SLOVENSKI STANDARD
SIST EN 10268:2000

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Hladno valjani ploģļ ati izdelki iz mikrolegiranih jekel z veliko napetostjo teļ enja za preoblikovanje v hladnem - Sploģni dobavni pogoji

Cold-rolled flat products made of high yield strength micro-alloyed steels for cold forming - General delivery conditions

Ta slovenski standard je istoveten z: EN 10268:1998

ICS:

77.140.50	Ploģļ ati jekleni izdelki in polizdelki	Flat steel products and semi-products

SIST EN 10268:2000 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10268

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Descriptors: iron and steel products, cold rolled products, alloy steels, high yield strength steels, cold-working, classifications, design, manufacturing, chemical composition, grades : quality, mechanical properties, surface condition, tests, user supplier relations, acceptance testing, delivery condition

English version

Cold-rolled flat products made of high yield strength micro-alloyed steels for cold forming - General delivery conditions

Produits plats laminés à froid en aciers micro-alliés soudables à haute limite d'élasticité pour formage à froid - Conditions techniques de livraison

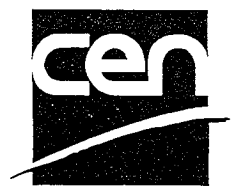
Kaltgewaltze Flacherzeugnisse mit hoher Streckgrenze zum Kaltumformen aus mikrolegierten Stählen - Technische Lieferbedingungen

This European Standard was approved by CEN on 5 November 1998.

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.



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

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

Contents

Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 13 "Flat products for cold working - Qualities, dimensions, tolerances and specific tests", the secretariat of which is held by IBN.

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 May 1999, and conflicting national standards shall be withdrawn at the latest by May 1999.

The European Committee for Iron and Steel Standardization (ECISS) had charged the Technical Committee 13 (Secretariat Belgium) with preparing a European Standard on cold rolled products which were the subject of part 4 of EURONORM 149-1980.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

However, during the course of the work, it became apparent that the products covered here were very different in nature and use from those covered by the first 3 parts of the future EN 10149.

Therefore, this standard has been allocated a quite different number that of EN 10149.

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.

1 Scope

The object of this European Standard is to define the chemical and mechanical properties and inspection conditions for cold-rolled flat products made of high yield strength steels for cold forming. The steels included are of high strength low-alloy (HSLA) type, where the principal strengtheming mechanism is via microalloying additions of dispersed elements such as Nb, Ti or V.

This European Standard is applicable to cold-rolled flat products of thickness less than or equal to 3 mm.

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.

ENV 606	Bar coded transport and handling labels for steel products
EN 10002-1	Metallic materials - Tensile test - Part 1 : Method of test (at ambient temperature), including Addendum AC1: 1990
EN 10020	Definition and classification of grade of steel
EN 10021	General technical delivery requirements for steel and iron products
EN 10027-1	Designation systems for steels - Part 1 : Steel names, principal symbols
EN 10027-2	Designation systems for steels - Part 2 : Numerical system
EN 10079	Definition of steel products
EN 10130+A1	Cold rolled low carbon steel flat products for cold forming - Technical delivery conditions
EN 10131	Cold rolled uncoated low carbon and high yield strength steel flat products for cold forming - Tolerances on dimensions and shape
EN 10139	Cold rolled uncoated mild narrow steel strip for cold forming - Technical delivery conditions
EN 10140	Cold rolled narrow steel strip - Tolerances on dimensions and shape
EN 10204	Metallic products - Types of inspection documents (includes amendment A1:1995)
ISO 7438	Metallic materials - Bend test
EURONORM 49-72	Roughness measurement of cold rolled uncoated steel sheet and strip
EURONORM 103-71	Micrographic determination of ferritic or austenitic grain size of steel

3 Definitions

For the purpose of this European Standard, the following definitions of cold rolled flat products given in clause 1 are identical to those given in EN 10079.

4 Dimensions and tolerances

The tolerance on dimensions and shape of products in rolled widths ≥ 600 mm are those given in EN 10131 ; those of products in rolled widths < 600 mm are given in EN 10140.

5 Classification and designation

5.1 Classification

This standard specifies five grades : H240 LA - H280 LA - H320 LA - H360 LA and H400 LA which differ in their minimum yield strength measured on a sample taken in the longitudinal direction of rolling.

5.2 Designation

5.2.1 The symbol designation of the steel grades in this European Standard is in conformity with EN 10027-1, the numerical designation is allocated in conformity with EN 10027-2.
The added symbol LA (Low Alloy) refers to the fact that the steels covered by this standard are microalloyed.

5.2.2 The products complying with this European Standard shall be designated in the following order :

- the designation of the product (sheet, cold-rolled wide strip, slit cold-rolled wide strip, cold-rolled narrow strip, cold-rolled strip in cut lengths) ;

- the number of this European Standard ;

- the steel name or steel number (see table 1 and table 3) ;

EXAMPLE : sheet EN 10268 - H 280 LA
sheet EN 10268 - 1.0489

6 Technical requirements

6.1 Steel and product manufacturing process

Unless otherwise agreed at the time of the enquiry and order, the steel manufacturing and production processes shall be at the manufacturer's option.

They shall be reported to the purchaser if he so requests.

6.2 Deoxidation method - Grain size

All the steel shall come from specially killed casts. They shall contain sufficient amounts of elements to bind the nitrogen, such as Al and Ti and be fine grain (G ≥ 9 in accordance with EURONORM 103-71).

6.3 Delivery conditions

6.3.1 The products covered by this standard are generally supplied in the skin-passed condition. If agreed at the time of enquiry and order, non skin-passed products may be supplied to the purchaser.

6.3.2 The products are normally supplied oiled. In this case, both sides are corrosion protected by a coat of non-drying neutral oil, free of foreign bodies and spread uniformly so that under the normal packing, transportation, loading and storage conditions, there will be no corrosion for up to three months.

If the conditions of transportation or storage are such that special protection against corrosion is required, the purchaser shall inform the manufacturer at the time of the order.

The layer of oils shall be capable of being removed by alkaline solutions or normal solvents.

The choice of protective oils may be subject of special agreement.

If the purchaser does not require surfaces to be oiled, this shall be clearly indicated at the time of the order.

NOTE : If the order is for unoiled products, the manufacturer is not responsible for the risk of rust. The purchaser is also advised that there is a greater risk of the appearance of light scratches during handling, transportation, and putting into application.

6.4 Chemical composition

Table 1 gives the permissible limiting values for the chemical composition of the cast.

Table 1 : Chemical composition of the ladles analysis

Steel Designation		C %	Si %	Mn %	P %	S %	Al %	Nb %	Ti %
name	number	max	max	max	max	max (1)	min	max (2)	max (2)
H 240 LA	1.0480	0,10	0,50	0,60	0,025	0,025	0,015	0,090	0,15
H 280 LA	1.0489	0,10	0,50	0,80	0,025	0,025	0,015	0,090	0,15
H 320 LA	1.0548	0,10	0,50	1,00	0,025	0,025	0,015	0,090	0,15
H 360 LA	1.0550	0,10	0,50	1,20	0,025	0,025	0,015	0,090	0,15
H 400 LA	1.0556	0,10	0,50	1,40	0,025	0,025	0,015	0,090	0,15

(1) : If agreed at the time of enquiry and order, sulphur contents ≤ 0,012 % in the product analysis may be supplied.

(2) : These additional elements may be used individually or in combination where they appear in the definition of the steel in the composition limits indicated. Vanadium may also be used. The sum of the contents of the 3 dispersoidal elements shall not exceed 0,22 %.

Table 2 gives the permissible deviation on the product.

Table 2 : Permissible deviation of the product analysis relative to the limit values specified in the ladle analysis

Element	Maximum content of the ladle analysis %	Permissible deviation of the product analysis relative to the limits specified in the ladle analysis %
C	≤ 0,10	+ 0,02
Mn	≤ 1,40	+ 0,10
Si	≤ 0,50	+ 0,05
P	≤ 0,025	+ 0,005
S	≤ 0,020	+ 0,002
Al_{total}	≥ 0,015	- 0,005
Nb	≤ 0,09	+ 0,01
V	≤ 0,20	+ 0,02
Ti	≤ 0,15	+ 0,01

6.5 Mechanical properties

Table 3 gives the guaranteed mechanical properties.