Australian/New Zealand Standard™

PVC pipes and fittings for stormwater and surface water applications

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee PL/21, Unplasticised PVC Pipes. It was approved on behalf of the Council of Standards Australia on 14th June, 2002 and on behalf of the Council of Standards New Zealand on 23 May 2002. It was published on 10 July 2002.

The following are represented on Committee PL/21:

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Australian Nuclear Science and Technology Organisation
CSIRO Building, Construction and Engineering
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Local Government New Zealand
Master Plumbers Australia
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Previous edition AS 1254—1991.
Originated in New Zealand as NZS 7649—1974.
Previous New Zealand edition NZS 7649:1988.
AS 154—1991 and NZS 7649—1988 jointly revised and redesignated AS/NZS 1254:2002.

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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 AS 1254—1991, *Unplasticized PVC (UPVC) pipes and fittings for storm and surface water applications,* and NZS 7649 — 1988, *Unplasticized PVC sewer and drain pipe and fittings*

The objective of this Standard is to outline minimum requirements for the manufacture and performance of PVC pipes and fittings for stormwater applications for use by manufacturers, specifiers and purchasers of such products.

For pipe of nominal diameter DN 75 there is one classification based on minimum wall thickness. This is class SN2. For pipe of nominal diameter DN 90 and DN 100 there are three classifications based on minimum pipe stiffness. These are pipe stiffness classes SN2, SN4 and SN8. For pipes greater than DN 100 there are 4 stiffness classes, SN1.5, SN2, SN4 and SN8.

In general, pipes manufactured to AS 1254 — 1991 have been replaced by a minimum pipe stiffness requirement of SN2 and pipes manufactured to NZS 7649:1988 have been replaced by a minimum pipe stiffness requirement of SN4. Sufficient dimensional information is provided to ensure compatible joints, minimum bore and resistance to abrasion.

Stiffness class SN8 has been included for applications where heavy loads, for example deeper burial, traffic loads or poor installation practice for which higher pipe stiffness may be required to minimize deflection of the installed pipes.

Stiffness class SN1.5 in sizes greater than DN 100 has been included to accommodate pipes currently manufactured and shown to perform satisfactorily.

NOTE: This Standard no longer includes ribbed profile-wall pipes, (formed from a profile with a seam), in diameters DN 375–DN 1050.

Pipe stiffness is a measure of resistance of a pipe to ring deflection and is determined by testing or calculation, in newtons per metre per metre length.

Users wishing to compare the stiffness of pipes made to the previous classification scheme (AS 1254—1981 and NZS 7649—1988), with current requirements may use the equation of Clause 1.3.11.

The E_b value for sandwich construction pipe may be less than that for plain wall pipe of the same wall thickness. To achieve the same pipe stiffness, a sandwich construction pipe might require a greater wall thickness than for an equivalent plain wall pipe.

Caution is advised, however, because it is necessary to assume a value of the initial three-minute ring bending modulus E_b of PVC in the equation. The committee has assumed a value of 3 200 MPa for PVC (as recommended in AS/NZS 2566.1) for the three-minute ring bending modulus (E_b). This value is not a ‘material constant’; it depends on the resin used, and the influence of the additives and fillers used in the manufacture of PVC stormwater pipes. While calculations are useful for estimating pipe stiffness and wall thickness, these values should only be used as guidelines.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

The test criteria of this Standard apply to pipes and fittings at the time of manufacture and should not be used to assess the results from tests on pipes or fittings which have been in service.

Any fitting already marked in accordance with the superseded Standards listed above will be considered acceptable and complying with the marking requirements of this Standard (Clause 5.6) for a period of three years from the date of publication of the Standard.

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1.1 SCOPE

This Standard specifies requirements for PVC pipes and fittings for conveyance of stormwater or surface water. Pipes and fittings complying with this Standard are not intended for the conveyance of drinking water. The Standard includes requirements for both plain and structured wall pipes and fittings.

Alternative methods for determining compliance with this Standard are given in Appendix A.

NOTE: Pipe manufactured to this Standard should only be used and installed in accordance with AS 2032, AS/NZS 2566.1, AS 3500.0, and NZS 7643.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1199	Sampling procedures and tables for inspection by attributes
1399	Guide to AS 1199, Sampling procedures and tables for inspection by attributes
1646	Elastomeric seals for waterworks purposes
2032	Code of practice for installation of UPVC pipe systems
2887	Plastic waste fittings
3900.1	Quality systems-Guide to selection and use
3904.1	Quality systems-Guide to quality management and quality systems elements
AS/NZS	
1260	PVCU pipes and fittings for drain, waste and vent applications
1462	Methods of test for plastics pipes and fittings
1462.1	Method 1: Method for determining the dimensions of pipes and fittings
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