

**Metallide keevitusprotseduuride
spetsifitseerimine ja atesteerimine.
Keevitusprotseduuri katse. Osa 1: Teraste
gaas- ja kaarkeevitus ning nikli ja
niklisulamite kaarkeevitus (ISO 15614-
1:2004)**

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 15614-1:2004)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 15614-1:2004 sisaldab Euroopa standardi EN ISO 15614-1:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 23.09.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 15614-1:2004 consists of the English text of the European standard EN ISO 15614-1:2004. This document is endorsed on 23.09.2004 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 European Standard is a part of a series of standards, details of this series are given in EN ISO 15607:2003, annex A. This standard specifies how a preliminary welding procedure specification is qualified based on pre-production welding tests. The principles of this standard may be applied to other welding processes. This standard is applicable to arc welding, gas welding, beam welding, resistance welding, stud welding and friction welding of metallic materials. The use of this standard can be restricted by an application standard or specification.	Scope: This European Standard is a part of a series of standards, details of this series are given in EN ISO 15607:2003, annex A. This standard specifies how a preliminary welding procedure specification is qualified based on pre-production welding tests. The principles of this standard may be applied to other welding processes. This standard is applicable to arc welding, gas welding, beam welding, resistance welding, stud welding and friction welding of metallic materials. The use of this standard can be restricted by an application standard or specification.
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English version

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 15614-1 : 2004)

Descriptif et qualification d'un mode opératoire de soudage pour les matériaux métalliques – Epreuve de qualification d'un mode opératoire de soudage – Partie 1: Soudage à l'arc et aux gaz des aciers et soudage à l'arc des nickels et alliages de nickel (ISO 15614-1 : 2004)

Anforderung und Qualifizierung von Schweißverfahren für metallische Werkstoffe – Schweißverfahrensprüfung – Teil 1: Lichtbogen- und Gas-schweißen von Stählen und Lichtbogenschweißen von Nickel und Nickellegierungen (ISO 15614-1 : 2004)

This European Standard was approved by CEN on 2003-05-07.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

Management Centre: rue de Stassart 36, B-1050 Brussels

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Foreword

This document 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 December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

This document replaces EN 288-3:1992.

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 Annexes ZB and ZC.

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 carried out in accordance with this standard from the date of its issue.

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

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 European Standard is part of a series of standards, details of this series are given in EN ISO 15607:2003, 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 and gas welding of steels in all product forms and the arc welding of nickel and nickel alloys in all product forms

Arc and gas welding are covered by the following processes in accordance with EN ISO 4063:

111 - manual metal arc welding (metal-arc welding with covered electrode);

114 - self-shielded tubular-cored arc welding;

12 - submerged arc welding;

131 - metal inert gas welding, MIG welding;

135 - metal active gas welding, MAG welding;

136 - tubular-cored metal arc welding with active gas shield;

137 - tubular-cored metal arc welding with inert gas shield;

141 - tungsten inert gas arc welding; TIG welding;

15 - plasma arc welding;

311 - oxy-acetylene welding.

The principles of this European 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 (including amendments).

- EN 287-1, *Qualification testing of welders - Fusion welding - Part 1: Steels*
- EN 439, *Welding consumables – Shielding gases for arc welding and cutting.*
- EN 571-1, *Non destructive testing – Penetrant testing – Part 1: General principles.*
- EN 875, *Destructive tests on welds in metallic materials - Impact tests - Test specimen location, notch orientation and examination.*
- 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 1011-1 *Welding –Recommendations for welding of metallic materials –Part 1: General guidance for arc welding*
- EN 1043-1:1995, *Destructive tests on welds in metallic materials – Hardness testing – Part 1: Hardness test on arc welded joints.*
- EN 1290, *Non-destructive examination of welds - Magnetic particle examination of welds.*
- 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 1714, *Non destructive examination of welds – Ultrasonic examination of welded joints.*
- EN ISO 4063, *Welding and allied processes – Nomenclature of processes and reference numbers (ISO 4063:1998).*
- EN ISO 6947, *Welds - Working positions - Definitions of angles of slope and rotation (ISO 6947:1993).*
- EN ISO 9606-4, *Approval testing of welders – Fusion welding – Part 4: Nickel and nickel alloys. (ISO 9606-4:1999).*
- EN 12062, *Non-destructive examination of welds - General rules for metallic materials.*
- EN ISO 15607:2003, *Specification and qualification of welding procedures for metallic materials - General rules (ISO 15607:2003).*
- CR ISO 15608:2000 , *Welding - Guidelines for a metallic material grouping system (ISO/TR 15608:2000).*
- prEN ISO 15609-1, *Specification and approval of welding procedures for metallic materials – Welding procedure specification – Part 1: Arc welding (ISO/DIS 15609-1:2000).*
- EN ISO 15609-2, *Specification and qualification of welding procedures for metallic materials – Welding procedure specification – Part 2: Gas welding (ISO 15609-2:2001).*
- EN ISO 15613, *Specification and qualification of welding procedure for metallic materials – Qualification based on pre-production welding test (ISO 15613:2003).*
- EN ISO 5817, *Fusion-welded joints in steel, nickel titanium and their alloys (beam welding excluded) - Quality levels for imperfections (ISO 5817:2003).*