



BSI Standards Publication

# **Hot rolled weldable steel bars for pressure purposes with specified elevated temperature properties**

**National foreword**

This British Standard is the UK implementation of EN 10273:2016. It supersedes BS EN 10273:2007 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/107, Steels for Pressure Purposes.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.  
Published by BSI Standards Limited 2016

ISBN 978 0 580 84030 2

ICS 77.140.30; 77.140.60

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2016.

**Amendments/corrigenda issued since publication**

Date	Text affected
------	---------------

---

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 10273**

July 2016

ICS 77.140.30; 77.140.60

Supersedes EN 10273:2007

English Version

**Hot rolled weldable steel bars for pressure purposes with  
specified elevated temperature properties**

Barres laminées à chaud en acier soudable pour  
appareils à pression, avec des caractéristiques  
spécifiées aux températures élevées

Warmgewalzte schweißgeeignete Stäbe aus Stahl für  
Druckbehälter mit festgelegten Eigenschaften bei  
erhöhten Temperaturen

This European Standard was approved by CEN on 15 April 2016.

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-CENELEC 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-CENELEC 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

European foreword .....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions .....	6
4 Dimensions and tolerances on dimensions.....	6
5 Calculation of mass.....	6
6 Classification and designation .....	7
6.1 Classification.....	7
6.2 Designation .....	7
7 Information to be supplied by the purchaser .....	7
7.1 Mandatory information .....	7
7.2 Options.....	7
7.3 Examples for ordering.....	8
8 Requirements.....	8
8.1 Steelmaking process .....	8
8.2 Delivery condition .....	8
8.3 Chemical composition .....	9
8.4 Mechanical properties .....	9
8.5 Surface condition .....	9
8.6 Internal soundness.....	9
8.7 Weldability .....	9
9 Inspection .....	10
9.1 Types of inspection and inspection documents.....	10
9.2 Tests to be carried out .....	10
9.3 Retests, sorting and reprocessing.....	10
10 Sampling.....	11
10.1 Frequency of testing.....	11
10.2 Selection and preparation of samples and test pieces .....	11
11 Test methods .....	11
11.1 Chemical analysis.....	11
11.2 Tensile test at room temperature.....	12
11.3 Tensile test at elevated temperature.....	12
11.4 Impact test.....	12
11.5 Other testing.....	13
12 Marking .....	13
Annex A (informative) Guidelines for heat treatment.....	24
Annex B (informative) Reference data on creep strain and creep rupture .....	25
Annex C (informative) Significant changes to the previous version EN 10273:2007.....	28
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of Directive 2014/68/EU .....	29

<b>Bibliography .....</b>	<b>30</b>
---------------------------	-----------

## European foreword

This document (EN 10273:2016) has been prepared by Technical Committee ECISS/TC 107 “Steels for pressure purposes”, 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 January 2017, and conflicting national standards shall be withdrawn at the latest by January 2017.

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.

This document supersedes EN 10273:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of Directive 2014/68/EU.

For relationship with Directive 2014/68/EU, see informative Annex ZA, which is an integral part of this document.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies the technical delivery conditions for hot rolled weldable steel bars for the construction of pressure equipment for use at elevated temperatures with thicknesses given in Table 5.

The general technical delivery conditions in EN 10021 also apply to products supplied in accordance with this European Standard.

**NOTE** Once this European Standard is published in the Official Journal of the European Union (OJEU) under Directive 2014/68/EC, presumption of conformity to the Essential Safety Requirements (ESRs) of Directive 2014/68/EC is limited to technical data of materials in this European Standard and does not presume adequacy of the material to a specific item of equipment. Consequently, the assessment of the technical data stated in this material standard against the design requirements of this specific item of equipment to verify that the ESRs of the Pressure Equipment Directive are satisfied, needs to be done. .

## 2 Normative references

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

EN 10020:2000, *Definition and classification of grades of steel*

EN 10021, *General technical delivery conditions 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 10052:1993, *Vocabulary of heat treatment terms for ferrous products*

EN 10058, *Hot rolled flat steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10059, *Hot rolled square steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10060, *Hot rolled round steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10061, *Hot rolled hexagon steel bars for general purposes — Dimensions and tolerances on shape and dimensions*

EN 10079:2007, *Definition of steel products*

EN 10168:2004, *Steel products — Inspection documents — List of information and description*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 10221:1995, *Surface quality classes for hot-rolled bars and rods — Technical delivery conditions*

EN 10308, *Non destructive testing — Ultrasonic testing of steel bars*

EN ISO 148-1:2010, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1:2009)*