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BSI Standards Publication

Iron and steel — European standards for the determination of chemical composition

National foreword

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The UK participation in its preparation was entrusted to Technical Committee ISE/102, Methods of Chemical Analysis for Iron and Steel.

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

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English Version

Iron and steel - European standards for the determination of chemical composition

Aciers et fontes - Normes européennes pour la détermination de la composition chimique

Eisen und Stahl - Europäische Normen für die Bestimmung der chemischen Zusammensetzung

This Technical Report was approved by CEN on 17 April 2023. It has been drawn up by the Technical Committee CEN/TC 459/SC 2.

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Contents

Page

European foreword ... **3**

1 Scope ... **5**

2 Normative references ... **5**

3 Terms and definitions ... **5**

4 European Standards for the determination of the chemical composition of steels and irons ... **6**
4.1 Mono-elemental methods ... **6**
4.2 Multi-elemental methods ... **8**

5 Range of application and principle of the methods ... **9**
5.1 Mono-elemental methods ... **9**
5.2 Multi-elemental methods ... **25**

Annex A (informative) List of other European Standards and CEN Technical Reports applicable for the determination of the chemical composition of ferrous materials ... **29**

Annex B (informative) List of withdrawn Euronorms and of the corresponding replacement European standards ... **30**

Annex C (informative) Graphical representation of the scope of methods described in this technical report ... **33**

Annex D (informative) Trilingual key of the abbreviations used in the figures given in Annex C ... **36**

European foreword

This document (CEN/TR 10261:2023) has been prepared by Technical Committee CEN/TC 459 “ECISS – European Committee for Iron and Steel Standardization”[1], the secretariat of which is held by AFNOR.

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 supersedes CEN/TR 10261:2018.

In comparison with the previous edition, the following modifications have been made:

— Numbering of sub-paragraphs in Clause 4;

— In 3.1, addition of a Note;

— in 4.1, for calcium, reference of EN 10177 updated;

— in 4.1, for carbon, reference of EN ISO 15349-2 updated;

— in 4.1, for chromium, reference of CEN/TR 10367 updated;

— in 4.1, for cobalt, reference of EN ISO 11652 added;

— in 4.1, for copper, reference modified;

— in 4.1, for lead, reference of EN 10181 updated;

— in 4.1, for nickel, reference of EN 10136 updated;

— in 4.1, for nitrogen, reference of EN ISO 4945 updated;

— in 4.1, for silicon, reference of EN ISO 439 updated;

— in 4.1, for vanadium, reference of EN ISO 4947 updated;

— in 4.1, for vanadium, reference of EN ISO 9647 added;

— 5.1.4, information on EN 10177 revised;

— 5.1.6, reference of CEN/TR 10367 updated;

— 5.1.7, reference of EN ISO 11652 added;

— 5.1.9, information on EN 10181 revised;

— 5.1.11, information on EN 10136 revised;

— 5.1.13, information on EN ISO 4945 revised;

— 5.1.17, information on EN ISO 439 revised;

[1] Through its sub-committee SC 2 “Methods of chemical analysis for iron and steel” (secretariat: SIS).

— 5.1.20, information on EN ISO 4947 revised;

— Annex A, reference of CEN/TR 10317 updated;

— Annex A, reference of CEN/TR 10364 updated;

— Annex C, CEN/TR 10362 moved from Figure C.1 to Figure C.2.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

1 Scope

This document lists, under Clause 4, the European Standards which are currently available for the determination of the chemical composition of steels and cast irons.

In Clause 5, this document provides details on the range of application and gives the principle of the method described in each standard.

Items which are under preparation as European Standards or as CEN Technical Reports by ECISS/TC 102 are available on the webpage of CEN, through the following link: https://standards.cen.eu/dyn/www/f?p=204:22:0::::FSP_ORG_ID:733643&cs=123E58BF77E3DE921F548B80C5FF2E5D4.

Annex A gives a list of other European Standards and CEN Technical Reports applicable for the determination of the chemical composition of steels and cast irons.

Annex B gives a list of withdrawn Euronorms, together with the corresponding replacement European Standards, if any.

Annex C shows graphical representations of the content ranges of the methods listed in this document. Figure C.1 gives the content ranges of the referee methods, Figure C.2 gives the content ranges of the routine methods and Figure C.3 represents the fields of application of all the methods described.

Annex D provides a trilingual key of the abbreviations used in the Figures given in Annex C.

NOTE Three methods applicable for the analysis of some ferro-alloys are listed in Annex A.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
referee method
stoichiometric method or a method calibrated against pure metals or stoichiometric compounds, which is to be used for certification analysis or in case of arbitration

Note 1 to entry Due to lack of accuracy or to a low number of laboratories having participated to the related validation tests, some stoichiometric methods or methods calibrated against pure metals or stoichiometric compounds cannot be taken as "referee methods". They are published as CEN/TRs.

3.2
routine method
method calibrated against reference materials or certified reference materials, or against standard solutions commercially available, which is widely used for control purposes (day to day analysis)