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STN	**Zváracie materiály Tyčinky, drôty a zvarový kov na zváranie nelegovaných a jemnozrnných ocelí volfrámovou elektródou v inertnom plyne Klasifikácia (ISO 636: 2024)**	**STN EN ISO 636 05 5309**

Welding consumables - Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels - Classification (ISO 636:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/24

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EN ISO 636

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ICS 25.160.20 Supersedes EN ISO 636:2017

English Version

Welding consumables - Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels - Classification (ISO 636:2024)

Produits consommables pour le soudage - Baguettes, fils et dépôts pour soudage TIG des aciers non alliés et des aciers à grains fins - Classification (ISO 636:2024)

Schweißzusätze - Stäbe, Drähte und Schweißgut zum Wolfram-Inertgasschweißen von unlegierten Stählen und Feinkornstählen - Einteilung (ISO 636:2024)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 636:2024) 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 AFNOR.

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of an identical text or by endorsement, at the latest by April 2025, and conflicting national standards shall be withdrawn at the latest by April 2025.

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Endorsement notice

The text of ISO 636:2024 has been approved by CEN as EN ISO 636:2024 without any modification.

International Standard

ISO 636

Welding consumables — Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels — Classification

Produits consommables pour le soudage — Baguettes, fils et dépôts pour soudage TIG des aciers non alliés et des aciers à grains fins — Classification

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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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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 sixth edition cancels and replaces the fifth edition (ISO 636:2017), which has been technically revised.

The main changes are as follows:

— document has been reformatted in single column format;

— dated references have been updated to current editions;

— text added to 4.1 and Table 8 regarding differences in mechanical properties;

— chemical compositions have been updated for some classifications;

— five new classifications have been added to system B;

— footnote for boron added to Table 4;

— table footnotes have been revised for clarity;

— requirements in Table 5 have been aligned with other standards;

— information on preheating and interpass temperatures has been revised in Table 6;

— Clause 7 was revised to clarify the effect of chemical elements that do not change during production;

— examples in Clause 11 have been revised and examples have been added.

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.

ISO 636:2024(en)

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 provides a classification for the designation of rods and wires 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 to tensile strength of weld metal is generally higher than that of the parent metal. Matching weld metal yield strength to parent metal yield strength will not necessarily ensure that the weld metal tensile strength matches that of the parent material.

Where the application requires matching tensile strengths, selection of consumables is made by reference to columns 3 and 7 of Table 2.

Of note is that the mechanical properties of all-weld metal test specimens used to classify the rods and wires vary from those obtained in production joints because of differences in welding procedure such as diameter, width of weave, welding position, and material composition.

The classification according to system A is mainly based on EN 1668:1997[1]. The classification according to system B is mainly based upon standards used around the Pacific Rim.

International Standard **ISO 636:2024(en)**

Welding consumables — Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels — Classification

1 Scope

This document specifies requirements for classification of rods, wires and deposits in the as-welded condition and in the post-weld heat-treated condition for tungsten inert gas 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.

This document is 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) Components which carry the suffix “system A” are applicable only to rods, wires and deposits classified to the system based upon the yield strength and the average impact energy of 47 J of all-weld metal in accordance with this document.

b) Components which carry the suffix “system B” are applicable only to rods, wires and deposits classified to the system based upon the tensile strength and the average impact energy of 27 J of all-weld metal in accordance with this document.

c) Components which have neither the suffix “system A” nor the suffix “system B” are applicable to all rods, wires and deposits 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 13916, *Welding — Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature*

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: Preparation of all-weld metal test pieces and specimens in steel, nickel and nickel alloys*

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