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**Welding consumables — Technical  
delivery conditions for filler materials  
and fluxes — Type of product,  
dimensions, tolerances and markings**

*Produits consommables pour le soudage — Conditions techniques  
de livraison des produits d'apport et des flux — Type de produits,  
dimensions, tolérances et marquage*

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## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <http://www.iso.org/directives>).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see <http://www.iso.org/patents>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: <http://www.iso.org/iso/foreword.html>.

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

This fifth edition cancels and replaces the fourth edition (ISO 544:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

- in [5.4](#), clarification that fluxes can be obtainable in different particle size distributions is given (not all fluxes are available in multiple particle size distributions);
- [Table 2](#) has been changed;
- in [Table 4](#), a new spool type B400 has been added;
- [8.1.2](#) has been revised to include reels and rims
- [8.2](#), bullet number 5 has been revised.

Requests for official interpretations of any aspect of this document should be directed to the Secretariat of ISO/TC 44/SC 3 via your national standards body. A complete listing of these bodies can be found at <http://www.iso.org>.

# Welding consumables — Technical delivery conditions for filler materials and fluxes — Type of product, dimensions, tolerances and markings

## 1 Scope

This document specifies technical delivery conditions for filler materials and fluxes for fusion welding.

This document does not apply to other auxiliary materials such as shielding gases.

## 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.

ISO 14174, *Welding consumables — Fluxes for submerged arc welding and electroslag welding — Classification*

ISO 14344, *Welding consumables — Procurement of filler materials and fluxes*

ISO 80000-1:2009, *Quantities and units — Part 1: General*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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

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

## 4 Product type and welding process

The types of products covered by this document and the welding process(es) in which they are used are listed in [Table 1](#).

NOTE The corresponding reference numbers for each welding process in accordance with ISO 4063 are given for information.

## 5 Dimensions and tolerances

### 5.1 Solid wires and solid wire electrodes, tubular cored wires and tubular cored electrodes, solid and tubular cored rods and covered electrodes

Dimensions and tolerances for solid wires and solid wire electrodes, tubular cored wires and tubular cored electrodes, solid and tubular cored rods and covered electrodes are given in [Table 2](#).

**Table 1 — Product type and welding process**

Product type	Welding process(es) <sup>a</sup>
Cored strip electrode	EG, ES, S
Covered electrode	E
Solid rod	W, O, P
Solid strip electrode	ES, S
Solid wire	W, P, L, EB
Solid wire electrode	EG, ES, G, S
Tubular cored rod	W, O, P
Tubular cored wire	L, W
Tubular cored electrode	EG, ES, P, S, T
Thin foil	L, EB
<p><sup>a</sup> The corresponding reference numbers for each welding process in accordance with ISO 4063 are:</p> <ul style="list-style-type: none"> <li>— E Manual metal arc welding (111);</li> <li>— EB Electron beam welding (51);</li> <li>— EG Electrode gas welding (73);</li> <li>— ES Electroslag welding (72);</li> <li>— G MIG/MAG welding with solid wire electrode (131, 135);</li> <li>— L Laser welding (52);</li> <li>— O Oxyfuel gas welding (31);</li> <li>— P Plasma arc welding (15);</li> <li>— S Submerged arc welding (12);</li> <li>— T Metal arc welding with tubular cored electrode with a gas shield (132, 133, 136 and 138) or without a gas shield (114);</li> <li>— W Gas tungsten arc welding (14).</li> </ul>	

## 5.2 Solid strip electrodes

Dimensions and tolerances for solid strip electrodes are given in [Table 3](#).

## 5.3 Cored strip electrodes and thin foils

Dimensions and tolerances for cored strip electrodes and thin foils shall be in accordance with the relevant application standard.