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Australian/New Zealand Standard™

Welding consumables — Solid wire electrodes, solid wires and rods for fusion welding of titanium and titanium alloys — Classification



AS/NZS ISO 24034:2023

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- New Zealand Heavy Engineering Research Association
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- University of Auckland (New Zealand)
- Weld Australia

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD-002, Welding Consumables, to supersede AS/NZS 1167.2:1999, *Welding and brazing — Filler metals, Part 2: Filler metal for welding*.

The objective of this document is to specify requirements for the classification of solid wire electrodes, solid wires and rods for fusion welding of titanium and titanium alloys. The classification is based on their chemical composition.

The compositions of solid wire electrodes for metal inert gas (MIG) welding are the same as solid wire electrodes, solid wires and rods for tungsten inert gas (TIG) arc welding, plasma arc welding, laser beam welding, and other fusion welding processes.

This document is identical with, and has been reproduced from, ISO 24034:2020, *Welding consumables — Solid wire electrodes, solid wires and rods for fusion welding of titanium and titanium alloys — Classification*.

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Foreword

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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*, 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).

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Official interpretations of ISO/TC 44 documents, 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 24034:2010), which has been technically revised. The main changes compared to the previous edition are as follows:

Introduction

This document proposes a classification in order to designate solid wire electrodes, solid wires and rods in terms of their chemical composition.

There is no unique relationship between the product form (solid wire electrodes, solid wires or rods) and the welding process used (gas-shielded metal arc welding, tungsten inert gas arc welding, plasma arc welding or laser beam welding). For this reason, solid wire electrodes, solid wires and rods can be classified in terms of their chemical composition.

In this document, the symbol of the welding process is not used, because:

- a) different joining processes are performed with the same chemical component consumable;
- b) the producer is not able to determine the process symbol before shipping.

Also, it should be noted that the mechanical properties of all-weld metal test specimens or welded joints produced by welding consumables can vary from those obtained in production joints because of differences in welding procedure and the base-metal alloy. For this reason, the mechanical properties of all-weld metal or welded joints for titanium-welding consumables are not specified in this classification.