



SLOVENSKI STANDARD
SIST EN 14700:2005

01-julij-2005

Dodajni materiali za varjenje - Dodajni materiali za trdo navarjanje

Welding consumables - Welding consumables for hard-facing

Schweißzusätze - Schweißzusätze zum Hartauftragen

Produits consommables de soudage - Produits consommables pour le rechargement dur

Ta slovenski standard je istoveten z: EN 14700:2005

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ICS:

25.160.20 Potrošni material pri varjenju Welding consumables

SIST EN 14700:2005

en

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EUROPEAN STANDARD

EN 14700

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2005

ICS 25.160.20

English version

Welding consumables - Welding consumables for hard-facing

Produits consommables de soudage - Produits
consommables pour le rechargement dur

Schweißzusätze - Schweißzusätze zum Hartauftragen

This European Standard was approved by CEN on 8 April 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

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Foreword

This European Standard (EN 14700:2005) has been prepared by 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of an identical text or by endorsement, at the latest by November 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

This European Standard includes a Bibliography.

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.

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EN 14700:2005 (E)**1 Scope**

This European Standard applies to welding consumables for hard facing. The range of application includes surfaces of new structural components, semi-finished products as well as repair of surfaces of structural components which have to resist to mechanical, chemical, thermal or combined stress.

This European Standard specifies requirements for classification of the consumables based on their chemical composition of the all weld metal of covered electrodes, cored wires, cored rods, cored strips, sintered strips, sintered rods and metal powders and on the chemical composition of solid wires, solid rods, solid strips and cast rods.

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.

EN ISO 544, *Welding consumables — Technical delivery conditions for welding filler materials — Type of product, dimensions, tolerances and markings (ISO 544:2003)*

EN ISO 6847, *Welding consumables — Deposition of a weld metal pad for chemical analysis (ISO 6847:2000)*

EN ISO 14344, *Welding and allied processes — Flux and gas shielded electrical welding processes — Procurement guidelines for consumables (ISO 14344:2002)*

ISO 31-0:1992, *Quantities and units — Part 0: General principles*

3 Classification

[SIST EN 14700:2005](https://standards.iteh.ai/catalog/standards/sist/dbdde4d7-b0b4-4fe9-b507-09600181a2c9/sist-en-14700-2005)

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The classification is divided in two parts:

- a) the first part gives a symbol indicating the product form, see 4.1;
- b) the second part gives a alloy symbol indicating the chemical composition, see Table 2.

4 Symbols and requirements**4.1 Symbol for the product form**

The following symbols for the product forms shall be used (see Table 1).

Table 1 — Symbols for the product form

Symbol	Product form (consumable)
E	covered electrode
S	solid wire and solid rod
T	cored wire and cored rod
R	cast rod
B	solid strip
C	sintered rod, cored strip and sintered strip
P	metal powder

NOTE See also Table A.3.

4.2 Symbol for the chemical composition

The alloy symbols in Table 2 indicate the chemical composition of the all weld metal of covered electrodes, cored wires, cored strips, sintered strips, sintered rods and metal powder or the chemical composition of solid wires, solid rods, solid wires and cast rods.

5 Alloy types, form of supply, requirements and applications

The most usual alloy types are listed in Table 2. Typical application is given in Table A.1. The forms of supply listed in Tables A.2 and A.3 may support the decision making as regards applicable welding processes.

The applications shown in Table A.4 give reference to the suitability of individual alloy types for different kind of requirements and system structures. It can be concluded that other alloy types may also be considered with regard to complex kind of requirements.

6 Chemical composition

The chemical analysis shall be performed on specimens of solid wires, solid rods and solid strips according to EN ISO 6847 respectively or on any suitable all-weld metal specimen and cast rods (covered electrodes, cored wires, cored strips, sintered rods, sintered strips and metal powder). Any analytical technique can be used, but in case of dispute reference shall be made to established published methods.

NOTE See Bibliography.

7 Rounding off procedure

For purposes of determining compliance with the requirements of this European Standard, the actual test values obtained shall be subjected to the rounding-off rules of ISO 31-0:1992, Annex B, Rule A. If the measured values are obtained by equipment calibrated in units other than those of this standard, the measured values shall be converted to the units of this standard before rounding off. If an average value is to be compared to the requirements of this document, rounding off shall be done only after calculating the average. In the case where the testing document cited in the normative references of this European Standard contains instructions for rounding off that conflict with the instructions of this standard, the rounding off requirements of the testing document shall apply. The rounded-off results shall fulfil the requirements of the appropriate table for the classification under test.

EN 14700:2005 (E)**8 Retest**

If any test fails to meet the requirement, that test shall be repeated twice. The results of both retests shall meet the requirement. Specimens for the retest may be taken from the original test sample or from a new test sample. For chemical analysis, retest need be only for those specific elements that failed to meet their test requirement. If the results of one or both retests fail to meet the requirement, the material under test shall be considered as not meeting the requirements of this specification for that classification.

In the event that, during preparation or after completion of any test, it is clearly determined that prescribed or proper procedures were not followed in preparing the sample or test specimen(s), or in conducting the tests, the test shall be considered invalid, without regard to whether the test was actually completed, or whether the test results met, or failed to meet, the requirement. That test shall be repeated, following proper prescribed procedures. In this case, the requirement for doubling the number of test specimens does not apply.

9 Technical delivery conditions

The technical delivery conditions shall meet the requirements in EN ISO 544 and EN ISO 14344. The requirements for cored strips, sintered rods and sintered strips as well as for cast rods and metal powders shall be defined separately.

10 Designation

The designation of the consumables shall follow the principle given in the examples below:

EXAMPLE 1 A solid wire (S) for gas shielded metal arc welding with a chemical composition within the limits for the alloy symbol Fe7 of Table 2 is designated:

Solid wire EN 14700 S Fe7 [SIST EN 14700:2005](https://standards.iteh.ai/catalog/standards/sist/dbdde4d7-b0b4-4fe9-b507-09600181a2c9/sist-en-14700-2005)
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where

- EN 14700 is the standard number;
- S is the product form (see Table 1);
- Fe7 is the alloy symbol (see Table 2).

EXAMPLE 2 A cored wire (T) for gas shielded metal arc welding with a chemical composition within the limits for the alloy symbol Fe9 of Table 2 is designated:

Cored wire EN 14700 T Fe9

where

- EN 14700 is the standard number;
- T is the product form (see Table 1);
- Fe9 is the alloy symbol (see Table 2).

