AS/NZS 4158:2003
(Incorporating Amendment No. 1)

AS/NZS 4158:2003

Australian/New Zealand Standard™

Thermal-bonded polymeric coatings on valves and fittings for water industry purposes

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee WS-022, Valves for Water Supply Purposes. It was approved on behalf of the Council of Standards Australia on 3 January 2003 and on behalf of the Council of Standards New Zealand on 24 January 2003.

This Standard was published on 5 March 2003.

The following are represented on Committee WS-022:

Australian Industry Group
Australian Chamber of Commerce
Australian Valve Manufacturers Association
Business New Zealand
Master Plumbers Australia
New Zealand Metal Casting Industry Association
New Zealand Water and Waste Association
Society of Mechanical Engineers Australia
Plastics Pipe Institute Association of Australia
Water Industry Alliance
Water Services Association of Australia

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 Standards may also be withdrawn.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 02420.

AS/NZS 4158:2003
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Thermal-bonded polymeric coatings on valves and fittings for water industry purposes

Originated as AS/NZS 4158.1:1994.
Previous edition 1996.
Second edition 2003.
Reissued incorporating Amendment No. 1 (September 2005).

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

ISBN 0 7337 5033 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WS-022, Valves For Water Supply Purposes, at the request of manufacturers and users of polymeric coatings for valves and fittings, to supersede AS/NZS 4158:1996.

This Standard incorporates Amendment No. 1 (September 2005). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide requirements and performance tests for coating systems for valves and fittings used in supply systems including potable water, recycled water and wastewater systems, together with default compliance requirements for the use of manufacturers and certification bodies.

Changes to the previous edition area as follows:

(a) The previous edition of the Standard covered fusion-bonded epoxies and polyamides which were typically used at that time. This edition encompasses both thermoplastic and thermosetting coating materials

(b) The limiting temperature for use has been changed to 50°C to be consistent with the hot water immersion test temperature, which was reduced to accommodate thermoplastic coatings.

(c) Limits on water absorption have been tightened to reflect current coating material performance.

(d) Continuity testing has been updated to a high voltage test suitable for the typical coating thicknesses and cast substrates used for valve bodies and fittings.

(e) Improvements have been made to other type tests, process verification tests and the batch release tests. Batch release testing requirements have been placed on the coating material supplier.

(f) Methods for demonstrating compliance with the Standard have been expanded and made mandatory.

Polymeric coatings referred to in this edition of the Standard apply to both thermoplastic and thermosetting, factory-applied, thermal-bonded coatings used to prevent corrosion of the internal and external surfaces of metallic valves and fittings.

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, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

Page

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Thermal-bonded polymeric coatings on valves and fittings for water industry purposes

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the requirements for factory-applied thermal-bonded polymeric corrosion protective coatings (barrier coatings). For the purposes of this Standard, the term polymeric coating is intended to encompass both thermoplastic and thermosetting coating materials, which are used to coat both the internal and external surfaces of valves and fittings.

This Standard covers the following service application areas:

(a) Factory-applied coatings and associated coatings used for repair.

(b) Ductile iron, grey cast iron, malleable iron, steel and copper alloy based substrates.

(c) Valves, fittings and their components and associated equipment.

(d) Contact with water, and wastewater up to 50°C.

(e) Above and below ground exposure.

NOTES:

1 Some coatings may not be suitable for all wastewaters. Compatibility should be checked with the manufacturer.

2 Guidelines on requirements to be specified by the purchaser are given in Appendix A.

Means of demonstrating compliance with this Standard are given in Appendix B.

1.2 REFERENCED DOCUMENTS

The documents referred to in this Standard are listed in Appendix C.

1.3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 3500.0 and those below apply.

1.3.1 Coating

A material, applied to a surface at a specified film thickness, that is intended to protect the surface from corrosive elements or conditions such as moisture, gases, and abrasion by windblown or waterborne particles.

1.3.2 Coated product

A valve or fitting or part thereof that has a coating applied to it.

1.3.3 Coating defect

A detectable weakness or discontinuity in a coating, which causes its ability to protect the substrate from corrosion to be suspect during the normal service life.