

TECHNICAL NOTE

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AUSTRALIAN STANDARD FOR NON-PRESSURE PVC PIPES AND FITTINGS

This technical note addresses only technical matters related to the application of our products. It does not address issues of health and safety practices, nor any regulatory limitations that may apply, and does not constitute a recommendation of suitability for any purpose

Introduction

Some Australian /New Zealand Standards for non-pressure PVC-U pipes have been recently revised. These are:

- AS/NZS 1260, PVCU pipes and fittings for drain, waste and vent applications; and
- AS/NZS 1254, PVC pipes and fittings for storm and surface water applications.

AS/NZS 1260 covers plain and structured wall pipes and fittings for drain, waste and vent applications in either above or below ground installations that operate under gravity flow.

AS/NZS 1254 covers plain and structured wall pipes and fittings for storm and surface water drainage. These pipes are not specifically intended to transport drinking water.

This technical note is intended to assist the specifier and user by outlining the main features of these revised standards and highlighting any significant changes from previous versions.

Classification system

Regular users of PVC-U DWV pipes will now be familiar with the dual classification system in AS/NZS 1260, which has been in place since 1999.

Smaller diameter pipes are specified by dimensions and have a specified minimum wall thickness. These pipes are frequently installed above ground and subjected to elevated temperature discharges. While stiffness is not specified, the actual stiffness of small diameter pipes with specified minimum wall thickness is generally higher than the minimum values required for large diameter pipes.

Larger diameter pipes are specified by minimum stiffness. These pipes are predominantly used in buried applications and ring bending stiffness is a fundamental consideration for buried flexible pipes.

For above ground use (soil, waste and vent), the stiffness requirements for plain wall pipes are considered sufficient to ensure adequate wall thickness.

The classification system used in AS/NZS 1260 has now been adopted in AS/NZS 1254 as well.

Stiffness Terminology

Stiffness is a measure of the resistance of a pipe to ring deflection. It is measured as the force required to deflect a length of pipe by a specified amount between parallel plates. The units are newtons per metre deflection per metre length (N/m/m)

The 'SN' stiffness terminology used in International Standards is used also in Australian / New Zealand Standards. The following table shows the nominal stiffness classes and the corresponding stiffness values. For pipes that are classified in terms of stiffness, the stiffness class will form part of the pipe marking.

Class	Stiffness N/m/m
SN1.5	1500
SN2	2000
SN4	4000
SN6	6000
SN8	8000
SN10	10000
SN16	16000

While stiffness can be calculated with knowledge of appropriate material and wall section properties, AS/NZS 1260 and

AS/NZS 1254 require that stiffness be measured experimentally for all pipes classified by this means.

AS/NZS 1260 – DWV Pipes

The following table shows the range of pipes, their classes and wall construction, covered by AS/NZS 1260:

Class	Pipe size and type		
	≤ DN80	DN100	≥ DN150
min wall thickness	• plain wall • sandwich	—	—
SN4	—	—	• plain wall • sandwich • profile wall
SN6	—	• plain wall • sandwich	—
SN8	—	• profile wall	• plain wall • sandwich • profile wall
SN10	—	• plain wall • sandwich	—
SN16	—	• plain wall • sandwich • profile wall	• plain wall • sandwich • profile wall

SN4 and SN6 pipes are considered to be suitable for plumbing applications. These classes are similar to SH in the old classification system

SN8 (150 up) and SN10 (100 only) are generally specified for municipal drainage applications where higher pipe stiffness may be required to minimise diametral deflection. These classes are similar to SEH in the old system.

Class SN16 has been included as an equivalent to a class used in New Zealand for applications involving very heavy loads. Extensive experience in Australia has demonstrated that SN8/SN10 pipes have performed well in heavy load applications and therefore SN16 pipe is seldom used in Australia. For guidance, designers should consult ASNZS 2566.1 – Buried flexible pipelines, Part 1: Structural Design.

AS/NZS 1260 – DWV Fittings

Injection moulded plain wall fittings are designated SN6. These fittings are considered suitable for use with compatible pipes of all classes.

Structured wall injection moulded fittings are classified as minimum SN8 by performance testing. With appropriate end connections, these fittings are also suitable for use with pipes of different stiffness classes.

Only SN8 injection moulded fittings are marked with a stiffness class.

Fabricated fittings are also covered by the Standard. These may be SN6 or SN10

AS/NZS 1254 – Stormwater Pipes

AS/NZS 1254 covers the following pipe classes and wall constructions:

- DN75 pipes are specified by wall thickness and designated as SN2. These pipes may be plain wall or sandwich construction.
- DN90 and DN100 pipes are classified in terms of minimum pipe stiffness as SN2, SN4 or SN8. These pipes may be plain wall, sandwich construction or profile wall.
- Pipe sizes >DN100 are classified in terms of minimum pipe stiffness as SN1.5, SN2, SN4 or SN8. These pipes may be plain wall, sandwich construction or profile wall.

SN1.5 and SN2 are similar to the pipes specified in the earlier version of this standard, AS 1254 – 1991.

SN4 is similar to the pipes covered by the superseded New Zealand Standard NZS 7649-1988.

SN8 is a new class, which has been added for applications involving heavy loads.

AS/NZS 1254 – Stormwater Fittings

Injection moulded plain wall fittings are designated SN4. These fittings are considered suitable for use with compatible pipes of all classes.

Structured wall injection moulded fittings are classified as minimum SN4 by performance testing. With appropriate end connections, these fittings are also suitable for use with pipes of different stiffness classes.

Fabricated fittings are also covered by the Standard. These may be SN2 or SN4.

Fittings with parallel sockets

Both AS/NZS 1260 and AS/NZS 1254 now allow for injection moulded fittings with parallel sockets for solvent cement jointing in sizes >DN150. These are predominantly imported products and so the Standards do not specify colour requirements or titanium dioxide (TiO₂) content to provide UV protection for these fittings.

The parallel socket means that, while the usual priming fluid may still be used, a gap filling solvent cement is required for jointing.

Also, since there is no specified requirement for TiO₂, UV protection will be required for installations exposed to direct sunlight. Manufacturer's recommendations should also be sought if extended storage in direct sunlight is required.

These fittings are recognisable by the words "parallel socket" marked on them and will also have notes to remind the user of the special considerations noted above.

For further information about our products and applications, see our web site at

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