ICS 25.160.10 SLOVENSKÁ TECHNICKÁ NORMA Apríl 2026

STN	**Stanovenie a schválenie postupov zvárania kovových materiálov Skúška postupu zvárania Časť 11: Zváranie elektrónovým a laserovým lúčom (ISO 15614-11: 2025)**	**STN EN ISO 15614-11** 05 0311

Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 11: Electron and laser beam welding (ISO 15614-11:2025)

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. 03/26

Obsahuje: EN ISO 15614-11:2025, ISO 15614-11:2025

Oznámením tejto normy sa ruší
STN EN ISO 15614-11 (05 0311) z novembra 2002

142288

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15614-11

November 2025

ICS 25.160.10

Supersedes EN ISO 15614-11:2002

English Version

Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 11: Electron and laser beam welding (ISO 15614-11:2025)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques - Épreuve de qualification d'un mode opératoire de soudage - Partie 11: Soudage par faisceau d'électrons et par faisceau laser (ISO 15614-11:2025)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe - Schweißverfahrensprüfung - Teil 11: Elektronen- und Laserstrahlschweißen (ISO 15614-11:2025)

This European Standard was approved by CEN on 8 August 2025.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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 15614-11:2025 E

Contents

Page

European foreword

This document (EN ISO 15614-11:2025) 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 May 2026, and conflicting national standards shall be withdrawn at the latest by May 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 15614-11:2002.

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 15614-11:2025 has been approved by CEN as EN ISO 15614-11:2025 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	Clauses 5, 6, 7, 8, 9	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 3452-1	ISO 3452-1:2021	*Non-destructive testing — Penetrant testing — Part 1: General principles*	EN ISO 3452-1:2021
ISO 4136	ISO 4136:2022	*Destructive tests on welds in metallic materials — Transverse tensile test*	EN ISO 4136:2022
ISO 5173	ISO 5173:2023	*Destructive tests on welds in metallic materials — Bend tests*	EN ISO 5173:2023
ISO 6947	ISO 6947:2019	Welding and allied processes — Welding positions	EN ISO 6947:2019

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
ISO 9015-2	ISO 9015-2:2016	*Destructive tests on welds in metallic materials — Hardness testing — Part 2: Microhardness testing of welded joints*	EN ISO 9015-2:2016
ISO 13588	ISO 13588:2019	*Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology*	EN ISO 13588:2019
ISO 13919-1	ISO 13919-1:2019	*Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections — Part 1: Steel, nickel, titanium and their alloys*	EN ISO 13919-1:2019
ISO 13919-2	ISO 13919-2:2021	*Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections — Part 2: Aluminium, magnesium and their alloys and pure copper*	EN ISO 13919-2:2021
ISO 15608	ISO 15608:2025	*Welding — Grouping system for metallic materials*	EN ISO 15608:2025
ISO 15609-3:2004	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 15609-4:2009	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 17636-1	ISO 17636-1:2022	*Non-destructive testing of welds — Radiographic testing — Part 1: X- and*	EN ISO 17636-1:2022

Column 1 Reference in Clause 2	Column 2 International Standard Edition	Column 3 Title	Column 4 Corresponding European Standard Edition
		gamma-ray techniques with film	
ISO 17636-2	ISO 17636-2:2022 Corrected version 2023–02	*Non-destructive testing of welds — Radiographic testing — Part 2: X- and gamma-ray techniques with digital detectors*	EN ISO 17636-2:2022
ISO 17637	ISO 17637:2016	*Non-destructive testing of welds — Visual testing of fusion-welded joints*	EN ISO 17637:2016
ISO 17638	ISO 17638:2016	*Non-destructive testing of welds — Magnetic particle testing*	EN ISO 17638:2016
ISO 17639	ISO 17639:2022	*Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds*	EN ISO 17639:2022
ISO 17640	ISO 17640:2018	*Non-destructive testing of welds — Ultrasonic testing — Techniques, testing levels, and assessment*	EN ISO 17640:2018
ISO 20601	ISO 20601:2018	*Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology for thin-walled steel components*	EN ISO 20601:2018
ISO 22826	ISO 22826:2005	*Destructive tests on welds in metallic materials — Hardness testing of narrow joints welded by laser and electron beam (Vickers and Knoop hardness tests)*	EN ISO 22826:2021
ISO/TR 25901-1	ISO/TR 25901-1:2016	*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 25901-3	ISO/TR 25901-3:2016	*Welding and allied processes — Vocabulary — Part 3: Welding processes*	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 product(s) falling within the scope of this standard.

International Standard

ISO 15614-11

Specification and qualification of welding procedures for metallic materials — Welding procedure test —

Part 11: Electron and laser beam welding

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques — Épreuve de qualification d'un mode opératoire de soudage —

Partie 11: Soudage par faisceau d'électrons et par faisceau laser

Second edition
2025-10

Reference number
ISO 15614-11:2025(en)

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

Published in Switzerland

Contents

Page

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 15614-11:2002), which has been technically revised.

The main changes are as follows:

— normative references updated and ISO 15607 moved to Bibliography;

— acceptance level changed to quality level in accordance with the ISO 13919-1 and ISO 13919-2;

— terminology aligned with that used in other parts of the ISO 15614 series, where appropriate;

— figures updated and corrected, including symbols and keys;

— Tables 1 to 4 revised;

— 6.2 reformatted and revised;

— Clause 7 revised.

A list of all parts in the ISO 15614 series can be found on the ISO website.

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

All new welding procedure tests are intended to be carried out in accordance with this document. However, this document does not invalidate previous welding procedure tests made to former national standards or specifications or previous editions of this document.

Where additional tests have to be carried out to make a qualification technically equivalent, these should be done on a test piece which is made in accordance with this document.

Specification and qualification of WPSs that were made in accordance with previous editions of this document can be used for any application for which the current edition is specified. In this case, the ranges of qualification of previous editions remain applicable.

It is possible to create a new welding procedure qualification record (WPQR) range of qualification according to this edition based on an existing qualified WPQR, provided the technical intent of the testing requirements of this document have been satisfied.

International Standard **ISO 15614-11:2025(en)**

Specification and qualification of welding procedures for metallic materials — Welding procedure test —

Part 11: Electron and laser beam welding

1 Scope

This document specifies requirements for qualification testing of welding procedure specifications (WPSs) for electron or laser beam welding.

This document applies to metallic materials, irrespective of the shape of the parts, their thicknesses, the manufacturing method (e.g. rolling, forging, casting, sintering) or their heat treatment. It covers both the production of new parts and repair work.

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 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*

ISO 4136, *Destructive tests on welds in metallic materials — Transverse tensile test*

ISO 5173, *Destructive tests on welds in metallic materials — Bend tests*

ISO 6947, *Welding and allied processes — Welding positions*

ISO 9015-2, *Destructive tests on welds in metallic materials — Hardness testing — Part 2: Microhardness testing of welded joints*

ISO 13588, *Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology*

ISO 13919-1, *Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections — Part 1: Steel, nickel, titanium and their alloys*

ISO 13919-2, *Electron and laser-beam welded joints — Requirements and recommendations on quality levels for imperfections — Part 2: Aluminium, magnesium and their alloys and pure copper*

ISO/DIS 15608[1)], *Welding — Grouping system for metallic materials*

ISO 15609-3:2004, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 3: Electron beam welding*

ISO 15609-4:2009, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 4: Laser beam welding*

ISO 17636-1, *Non-destructive testing of welds — Radiographic testing — Part 1: X- and gamma-ray techniques with film*

1) Under preparation. Stage at the time of publication: ISO/DIS 15608:2025.

ISO 17636-2, *Non-destructive testing of welds — Radiographic testing — Part 2: X- and gamma-ray techniques with digital detectors*

ISO 17637, *Non-destructive testing of welds — Visual testing of fusion-welded joints*

ISO 17638, *Non-destructive testing of welds — Magnetic particle testing*

ISO 17639, *Destructive tests on welds in metallic materials — Macroscopic and microscopic examination of welds*

ISO 17640, *Non-destructive testing of welds — Ultrasonic testing — Techniques, testing levels, and assessment*

ISO 20601, *Non-destructive testing of welds — Ultrasonic testing — Use of automated phased array technology for thin-walled steel components*

ISO 22826, *Destructive tests on welds in metallic materials — Hardness testing of narrow joints welded by laser and electron beam (Vickers and Knoop hardness tests)*

ISO/TR 25901-1, *Welding and allied processes — Vocabulary — Part 1: General terms*

ISO 25901-2, *Welding and allied processes — Vocabulary — Part 2: Health and safety*

ISO/TR 25901-3, *Welding and allied processes — Vocabulary — Part 3: Welding processes*