KEEVITAMINE. SOOVITUSED METALLMATERJALIDE KEEVITAMISEKS. OSA 3: ROOSTEVABADE TERASTE KAARKEEVITUS

Welding - Recommendations for welding of metallic materials - Part 3: Arc welding of stainless steels

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1011-3:2018 sisaldab Euroopa standardi EN 1011-3:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 1011-3:2018 consists of the English text of the European standard EN 1011-3:2018.
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 05.12.2018.	Date of Availability of the European standard is 05.12.2018.
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.

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English Version

Welding - Recommendations for welding of metallic materials - Part 3: Arc welding of stainless steels

Soudage - Recommandations pour le soudage des matériaux métalliques - Partie 3: Soudage à l'arc des aciers inoxydables

Schweißen - Empfehlungen zum Schweißen metallischer Werkstoffe - Teil 3: Lichtbogenschweißen von nichtrostenden Stählen

This European Standard was approved by CEN on 17 September 2018.

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 1011-3:2018) has been prepared by 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 1011-3:2000.

EN 1011 consists of the following parts, under the general title *Welding — Recommendations for welding of metallic materials*:

— *Part 1: General guidance for arc welding*;

— *Part 2: Arc welding of ferritic steels*;

— *Part 3: Arc welding of stainless steels*;

— *Part 4: Arc welding of aluminium and aluminium alloys*;

— *Part 5: Welding of clad steel*;

— *Part 6: Laser beam welding*;

— *Part 7: Electron beam welding*;

— *Part 8: Welding of cast irons*.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is being issued with several annexes in order that it may be extended to cover the different types of steel which will be produced to all the European steel standards for stainless steels.

When this document is referenced for contractual purposes, the ordering authority should state the need for compliance with the standard and such other annexes as are appropriate.

This document gives general guidance for the satisfactory production and control of welding and details the possible detrimental phenomena which may occur with advice on methods by which they may be avoided. It is generally applicable to all stainless steels and is appropriate regardless of the type of fabrication involved, although the application standard may have additional requirements. Permissible design stresses in welds, methods of testing and acceptance levels are not included because they depend on the service conditions of the fabrication. These details should be obtained from the design specification.

This document contains additional details for fusion welding of stainless steels and should be read in conjunction with the general recommendations in EN 1011-1.

1 Scope

This document gives general recommendations for the fusion welding of stainless steels. Specific details relevant to austenitic, austenitic-ferritic, ferritic and martensitic stainless steels are given in Annexes A to D.

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.

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

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

CEN ISO/TR 15608, *Welding — Guidelines for a metallic materials grouping system (ISO/TR 15608)*

EN ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding (ISO 15609-1)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
passive layer
thin, transparent and tightly adherent film on the surface of stainless steels which protects them against corrosive attack

3.2
stabilized/unstabilized
stabilized steels contain additions of strong carbide/nitride forming elements, (usually titanium or niobium), which limit the formation of chromium carbides/nitrides, allowing the stainless steel to retain its corrosion resistance, particularly around grain boundaries

3.3
ferrite number
number indicating magnetic attraction, relative to a series of reference samples and therefore, proportional to the ferro-magnetic phase content, approximately equal to ferrite (delta ferrite) content over the range 0 % to 10 % but more readily measured