AS/NZS 4131:2010
(Incorporating Amendment Nos 1 and 2)

AS/NZS 4131:2010

Australian/New Zealand Standard™

Polyethylene (PE) compounds for pressure pipes and fittings

STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee PL-006, Polyolefin Pipe Systems. It was approved on behalf of the Council of Standards Australia on 6 January 2010 and on behalf of the Council of Standards New Zealand on 23 December 2009.
This Standard was published on 5 February 2010.

The following are represented on Committee PL-006:

Australian Gas Association
CSIRO Manufacturing and Infrastructure Technology
Certification Bodies (Australia)
Energy Networks Association
Institution of Engineers
Master Plumbers, Gasfitters and Drainlayers New Zealand
New Zealand Water and Waste Association
Plastics Industry Pipe Association of Australia
Plastics New Zealand
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 Standards may also be withdrawn.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.saiglobal.com or Standards New Zealand web site at www.standards.govt.nz and looking up the relevant Standard in the on-line catalogue.

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 Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 4131.

AS/NZS 4131:2010
(Incorporating Amendment Nos 1 and 2)

Australian/New Zealand Standard™

Polyethylene (PE) compounds for pressure pipes and fittings

Originated in Australia in part as AS K125—1963.
Originated in New Zealand in part as NZS 1189:1953.
Previous edition AS/NZS 4131:2003.
Fourth edition 2010.
Reissued incorporating Amendment No. 1 (June 2010).
Reissued incorporating Amendment No. 2 (June 2018).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

ISBN 0 7337 9361 4

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee PL-006, Polyolefin Pipe Systems, to supersede AS/NZS 4131:2003, *Polyethylene (PE) compounds for pressure pipes and fittings*.

This Standard incorporates Amendment No. 1 (June 2010) and Amendment No. 2 (June 2018). The changes required by the Amendments 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 a standard specification for manufacturers and purchasers of these products.

This document is based largely on the latest ISO and CEN documents and consequently provides for compatibility of compounds of different origin.

Changes in this revision include:

(a) PE 80C is no longer a classification.

(b) The lower prediction limit of the predicted hydrostatic strength at temperatures up to 40°C is no longer required to classify the compound.

NOTE: Elevated temperature performance data are included in AS/NZS 2033.

(c) Determination of the resistance to Rapid Crack Propagation and Slow Crack Growth Resistance is specified to be carried out on 110SDR11 dimension pipe or larger.

(d) The requirements for re-evaluation of a compound (Table A2) were revised to clarify the requirements for the same base polymer produced at a different site.

(e) Changes in test methods and requirements to align with ISO.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard. Other notes are for information only.

CONTENTS

Page

1 SCOPE AND APPLICATION 4
2 REFERENCED DOCUMENTS 4
3 DEFINITIONS 4
4 COMPOSITION 4
5 VOLATILE CONTENT 5
6 CLASSIFICATION 6
7 RESISTANCE TO INTERNAL PRESSURE 6
8 SLOW CRACK GROWTH RESISTANCE 6
9 WEATHERING RESISTANCE 6
10 EFFECT ON WATER 6
11 MARKING 6

APPENDICES

A MEANS FOR DEMONSTRATING COMPLIANCE WITH THIS STANDARD 10
B METHOD FOR DETERMINING WEATHERING RESISTANCE FOR EXTERNAL STORAGE 15

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Polyethylene (PE) compounds for pressure pipes and fittings

1 SCOPE AND APPLICATION

1.1 Scope

This Standard specifies requirements for polyethylene compounds (PE 80 and PE 100) suitable for manufacturing polyethylene pipes and fittings for pressure applications. Minimum requirements are given for materials, additives and long-term pressure performance.

Methods of demonstrating compliance with this Standard are given in Appendix A.

NOTE: Compounds complying with this Standard are not intended for use with gases containing more than 1% aromatics by volume. Where aromatic content is greater than this, testing for resistance to gas constituents should be carried out in accordance with ISO 4437.

1.2 Application

The test requirements specified in this Standard may be achieved by alternative test methods if such methods can be shown to provide accuracy equal to or greater than those specified herein. In all cases of dispute, the methods specified in this Standard shall be considered the reference test methods.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1199	Sampling procedures for inspection by attributes (all parts)
1145	Determination of tensile properties of plastics materials
1145.2	Part 2: Test conditions for moulding and extrusion plastics
1745	Outdoor weathering of plastics in the Australian environment
1745.2	Part 2: Guide for design purposes
2193	Calibration and classification of force-measuring systems
AS/NZS	
1462	Method of test for plastics pipes and fittings
1462.6	Method 6: Thermoplastics pipes, fittings and assemblies for the transport of fluids under pressure—Resistance to internal pressure
1462.27	Method 27: Determination of toluene extract of carbon black
1462.28	Method 28: Method for the assessment of the degree of pigment or carbon black dispersion in polyolefin pipes, fittings and compounds
1462.29	Method 29: Plastic piping and ducting systems—Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation (ISO 9080:2003 MOD)
2033	Installation of polyethylene pipe systems
3500	Plumbing and drainage
3500.0	Part 0: Glossary of terms
4020	Testing of products for use in contact with drinking water