

# SVENSK STANDARD

## SS-EN ISO 9444-2:2010



Fastställt/Approved: 2010-06-14  
Publicerad/Published: 2010-08-18  
Utgåva/Edition: 1  
Språk/Language: engelska/English  
ICS: 77.140.20; 77.140.50

---

### **Kontinuerligt varmvalsat rostfritt stål – Toleranser för dimensioner och form –**

#### **Del 2: Breda band och plåt (ISO 9444-2:2009)**

### **Continuously hot-rolled stainless steel – Tolerances on dimensions and form –**

#### **Part 2: Wide strip and sheet/plate (ISO 9444-2:2009)**

This preview is downloaded from [www.sis.se](http://www.sis.se). Buy the entire standard via <https://www.sis.se/std-74366>

# Standarder får världen att fungera

*SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.*

## Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

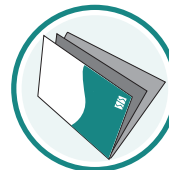
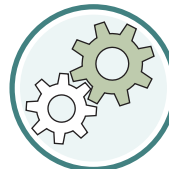
## Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

## Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

**Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på [www.sis.se](http://www.sis.se) eller ta kontakt med oss på tel 08-555 523 00.**



# Standards make the world go round

*SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.*

## Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

## Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

## Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

**If you want to know more about SIS, or how standards can streamline your organisation, please visit [www.sis.se](http://www.sis.se) or contact us on phone +46 (0)8-555 523 00**



Europastandarden EN ISO 9444-2:2010 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 9444-2:2010.

The European Standard EN ISO 9444-2:2010 has the status of a Swedish Standard. This document contains the official English version of EN ISO 9444-2:2010.

© 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.

*Uppllysningar 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 uppllysningar om svensk och utländsk standard.*

*Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.*

Standarden är framtagen av kommittén för Rostfria stål, SIS/TK 135.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](http://www.sis.se) - där hittar du mer information.



EUROPEAN STANDARD

EN ISO 9444-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2010

ICS 77.140.20; 77.140.50

English Version

Continuously hot-rolled stainless steel - Tolerances on  
dimensions and form - Part 2: Wide strip and sheet/plate (ISO  
9444-2:2009)

Acier inoxydable laminé à chaud en continu - Tolérances  
sur les dimensions et la forme - Partie 2: Grandes bandes et  
tôles (ISO 9444-2:2009)

Kontinuierlich warmgewalzter nichtrostender Stahl -  
Grenzabmaße und Formtoleranzen - Teil 2: Warmbreitband  
und Blech (ISO 9444-2:2009)

This European Standard was approved by CEN on 20 May 2010.

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, Croatia, 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: Avenue Marnix 17, B-1000 Brussels



## Contents

Page

Foreword.....	iv
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions.....	1
4 Information to be supplied by the purchaser .....	2
5 Type of delivery and delivery condition .....	3
6 Tolerances on thickness for hot-rolled wide strip and sheet/plate .....	3
7 Tolerances on width for hot-rolled wide strip and sheet/plate .....	4
8 Tolerances on length for sheet/plate .....	4
9 Tolerances on edge camber for hot-rolled wide strip and sheet/plate .....	5
10 Tolerances on squareness for sheet/plate.....	5
11 Tolerances on flatness for sheet/plate .....	5
12 Form of coils .....	5
13 Ordered format for sheet/plate .....	5
14 Measurement of thickness for hot-rolled wide strip and sheet/plate.....	6
15 Measurement of width.....	6
16 Measurement of length.....	6
17 Measurement of edge camber .....	6
18 Measurement of squareness .....	7
19 Measurement of flatness.....	7
Bibliography .....	8

## Foreword

The text of ISO 9444-2:2009 has been prepared by Technical Committee ISO/TC 17 “Steel” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9444-2:2010 by Technical Committee ECISS/TC 105 “Steels for heat treatment, alloy steels, free-cutting steels and stainless steels” 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 December 2010, and conflicting national standards shall be withdrawn at the latest by December 2010.

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, Croatia, 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.

### Endorsement notice

The text of ISO 9444-2:2009 has been approved by CEN as a EN ISO 9444-2:2010 without any modification.



# Continuously hot-rolled stainless steel — Tolerances on dimensions and form —

## Part 2: Wide strip and sheet/plate

### 1 Scope

This part of ISO 9444 specifies the tolerances on dimensions and form for continuously hot-rolled stainless steel wide strip in actual widths from 600 mm to 2 500 mm and for sheet/plate cut from such strip.

### 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.

ISO 6929:1987, *Steel products — Definitions and classification*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6929 and the following apply.

#### 3.1

##### **hot-rolled sheet/plate**

flat rolled product, the edges being allowed to deform freely, supplied flat and generally square or rectangular, but also in any other shape, for example circular or according to the design sketch; the edges are as-rolled or sheared or flame-cut or chamfered

NOTE 1 The product may also be delivered precurved.

NOTE 2 Hot-rolled sheet/plate may be produced:

- a) directly rolled on a reversing mill, or by cutting from a parent plate rolled on a reversing mill;
- b) by cutting from hot-rolled strip rolled on a continuous mill.

NOTE 3 Reversing-mill plate is known generally as “quarto-plate”.

Continuous-mill sheet/plate is known generally as “hot-rolled sheet/plate”.

NOTE 4 Where further subdivision is required to be made on the basis of thickness for statistical purposes, the following is recommended:

- a) **sheet**: thickness less than 3 mm (except electrical sheet);
- b) **plate**: thickness equal to or greater than 3 mm.

NOTE 5 Adapted from ISO 6929:1987, definition 6.2.6.2.2.2.

### 3.2

#### hot-rolled strip

hot-rolled flat product which immediately after the final rolling pass or after pickling or annealing is wound into laps so as to form a coil

NOTE 1 Hot-rolled strip as-rolled has slightly convex edges, but it may also be supplied with sheared edges or be obtained by slitting wider hot-rolled strip.

[ISO 6929:1987, definition 6.2.6.2.2.3.1]

NOTE 2 According to its actual width, including hot-rolled slit strips irrespective of the rolling width, hot-rolled strip is classified as

- hot-rolled wide strip: strip of a width equal to or greater than 600 mm, or
- hot-rolled narrow strip: strip of a width less than 600 mm.

After decoiling and cutting to length, hot-rolled narrow strip may be supplied as cut lengths.

## 4 Information to be supplied by the purchaser

4.1 It shall be the responsibility of the purchaser to specify all requirements that are necessary for products under this specification. Such requirements to be considered include, in the order listed, but not limited to, the following:

- a) the type of delivery [see 5.1 a) and 5.1 b)];
- b) the number of this part of ISO 9444, i.e. ISO 9444-2;
- c) the thickness, in millimetres (if necessary, accurate to two decimal places);
- d) the width, in millimetres;
- e) the condition of the edges (M = mill edges, T = trimmed edges);
- f) for wide strip [see 5.1 a)], the condition of the ends [R = rolled (mill) ends, C = cropped ends];
- g) for sheet/plate, the length, in millimetres;
- h) any special delivery condition (see 5.2).

EXAMPLE 1 Plate in accordance with this International Standard, with a specified thickness of 4,0 mm, a specified width of 1 200 mm, with trimmed edges (T) and a specified length of 2 500 mm.

**Plate ISO 9444-2 – 4,0 × 1200T × 2500**

EXAMPLE 2 Hot-rolled wide strip in accordance with this International Standard, with a specified thickness of 6,0 mm, a specified width of 1 500 mm, with mill edges (M) and mill (rolled = R) ends:

**Hot-rolled wide strip ISO 9444-2 – 6,0 × 1500M-R**

4.2 In the absence of information in the order concerning special requirements for tolerances on dimension and shape [see 4.1 c) to 4.1 h)], hot-rolled products covered by this part of ISO 9444 will be delivered in accordance with the basic specifications of this part of ISO 9444, i.e. with normal tolerances and/or in the usual delivery condition.

## 5 Type of delivery and delivery condition

### 5.1 Type of delivery

Flat products in accordance with this part of ISO 9444 can be supplied as

- a) hot-rolled wide strip (strip in actual widths from 600 mm to 2 500 mm), or
- b) hot-rolled sheet/plate [cut from hot-rolled wide strip in accordance with 5.1 a)];

### 5.2 Delivery condition

**5.2.1** Hot-rolled wide strip and sheet/plate covered by this part of ISO 9444 are supplied in the as-rolled (U) condition, unless the annealed and/or descaled conditions has been agreed upon.

**5.2.2** Hot-rolled, or hot-rolled and annealed, wide strip is supplied with mill edges and mill ends. Delivery with trimmed (slit) edges shall be by special agreement.

**5.2.3** Annealed and descaled wide strip and sheet/plate are supplied with trimmed (slit) edges and cut ends.

### 5.3 General information

In the absence of agreements at the time of enquiry and order concerning special requirements for the delivery condition given in 5.2, flat products covered by this part of ISO 9444 will be delivered in accordance with the basic specifications of this part of ISO 9444.

## 6 Tolerances on thickness for hot-rolled wide strip and sheet/plate

**6.1** The tolerances on thickness, which include crown, are given in Table 1.

**Table 1 — Tolerances on specified thickness for hot-rolled wide strip and sheet/plate <sup>a</sup>**

Dimensions in millimetres

Specified thickness <i>t</i>	Tolerances on specified thickness <sup>b</sup> for nominal width of	
	$w \leq 1\,400$	$1\,400 < w \leq 2\,500$
$t \leq 2,0$	± 0,22	± 0,27
$2,0 < t \leq 2,5$	± 0,23	± 0,30
$2,5 < t \leq 3,0$	± 0,26	± 0,31
$3,0 < t \leq 4,0$	± 0,29	± 0,34
$4,0 < t \leq 5,0$	± 0,31	± 0,36
$5,0 < t \leq 6,0$	± 0,34	± 0,38
$6,0 < t \leq 8,0$	± 0,38	± 0,40
$8,0 < t \leq 10,0$	± 0,42	± 0,44
$10,0 < t \leq 13,0$	± 0,46	± 0,48
$t > 13,0$	The tolerances have to be agreed upon at the time of enquiry and order.	

<sup>a</sup> For wide strip, the specified values for tolerances shall not apply to the mill ends of the coil for a total length *l* which is calculated using the formula:

$$l(\text{m}) = \frac{90}{\text{nominal thickness (mm)}}$$

with a maximum total length (both ends) of 20 m per coil.

<sup>b</sup> Trimmed edges or sheared ends may have burrs.