EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10163-3

December 2004

ICS 77.140.60; 77.140.70

Supersedes EN 10163-3:1991

English version

Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections - Part 3: Sections

Conditions de livraison relatives à l'état de surface des tôles, larges plats et profilés en acier laminés à chaud - Partie 3: Profilés

Lieferbedingungen für die Oberflächenbeschaffenheit von warmgewalzten Stahlerzeugnissen (Blech, Breitflachstahl und Profile) - Teil 3: Profile

This European Standard was approved by CEN on 4 November 2004.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Ref. No. EN 10163-3:2004: E

Contents

Foreword

This document (EN 10163-3:2004) has been prepared by Technical Committee ECISS/TC 10 “Structural steels – Grades and qualities”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

This document supersedes EN 10163-3:1991, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections – Part 3: Sections.*

This series of standards consists of the following parts, under the general title *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections*:

— *Part 1: General requirements*

— *Part 2: Plate and wide flats*

During the 5 year review of EN 10163-3:1991 the members of ECISS/TC 10 agreed to revise EN 10163-3:1991. It was asked to actualise the normative references and to bring the text in line with ECISS DOCS N 809 “Iron and steel standardization – Model for a product standard”.

This document includes a Bibliography.

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

1 Scope

In addition to EN 10163-1 this document specifies the delivery requirements for surface condition of sections to which the European Standards mentioned in Clause 2 apply and applies to all surfaces excluding edges.

NOTE In this document section toes (see EN 10055) are considered as part of the surfaces of a section.

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 10163-1, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections – Part 1: General requirements*.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
imperfections for long products
surface discontinuities with a depth and/or area equal to or less than a specified limiting value

3.2
defects for long products
surface discontinuities with a depth and/or area greater than a specified limiting value

4 General

The conditions stated in EN 10163-1 apply.

5 Classification

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

Class C General applications.

The surface condition shall comply with the requirements of 6.2.1 and 6.3.

Class D Special applications.

The surface condition shall comply with the requirements of 6.2.2 and 6.3.

Subclass 1 Repair by chipping and/or grinding followed by welding is permitted in compliance with 6.3.2.2 and 6.3.2.3.

Subclass 2 Repair by welding is only permitted if agreed at the time of the order and under agreed conditions (see 6.3.2.4).

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 C and subclass 1 unless otherwise specified at the time of the order.

6 Requirements

6.1 Depth and affected area of discontinuities

The requirements of EN 10163-1 apply.

6.2 Repair requirements

6.2.1 Class C

6.2.1.1 Imperfections

Discontinuities not exceeding the limits of Table 1 are regarded as being inherent of the manufacturing process and are permissible irrespective of their number.
A surface area with discontinuities within the limits of Table 1 but with a remaining thickness under the discontinuities less than the minimum thickness as specified in the applicable European Standards (see Clause 2) is permissible with a maximum of 15 % of the inspected surface.

6.2.1.2 Defects

6.2.1.2.1 Discontinuities with a depth exceeding the limits of Table 1 shall be repaired irrespective of their number.

6.2.1.2.2 Discontinuities with a surface area with a remaining thickness under the discontinuities less than the minimum thickness as specified in the applicable European Standards (see Clause 2) of more than 15 % of the inspected surface shall be repaired.

Table 1 — Maximum permissible depth of discontinuities for class C

Dimensions in millimetres

Nominal thickness of the product t	Maximum permissible depth of discontinuities
$3 \leq t < 6$	20 % of t
$6 \leq t < 20$	1,2
$20 \leq t < 40$	1,7
$40 \leq t < 80$	2,5
$80 \leq t < 160$	3,0

6.2.2 Class D

6.2.2.1 Imperfections

Discontinuities not exceeding the limits of Table 2 are regarded as being inherent of the manufacturing process and are permissible irrespective of their number.

A surface area with discontinuities within the limits of Table 2 but with a remaining thickness under the discontinuities less than the minimum thickness as specified in the applicable European Standards (see Clause 2) is permissible with a maxlmum of 2 % of the inspected surface.

Table 2 — Maximum permissible depth of discontinuities for class D

Dimensions in millimetres

Nominal thickness of the product t	Maximum permissible depth of discontinuities
$3 \leq t < 20$	0,5
$20 \leq t < 40$	0,7
$40 \leq t < 80$	1,0
$80 \leq t < 160$	1,5

6.2.2.2 Defects

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

6.2.2.2.2 Discontinuities with a surface area with a remaining thickness under the discontinuities less than the minimum thickness as specified in the applicable European Standards (see Clause 2) of more than 2 % of the inspected surface shall be repaired.

6.3 Repair procedures

6.3.1 Grinding

The maximum permitted grinding allowance below the minimum thickness as specified in the European Standards specifying tolerances is given in Table 3.

Futhermore the following conditions apply.

For ground areas with a thickness under the minimum permissible thickness, as specified in the European Standards specifying tolerances, the sum of all ground areas shall not exceed 15 % of the surface for class C and 2 % for class D.

Table 3 — Grinding allowance below the minimum thickness

Dimensions in millimetres

Nominal thickness of the product *t*	Maximum permitted grinding allowance below the minimum specified thickness
$3 \leq t < 20$	0,4
$20 \leq t < 40$	0,6
$40 \leq t < 80$	1,2
$80 \leq t < 160$	2,0

6.3.2 Welding

6.3.2.1 General

The following conditions apply for the repair by welding of defects which cannot be repaired by grinding as stated under 6.3.1.

6.3.2.2 Class C Subclass 1

The sum of the welded areas shall not exceed 15 % of the surface area under inspection.

6.3.2.3 Class D Subclass 1

The sum of the welded areas shall not exceed 2 % of the surface area under inspection.

6.3.2.4 Subclass 2

Repair by welding is only allowed if agreed at the time of the order. In this case requirements different from 6.3.2.2 and 6.3.2.3 can be specified.

6.3.2.5 Subclass 3

Repair by welding is not allowed.

Bibliography

[1] EN 10024, *Hot rolled taper flange I sections - Tolerances on shape and dimensions.*

[2] EN 10034, *Structural steel I and H sections - Tolerances on shape and dimensions.*

[3] EN 10055, *Hot-rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions.*

[4] EN 10056-1, *Structural steel equal and unequal leg angles - Part 1: Dimensions.*

[5] EN 10056-2, *Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions.*

[6] EN 10279, *Hot rolled steel channels - Tolerances on shape and dimensions and mass.*