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Welding consumables - Wire electrodes and weld
deposits for gas shielded metal arc welding of non alloy
and fine grain steels - Classification (ISO 14341:2020)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14341:2020 sisaldab Euroopa standardi EN ISO 14341:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14341:2020 consists of the English text of the European standard EN ISO 14341:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Welding consumables - Wire electrodes and weld deposits
for gas shielded metal arc welding of non alloy and fine
grain steels - Classification (ISO 14341:2020)**

Produits consommables pour le soudage - Fils-
électrodes et métaux d'apport déposés en soudage à
l'arc sous protection gazeuse des aciers non alliés et à
grains fins - Classification (ISO 14341:2020)

Schweißzusätze - Drahtelektroden und Schweißgut
zum Metall-Schutzgasschweißen von unlegierten
Stählen und Feinkornstählen - Einteilung (ISO
14341:2020)

This European Standard was approved by CEN on 14 July 2020.

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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 14341:2020) 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of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

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 14341:2011.

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, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14341:2020 has been approved by CEN as EN ISO 14341:2020 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 documents 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*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 14341:2010), which has been technically revised. The main changes compared to the previous edition are as follows:

- all references have been updated;
- in [Table 3A](#), the footnote for Cu that appeared in the 2008 edition has been reintroduced;
- in [Table 3B](#) and Table 4B, a new symbol S8 has been added;
- in [Table 3B](#), Ni, Cr, Mo and V values have been added for symbols S2, S3, S4, S5, S6, and S7;
- [Clause 8](#) has been updated to the latest agreed text;
- in [Clause 11](#), an example for a Z classification has been added as Example 2A.

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.

Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

Introduction

This document recognizes that there are two somewhat different approaches in the global market to classifying a given wire electrode, and allows for either or both to be used, to suit a particular market need. Application of either type of classification designation (or both where suitable) identifies a product as classified in accordance with this document.

This document provides a classification in order to designate wire electrodes in terms of their chemical composition and, where required, in terms of the yield strength, tensile strength and elongation of the all-weld metal. The ratio of yield strength to tensile strength of weld metal is generally higher than that of parent metal. Users should note that matching weld metal yield strength to parent metal yield strength does not necessarily ensure that the weld metal tensile strength matches that of the parent material. Therefore, where the application requires matching tensile strength, selection of the consumable should be made by reference to column 3 of Table 1A or 1B.

It should be noted that the mechanical properties of all-weld metal test specimens used to classify the electrodes vary from those obtained in production joints because of differences in welding procedures such as electrode size, width of weave, welding position and material composition.

Welding consumables — Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels — Classification

1 Scope

This document specifies requirements for classification of wire electrodes and weld deposits in the as-welded condition and in the post-weld heat-treated condition for gas shielded metal arc welding of non alloy and fine grain steels with a minimum yield strength of up to 500 MPa or a minimum tensile strength of up to 570 MPa. One wire electrode can be tested and classified with different shielding gases.

This document constitutes a combined specification providing classification utilizing a system based upon the yield strength and the average impact energy of 47 J of all-weld metal, or utilizing a system based upon the tensile strength and the average impact energy of 27 J of all-weld metal.

- a) Clauses and tables which carry the suffix letter “A” are applicable only to wire electrodes classified to the system based on the yield strength and the average impact energy of 47 J of all-weld metal in accordance with this document.
- b) Clauses and tables which carry the suffix letter “B” are applicable only to wire electrodes classified to the system based on the tensile strength and the average impact energy of 27 J of all-weld metal in accordance with this document.
- c) Clauses and tables which have neither the suffix letter “A” nor the suffix letter “B” are applicable to all wire electrodes classified in accordance with this document.

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 14175:2008, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes*

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 80000-1:2009, *Quantities and units — Part 1: General*. Corrected by ISO 80000-1:2009/Cor 1:2011

3 Terms and definitions

No terms and definitions are listed in this document.

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

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