

**Metallide keevitusprotseduuride
spetsifitseerimine ja atesteerimine.
Keevitusprotseduuri katse. Osa 5:
Titaaniumi, tsirkooniumi ja nende sulamite
kaarkeevitus (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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 15614-5:2004 sisaldab Euroopa standardi EN ISO 15614-5:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 27.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 15614-5:2004 consists of the English text of the European standard EN ISO 15614-5:2004. This document is endorsed on 27.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This standard is part of a series of standards, details of this series are given in prEN ISO 15607:2000, annex A. This standard specifies how a preliminary welding procedure specification is qualified by welding procedure tests. This standard defines the conditions for the 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. Tests shall be carried out in accordance with this standard. Additional tests may be required by application standards.	Scope: This standard is part of a series of standards, details of this series are given in prEN ISO 15607:2000, annex A. This standard specifies how a preliminary welding procedure specification is qualified by welding procedure tests. This standard defines the conditions for the 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. Tests shall be carried out in accordance with this standard. Additional tests may be required by application standards.
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Võtmesõnad:

English version

Specification and qualification of welding procedures for metallic materials

Welding procedure test

Part 5: Arc welding of titanium, zirconium and their alloys
(ISO 15614-5 : 2004)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques – Epreuve de qualification d'un mode opératoire de soudage – Partie 5: Soudage à l'arc sur titane, zirconium et leurs alliages (ISO 15614-5 : 2004)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe – Schweißverfahrensprüfung – Teil 5: Lichtbogenschweißen von Titan, Zirkonium und ihren Legierungen (ISO 15614-5 : 2004)

This European Standard was approved by CEN on 2003-11-03.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This document (EN ISO 15614-5:2004) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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 September 2004, and conflicting national standards shall be withdrawn at the latest by September 2004.

Annex A is informative. Annex ZA is normative.

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).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

All new welding procedure tests are to be in accordance with this standard from the date of its issue.

However, this standard does not invalidate previous welding procedure tests made to former national standards or specifications.

Where additional tests have to be carried out to make the qualification technically equivalent, it is only necessary to do the additional tests on a test piece which should be made in accordance with this standard.

1 Scope

This standard is part of a series of standards, details of this series are given in prEN ISO 15607:2000, annex A.

This standard specifies how a preliminary welding procedure specification is qualified by welding procedure tests.

This standard defines the conditions for the 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.

Tests shall be carried out in accordance with this standard. Additional tests may be required by application standards.

This standard applies to the arc welding of titanium, zirconium and their alloys in all product forms.

Arc welding is covered by the following processes in accordance with EN ISO 4063.

131 - metal inert gas welding, MIG welding

141 - tungsten inert gas welding, TIG welding

15 – plasma arc welding

The principles of this standard may be applied to other fusion welding processes.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 439, *Welding consumables – Shielding gases for arc welding and cutting.*

EN 571-1, *Non destructive testing – Penetrant testing – Part 1: General principles.*

EN 895, *Destructive tests on welds in metallic materials – Transverse tensile test.*

EN 910, *Destructive tests on welds in metallic materials – Bend tests.*

EN 970, *Non-destructive examination of fusion welds – Visual examination.*

EN 1321, *Destructive tests on welds in metallic materials - Macroscopic and microscopic examination of welds.*

EN 1418, *Welding personnel – Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials.*

EN 1435, *Non-destructive examination of welds – Radiographic examination of welded joints.*

EN ISO 5817, *Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections (ISO 5817:2003).*

EN ISO 6947, *Welds – Working positions – Definitions of angles of slope and rotation. (ISO 6947:1993).*

EN ISO 9606-5, *Approval testing of welders - Fusion welding - Part 5: Titanium and titanium alloys, zirconium and zirconium alloys (ISO 9606-5:2000).*

prEN ISO 15607:2000, *Specification and approval of welding procedures for metallic materials – General rules. (ISO/DIS 15607:2000).*