atmosphere.

The surface finishes of quenched and tempered cold rolled strip are as follows:

- | | |
|---------------------------|--|
| — grey/blue oxide finish: | unpolished |
| — bright tempered: | unpolished |
| — polished: | obtained by fine grinding, abrasive brushing or other processes. |
| — polished and coloured: | blue or yellow colour obtained by oxidation by heat treatment. |

7.8 Dimensions and tolerances on dimensions and shape

See EN 10132-1.

8 Inspection

See EN 10132-1.

9 Sampling

See EN 10132-1.

10 Test methods

See EN 10132-1.

11 Labelling, packaging and protection

See EN 10132-1.

12 Retests

See EN 10132-1.

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