

Australian/New Zealand Standard™

**Zinc and zinc/aluminium-alloy coatings
on steel wire**



AS/NZS 4534:2006

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee MT-009, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 8 June 2006 and on behalf of the Council of Standards New Zealand on 16 June 2006.

This Standard was published on 19 July 2006.

The following are represented on Committee MT-009:

Australian Institute of Metal Finishing
Australian Aluminium Council
Australian Industry Group
Australian Paint Manufacturers' Federation
Department of Defence
Galvanizers Association of Australia
Institution of Materials Engineering Australia
Powder Coaters Association
The Royal Australian Chemical Institute
Society of Automotive Engineers—Australasia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 06060.

Australian/New Zealand Standard™

Zinc and zinc/aluminium-alloy coatings on steel wire

Originated, in part, as part of AS K53.1—1934 and AS K53.2—1935.
Previous edition AS/NZS 4534:1998.
Second edition 2006.

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 7621 3

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MT-009, Metal Finishing, to supersede AS/NZS 4534:1998, *Zinc and zinc/aluminium-alloy coatings on steel wire*.

The objective of this Standard is to specify requirements for zinc/aluminium-alloy coatings on steel wire and on fabricated wire products. The coatings are formed by the application of molten metal by hot dipping using a specialized continuous process, or by electroplating. However, in this revision of the Standard, a further range of coatings, specifically of high coating mass, has been added. The purpose of these new coatings, which first appeared in AS 2423—2002, *Coated steel wire fencing products for terrestrial, aquatic and general use*, is to provide superior protection to steel wire subjected to the more aggressive forms of corrosive environment, such as immersion in seawater.

This edition contains improved guidelines, set out in an Appendix, for the selection of appropriate coatings for the corrosion protection of steel wire.

During the preparation of this Standard cognisance was taken of ISO 7989:1988, *Zinc coatings for steel wire*. However, this international Standard could not be endorsed as an Australian Standard, as it is deficient in technical detail and is considered unsuitable by Australian industry.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, where an ‘informative’ appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 REFERENCED DOCUMENTS	4
3 DEFINITIONS	5
4 DESIGNATION	6
5 WIRE MANUFACTURING PROCESS.....	7
6 APPEARANCE	8
7 SELECTION OF TEST SPECIMENS FOR COATING MASS AND COATING ADHERENCE TESTS.....	8
8 TEST METHOD AND REQUIREMENTS FOR COATING MASS	9
9 TEST METHOD AND REQUIREMENTS FOR COATING ADHERENCE	9
10 CORROSION RESISTANCE.....	10
11 ROUNDING OF TEST RESULT VALUES.....	10
12 MARKING	10
 APPENDICES	
A PURCHASING GUIDELINES.....	13
B MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS STANDARD	14
C CHANGES IN MECHANICAL PROPERTIES CAUSED BY AGEING OR HYDROGEN EMBRITTLEMENT	16
D TRANSPORT AND STORAGE OF ZINC-COATED AND ZINC/ALUMINIUM ALLOY-COATED WIRES	17
E DETERMINATION OF COATING MASS.....	18
F GUIDANCE ON CORROSION PROTECTION	25

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Zinc and zinc/aluminium-alloy coatings on steel wire****1 SCOPE**

This Standard specifies requirements for the mass, quality and testing of zinc coatings and zinc/aluminium-alloy coatings on steel wire of circular or non-circular (shaped) cross-section. The coatings are applied in a continuous process and may be formed either by the application of molten metal or by electrodeposition.

Six standard coating mass classes and a range of special coating mass classes are covered. The standard classes are intended, in general, for applications subjected to normal atmospheric corrosion conditions, whereas the special classes are specifically designed to provide acceptable durability under severe to extreme service conditions, such as for prolonged immersion in freshwater or seawater.

This Standard applies to coatings on wire at its final size, whether or not the coating has been applied after final cold working, prior to cold working, or at an intermediate stage of cold working.

Matters not relating to the coating itself are outside the scope of this Standard.

This Standard does not apply to coatings on articles that have been fabricated from uncoated steel wire and which have subsequently been coated with zinc or zinc/aluminium alloy, except where the coating has been applied in a specialized continuous process (e.g. for wire netting) as opposed to batch treatment (e.g. for nails).

NOTES:

- 1 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in Appendix A.
- 2 Coatings in accordance with this Standard may not be available in every combination of wire size, coating mass class and coating type. Reference should be made to appropriate Australian Standards for the types of wire involved.
- 3 Means for determining compliance with this Standard are given in Appendix B.
- 4 Except as stated in this Clause, requirements for zinc coatings on manufactured wire articles, which have been electroplated following fabrication, are given in AS 1789.
- 5 This Standard does not specify the Preece test for coating uniformity. If this test is required, arrangements should be made between the purchaser and the supplier.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1199	Sampling procedures for inspection by attributes
1199.0	Part 0: Introduction to the ISO 2859 attribute sampling system
1199.1	Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
1242	Zinc ingots
1329	Methods for the analysis of zinc and zinc alloys
1329.1	Method 1: Determination of aluminium content—Titrimetric method

This is a free preview. Purchase the entire publication at the link below:

-
- ▶ [Looking for additional Standards? Visit SAI Global Infostore](#)
 - ▶ [Subscribe to our Free Newsletters about Australian Standards® in Legislation; ISO, IEC, BSI and more](#)
 - ▶ [Do you need to Manage Standards Collections Online?](#)
 - ▶ [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
 - ▶ [Do you want to know when a Standard has changed?](#)
 - ▶ [Want to become an SAI Global Standards Sales Affiliate?](#)

Learn about other SAI Global Services:

- ▶ [LOGICOM Military Parts and Supplier Database](#)
- ▶ [Metals Infobase Database of Metal Grades, Standards and Manufacturers](#)
- ▶ [Materials Infobase Database of Materials, Standards and Suppliers](#)
- ▶ [Database of European Law, CELEX and Court Decisions](#)

Need to speak with a Customer Service Representative - [Contact Us](#)