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Specification and qualification of welding procedures for metallic materials - Qualification based on a pre-production welding test (ISO 15613:2025)

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. 01/26

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EN ISO 15613

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ICS 25.160.10 Supersedes EN ISO 15613:2004

English Version

Specification and qualification of welding procedures for metallic materials - Qualification based on a pre-production welding test (ISO 15613:2025)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Qualification sur la base d'un assemblage soudé de préproduction (ISO 15613:2025)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Qualifizierung aufgrund einer vorgezogenen Arbeitsprüfung (ISO 15613:2025)

This European Standard was approved by CEN on 17 August 2025.

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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

Ref. No. EN ISO 15613:2025 E

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European foreword

This document (EN ISO 15613:2025) 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of an identical text or by endorsement, at the latest by March 2026, and conflicting national standards shall be withdrawn at the latest by March 2026.

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 15613:2004.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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 15613:2025 has been approved by CEN as EN ISO 15613:2025 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2014/68/EU (PED) aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/601 to provide one voluntary means of conforming to Essential Safety Requirements of the New Approach Pressure Equipment Directive 2014/68/EU.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 and application of the edition of the normatively referenced standards as given in Table ZA.2 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Safety Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of the Directive 2014/68/EU (PED)

Essential Requirements of Directive 2014/68/EU (PED)	Clauses of this EN	Remarks/Notes
3.1.2, paragraphs 3, 4 and 5	4, 5, 6, 7, 8, 9 and 10	Permanent joining. For pressure resistant components of pressure equipment in the categories II, III and IV the examiner/examining body is a competent third party.

Table ZA.2 — Normative references from Clause 2 of this document and their corresponding European publications

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 15607	ISO 15607:2019	*Specification and qualification of welding procedures for metallic materials — General rules*	EN ISO 15607:2019
ISO 15609-1	ISO 15609-1:2019	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding*	EN ISO 15609-1:2019
ISO 15609-2	ISO 15609-2:2019	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification —*	EN ISO 15609-1:2019

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		Part 2: Gas welding	
ISO 15609-3	ISO 15609-3:2004	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 3: Electron beam welding*	EN ISO 15609-3:2004
ISO 15609-4	ISO 15609-4:2009	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 4: Laser beam welding*	EN ISO 15609-4:2009
ISO 15609-5	ISO 15609-5:2011	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding*	EN ISO 15609-5:2011
ISO 15609-6	ISO 15609-6:2013	*Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 6: Laser-arc hybrid welding*	EN ISO 15609-6:2013
ISO 15614-1	ISO 15614-1:2017 ISO 15614-1:2017/Amd 1:1019	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*	EN ISO 15614-1:2017 EN ISO 15614-1:2017/A1:2019
ISO 15614-2	ISO 15614-2:2005 ISO 15614-2:2005/Cor 2:2009	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys*	EN ISO 15614-2:2005 EN ISO 15614-2:2005/AC:2009
ISO 15614-3	ISO 15614-3:2008	*Specification and qualification of welding procedures for metallic*	EN ISO 15614-3:2008

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		materials — Welding procedure test — Part 3: Fusion welding of non-alloyed and low-alloyed cast irons	
ISO 15614-5	ISO 15614-5:2004	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 5: Arc welding of titanium, zirconium and their alloys*	EN ISO 15614-5:2004
ISO 15614-6	ISO 15614-6:2006	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 6: Arc and gas welding of copper and its alloys*	EN ISO 15614-6:2006
ISO 15614-8	ISO 15614-8:2016	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 8: Welding of tubes to tube-plate joints*	EN ISO 15614-8:2016
ISO 15614-10	ISO 15614-10:2005	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 10: Hyperbaric dry welding*	EN ISO 15614-10:2005
ISO 15614-11	ISO 15614-11:2002	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 11: Electron and laser beam welding*	EN ISO 15614-11:2002
ISO 15614-12	ISO 15614-12:2021	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection*	EN ISO 15614-12:2021

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		welding	
ISO 15614-13	ISO 15614-13:2021	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 13: Upset (resistance butt) and flash welding*	EN ISO 15614-13:2021
ISO 15614-14	ISO 15614-14:2013	*Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 14: Laser-arc hybrid welding of steels, nickel and nickel alloys*	EN ISO 15614-14:2013
ISO/TR 25901-1	ISO/TR 17671-1:2016	*Welding and allied processes — Vocabulary — Part 1: General terms*	None For applicable standard edition see Column 2
ISO 25901-2	ISO 25901-2:2022	*Welding and allied processes — Vocabulary — Part 2: Health and safety*	EN ISO 25901-2:2023
ISO/TR 25901-4	ISO/TR 25901-4:2016	*Welding and allied processes — Vocabulary — Part 4: Arc welding*	None For applicable standard edition see Column 2

The documents listed in the Column 1 of Table ZA.2, in whole or in part, are normatively referenced in this document, i.e. are indispensable for its application. The achievement of the presumption of conformity is subject to the application of the edition of Standards as listed in Column 4 or, if no European Standard Edition exists, the International Standard Edition given in Column 2 of Table ZA.2.

WARNING 1 Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 Other Union legislation may be applicable to the products falling within the scope of this standard.

International Standard

ISO 15613

Specification and qualification of welding procedures for metallic materials — Qualification based on a pre-production welding test

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques — Qualification sur la base d'un assemblage soudé de préproduction

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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.

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 15613:2004), which has been technically revised.

The main changes are as follows:

— the normative references have been updated and extensively revised;

— all parts of the document related to the changes in normative references have been updated accordingly;

— Tables have been added to Clause 4 and 5 to give the relevant standards for each welding process;

— Clause 5 has been revised to clarify the intent;

— the text of Clause 7 has been revised and refers to the standards in Table 2. All testing information has been deleted to avoid conflict with the relevant parts of the ISO 15614 series;

— the title of 7.2.1 has been updated to reflect the title of ISO 15614-12;

— Clauses 8 and 10 have been 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

One of the methods for welding procedure qualification is based on a pre-production welding test as given in ISO 15607.

Qualification based on a pre-production welding test can be used where the shape and dimensions of the standard test pieces do not adequately represent the joint to be welded.

In such cases, one or more special test pieces can be made to simulate the production joint in all essential features, for example dimensions, restraint, heat sink effects and limited access.

This document is one of a number of standards dealing with specification and qualification of welding procedures. Details are given in ISO 15607.

International Standard **ISO 15613:2025(en)**

Specification and qualification of welding procedures for metallic materials — Qualification based on a pre-production welding test

1 Scope

This document specifies how a preliminary welding procedure specification is qualified based on a pre-production welding test.

This document is applicable to arc welding, gas welding, beam welding, resistance welding, stud welding and friction welding of metallic materials.

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 15607, *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 15609-3, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 3: Electron beam welding*

ISO 15609-4, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 4: Laser beam welding*

ISO 15609-5, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding*

ISO 15609-6, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 6: Laser-arc hybrid welding*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO 15614-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys*

ISO 15614-3, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 3: Fusion welding of non-alloyed and low-alloyed cast irons*

ISO 15614-5, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 5: Arc welding of titanium, zirconium and their alloys*

ISO 15614-6, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 6: Arc and gas welding of copper and its alloys*

ISO 15614-8, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 8: Welding of tubes to tube-plate joints*

ISO 15614-10, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 10: Hyperbaric dry welding*

ISO 15614-11, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 11: Electron and laser beam welding*

ISO 15614-12, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection welding*

ISO 15614-13, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 13: Upset (resistance butt) and flash welding*

ISO 15614-14, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 14: Laser-arc hybrid welding of steels, nickel and nickel alloys*

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