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Specification and qualification of welding procedures for metallic materials - Qualification based on tested welding consumables (ISO 15610:2023)

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. 04/23

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English Version

Specification and qualification of welding procedures for metallic materials - Qualification based on tested welding consumables (ISO 15610:2023)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Qualification basée sur des produits consommables soumis à essais (ISO 15610:2023)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Qualifizierung aufgrund des Einsatzes von geprüften Schweißzusätzen (ISO 15610:2023)

This European Standard was approved by CEN on 30 December 2022.

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European foreword

This document (EN ISO 15610:2023) 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of an identical text or by endorsement, at the latest by August 2023, and conflicting national standards shall be withdrawn at the latest by August 2023.

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 15610:2003.

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.

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Endorsement notice

The text of ISO 15610:2023 has been approved by CEN as EN ISO 15610:2023 without any modification.

INTERNATIONAL STANDARD

ISO 15610

Second edition
2023-02

Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables

*Descriptif et qualification d'un mode opératoire de soudage pour
les matériaux métalliques — Qualification basée sur des produits
consommables soumis à essais*



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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 10, *Quality management in the field of welding*, 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 second edition cancels and replaces the first edition (ISO 15610:2003), which has been technically revised.

The main changes are as follows:

- process numbers have been updated in accordance with ISO 4063:2009;
- normative references have been updated;
- text has been editorially revised.

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 is a part of a group of standards dealing with specification and qualification of welding procedures, details of which are given in ISO 15607:2019, Annex A.

In ISO 15607, one of the methods for the qualification of welding procedures is based on tested welding consumable usage data.

Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables

1 Scope

This document specifies how a welding procedure can be qualified by using tested welding consumable data. It expands on the requirements given in ISO 15607.

In addition, it gives the range of qualification.

This document is applicable to the welding processes according to [Table 1](#).

Table 1 — Applicable welding processes

Process number according to ISO 4063:2009	Welding process
111	Manual metal arc welding (metal arc welding with covered electrode)
114	Self-shielded tubular cored arc welding
121	Submerged arc welding with solid wire electrode
131	MIG welding with solid wire electrode
132	MIG welding with flux-cored electrode
133	MIG welding with metal cored electrode
135	MAG welding with solid wire electrode
136	MAG welding with flux cored electrode
138	MAG welding with metal cored electrode
141	TIG welding with solid filler material (wire/rod)
15	Plasma arc welding
311	Oxyacetylene welding

Application of this document is limited to parent material groups 1.1, 8.1, 21, 22.1 and 22.2 in accordance with ISO/TR 15608, which produce acceptable microstructures and properties in the heat-affected zone which do not deteriorate significantly in service.

This document is limited to:

- parent material thicknesses $t \leq 40$ mm (groups 1.1 and 8.1) and $t \leq 20$ mm (groups 21, 22.1 and 22.2);
- fillet welds with throat thickness $a \geq 1$ mm.

This document is not applicable when any of the following is specified for the welded joint:

- a) hardness;
- b) impact properties;
- c) preheating;
- d) controlled heat input;

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- e) interpass temperature;
- f) post-weld heat treatment.

The use of this document can also be restricted by an application standard, specification or other documents.

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/TR 15608, *Welding — Guidelines for a metallic materials grouping system*

ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding*

ISO 15609-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 2: Gas welding*

ISO 25901 (all parts), *Welding and allied processes — Vocabulary*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN