AS 2518—1992

Australian Standard®

Fusion-bonded low density polyethylene coating for pipes and fittings

This Australian Standard was prepared by Committee WS/9, Rolled and Welded Steel Pipes. It was approved on behalf of the Council of Standards Australia on 10 March 1992 and published on 20 July 1992.

The following interests are represented on Committee WS/9:

Brisbane City Council
Building Management Authority, W.A.
Confederation of Australian Industry
Engineering and Water Supply Department, S.A.
Hobart City Council
Hunter Water Board
Melbourne Water
Metal Trades Industry Association
Public Works Department, N.S.W.
Rural Water Commission
State Electricity Commission of Victoria
Victorian Water and Sewerage Authorities Association
Water Authority of Western Australia
Water Board, Sydney, Illawara, Blue Mountains
Water Resources Commission, Qld

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PREFACE

This Standard was prepared by a subcommittee of Standards Australia Committee for Rolled and Welded Steel Pipes at the request of manufacturers and users of fusion-bonded low-density polyethylene external protective coating for pipes and fittings. It is one of a series of Standards that exist as alternatives to the original coal-tar primer/enamel coating system Standards.

The fusion-bonded low-density polyethylene coating referred to in this Standard is to be applied only to external surfaces of pipes and fittings.

Attention is drawn to the fact that this Standard does not purport to satisfy all requirements in Australian Standard pipelines codes. Contracting parties may therefore need to consider further requirements to satisfy contracts invoking Australian Standard pipeline codes.

This edition incorporates Amendment No. 1 as issued in 1984. It also includes a change to the requirement for tensile stress at yield of the coating. This modification was agreed by the Committee to provide a requirement that is more compatible with the known properties of fusion-bonded low-density polyethylene coatings. Other changes to the 1982 edition are of an editorial nature.

As part of the editorial revision, the frequency of testing requirements that were previously a mandatory part of the Standard, have been incorporated into an informative (non-mandatory) appendix. Here they constitute one of a number of choices available to the user who requires information on means of determining compliance of a 'lot' with this Standard.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard

Fusion-bonded low-density polyethylene coating for pipes and fittings

1 SCOPE This Standard specifies requirements for fusion-bonded low-density polyethylene coating of pipes and fittings for protection against corrosion. The coating is intended for use on pipes and fittings that are installed in locations not subject to weather exposure, although a safe period of 18 months of weather exposure is allowed for to cover the storage period prior to installation.

NOTES:

1 Advisory information on methods of determining compliance of a 'lot' with this Standard is given in Appendix A.

2 Guidelines to purchasers on requirements that are to be specified by the purchaser and those that are to be or may be agreed upon at the time of enquiry or order are given in Appendix B.

3 The attention of purchasers is drawn to the necessity to ascertain the expected weathering period of the coating before installation, and in the likelihood of 18 months being exceeded, to make provision for shielding of the coating from direct sunlight.

Polyethylene materials complying with this Standard are intended for application to pipe and fittings where the pipeline operating temperatures are not normally more than +60°C nor less than −40°C.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1145	Determination of tensile properties of plastics materials
1193	Plastics—Methods for determining the density and relative density of non-cellular plastics
1199	Sampling procedures and tables for inspection by attributes
1327	Standard environments for conditioning and testing plastics materials
1399	Guide to AS 1199—Sampling procedures and tables for inspection by attributes
1463	Polyethylene pipe extrusion compounds
1579	Arc welded steel pipes for water and gas
1580	Paints and related materials—Methods of test
1580.108.1	Method 108.1: Determination of dry film thickness on iron and steel substrates (permanent magnet instruments)
1627	Metal finishing—Preparation and pretreatment of surfaces
1627.2	Part 2: Power tool cleaning
1627.4	Part 4: Abrasive blast cleaning
3862	External fusion-bonded epoxy coating for steel pipes
3900	Quality systems—Guide to selection and use
SAA HB18	Guidelines for third party certification and accreditation
HB18.44	Guide 44—General rules for ISO or IEC international third-party certification schemes for products
ASTM	
D 1693	Test method for environmental stress-cracking of ethylene plastics
G 8	Test method for cathodic disbonding of pipeline coatings

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Coating—fusion-bonded low-density polyethylene compound applied externally to pipes and fittings.

3.2 Flaw—any part of the coating not complying with the electrical insulation requirements of this Standard.

3.3 Fusion-bond—the bond produced between the polyethylene and the surface of the pipe or fitting when the polyethylene is applied to the heated pipe or fitting.

3.4 Weather exposure—continuously exposed without protection from direct sunlight and weathering elements.

3.5 Surface preparation—treatment of the pipe or fitting surface to receive polyethylene coating.

4 MATERIAL REQUIREMENTS

4.1 General Material used for the coating system shall comply with the requirements of Clause 4.2, and shall not contain solvents or other additives known to adversely affect polyethylene.

4.2 Polyethylene fusion-bonding compound

4.2.1 *Composition* The polyethylene compound shall consist of the following components:

(a) Homopolymers of ethylene or copolymers of ethylene with other olefinic materials.

(b) One or more antioxidants.