SLOVENSKI STANDARD

SIST EN 13479:2018

01-februar-2018

Nadomešča:

SIST EN 13479:2005

Dodajni materiali za varjenje - Splošni produktni standard za dodajne materiale in praške za talilno varjenje kovinskih materialov

Welding consumables - General product standard for filler metals and fluxes for fusion welding of metallic materials

Schweißzusätze - Allgemeine Produktnorm für Zusätze und Pulver zum Schmelzschweißen von metallischen Werkstoffen

Produits consommables pour le soudage - Norme produit générale pour les métaux d'apport et les flux pour le soudage par fusion de matériaux métalliques

Ta slovenski standard je istoveten z: **EN 13479:2017**

ICS:

25.160.20 Potrošni material pri varjenju Welding consumables

SIST EN 13479:2018 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13479

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ICS 25.160.20

Supersedes EN 13479:2004

English Version

Welding consumables - General product standard for filler metals and fluxes for fusion welding of metallic materials

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This European Standard was approved by CEN on 11 May 2017.

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.

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

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

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Contents

Page

European foreword

This document (EN 13479:2017) 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 December 2017 and conflicting national standards shall be withdrawn at the latest by March 2019.

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 13479:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports basic work requirements of Regulation (EU) 305/2011.

For relationship with EU Regulation 305/2011, see informative Annex ZA, which is an integral part of this document.

In comparison with the previous edition, the following modifications have been made:

— the Introduction has been deleted;

— the normative references have been updated;

— the terms 3.1 (product specification), 3.2 (manufacturer) and 3.3 (deposited metal) have been deleted from Clause 3;

— the entire document, including the Annex ZA, has been editorially revised.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies product characteristics and related test/assessment methods for filler materials (welding consumables as defined in ISO/TR 25901-1) and fluxes to be used for fusion welding of metallic structures or composite metals and concrete structures in construction works.

This European Standard does not cover shielding gases and ceramic backings (as defined in ISO/TR 25901-1).

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.

EN 12536:2000, *Welding consumables - Rods for gas welding of non alloy and creep-resisting steels - Classification*

EN ISO 636:2015, *Welding consumables - Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels - Classification (ISO 636:2015)*

EN ISO 1071:2015, *Welding consumables - Covered electrodes, wires, rods and tubular cored electrodes for fusion welding of cast iron - Classification (ISO 1071:2015)*

EN ISO 2560:2009, *Welding consumables - Covered electrodes for manual metal arc welding of non-alloy and fine grain steels - Classification (ISO 2560:2009)*

EN ISO 3580:2011, *Welding consumables - Covered electrodes for manual metal arc welding of creep-resisting steels - Classification (ISO 3580:2010)*

EN ISO 3581:2016, *Welding consumables - Covered electrodes for manual metal arc welding of stainless and heat-resisting steels - Classification (ISO 3581:2016)*

EN ISO 14171:2016, *Welding consumables - Solid wire electrodes, tubular cored electrodes and electrode/flux combinations for submerged arc welding of non alloy and fine grain steels - Classification (ISO 14171:2016)*

EN ISO 14174:2012, *Welding consumables - Fluxes for submerged arc welding and electroslag welding - Classification (ISO 14174:2012)*

EN ISO 14341:2011, *Welding consumables - Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels - Classification (ISO 14341:2010)*

EN ISO 14343:2017, *Welding consumables - Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels - Classification (ISO 14343:2017)*

EN ISO 16834:2012, *Welding consumables - Wire electrodes, wires, rods and deposits for gas shielded arc welding of high strength steels - Classification (ISO 16834:2012)*

EN ISO 17632:2015, *Welding consumables - Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels - Classification (ISO 17632:2015)*

EN ISO 17633:2010, *Welding consumables - Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels - Classification (ISO 17633:2010)*

EN ISO 17634:2015, *Welding consumables - Tubular cored electrodes for gas shielded metal arc welding of creep-resisting steels - Classification (ISO 17634:2015)*

EN ISO 18273:2015, *Welding consumables - Wire electrodes, wires and rods for welding of aluminium and aluminium alloys - Classification (ISO 18273:2015)*

EN ISO 18275:2012, *Welding consumables - Covered electrodes for manual metal arc welding of high-strength steels - Classification (ISO 18275:2011)*

EN ISO 18276:2017, *Welding consumables - Tubular cored electrodes for gas-shielded and non-gas-shielded metal arc welding of high strength steels - Classification (ISO 18276:2017)*

EN ISO 21952:2012, *Welding consumables - Wire electrodes, wires, rods and deposits for gas shielded arc welding of creep-resisting steels - Classification (ISO 21952:2012)*

EN ISO 24598:2012, *Welding consumables - Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of creep-resisting steels - Classification (ISO 24598:2012)*

EN ISO 26304:2011, *Welding consumables - Solid wire electrodes, tubular cored electrodes and electrode-flux combinations for submerged arc welding of high strength steels - Classification (ISO 26304:2011)*

CEN/TR 10261, *Iron and steel - European standards for the determination of chemical composition*

ISO/TR 25901-1:2016, *Welding and allied processes - Vocabulary - Part 1: General terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 25901-1:2016 apply.

4 Product characteristics

Chemical composition in % (m/m) for the following welding consumables shall be in accordance with the requirements for the applicable type of product as listed below:

Covered electrodes for manual metal arc welding:

— *of cast iron:* EN ISO 1071:2015, Table 2 or 3;

— *of non-alloy and fine grain steels:* EN ISO 2560:2009, Table 3A or 3B;

— *of creep-resisting steels:* EN ISO 3580:2011, Table1;

— *of stainless and heat-resisting steels:* EN ISO 3581:2016, Table1;

— *of high-strength steels:* EN ISO 18275:2012, Table 3A or 3B.

Solid wires/rods/strips:

— *for tungsten inert gas welding of non-alloy and fine-grain steels:* EN ISO 636:2015, Table 3A or 3B;

— *for fusion welding of cast iron:* EN ISO 1071:2015, Table 2 or 3;

— *for gas welding of non alloy and creep-resisting steels:* EN 12536:2000, Table1;

— *for submerged arc welding of non alloy and fine grain steels:* EN ISO 14171:2016, Table 4A or, 4B, 5A or 5B;

— *for gas shielded metal arc welding of non alloy and fine grain steels:* EN ISO 14341:2011, Table 3A or 3B;

— *for arc welding of stainless and heat resisting steels:* EN ISO 14343:2017, Table 1;

— *for gas shielded arc welding of high strength steels:* EN ISO 16834:2012, Table 3A or 3B;

— *for welding of aluminium and aluminium alloys:* EN ISO 18273:2015, Table 1;

— *for gas shielded arc welding of creep-resisting steels:* EN ISO 21952:2012, Table 1;

— *for submerged arc welding of creep-resisting steels:* EN ISO 24598:2012, Table 3;

— *for submerged arc welding of high strength steels:* EN ISO 26304:2011, Table 3.

Tubular cored wires:

— *for fusion welding of cast iron:* EN ISO 1071:2015, Table 2 or 3;

— *for submerged arc welding of non alloy and fine grain steels:* EN ISO 14171:2016, Table 4A or 4B, 5A or 5B;

— *for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels:* EN ISO 17632:2015, Table 4A or 4B;

— *for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels:* EN ISO 17633:2010, Table 1A or 1B-1 or 1B-2 or 1B-3 or 1B-4;

— *for gas shielded metal arc welding of creep-resisting steels:* EN ISO 17634:2015, Table 1;

— *for gas-shielded and non-gas-shielded metal arc welding of high-strength steels:* EN ISO 18276:2017, Table 3A or 3B;

— *for submerged arc welding of creep-resisting steels:* EN ISO 24598:2012, Table 3;

— *for submerged arc welding of high strength steels:* EN ISO 26304:2011, Table 3.

Chemical composition in % (m/m) for fluxes shall be in accordance with:

— *for submerged arc welding and electroslag welding:* EN ISO 14174:2012, Table 1.

5 Testing, assessment and sampling methods

The chemical analysis of rods/wires and/or strips, shall be performed on samples of the product or the stock from which it is made. The chemical analysis of fluxes shall be performed on samples of the product. The chemical analysis of covered electrodes and tubular cored electrodes shall be performed on any suitable all-weld metal test specimen.

The chemical analysis shall be carried out using the test method as defined in the appropriate European Standard according to CEN/TR 10261 for the element being analysed.

6 Assessment and verification of constancy of performance - AVCP

6.1 General

The compliance of filler materials and fluxes with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

— determination of the product type;

— factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performance(s).

6.2 Type testing

6.2.1 General

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests (e.g. use of previously existing data, CWFT and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

For the purposes of assessment, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family.

NOTE 1 Products may be grouped in different families for different characteristics.

NOTE 2 Reference to the assessment method standards should be made to allow the selection of a suitable representative sample.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

— at the beginning of the production of a new or modified filler material or flux (unless a member of the same product range), or

— at the beginning of a new or modified method of production (where this may affect the stated properties), or

they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the filler material or flux design, in the raw material, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the filler material or flux manufacturer to ensure that the filler material or flux as a whole is correctly manufactured and have the declared performance values.