

AS/NZS 5395:2024



Australian/New Zealand Standard™

Best Environmental Practice PVC Pipes and Fittings



AS/NZS 5395:2024

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee PL-021, PVC, ABS and Polyamide Pipe Systems. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 25 May 2024 and by the New Zealand Standards Approval Board on 03 April 2024.

This Standard was published on 7 June 2024.

The following are represented on Committee PL-021:

- Association of Accredited Certification Bodies
- Australasian Society for Trenchless Technology
- Australian Building Codes Board
- Australian Industry Group
- Chemistry Australia
- Energy Networks Australia
- Engineers Australia
- Joint Accreditation System of Australia & New Zealand
- Local Government New Zealand
- Materials Australia
- Plastic Industry Pipe Association of New Zealand
- Plastics Industry Pipe Association of Australia
- Plastics New Zealand
- Water New Zealand
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This Standard was issued in draft form for comment as DR AS/NZS 5395:2024.

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ISBN 978 1 76139 665 6

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First published as AS/NZS 5395:2024.

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee PL-021, PVC, ABS and Polyamide Pipe Systems to supersede the following:

- (a) Appendix C in AS/NZS 1260:2017, *PVC-U pipes and fittings for drain, waste and vent applications*.
- (b) Appendix G in AS/NZS 4765:2017, *Modified PVC (PVC-M) pipes for pressure applications*.
- (c) Appendix B in AS/NZS 1477:2017, *PVC pipes and fittings for pressure applications*.
- (d) Appendix ZB in AS/NZS 4441:2017, *Oriented PVC (PVC-O) pipes for pressure applications (ISO 16422:2014, MOD)*.
- (e) Appendix B in AS/NZS 1254:2010, *PVC-U pipes and fittings for stormwater and surface water applications*.

The objective of this document is to specify requirements for best environmental practice for PVC pipes, conduits, profiles and fittings.

The particular requirements of this document supplement the general requirements specified in the documents listed above.

This document is intended to be read in conjunction with the documents listed above.

Where reference is made to a Standard by its designation only, the reference is to the current edition of the Standard. Where reference is made to a Standard by its designation, year and, where relevant, amendment number, the reference applies to that specific document.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

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Introduction

This document details the requirements for a product to qualify as best environmental practice (BEP) PVC.

In 2010, following an extensive review by an expert reference panel, the Green Building Council of Australia (GBCA) included Green Star PVC materials credits in the Green Star rating tool. This established the criteria defining BEP PVC manufacturing from raw materials and production through use to end-of-life, recycling, and disposal.

At the time, the BEP requirements were included in the relevant Australian and New Zealand PVC product Standards. This enabled both product certification and consistent BEP identification marking on PVC pipe and fittings products.

The requirements for BEP PVC have now been consolidated in this document, which can be referenced by Australian and New Zealand Standards for PVC pipes and fittings. It may also be used for related PVC products, such as profile extrusions.

Product and manufacturer declarations are necessary elements of the compliance process for BEP PVC. While some requirements can be met by testing, there are others that are supported by supplier statements of compliance, for example, confirming the type of chlorine or vinyl chloride monomer manufacturing process employed.

Some organisations may require BEP PVC certification by an accredited third-party conformity assessment body (CAB) registered with and accredited by the Joint Accreditation System of Australia and New Zealand.

NOTE Further information regarding the development of the best environmental practice of PVC is given in PIPA POP106, *Verification Guidance for Best Environmental Practice PVC Pipe and Fittings*.

Australian/New Zealand Standard

Best Environmental Practice PVC Pipes and Fittings

Section 1 Scope and general

1.1 Scope

This document specifies requirements for best environment practice for PVC pipes, conduits, profiles and fittings.

NOTE See Table A.1 for a summary of how to demonstrate conformity with best environmental practice.

It applies to, but is not limited to, PVC products that conform to the following documents:

- (a) AS/NZS 1254.
- (b) AS/NZS 1260.
- (c) AS/NZS 1477.
- (d) AS/NZS 4441.
- (e) AS/NZS 4765.
- (f) AS/NZS 2053.2.
- (g) AS/NZS 2053.6.
- (h) AS/NZS 61386.21.
- (i) AS/NZS 61386.22.
- (j) AS/NZS 4296.
- (k) AS 2047.

This document does not apply to post-consumer recycled PVC content that is used in the production of new PVC pipes and fittings.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

NOTE Documents for informative purposes are listed in the Bibliography.

AS ISO/IEC 17050-1, *Conformity assessment—Supplier's declaration of conformity, Part 1: General requirements*

AS ISO/IEC 17050-2, *Conformity assessment—Supplier's declaration of conformity, Part 2: Supporting documentation*

1.3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE ISO maintains a terminological database for use in standardization at the following address:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

1.3.1**fully integrated plant**

production of chlorine, EDC, VCM and PVC that are all internally manufactured

1.3.2**legacy additives**

additives such as stabilisers and pigments containing compounds based on lead (Pb) or cadmium (Cd)

Note 1 to entry: Lead and cadmium were previously used in the manufacture of PVC pipes and fittings, but these additives were completely phased out by the end of 2008. Recycled PVC pipes and fittings made prior to 2009 may contain these legacy additives, but can be safely incorporated into the core layer of sandwich construction, non-pressure pipes.

1.3.3**post-consumer**

plastics material generated by end-users of products that have fulfilled their intended purpose or that can no longer be used

Note 1 to entry: End-users may include households or commercial, industrial, and institutional facilities.

1.3.4**pre-consumer**

plastics material diverted from the waste stream either during a manufacturing process or from unused products

Note 1 to entry: This excludes manufacturers' own rework, regrind or scrap.

1.3.5**recycled material**

plastics material resulting from the recycling of post-consumer and/or pre-consumer plastics products, that can be reprocessed and made into pipes, conduits, profiles or fittings in accordance with the relevant product Standard

1.3.6**sandwich construction**

pipes or fittings with smooth inside and outside surfaces, in which the inner and outer layers are of solid PVC-U and are connected by a foam or solid intermediate layer of PVC-U

1.3.7**suspension PVC resin****S-PVC resin**

polymerization process used to make PVC resin grades suitable for pipes, conduits, profiles and fittings

Note 1 to entry: Suspension polymerization includes four main steps, including: polymerization, stripping residual VCM, centrifugation of water suspension to remove water, and drying.

1.3.8**conformity assessment body****CAB**

certifier registered with and accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ)

1.4 Acronyms

EDC	ethylene dichloride
VCM	vinyl chloride monomer
BEP	best environmental practice