



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 15610:2021**

**01-oktober-2021**

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**Popis in kvalifikacija varilnih postopkov za kovinske materiale - Kvalifikacija na podlagi preskušanih dodatnih materialov (ISO/DIS 15610:2021)**

Specification and qualification of welding procedures for metallic materials - Qualification based on tested welding consumables (ISO/DIS 15610:2021)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Qualifizierung aufgrund des Einsatzes von geprüften Schweißzusätzen (ISO/DIS 15610:2021)

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Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Qualification basée sur des produits consommables soumis à essais (ISO/DIS 15610:2021)

**Ta slovenski standard je istoveten z: prEN ISO 15610**

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**ICS:**

25.160.10      Varilni postopki in varjenje      Welding processes

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# DRAFT INTERNATIONAL STANDARD

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## 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*

ICS: 25.160.10

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## ISO/DIS 15610:2021(E)

### 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://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*.

This second edition cancels and replaces the first edition (ISO 15610:2003), which has been technically revised.

The main changes compared to the previous edition are as follows:

- updated normative references;
- text editorial revised;
- process numbers according to ISO 4063.

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](http://www.iso.org/members.html).

## Introduction

In ISO 15607, one of the methods of welding procedure qualification is based on tested welding consumables.

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

## 1 Scope

This document is a part of a series of standards, details of this series are given in ISO 15607:2019, Annex A.

This document gives the necessary information to explain the requirements referenced in ISO 15607:2019 about the qualification of welding procedures based on tested consumables.

In addition, it gives the range of qualification.

This document applies to arc and gas welding in accordance with [Table 1](#).

**Table 1 — Applicable welding processes**

Process number according to ISO 4063	Welding process	Process applicable for alloys based on steel	Process applicable for alloys based on aluminium
111	Manual metal-arc welding (metal-arc welding with covered electrode)	X	—
114	Self-shielded tubular-cored arc welding	X	—
121	Submerged-arc welding with solid wire electrode	X	—
131	MIG welding with solid wire electrode	X	X
132	MIG welding with flux-cored electrode	X	—
133	MIG welding with metal cored electrode	X	—
135	MAG welding with solid wire electrode	X	—
136	MAG welding with flux-cored electrode	X	—
138	MAG welding with metal cored electrode	??	—
141	TIG welding with solid filler material (wire/rod)	X	X
143	TIG welding with tubular-cored filler material	—	—
145	TIG welding using reducing gas and solid filler material	—	—
15	Plasma-arc welding	X	X
311	Gas welding	X	—

NOTE X indicates the process for which ISO 15610 is applicable and - indicates the process for which the standard is not applicable.

Other fusion welding processes may be accepted if specified.

This document is limited to application to parent metals which produce acceptable micro structures and properties in the heat affected zone which do not deteriorate significantly in service.

This document is not applicable where requirements for base metal, welding consumable or welded joints are specified as follows:

- defined requirements for hardness;
- impact properties lower than -20 °C;

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- c) preheating for welding higher than 50 °C;
- d) controlled heat input;
- e) any post-weld heat-treatments.

The use of this document may also be restricted by an application standard or a specification.

## 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 4063, *Welding and allied processes — Nomenclature of processes and reference numbers*

ISO 15607:2019, *Specification and qualification of welding procedures for metallic materials — General rules*

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

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

EN 14532-1:2015, *Welding consumables — Test methods and quality requirements — Part 1: Primary methods and conformity assessment of consumables for steel, nickel and nickel alloys*

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## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 25901(all parts) and the following apply.

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 <https://www.electropedia.org/>

### 3.1 tested welding consumable

consumable or consumable combination tested in accordance with EN 14532-1:2015 or equal. If EN 14532-1 is not used for verification, the applied standards shall be documented.

## 4 Preliminary welding procedure specifications (pWPS)

The qualification of a welding procedure based on tested welding consumables shall be based on a pWPS according to ISO 15609-1 or ISO 15609-2. This pWPS shall specify the range for all the relevant parameters.

## 5 Qualification of the welding procedure

The essential items for the qualification are:

- a) specifications of parent material(s) to be used;