

SVENSK STANDARD

SS-EN 10111:2008

Fastställt/Approved: 2008-04-14

Publicerad/Published: 2008-05-12

Utgåva/Edition: 2

Språk/Language: engelska/English

ICS: 77.140.50

Kontinuerligt varmvalsad plåt och band av lågkolhaltigt stål för kallformning – Tekniska leveransbestämmelser

Continuously hot rolled low carbon steel sheet and strip for cold forming – Technical delivery conditions

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-65965>

Hitta rätt produkt och ett leveranssätt som passar dig

Standarder

Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster

Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på. På så sätt är du säker på att du alltid arbetar efter rätt utgåva.

e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt

Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter

Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement".

Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt

Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards

By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services

Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.

e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery

You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products

We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements.

Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project

You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Europastandarden EN 10111:2008 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 10111:2008.

Denna standard ersätter SS-EN 10111, utgåva 1.

The European Standard EN 10111:2008 has the status of a Swedish Standard. This document contains the official English version of EN 10111:2008.

This standard supersedes the Swedish Standard SS-EN 10111, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00.

Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.

Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.

E-mail: sis.sales@sis.se Internet: www.sis.se

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10111

April 2008

ICS 77.140.50

Supersedes EN 10111:1998

English Version

Continuously hot rolled low carbon steel sheet and strip for cold forming - Technical delivery conditions

Tôles et bandes en acier doux laminées à chaud en continu pour formage à froid - Conditions techniques de livraison

Kontinuierlich warmgewalztes Band und Blech aus weichen Stählen zum Kaltumformen - Technische Lieferbindungen

This European Standard was approved by CEN on 29 February 2008.

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 CEN 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 CEN Management Centre has the same status as the official versions.

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



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

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

Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Classification and designation.....	5
4.1 Classification.....	5
4.2 Designation	5
5 Requirements	5
5.1 Steelmaking and manufacturing processes	5
5.2 Deoxidation	5
5.3 Chemical composition	5
5.4 Delivery conditions.....	5
5.5 Mechanical properties.....	6
5.6 Surface characteristics	6
5.7 Suitability for surface coating	6
5.8 Weldability	7
5.9 Tolerances on dimensions and shape	7
6 Tests.....	9
6.1 General.....	9
6.2 Inspection units	9
6.3 Number of tests.....	9
6.4 Sampling.....	9
6.5 Test methods.....	10
6.6 Retests	10
6.7 Inspection document.....	10
7 Marking	10
8 Packing	11
9 Storage and transportation.....	11
10 Disputes	11
11 Information to be provided by the purchaser at the time of enquiry and order.....	11
11.1 Mandatory information	11
11.2 Options	11
Bibliography.....	12

Foreword

This document (EN 10111:2008) 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 NBN.

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 October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

This document supersedes EN 10111:1998.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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

SS-EN 10111:2008 (E)

1 Scope

This European Standard specifies the grades of continuously hot rolled low carbon steel sheet and strip (in coils) for cold forming.

Depending on its actual width, strip is classified as:

- hot rolled wide strip if its width is greater than or equal to 600 mm;
- hot rolled slit wide strip if its width is less than 600 mm.

For each grade, it specifies the chemical composition and the mechanical properties.

This European Standard is applicable to products of thickness not less than 1,0 mm and not exceeding 11 mm.

This European Standard is not applicable to products covered by other standards, such as:

- hot rolled products of non-alloy structural steels for general use (see EN 10025 all parts);
- steel sheet for pressure purposes (see EN 10028 all parts);
- steel sheet for welded gas cylinders (see EN 10120);
- quenched and tempered steels (see EN 10083-1 and EN 10083-2).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references the latest edition of the referenced document (including any amendments) applies.

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

EN 10021, *General technical delivery requirements for steel products*

EN 10027-1, *Designation systems for steels - Part 1: Steel names*

EN 10027-2, *Designation systems for steels — Part 2: Numerical system*

EN 10051, *Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels - Tolerances on dimensions and shape*

EN 10079, *Definition of steel products*

EN 10204, *Metallic products — Types of inspection documents*

EN ISO 14284, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996)*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions of hot rolled flat products are those given in EN 10079.

4 Classification and designation

4.1 Classification

The choice of steel grade and product type is left to the purchaser. For this choice, the purchaser may be advised by the manufacturer, but without any liability on the part of the latter, unless agreed at the time of enquiry and order.

Hot rolled products are classified into four grades DD11, DD12, DD13 and DD14 defined by chemical composition, mechanical and forming characteristics (see Table 1).

4.2 Designation

4.2.1 The steel names are in compliance with EN 10027-1; the steel numbers, with EN 10027-2.

4.2.2 Products conforming to this European Standard shall be designated, in order, in the following way:

- a) product designation (e.g. "strip", "sheet" or "slit strip cut longitudinally") in line with EN 10079;
- b) number of this European Standard (EN 10111);
- c) symbolic or numerical designation of the steel (see Table 1).

EXAMPLE Strip EN 10111 – DD13

or

Strip EN 10111 – 1.0335

5 Requirements

5.1 Steelmaking and manufacturing processes

Unless otherwise agreed at the time of enquiry and order, the steelmaking and manufacturing processes are left to the discretion of the manufacturer.

The purchaser shall be informed of these processes if he specifies it.

5.2 Deoxidation

For grade DD11 the method of deoxidation shall be at the manufacturer's discretion. Grades DD12, DD13 and DD14 shall be fully killed.

5.3 Chemical composition

Table 1 gives the permissible chemical composition limits in the cast.

5.4 Delivery conditions

5.4.1 The products shall usually be delivered with their surface as rolled. By agreement at the time of enquiry and order, the products may be delivered with descaled surface. When they are delivered as rolled, they are covered with a thin layer of scale of variable coloration.

The products may be supplied with a light skin-pass, either at the manufacturer's discretion or by agreement at the time of enquiry and order.

SS-EN 10111:2008 (E)

5.4.2 The descaled products are usually delivered oiled. In this case, both surfaces are preserved by a layer of neutral non-drying oil, free of impurities, and uniformly spread in such a way that under normal conditions of packaging, transportation, handling and storage the products will show no corrosion for up to three months from the date on which the products are made available. The date of availability shall be notified to the purchaser with reasonable prior notice compatible with the validity of corrosion resistance.

The layer of oil shall be capable of being removed by alkaline solutions or usual solvents.

The choice of protective oils may be subject to special agreement at the time of enquiry and order.

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 enquiry and order.

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

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

5.4.3 Descaled products may be supplied with trimmed edges upon agreement at the time of enquiry and order (designation GK following EN 10051).

5.5 Mechanical properties

Table 1 gives the basic mechanical properties valid for the four grades.

They correspond to the increasing formability in the order DD11 to DD14.

The characteristics indicated in Table 1 are valid for the period specified in the same Table 1, from the date on which the products are made available.

The date of availability shall be notified to the purchaser with reasonable prior notice compatible with the validity of the mechanical properties.

Subject to special agreement, the products may be supplied with special suitability for the production of a specific part. In this case, a maximum rejection percentage may be set by mutual agreement and acceptance on the basis of mechanical properties does not apply.

5.6 Surface characteristics

The sheets shall be free of slivers, blow holes, seams, cracks or scratches which would adversely affect their use.

Pores, small pits, small marks, small scratches, kinks from pay-off reels and a slight coloration are permitted.

The defects shall not be of such an extent that they might run the risk of causing failure or damage to tooling or welding difficulties when in use.

The surface quality of the unwound coil is assessed as for sheets. However, the percentage of surface defects is generally greater than when supplied in sheets. The maximum percentage of permissible rejections shall be fixed by special agreement at the time of enquiry and order.

5.7 Suitability for surface coating

The products may be intended for metallic coating by the hot dipping or electrodeposition and/or organic or other coatings. When such a coating is required, it shall be specified at the time of enquiry and order.

5.8 Weldability

The products are suitable for standard welding processes. However, the welding process and possible specific requirements of the resulting welded component should be specified at the time of enquiry and order, e.g. gas welding, structural safety requirements.

For non-descaled products, the welding process shall take into account the presence of a layer of scale.

5.9 Tolerances on dimensions and shape

The tolerances on dimensions and shape are given in EN 10051