

Welding consumables - Covered electrodes for manual metal arc welding of nickel and nickel alloys - Classification (ISO 14172:2023)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14172:2023 sisaldab Euroopa standardi EN ISO 14172:2023 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14172:2023 consists of the English text of the European standard EN ISO 14172:2023.
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English Version

**Welding consumables - Covered electrodes for manual
metal arc welding of nickel and nickel alloys -
Classification (ISO 14172:2023)**

Produits consommables pour le soudage - Électrodes
enrobées pour le soudage manuel à l'arc du nickel et
des alliages de nickel - Classification (ISO 14172:2023)

Schweißzusätze - Umhüllte Stabelektroden zum
Lichtbogenhandschweißen von Nickel und
Nickellegierungen - Einteilung (ISO 14172:2023)

This European Standard was approved by CEN on 29 December 2022.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 14172:2023) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding and allied processes" 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of an identical text or by endorsement, at the latest by February 2024, and conflicting national standards shall be withdrawn at the latest by February 2024.

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 EN ISO 14172:2015.

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

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, 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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 14172 has been approved by CEN as EN ISO 14172:2023 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 3, *Welding consumables*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 14172:2015), which has been technically revised.

The main changes are as follows:

- updated to latest style including foreword;
- aligned with ISO 18274 where possible;
- updated references;
- rounding procedure is now [Clause 8](#);
- revised the chemical compositions for a number of chemical compositions in [Table 1](#);
- added new alloys in [Table 1](#);
- updated corresponding entries in other parts of the document;
- new Example 2 added;
- added Chinese alloys to [Table C.1](#)

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Welding consumables — Covered electrodes for manual metal arc welding of nickel and nickel alloys — Classification

1 Scope

This document prescribes requirements for the classification of nickel and nickel-alloy covered electrodes for manual metal arc welding and overlaying. The classification of the covered electrodes is based on the chemical composition of their deposited all-weld metal. It includes those compositions in which the nickel content exceeds that of any other element.

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.

ISO 544, *Welding consumables — Technical delivery conditions for filler materials and fluxes — Type of product, dimensions, tolerances and markings*

ISO 6847, *Welding consumables — Deposition of a weld metal pad for chemical analysis*

ISO 14344, *Welding consumables — Procurement of filler materials and fluxes*

ISO 15792-1:2020, *Welding consumables — Test methods — Part 1: Test methods for all-weld metal test specimens in steel, nickel and nickel alloys*

ISO 80000-1:2022, *Quantities and units — Part 1: General*

3 Terms and definitions

No terms and definitions are listed in this document.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Classification

A covered electrode shall be classified in accordance with the chemical composition of the all-weld metal as given in [Table 1](#). The required mechanical properties for the classification's all-weld metal are listed in [Table 2](#).

The symbol for the classification is divided into two parts:

- a) the first part gives a symbol indicating the product or process to be used;
- b) the second part gives a symbol indicating the chemical composition of the all-weld metal.