

Specification for

# **Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections —**

**Part 2: Plates and wide flats**

This European Standard EN 10163-2:1991 has the status of a  
British Standard

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This British Standard was published under the authority of the Standards Board and comes into effect on 20 December 1991

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The following BSI references relate to the work on this standard:  
Committee reference ISM/12  
Draft for comment 89/44689 DC

ISBN 0 580 20206 2

## Amendments issued since publication

Amd. No.	Date	Comments

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## National foreword

This British Standard has been prepared under the direction of the Iron and Steel Standards Policy Committee and is the English language version of EN 10163 *“Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections — Part 2: Plates and wide flats”*. Together with EN 10163-1 it supersedes BS 6512:1984, which is withdrawn.

The other Parts of EN 10163 are as follows:

- *Part 1: General requirements;*
- *Part 3: Sections.*

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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UDC 669.14-122.4-41:620.179.11

Descriptors: Iron and steel products, hot rolled products, steels, metal plates, wide flats, delivery condition, surface condition, quality classes

English version

## Delivery requirements for surface condition of hot rolled steel plates, wide flats and sections — Part 2: Plate and wide flats

Conditions de livraison relatives à l'état de  
surface des tôles, larges plats et profilés en  
acier laminés à chaud —  
Partie 2: Tôles et larges plats

Lieferbedingungen für die  
Oberflächenbeschaffenheit von  
warmgewalzten Stahlerzeugnissen (Blech,  
Breitflachstahl und Profile) —  
Teil 2: Blech und Breitflachstahl

This European Standard was approved by CEN on 21 August 1991. 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.

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# CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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

Foreword

This draft European Standard has been drawn up by ECISS/TC 10 “Structural steel — qualities” whose Secretariat is held by NNI.

Part 1 and 2 of this European Standard replaces: Euronorm 163 (1983), Delivery conditions for surface finish of hot rolled plates and wide flats.

Part 1 and 2 of this document was originally drawn up as Euronorm 163 under the European Coal and Steel Community. With the formation of ECISS and the establishment of the ECISS work programme TC 10 was asked to prepare this document for eventual publication as a European Standard.

ECISS/TC 10 met 3 and 4 May, 1990 in Brussels and agreed on the text for publication as a European Standard. The following countries were represented in that meeting: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Sweden and United Kingdom.

This European Standard EN 10163-2 was approved by CEN on 1991-04-16.

According to the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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## 1 Scope

This Part 2 in addition to Part 1 specifies the delivery requirements which apply to the surface quality of hot rolled plates and wide flats with thicknesses of  $3 \text{ mm} \leq e \leq 250 \text{ mm}$ .

NOTE For plates with a thickness  $> 250 \text{ mm}$  special agreements should be made at the time of enquiry and order.

## 2 Normative references

EN 10029, *Hot-rolled plates 3 mm thick or above; Tolerances on dimensions, shape and mass.*

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

EURONORM 91<sup>1)</sup>, *Hot-rolled wide flats; Tolerances on dimensions, shape and mass.*

## 3 General

3.1 The surface requirements and repair conditions are subdivided into 2 classes and each class is further subdivided into 3 subclasses.

Class A	<p>The surface condition shall comply with the requirements of 4.2 and 5.1.1</p> <p>The remaining thickness of the affected area under discontinuities and of repaired ground areas may be less than the minimum thickness as specified in the appropriate tolerance standard.</p>
Class B	<p>The surface condition shall comply with the requirements of 4.3 and 5.1.2</p> <p>The remaining thickness of the affected area under discontinuities and of repaired ground areas shall not be less than the minimum thickness as specified in the appropriate tolerance standard.</p>
Subclass 1	Repair by chipping and/or grinding followed by welding is permitted in compliance with 5.2.1
Subclass 2	Repairs by welding is only permitted if agreed at the time of enquiry and order and under agreed conditions (see 5.2.2)
Subclass 3	Repair by welding is not allowed.

The required class and subclass is specified in the appropriate material or product standard. If this is not the case the class and subclass shall be class A and subclass 1 unless otherwise specified at the time of enquiry and order.

3.2 If the purchaser needs to be sure that all discontinuities visible to the naked eye have been identified, assessed and where necessary repaired before delivery, products should be ordered descaled (see clause 3, Part 1).

## 4 Requirements

### 4.1 General

Plates and wide flats may have surface discontinuities, which may be divided into categories depending on their nature, depth and number as defined in 4.2 and 4.3.

### 4.2 Class A

#### 4.2.1 imperfections

4.2.1.1 Discontinuities other than cracks, shell and seams (see 4.2.2.3) not exceeding the limits of Table 1 are regarded as being inherent of the manufacturing process and are permissible irrespective of their number.

**Table 1 — Maximum permissible depth of imperfections**

Dimensions in mm	
Nominal thickness of the product $e$	Maximum permissible depth of imperfections
$3 \leq e < 8$	0,2
$8 \leq e < 25$	0,3
$25 \leq e < 40$	0,4
$40 \leq e < 80$	0,5
$80 \leq e < 150$	0,6
$150 \leq e \leq 250$	0,9

A surface area with a remaining thickness under the discontinuities less than the minimum thickness as specified in EN 10029, EN 10051 and EURONORM 91 is permissible with a maximum of 15 % of the inspected surface.

4.2.1.2 Discontinuities other than cracks, shell and seams (see 4.2.2.3) with a depth exceeding the limits of Table 1 but not exceeding the limits of Table 2 and of which the sum of the affected areas does not exceed 5 % of the inspected surface, may be left unrepaired.

<sup>1)</sup> Until this EURONORM is transformed into an European Standard, it can either be implemented or reference made to the corresponding national standard, the list of which is given in annex C to part 1 of this European Standard.

A surface area with a remaining thickness under the discontinuities less than the minimum thickness as specified in EN 10029, EN 10051 and EURONORM 91 is permissible with a maximum of 2 % of the inspected surface.

Table 2 — Maximum permissible depth of discontinuities

Dimensions in mm

Nominal thickness of the product <i>e</i>	Maximum permissible depth of discontinuities
$3 \leq e < 8$	0,4
$8 \leq e < 25$	0,5
$25 \leq e < 40$	0,6
$40 \leq e < 80$	0,8
$80 \leq e < 150$	0,8
$150 \leq e \leq 250$	1,2

4.2.2 Defects

4.2.2.1 Discontinuities with a depth not exceeding the limits of Table 2, but with an affected surface area of more than 5 % of the inspected surface shall be repaired.

4.2.2.2 Discontinuities with a depth exceeding the limits of Table 2 shall be repaired irrespective of their number.

4.2.2.3 Discontinuities such as cracks, shell and seams which are in general deep and sharp, and therefore impair the use of the products, shall always be repaired irrespective of their depth and number.

4.3 Class B

The requirements of 4.2.1 and 4.2.2 apply except that the remaining thickness under the discontinuities and repair ground areas shall not be less than the minimum permissible thickness as specified in the appropriate European Standards or EURONORMS specifying tolerances.

5 Repair procedures

5.1 Grinding

The producer shall be allowed to repair the entire surface by grinding to the minimum thickness specified in the appropriate European Standards or EURONORMS specifying the dimensional requirements.

Grinding of defects shall be carried out subject to the following conditions.

5.1.1 Class A

5.1.1.1 The maximum permissible depth of ground areas is given in Table 3.

Table 3 — Grinding allowances for plates and wide flats

Dimensions in mm

Nominal thickness of the product <i>e</i>	Permitted grinding depth allowances below the minimum thickness as specified in EN 10029, EN 10051 and EU 91
$3 \leq e < 8$	0,3
$8 \leq e < 15$	0,4
$15 \leq e < 25$	0,5
$25 \leq e < 40$	0,8
$40 \leq e < 60$	1,0
$60 \leq e < 80$	1,5
$80 \leq e \leq 250$	2,0

5.1.1.2 For ground areas with a thickness under the minimum permissible thickness, as specified in the European Standards or EURONORMS specifying tolerances, the sum of all ground areas below the minimum permissible thickness of one side of the product shall not exceed 2 % of the surface area under inspection. For products of surface area greater than 12,5 m<sup>2</sup> the size of a single ground area below the minimum permissible thickness shall not exceed 0,25 m<sup>2</sup>.

5.1.1.3 For the remaining thickness of two ground areas lying opposite to each other on both sides of the product the requirements of 5.1.1.1 apply.

5.1.2 Class B

The remaining thickness of the repaired ground area shall not be under the minimum permissible thickness as specified in the appropriate European Standards or EURONORMS specifying tolerances.

5.2 Welding

The following conditions apply for the repair by welding of defects which cannot be repaired by grinding as stated under 5.1.

5.2.1 Subclass 1

A single welded area shall not exceed 0,125 m<sup>2</sup> and the sum of the welded areas shall not exceed 0,125 m<sup>2</sup> or 2 % of the surface area under inspection whichever is the greater.

Ground and welded areas which are separated by a distance less than their average width shall be treated as a single area for the purpose of determining the limiting area.



**5.2.2 Subclass 2**

Repair by welding is only allowed if agreed at the time of enquiry and order. In this case requirements different from **5.2.1** can be specified.

**5.2.3 Subclass 3**

Repair by welding is not allowed.

## Annex A Classes and subclasses for surface conditions with their respective requirements (for information)

In Table 4 the classes and subclasses for surface conditions are given with their respective requirements.

**Table 4 — Classes and subclasses for surface conditions with their respective requirements**

		Remaining thickness of repaired ground area in compliance with 5.1.1		
		Repair chipping/grinding followed by welding	Repair welding by agreement	Repair welding not allowed
Class A	Subclass 1	X		
	Subclass 2		X	
	Subclass 3			X

		Remaining thickness of repaired ground area <u>not</u> under tolerance standard in compliance with 5.1.2		
		Repair chipping/grinding followed by welding	Repair welding by agreement	Repair welding not allowed
Class B	Subclass 1	X		
	Subclass 2		X	
	Subclass 3			X

## **National appendix NA (informative)**

The United Kingdom participation in the preparation of this European Standard was entrusted by the Iron and Steel Standards Policy Committee (ISM/-) to Technical Committee ISM/12 upon which the following bodies were represented:

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British Constructional Steelwork Association Ltd.  
British Railways Board  
British Steel Industry  
County Surveyors' Society  
Department of Transport  
Institution of Structural Engineers  
Lloyd's Register of Shipping  
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Steel Construction Institute  
Welding Institute

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