

This is a preview. To view the full content, please purchase this document.

BS EN 10025-4:2019



BSI Standards Publication

## Hot rolled products of structural steels

---

Part 4: Technical delivery conditions for thermomechanical  
rolled weldable fine grain structural steels

**bsi.**

## National foreword

This British Standard is the UK implementation of EN 10025-4:2019. It supersedes [BS EN 10025-4:2004](#), which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/103, Structural Steels Other Than Reinforcements.

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 2019  
Published by BSI Standards Limited 2019

ISBN 978 0 580 73968 2

ICS 77.140.10; 91.100.99; 77.140.50

**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 August 2019.

### Amendments/corrigenda issued since publication

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

---

This is a preview. To view the full content, please purchase this document.

[BS EN 10025-4:2019](#)

EUROPEAN STANDARD

**EN 10025-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2019

ICS 77.140.10; 77.140.50

Supersedes [EN 10025-4:2004](#)

English Version

## Hot rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels

Produits laminés à chaud en aciers de construction -  
Partie 4 : Conditions techniques de livraison pour les  
aciers de construction soudable à grains fins obtenus  
par laminage thermomécanique

Warmgewalzte Erzeugnisse aus Baustählen - Teil 4:  
Technische Lieferbedingungen für thermomechanisch  
gewalzte schweißgeeignete Feinkornbaustähle

This European Standard was approved by CEN on 16 June 2019.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, 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: Rue de la Science 23, B-1040 Brussels

<b>Contents</b>	<b>Page</b>
European foreword .....	4
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	8
4 Classification and designation .....	8
4.1 Classification.....	8
4.1.1 Main quality classes .....	8
4.1.2 Grades and qualities .....	8
4.2 Designation .....	9
5 Information to be supplied by the purchaser.....	9
5.1 Mandatory information .....	9
5.2 Options.....	9
6 Manufacturing process .....	9
6.1 Steel making process.....	9
6.2 Deoxidation and grain structure .....	10
6.3 Delivery conditions .....	10
7 Requirements.....	10
7.1 General.....	10
7.2 Chemical composition .....	10
7.3 Mechanical properties .....	11
7.3.1 General.....	11
7.3.2 Impact properties .....	11
7.3.3 Improved deformation properties perpendicular to the surface .....	11
7.4 Technological properties .....	12
7.4.1 Weldability.....	12
7.4.2 Formability and flame straightening.....	12
7.4.3 Hot-dip zinc-coating.....	13
7.5 Surface properties .....	13
7.5.1 Strip.....	13
7.5.2 Plates and wide flats .....	13
7.5.3 Sections.....	13
7.5.4 Bars and rods.....	13
7.6 Internal soundness.....	13
7.7 Dimensions, tolerances on dimensions and shape, mass.....	14
8 Inspection .....	14
8.1 Type of inspection and inspection document.....	14
8.2 Content of inspection document.....	14
8.3 Tests to be carried out .....	15
9 Frequency of testing and preparation of samples and test pieces.....	15
9.1 Frequency of testing.....	15
9.1.1 Chemical analysis.....	15
9.1.2 Mechanical tests .....	15
9.2 Preparation of samples and test pieces .....	15
9.2.1 Selection and preparation of samples for chemical analysis.....	15
9.2.2 Location of samples and orientation of test pieces for mechanical tests .....	16

9.2.3	Preparation of test pieces for mechanical tests .....	16
9.3	Identification of samples and test pieces.....	17
10	Test methods .....	17
10.1	Chemical analysis .....	17
10.2	Mechanical tests.....	17
10.2.1	Tensile test.....	17
10.2.2	Impact test.....	17
10.3	Ultrasonic testing.....	18
10.4	Retests .....	18
11	Marking, labelling, packaging .....	18
12	Complaints .....	18
13	Options .....	19
Annex A	(normative) Location of samples and test pieces.....	25
Annex B	(informative) List of Options of <a href="#">EN 10025-2</a> to -6 .....	28
Bibliography	.....	30

## European foreword

This document (EN 10025-4:2019) has been prepared by Technical Committee CEN/TC 459/SC 3 "Structural steels other than reinforcements", 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 February 2020 and conflicting national standards shall be withdrawn at the latest by February 2020.

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

This document will supersede [EN 10025-4:2004](#)

This document consists of the following parts, under the general title *Hot rolled products of structural steels*:

- *Part 1: General technical delivery conditions*
- *Part 2: Technical delivery conditions for non-alloy structural steels*
- *Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels*
- *Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels*
- *Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance*
- *Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition*

For a short transition period there will be a coexistence of [EN 10025-1:2004](#) with EN 10025-2:2019 to EN 10025-6:2019, since the new [EN 10025-1](#) has to fulfil the requirements of the CPR and will therefore be published later. For this short transition period up-to-the publication of the next edition of part 1 the following is to be taken into account for [EN 10025-1:2004](#):

- a) all dated and undated references to [EN 10025-1:2004](#) to [EN 10025-6:2004](#) are unchanged to this version with following exception: In 9.2.2.1 the references are 8.3.1 and 8.3.2 instead of 8.4.1 and 8.4.2,
- b) Clauses 5, 12 and 13 of [EN 10025-1:2004](#) are no longer relevant.

The main changes with respect to the previous edition are listed below:

- a) part 4 is now a stand-alone standard for technical delivery conditions including the preparation of samples and test pieces, the test methods, the marking, labelling and packaging and the drawings;
- b) for applications under the CPR this document and part 1 are used together;
- c) requirements for elements not defined were added to 7.2.1 and 7.2.2;
- d) Option 33 was added, Option 3 was renumbered to Option 24 and Option 9 was deleted;
- e) Si-content in 7.2.4 was changed;
- f) 7.4.3 concerning hot-dip zinc coating was modified;
- g) key to Figure A.1 was updated;

This is a preview. To view the full content, please purchase this document.

BS EN 10025-4:2019

**EN 10025-4:2019 (E)**

- h) steel grade S500M was added;
- i) Annex B concerning the corresponding EURONORMS deleted;
- j) references were updated and document editorial revised.

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

## 1 Scope

This document specifies technical delivery conditions for flat and long products of hot rolled weldable fine grain structural steels in the thermomechanical rolled condition in the grades and qualities given in Tables 1 to 3 (chemical composition) and Tables 4 to 6 (mechanical properties) in thickness  $\leq 150$  mm.

The steels specified in this document are especially intended for use in heavily loaded parts of welded structures such as, bridges, flood gates, storage tanks, water supply tanks, etc., for service at ambient and low temperatures.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1011-2](#), *Welding — Recommendations for welding of metallic materials — Part 2: Arc welding of ferritic steels*

[EN 10017](#), *Steel rod for drawing and/or cold rolling — Dimensions and tolerances*

[EN 10020:2000](#), *Definition and classification of grades of steel*

[EN 10021](#), *General technical delivery conditions for steel products*

[EN 10024](#), *Hot rolled taper flange I sections — Tolerances on shape and dimensions*

[EN 10025-1](#), *Hot rolled products of structural steels — Part 1: General technical delivery conditions*

[EN 10027-1](#), *Designation systems for steels — Part 1: Steel names*

[EN 10027-2](#), *Designation systems for steels — Part 2: Numerical system*

[EN 10029](#), *Hot-rolled steel plates 3 mm thick or above — Tolerances on dimensions and shape*

[EN 10034](#), *Structural steel I and H sections — Tolerances on shape and dimensions*

[EN 10048](#), *Hot rolled narrow steel strip — Tolerances on dimensions and shape*

[EN 10051](#), *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels — Tolerances on dimensions and shape*

[EN 10055](#), *Hot rolled steel equal flange tees with radiused root and toes — Dimensions and tolerances on shape and dimensions*

[EN 10056-1](#), *Structural steel equal and unequal leg angles — Part 1: Dimensions*

[EN 10056-2](#), *Structural steel equal and unequal leg angles — Part 2: Tolerances on shape and dimensions*

[EN 10058](#), *Hot rolled flat steel bars and steel wide flats 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*