

METALLIDE KEEVITUSPROTSEDUURIDE  
SPETSIFITSEERIMINE JA KVALIFITSEERIMINE.  
KEEVITUSPROTSEDUURI KATSE. OSA 7:  
PINDEKEEVITUS

Specification and qualification of welding procedures  
for metallic materials - Welding procedure test - Part 7:  
Overlay welding (ISO 15614-7:2016)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 15614-7:2016 sisaldab Euroopa standardi EN ISO 15614-7:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 15614-7:2016 consists of the English text of the European standard EN ISO 15614-7:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 26.10.2016.	Date of Availability of the European standard is 26.10.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

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English Version

Specification and qualification of welding procedures for  
metallic materials - Welding procedure test - Part 7:  
Overlay welding (ISO 15614-7:2016)

Descriptif et qualification d'un mode opératoire de  
soudage pour les matériaux métalliques - Épreuve de  
qualification d'un mode opératoire de soudage - Partie  
7: Rechargement par soudage (ISO 15614-7:2016)

Anforderung und Qualifizierung von Schweißverfahren  
für metallische Werkstoffe -  
Schweißverfahrensprüfung - Teil 7: Auftragschweißen  
(ISO 15614-7:2016)

This European Standard was approved by CEN on 11 September 2016.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## European foreword

This document (EN ISO 15614-7:2016) 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 April 2017, and conflicting national standards shall be withdrawn at the latest by April 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 15614-7:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 15614-7:2016 has been approved by CEN as EN ISO 15614-7:2016 without any modification.

## Annex ZA (informative)

### Relationship between this part of ISO 15614 and the Essential Requirements of EU Directive 2014/68/EU

This part of ISO 15614 has been prepared under a mandate given to CEN by the European Commission to provide a means of conforming to Essential Requirements of the New Approach Directive 2014/68/EU

Once this part of ISO 15614 is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this part of ISO 15614 given in Table ZA.1 confers, within the limits of the scope of this part of ISO 15614, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this part of ISO 15614 and Directive 2014/68/EU**

Essential requirements (ERs) of Directive 2014/68/EU	Clause(s)/subclause(s) of this part of ISO 15614	Qualifying remarks/notes
Annex I, 3.1.2	Clauses 4 to 9	Permanent joining

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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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](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 on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

The committee responsible for this document is 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 15614-7:2007), which has been technically revised.

ISO 15614 consists of the following parts, under the general title *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*
- *Part 2: Arc welding of aluminium and its alloys*
- *Part 3: Fusion welding of non-alloyed and low-alloyed cast irons*
- *Part 4: Finishing welding of aluminium castings*
- *Part 5: Arc welding of titanium, zirconium and their alloys*
- *Part 6: Arc and gas welding of copper and its alloys*
- *Part 7: Overlay welding*
- *Part 8: Welding of tubes to tube-plate joints*
- *Part 10: Hyperbaric dry welding*
- *Part 11: Electron and laser beam welding*
- *Part 12: Spot, seam and projection welding*
- *Part 13: Upset (resistance butt) and flash welding*
- *Part 14: Laser-arc hybrid welding of steels, nickel and nickel alloys*



Requests for official interpretations of any aspect of this part of ISO 15614 should be directed to the secretariat of ISO/TC 44/SC 10 via your national standards body, a complete listing which can be found at [www.iso.org](http://www.iso.org).

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## Introduction

This part of ISO 15614 is one of a series of International Standards, the details of which are given in ISO 15607:2003, Annex A.

All new welding procedure tests are intended to be carried out in accordance with this edition of ISO 15614-7 from the date of its publication. However, qualifications performed in accordance with the previous editions of this part of ISO 15614 are still valid and it is not considered necessary to perform additional tests to fulfil its requirements for any application with reference to previous editions. Nevertheless, in order to comply with the requirements of the present edition it may be necessary to perform additional tests for previously qualified WPS.

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

## Part 7: Overlay welding

### 1 Scope

This part of ISO 15614 specifies how a preliminary welding procedure specification for overlay welding is qualified by welding procedure tests.

This part of ISO 15614 defines the conditions for execution of welding procedure tests and the range of qualification for welding procedures for all practical welding operations within the range of variables listed in [Clause 8](#).

This part of ISO 15614 applies to all welding processes suitable for overlay welding. In situations where qualification is carried out on a pre-production test piece, the qualification is performed in accordance with ISO 15613 except that, as far as possible, the testing is according to this part of ISO 15614. Building up and repair of parent metal is covered by ISO 15613 or ISO 15614-1.

This edition of ISO 15614-7 is applicable to all new welding procedure qualification tests. It does not invalidate previous welding procedure tests made in accordance with previous editions of this part of ISO 15614. Where additional tests are required by the present edition, it is only necessary that those additional tests be carried out on a test piece made in accordance with the existing WPS and this part of ISO 15614.

If buttering is used for welding between dissimilar materials, the welding procedure is qualified in accordance with ISO 15614-1. This buttering may be required for weld combining different material structure or properties, e.g. joining martensitic steels or ferritic steels with austenitic steels.

Additional tests may be required by application standards.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 5173, *Destructive tests on welds in metallic materials — Bend tests*

ISO 9015-1, *Destructive tests on welds in metallic materials — Hardness testing — Part 1: Hardness test on arc welded joints*

ISO 13916, *Welding — Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature*

ISO 14174, *Welding consumables — Fluxes for submerged arc welding and electroslag welding — Classification*

ISO 14175, *Welding consumables — Gases and gas mixtures for fusion welding and allied processes*

ISO 15607:2003, *Specification and qualification of welding procedures for metallic materials — General rules*