

**KEEVITUSPERSONAL. KEEVITUSOPERAATORITE JA
KEEVITUSSEADISTAJATE KVALIFITSEERIMINE
METALSETE MATERJALIDE MEHHANISEERITUD JA
AUTOMAATKEEVITAMISEL**

**Welding personnel - Qualification testing of welding
operators and weld setters for mechanized and
automatic welding of metallic materials (ISO
14732:2013)**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 14732:2013 sisaldab Euroopa standardi EN ISO 14732:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14732:2013 consists of the English text of the European standard EN ISO 14732:2013.
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 07.08.2013.	Date of Availability of the European standard is 07.08.2013.
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.

ICS 03.100.30, 25.160.01

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Welding personnel - Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials (ISO 14732:2013)

Personnel en soudage - Épreuve de qualification des
opérateurs soudeurs et des régleurs en soudage pour le
soudage mécanisé et le soudage automatique des
matériaux métalliques (ISO 14732:2013)

Schweißpersonal - Prüfung von Bedienern und Einrichtern
zum mechanischen und automatischen Schweißen von
metallischen Werkstoffen (ISO 14732:2013)

This European Standard was approved by CEN on 7 March 2013.

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

Foreword

This document (EN ISO 14732:2013) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 "Welding" 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 February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

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 1418:1997.

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 14732:2013 has been approved by CEN as EN ISO 14732:2013 without any modification.

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Qualification	3
4.1 Methods of qualification.....	3
4.2 Essential variables and the range of qualification.....	4
5 Period of validity	5
5.1 Initial qualification.....	5
5.2 Confirmation of validity.....	5
5.3 Revalidation of qualification.....	5
5.4 Revocation of qualification.....	5
6 Certificate	6
7 Documentation	6
Annex A (normative) Functional knowledge appropriate to the welding unit	7
Annex B (informative) Knowledge of welding technology	8
Annex C (informative) Qualification test certificate for welding operators or weld setters	12
Bibliography	14

Introduction

This International Standard is intended to provide the basis for the mutual recognition by examining bodies of qualification related to the competence of welding operators and weld setters in the various fields of application. Tests shall be carried out in accordance with this International Standard unless more severe tests are specified by the relevant application standard, when these shall be applied.

The welding operator's or weld setter's ability and job knowledge continue to be approved only if the welding operators or weld setters are working with reasonable continuity on welding work within the extent of qualification. However, a functional knowledge test is mandatory.

It is presumed that the welding operator or weld setter has received training or has industrial practice within the range of qualification.

All new qualifications are to be in accordance with this International Standard from the date of issue.

At the end of its period of validity, the existing and valid qualification testing of welding operators and weld setters in accordance with the requirements of a national standard may be revalidated in accordance with this International Standard. The new range of qualification will be interpreted in accordance with the requirements of this International Standard.

Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials

1 Scope

This International Standard specifies requirements for qualification of welding operators and also weld setters for mechanized and automatic welding.

This International Standard does not apply to personnel exclusively performing loading or unloading of the automatic welding unit.

This International Standard is applicable when qualification testing of welding operators and weld setters is required by the contract or by the application standard.

The requirements for testing of stud welding operators and setters are given in ISO 14555. The qualification and revalidation is in accordance with this International Standard.

[Annex A](#) dealing with functional knowledge forms an integral part of this International Standard. [Annex B](#) dealing with welding technical knowledge, [Annex C](#) outlining the qualification test certificate and the Bibliography are informative.

2 Normative references

The following referenced documents are indispensable for the application 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 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements*

ISO 3834-3, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements*

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

ISO 9606-1, *Qualification testing of welders — Fusion welding — Part 1: Steels*

ISO 9606-2, *Qualification test of welders — Fusion welding — Part 2: Aluminium and aluminium alloys*

ISO 9606-3, *Approval testing of welders — Fusion welding — Part 3: Copper and copper alloys*

ISO 9606-4, *Approval testing of welders — Fusion welding — Part 4: Nickel and nickel alloys*

ISO 9606-5, *Approval testing of welders — Fusion welding — Part 5: Titanium and titanium alloys, zirconium and zirconium alloys*

ISO 14555, *Welding — Arc stud welding of metallic materials*

ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc 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 15613, *Specification and qualification of welding procedures for metallic materials — Qualification based on pre-production welding test*

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 15614-5, *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 15614-7, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 7: Overlay welding*

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 automatic welding

welding in which all operations are performed without welding operator intervention during the process

Note 1 to entry: Manual adjustment of welding variables by the welding operator during welding is not possible.

3.2 mechanized welding

welding where the required welding conditions are maintained by mechanical or electronic means but may be manually varied during the process

3.3 pre-production welding test

welding test having the same function as a welding procedure test, but based on a non-standard test piece, representative of the production conditions

3.4 production test

welding test carried out in the production environment with the welding unit, on actual products or on simplified test pieces, before production or during an interruption in normal production

3.5 production sample testing

testing of actual welded products sampled from a continuous production