BS EN ISO 14343:2025

BSI Standards Publication

Welding consumables — Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification

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National foreword

This British Standard is the UK implementation of EN ISO 14343:2025. It is identical to ISO 14343:2025. It supersedes BS EN ISO 14343:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/39, Welding consumables.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Welding consumables - Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels - Classification (ISO 14343:2025)

Produits consommables pour le soudage - Fils-électrodes, électrodes en feuillard, fils d'apport et baguettes de soudage pour le soudage à l'arc des aciers inoxydables et des aciers résistant aux températures élevées - Classification (ISO 14343:2025)

Schweißzusätze - Drahtelektroden, Bandelektroden, Drähte und Stäbe zum Lichtbogenschweißen von nichtrostenden und hitzebeständigen Stählen - Einteilung (ISO 14343:2025)

This European Standard was approved by CEN on 18 August 2024.

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European foreword

This document (EN ISO 14343:2025) has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by July 2025, and conflicting national standards shall be withdrawn at the latest by July 2025.

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 ISO 14343:2017.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 14343:2025 has been approved by CEN as EN ISO 14343:2025 without any modification.

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Document Sharing Hub

Full document details: BS EN ISO 14343:2025

Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Classification ... **2**
4.1 General ... 2
4.2 Symbols for products/processes ... 2
4.2.1 Classification by nominal composition – system A ... 2
4.2.2 Classification by alloy type – system B ... 2
4.3 Symbols for chemical composition ... 3
5 Properties of all-weld metal ... **13**
6 Chemical analysis ... **13**
7 Rounding procedure ... **13**
8 Retesting ... **13**
9 Technical delivery conditions ... **13**
10 Examples of designation ... **13**
Annex A (informative) **Expected minimum tensile properties of all-weld metal** ... **16**
Bibliography ... **20**

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Document Sharing Hub
Full document details: BS EN ISO 14343:2025

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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 3, *Welding consumables*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 14343:2017), which has been technically revised.

The main changes are as follows:

— addition of 19 L Mo Nb Si Ti, 18 L Ti for the alloy type 439, 27 7 5 N L and 29 8 2 N L in Table 1 and Table A.1;

— adjustment of chemical compositions in Table 1;

— change of Table 1 footnote c on the symbol classifications in parentheses;

— Addition of G classification in Table 1 for System B and new footnote;

— revision of Clause 10, Example 5.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

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Introduction

This document provides a classification system for wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels. It recognizes that there are two somewhat different approaches in the global market to classifying a given welding consumable, and allows for either or both to be used, to suit a particular market need. Many, but not all, commercial products addressed by this document can be classified using both approaches, and suitable products can also be marked.

System A uses the nominal composition approach with designators to indicate the principal alloying elements at their nominal levels, in a particular sequence, and which is sometimes followed by chemical element symbols to indicate compositional modifications to the original grade. System B uses the alloy type approach with three- or four-digit designations for certain grades, sometimes followed by one or more chemical element symbols indicating compositional modifications of the grade. In both approaches, classification is based upon the chemical composition of the product. In many cases, a given product can be classified using both approaches, because the composition ranges, although slightly different, overlap to a considerable extent between the two.

For stainless steel welding consumables, there is no unique relationship between the product form (wire electrode, strip electrode, wire or rod) and the welding process used (gas-shielded metal arc welding, gas tungsten arc welding, plasma arc welding, submerged arc welding, electroslag welding and laser beam welding). For this reason, the wire electrodes, strip electrodes, wires or rods can be classified on the basis of any of the above product forms and can be used, as appropriate, for more than one of the above processes.

Classification in accordance with system A, by nominal composition, was based mainly on EN 12072 which has been withdrawn and replaced by this document. Classification in accordance with system B, by alloy type, is mainly based upon standards used around the Pacific Rim.

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1 Scope

This document specifies requirements for classification of wire electrodes, strip electrodes, wires and rods for gas-shielded metal arc welding, gas tungsten arc welding, plasma arc welding, submerged arc welding, electroslag welding and laser beam welding of stainless and heat-resisting steels. The classification of the wire electrodes, strip electrodes, wires and rods is based upon their chemical composition.

This document is a combined specification providing for classification utilizing a system based upon nominal composition (system A), or utilizing a system based upon alloy type (system B).

a) Paragraphs which carry the label “classification according to nominal composition” and the suffix “system A”, or “ISO 14343-A”, are applicable only to products classified according to system A;

b) Paragraphs which carry the label “classification according to alloy type” and the suffix “system B”, or “ISO 14343-B”, are applicable only to products classified according to system B.

c) Paragraphs which carry neither label nor suffix letter are applicable to products that can be classified according to either system A or B or both.

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.

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

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

ISO 80000-1:2022, *Quantities and units — Part 1: General*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
rod
form of welding filler metal, normally packaged in straight lengths, that does not conduct the welding current, used in gas tungsten arc and plasma arc welding

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