



SLOVENSKI STANDARD
SIST EN ISO 17633:2006

01-oktober-2006

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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 17633:2004)

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Schweißzusätze - Fülldrahtelektroden und Füllstäbe zum Metall-Lichtbogenschweißen mit oder ohne Gasschutz von nichtrostenden und hitzebeständigen Stählen - Einteilung (ISO 17633:2004) <https://standards.iteh.ai/catalog/standards/sist/f0b805e4-f030-48ec-b7b5-210a275e739e/sist-en-iso-17633-2006>

Produits consommables pour le soudage - Fils et baguettes fourrés pour le soudage a l'arc avec ou sans protection gazeuse des aciers inoxydables et des aciers résistant aux températures élevées - Classification (ISO 17633:2004)

Ta slovenski standard je istoveten z: EN ISO 17633:2006

ICS:

25.160.20 Potrošni material pri varjenju Welding consumables

SIST EN ISO 17633:2006

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 17633

April 2006

ICS 25.160.20

Supersedes EN 12073:1999

English Version

**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
17633:2004)**

Produits consommables pour le soudage - Fils et baguettes
fourrés pour le soudage à l'arc avec ou sans protection
gazeuse des aciers inoxydables et des aciers résistant aux
températures élevées - Classification (ISO 17633:2004)

Schweißzusätze - Fülldrahtelektroden und Füllstäbe zum
Metall-Lichtbogenschweißen mit oder ohne Gasschutz von
nichtrostenden und hitzebeständigen Stählen - Einteilung
(ISO 17633:2004)

This European Standard was approved by CEN on 16 March 2006.

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.

[SIST EN ISO 17633:2006](https://standards.iteh.ai/catalog/standards/sist/0b805c4-f70-48ac-b7b5-17633-2006)

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

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

EN ISO 17633:2006 (E)**Foreword**

The text of ISO 17633:2004 has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17633:2006 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 October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

This document supersedes EN 12073:1999.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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The text of ISO 17633:2004 has been approved by CEN as EN ISO 17633:2006 without any modifications.

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INTERNATIONAL STANDARD

ISO 17633

First edition
2004-07-01

Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification

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*Produits consommables pour le soudage — Fils et baguettes fourrés
pour le soudage à l'arc avec ou sans protection gazeuse des aciers
inoxydables et des aciers résistant aux températures élevées —
Classification*

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ISO 17633:2004(E)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17633 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 3, *Welding consumables*.

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Introduction

This International Standard provides a classification system for tubular cored electrodes and rods for welding stainless steels. It recognizes that there are two somewhat different approaches in the global market, to classifying a given tubular stainless steel welding consumable, and allows for either or both to be used, to suit a particular market need. Application of either type of classification designation (or of both where suitable) identifies a product as classified according to this International Standard.

The classification according to system A is mainly based on EN 12073:1999, *Welding consumables — Tubular cored electrodes for metal arc welding with or without a gas shield of stainless and heat-resisting steels — Classification*. The classification according to system B is mainly based upon standards used around the Pacific Rim.

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 3, via your national standards body, a complete listing of which can be found at www.iso.org.

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Welding consumables — Tubular cored electrodes and rods for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels — Classification

1 Scope

This International Standard specifies requirements for classification of tubular flux and metal cored electrodes and rods, based on the all-weld metal chemical composition, the type of electrode core, shielding gas, welding position and the all-weld metal mechanical properties, in the as welded or heat treated conditions, for gas shielded and non-gas shielded metal arc welding of stainless and heat-resisting steels.

This International Standard is a combined standard providing for classification utilizing a system based upon classification according to nominal composition, or utilizing a system based upon classification according to alloy type.

- 1) Paragraphs and tables which carry the label “classification according to nominal composition” are applicable only to products classified to that system.
- 2) Paragraphs and tables which carry the label “classification according to alloy type” are applicable only to products classified to that system.
- 3) Paragraphs and tables which carry neither label are applicable to products classified according to either or both systems.

It is recognized that the operating characteristics of tubular cored electrodes can be modified by the use of pulsed current, but for the purposes of this International Standard, pulsed current is not permitted for determining the electrode classification.

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.

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

ISO 544, *Welding consumables — Technical delivery conditions for welding filler materials — Type of product, dimensions, tolerances and marking*

ISO 3690, *Welding and allied processes — Determination of hydrogen content in ferritic steel arc weld metal*

ISO 6847, *Welding consumables — Deposition of a weld metal pad for chemical analysis*

ISO 6947:1990, *Welds — Working positions — Definitions of angles of slope and rotation*

ISO 13916, *Welding — Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature*

ISO 14175:1997, *Welding consumables — Shielding gases for arc welding and cutting*

ISO 17633:2004(E)

ISO 14344, *Welding and allied processes — Flux and gas shielded electrical welding processes — Procurement guidelines for consumables*

ISO 15792-1:2000, *Welding consumables — Test methods — Part 1: Test methods for all-weld metal test specimens in steel, nickel and nickel alloys*

ISO 15792-3, *Welding Consumables — Test methods — Part 3: Classification testing of positional capacity and root penetration of welding consumables in a fillet weld*

3 Classification

Classification designations are based upon two approaches to indicating the chemical composition of the all-weld metal deposit obtained with a given electrode or rod.

The “nominal composition” approach uses designation components indicating directly the nominal levels of certain alloying elements, given in a particular order, and some symbols for low but significant levels of other elements, whose levels are not conveniently expressed as integers. The “alloy type” approach uses tradition-based three or four-digit designations for alloy families, and an occasional additional character or characters for compositional modifications of each original alloy within the family. The two designation approaches include additional designators for all other classification requirements, but not entirely the same classification requirements, as will be clear from the following.

In most cases, a given commercial product can be classified in both systems. Then either or both classification designations can be used for the product.

3A Classification according to nominal composition**3B Classification according to alloy type**

The classification is divided into five parts:

- 1) The first part gives a symbol indicating the product/process to be identified (see 4.1A);
- 2) The second part gives a symbol indicating the chemical composition of the all-weld metal (see Table 1A);
- 3) The third part gives a symbol indicating the type of electrode core (see Table 3A);
- 4) The fourth part gives a symbol indicating the shielding gas (see 4.4);
- 5) The fifth part gives a symbol indicating the welding position (see Table 4A).

The classification is divided into five parts:

- 1) The first part gives a symbol indicating the tubular cored electrode and rod (see 4.1B);
- 2) The second part gives a symbol indicating the chemical composition of the all-weld metal (see Table 1B);
- 3) The third part gives a symbol indicating the type of tubular cored electrode or rod (see Table 3B);
- 4) The fourth part gives a symbol indicating the shielding gas (see 4.4);
- 5) The fifth part gives a symbol indicating the welding position (see Table 4B).

In order to promote the use of this International Standard, the classification is split into two sections:

a) Compulsory section

This section includes the symbols for the type of product, the chemical composition of all-weld metal, the type of electrode core and the shielding gas, viz, the symbols defined in Clause 4.

This section includes the symbols for the type of product, the chemical composition of all-weld metal, the type of electrode core, the shielding gas and the welding position, viz, the symbols defined in Clause 4.