

AS/NZS 1789:2023



Australian/New Zealand Standard™

Metallic and other inorganic coatings — Electroplated coatings of zinc with supplementary treatments on iron or steel (ISO 2081:2018, MOD)



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- Australasian Corrosion Association
- Australasian Institute of Surface Finishing
- Australian Aluminium Council
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Australian Paint Manufacturers Federation
- Australian Steel Institute
- Building Research Association of New Zealand (BRANZ)
- Bureau of Steel Manufacturers of Australia
- CSIRO
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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MT-009, Metal Finishing, to supersede AS 1789:2003, *Electroplated zinc (electrogalvanized) coatings on ferrous articles (batch process)*.

The objective of this document is to specify requirements for electroplated coatings of zinc with supplementary treatments on iron or steel. It includes information to be supplied by the purchaser to the electroplater, and the requirements for heat treatment before and after electroplating.

This document is not applicable to zinc coatings applied —

- (a) to sheet, strip or wire in the non-fabricated form;
- (b) to close-coiled springs; or
- (c) for purposes other than protective or decorative.

This document does not specify requirements for the surface condition of the basis metal prior to electroplating with zinc. However, defects in the surface of the basis metal can adversely affect the appearance and performance of the coating.

The coating thickness that can be applied to threaded components can be limited by dimensional requirements, including class or fit.

This document is an adoption with national modifications, and has been reproduced from, ISO 2081:2018, *Metallic and other inorganic coatings — Electroplated coatings of zinc with supplementary treatments on iron or steel*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the modifications to ISO 2081:2018, for the application of this document in Australia and New Zealand.

As this document has been reproduced from an International document, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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National Foreword

See the table below for Australian or Australian/New Zealand Standards that may be used in place of the ISO Standards referenced throughout the document.

ISO Standard	Replace with
ISO 1463, <i>Metallic and oxide coatings — Measurement of coating thickness — Microscopical method</i>	AS 2331.1.1—2001 <i>Methods of test for metallic and related coatings, Local thickness tests—Micrographic examination of cross-sections</i>
ISO 2080, <i>Metallic and other inorganic coatings — Surface treatment, metallic and other inorganic coatings — Vocabulary</i>	AS 4108—2005 <i>Metal finishing—Glossary of terms in electroplating and related processes</i>
ISO 2819, <i>Metallic coatings on metallic substrates — Electrodeposited and chemically deposited coatings — Review of methods available for testing adhesion</i>	AS 2331.4.1—2001, <i>Methods of test for metallic and related coatings, Method 4.1: Physical tests—Qualitative adhesion tests</i>
ISO 9227, <i>Corrosion tests in artificial atmospheres — Salt spray tests</i>	AS 2331.3.1—2001, <i>Methods of test for metallic and related coatings, Method 3.1: Corrosion and related property tests—Neutral salt spray test (NSS test)</i> AS 2331.3.2—2001, <i>Methods of test for metallic and related coatings, Method 3.1: Corrosion and related property tests—Acetic acid salt spray test (ASS test)</i> AS 2331.3.3—2001, <i>Methods of test for metallic and related coatings, Method 3.1: Corrosion and related property tests—Copper accelerated acetic acid salt spray test (CASS test)</i>
ISO 10289, <i>Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion test</i>	AS 1247—2004, <i>Metallic coatings—Rating of test specimens and manufactured articles subject to corrosion tests</i>

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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings*, in collaboration with ISO Technical Committee TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 2081:2008), which has been technically revised. The following main changes have been made:

- the number of normative references has been reduced;
- reference to ASTM B117 has been replaced with ISO 9227;
- some abbreviated terms have been removed;
- coating designations have been modified;
- reference to ISO 1463 for thickness measurement has been increased;
- reference to use of trivalent chromium has been increased
- reference to use of hexavalent chromium has been reduced;
- reference to ISO 19598 in relation to supplementary Cr(VI)-free treatment has been added;
- Tables 1 and 2 have been replaced with a revised [Table 1](#) on neutral salt spray corrosion resistance;
- reference to ISO 15330 in relation to hydrogen embrittlement testing has been added;
- supplementary treatment designations have been modified;
- Annex C has been removed.