

Australian/New Zealand Standard™

**Polyethylene (PE) compounds for
pressure pipes and fittings**



AS/NZS 4131:2010

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
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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).

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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.

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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 gas 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

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| 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 |

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| 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 |