
**Welding consumables — Covered
electrodes for manual metal arc
welding of high-strength steels —
Classification**

*Produits consommables pour le soudage — Électrodes enrobées
pour le soudage manuel à l'arc des aciers à haute résistance —
Classification*

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Published in Switzerland

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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 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*.

Any feedback, question or request for official interpretation related to 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 www.iso.org/members.html. Official interpretations, where they exist, are available from this page: <https://committee.iso.org/sites/tc44/home/interpretation.html>.

This third edition cancels and replaces the second edition (ISO 18275:2011), which has been technically revised. The main changes compared to the previous edition are as follows:

- fillet weld testing has been removed from the document;
- requirements for diffusible hydrogen removal treatment have been revised;
- new classifications have been added: NiCrCu, E6218-N4M2 P;
- post-weld heat treatment details have been clarified on the B-side;
- [Clauses 7, 8](#) and [9](#) have been updated to reflect agreed text for all ISO/TC 44/SC 3 standards.

Introduction

This document recognizes that there are two somewhat different approaches in the global market to classifying a given electrode, 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 in accordance with this document. The classification in accordance with system A was originally based on EN 757:1997. The classification in accordance with system B is mainly based on standards used around the Pacific Rim.

This document provides a classification system for covered electrodes for high-strength steels in terms of the tensile properties, impact properties and chemical composition of the all-weld metal, as well as the type of electrode covering. The ratio of yield strength to tensile strength of weld metal is generally higher than that of parent metal. Users should note that matching weld metal yield strength to parent metal yield strength does not necessarily ensure that the weld metal tensile strength matches that of the parent metal. Therefore, where the application requires matching tensile strength, selection of the consumable should be made by reference to column 3 of Table 1A or column 2 of [Table 8B](#).

It should be noted that the mechanical properties of all-weld metal test specimens used to classify covered electrodes can vary from those obtained in production joints because of differences in welding procedure such as electrode size, width of weave, welding position, and parent metal composition.

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