

Australian/New Zealand Standard™

**Welding consumables—Covered  
electrodes for manual metal arc welding  
of stainless and heat-resisting steels—  
Classification**



**AS/NZS 4854:2006**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee WD-002, Welding Consumables. It was approved on behalf of the Council of Standards Australia on 13 January 2006 and on behalf of the Council of Standards New Zealand on 20 January 2006.  
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The following are represented on Committee WD-002:

Australian Chamber of Commerce and Industry  
Bureau of Steel Manufacturers of Australia  
Business New Zealand  
CSIRO Manufacturing and Infrastructure Technology  
Welding Technology Institute of Australia

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*This Standard was issued in draft form for comment as DR 05430.*

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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**RECONFIRMATION**

**OF**

**AS/NZS 4854:2006**

**Welding consumables—Covered electrodes for manual metal arc welding of  
stainless and heat-resisting steels—Classification**

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Technical Committee WD-002 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Bureau of Steel Manufacturers of Australia  
New Zealand Heavy Engineering Research Association  
Welding Technology Institute of Australia

## NOTES

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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 1553.3:1996, *Covered electrodes for welding, Part 3: Corrosion-resisting chromium and chromium-nickel steel electrode*.

The objective of this Standard is to provide a classification system for stainless steel, covered welding electrodes in terms of chemical composition of deposited weld metal and type of electrode covering.

This Standard is identical to, and has been reproduced from, ISO 3581:2003, *Welding consumables—Covered electrodes for manual metal arc welding of stainless and heat-resisting steels—Classification*.

An informative Annex giving information on health and safety has been added to this Standard.

As this Standard is reproduced from an international Standard, the following applies:

- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
- (b) In the source text ISO 3581 should read AS/NZS 4854.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>International Standard</i>	<i>Australian/New Zealand Standard</i>
ISO	AS/NZS ISO
544 Welding consumables—Technical delivery conditions for welding filler metals—Type of product, dimensions tolerances and markings	544 Welding consumables—Technical delivery conditions for welding filler metals—Type of product, dimensions tolerances and markings
	AS ISO
6947 Welds—Working positions—Definitions of angles of slope and rotation	3545 Welding positions
	AS ISO
13916 Welding—Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature	13916 Welding—Guidance on the measurement of preheating temperature, interpass temperature and preheat maintenance temperature
	AS/NZS ISO
14344 Welding and allied processes—Flux and gas shielded electrical welding processes—Procurement guidelines for consumables	14344 Welding and allied processes—Flux and gas shielded electrical welding processes—Procurement guidelines for consumables

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

## CONTENTS

	<i>Pages</i>
<b>1</b>	<b>Scope..... 1</b>
<b>2</b>	<b>Normative references ..... 1</b>
<b>3</b>	<b>Classification ..... 2</b>
<b>4</b>	<b>Symbols and requirements ..... 5</b>
<b>4.1</b>	<b>Symbol for the product/process ..... 5</b>
<b>4.2</b>	<b>Symbol for the chemical composition of all-weld metal ..... 5</b>
<b>4.3</b>	<b>Symbol for type of electrode covering ..... 5</b>
<b>4.4</b>	<b>Symbol for effective electrode efficiency and type of current ..... 13</b>
<b>4.5</b>	<b>Symbol for welding position ..... 13</b>
<b>5</b>	<b>Chemical analysis ..... 14</b>
<b>6</b>	<b>Mechanical property tests ..... 14</b>
<b>6.1</b>	<b>General ..... 14</b>
<b>6.2</b>	<b>Preheat and interpass temperatures ..... 14</b>
<b>6.3</b>	<b>Pass sequence ..... 15</b>
<b>7</b>	<b>Fillet weld test ..... 15</b>
<b>8</b>	<b>Retests ..... 16</b>
<b>9</b>	<b>Technical delivery conditions ..... 17</b>
<b>10</b>	<b>Examples of designation ..... 17</b>
	<b>Annex A (informative) Types of covering ..... 18</b>
	<b>Annex B (informative) Considerations on weld metal ferrite contents ..... 19</b>
	<b>Bibliography ..... 22</b>
	<b>Annex ZA (informative) Variations to ISO 3584:2003 for Australia and New Zealand ..... 23</b>
	<b>Annex ZB (informative) Health and Safety ..... 23</b>

## INTRODUCTION

This International Standard provides a classification system for stainless steel, covered welding electrodes in terms of chemical composition of deposited weld metal and type of electrode covering. Other properties of the electrodes are specified by reference to tables.

This International Standard has been prepared by the International Institute of Welding, Commission II "Arc Welding", Subcommission II-E. It recognizes that there are two somewhat different approaches in the global market, for classifying a given stainless steel, covered electrode, and allows for either or both to be used to suit a particular need. Application of either (or both) type(s) of classification designation identifies a product as classified according to this International Standard. It should be noted that the two systems are not exactly equivalent, therefore each system must be used independent of the other, without combining designators in any way.

The classification according to ISO 3581, system A, is mainly based upon EN 1600; the classification according to ISO 3581, system B, is mainly based upon standards used around the Pacific Rim.

## AUSTRALIAN/NEW ZEALAND STANDARD

# Welding consumables — Covered electrodes for manual metal arc welding of stainless and heat-resisting steels — Classification

## 1 Scope

This International Standard specifies requirements for classification of covered electrodes, based on the all-weld metal chemical composition, the type of electrode covering and other electrode properties, and the all-weld metal mechanical properties, in the as-welded or heat-treated conditions, for manual 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.

- a) Paragraphs and tables which carry the label “classification according to nominal composition” or “ISO 3581-A” are applicable only to products classified to that system.
- b) Paragraphs and tables which carry the label “classification according to alloy type” or “ISO 3581-B” are applicable only to products classified to that system.
- c) Paragraphs and tables which carry neither label are applicable to products classified according to either or both systems.

## 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 metals — Type of product, dimensions, tolerances and markings*

ISO 2401, *Covered electrodes — Determination of the efficiency, metal recovery and deposition coefficient*

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

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

ISO 8249, *Welding — Determination of Ferrite Number (FN) in austenitic and duplex ferritic-austenitic Cr-Ni stainless steel weld metals*

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

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