VICTORIAN BUILDING AUTHORITY

PLUMBING PRACTICE NOTE

Sanitary Plumbing SP 02 | Thermal expansion in above ground PVC-U pipeline

Audience

The audience/s for this Practice Note include/s:

☒ Architects/ Designers
☒ Builders
☒ Building Surveyors/ Inspectors
☒ Engineers
☒ Plumbers

Purpose

This Practice Note provides guidance on the requirements detailed in AS 2032.2006 installation of PVC pipes systems.

The content below provides guidance on:

- Installing an expansion joint
- Maximum length of pipeline between expansion joints
- Expansion joints between fixed points
- Expansion joint omitted when a plastic trap is used in line with the pipeline
- Alternative methods for providing expansion
- Expansion for Downpipes

Abbreviations & Definitions

The abbreviations and definitions set out below are for guidance only. They are not intended to vary those set out in the Building Act 1993, the Building Regulations 2018 or the National Construction Code 2022

- **AS** – Australian Standard
- **AS/NZS** – Australian/ New Zealand Standard
- **NCC** – National Construction Code
- **PCA** – Plumbing Code of Australia
- **Regulations** – Plumbing Regulations 2018
- **WH&S** - Work Health & Safety

VICTORIA State Government

For guidance on the plumbing regulatory framework, refer to Plumbing Practice Note RF 01 Plumbing Regulatory framework NCC 2022

Installing an expansion joint

Ensure that the expansion joint is clipped firmly so that there is no movement in the expansion joint itself and ensure the correct distance for expansion is left in the expansion joint after installation.

Maximum length of pipeline between expansion joints

Unless there is an alternative provision for thermal movement, pipelines must be fitted with expansion joints at spacings no greater than 6m for cold pipelines or 4m for hot pipelines.

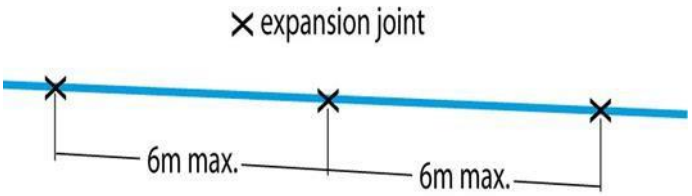

Figure 1 – 6.4.2.2 (a) AS/NSZ 2032:2006
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Expansion joints between fixed points

Unless there is an alternative provision for thermal movement, pipelines must be fitted with expansion joints.

The maximum length of pipeline between fixed points shall not exceed 2m for cold pipelines or 1m for hot pipelines.

Figure 2 - 6.2 AS/NZS2032:2026
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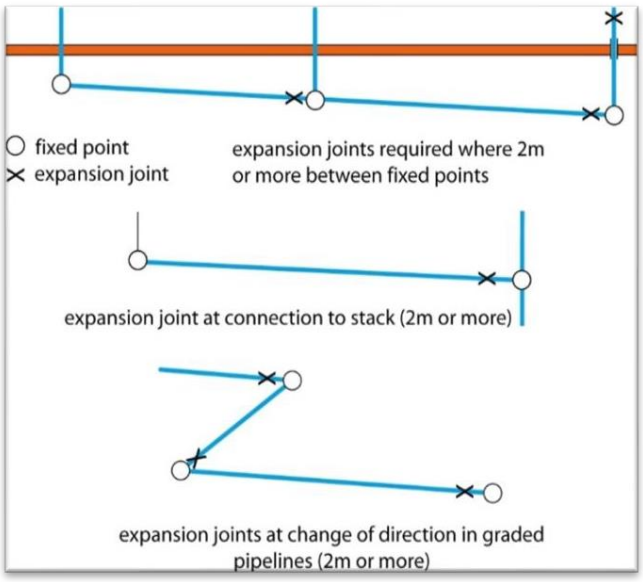

Expansion joint omitted when a plastic trap is used in line with pipeline

Expansion joints may be omitted if an alternative provision for expansion is made in the graded pipeline from a fixture trap, provided that the trap is aligned with the pipeline, of plastic material, and the pipeline does not exceed 6m.

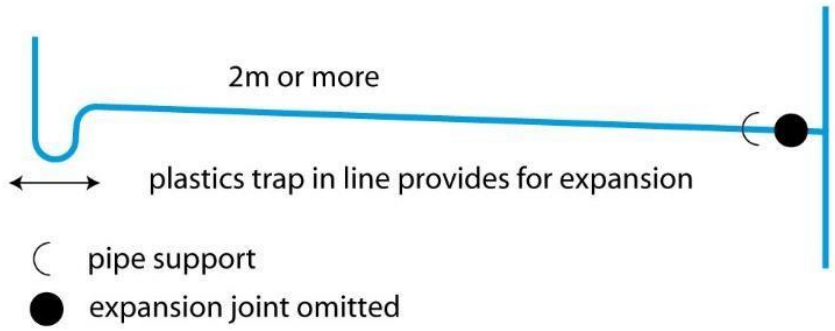

Figure 3 – AS/NZS.2032.2006 Clause 6.4.3(d)
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Alternative methods for providing expansion

Expansion joints may be omitted if an alternative provision for expansion is made above the highest branch connection to a stack where the stack is free to move through a weatherproof sleeve.

This illustration depicts shows the stack penetrating through roof sheet with weatherproof sleeve

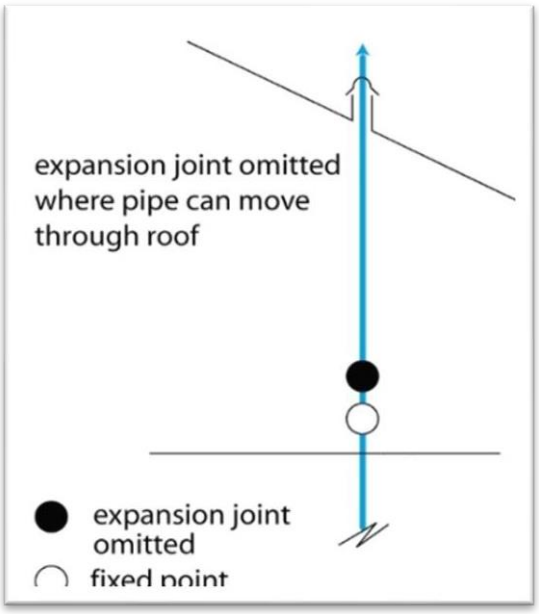

Figure 4 – AS/NZS 2320. 2006 Clause 6.4.3(a)
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Expansion joints may be omitted if an alternative provision for expansion is made at the base of an external vertical waste connected to a drainage trap and where the vertical waste is free to move through a sleeve.

This illustration below shows a sleeve provided at the connection to the Disconnector Gully.

Expansion joints may be omitted if an alternative provision for expansion is at a junction or bend in a graded pipeline where the thermal movement can be accommodated by deflection of the offset leg without affecting the grade of the pipeline. The maximum length (L) and the minimum length (l) of the offset leg must conform to **Table 1** below.

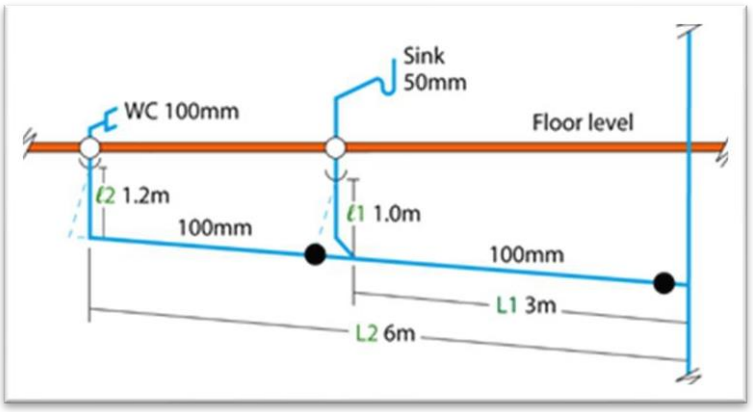

Figure 5 –AS/NZS 2032.2006 Clause 6.4.3(c)
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Expansion joints may be omitted to pipe systems on grade where provision for expansion can be achieved through bends.

- L1 is 100mm and 2m long
- From Table 1, l is 0.75m
- This means that provided the pipe support is 0.75m upstream of the 90-degree bend, expansion is provided by the flex of the PVC-U pipe. L2 is DN100mm PVC-U pipe 4m long

From **Table 1**, l2 is 1.1m

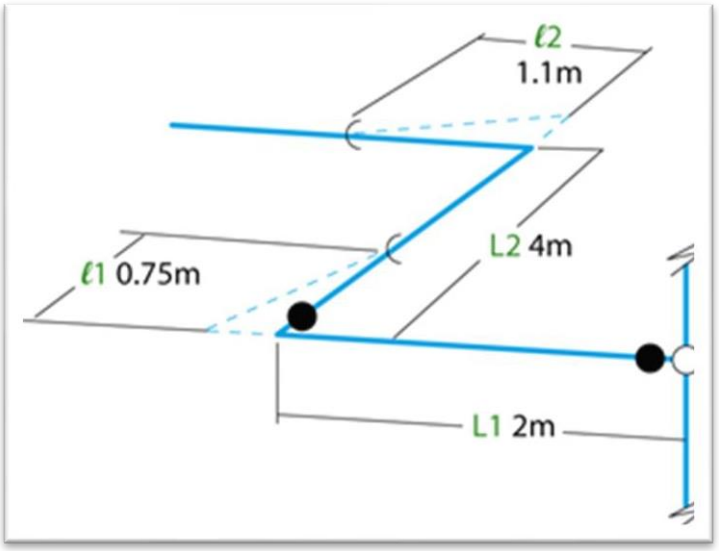

Figure 6 - AS/NZS 2032.2006 Clause 6.4.3(c)
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Nominal size of pipe mm	Maximum pipe length (L) m	Maximum length of offset leg (l) m
40,50	2.0	0.5
	3.0	0.6
	4.0	0.8
	6.0	1.0
65,80,100	2.0	0.75
	3.0	1.0
	4.0	1.1
	6.0	1.2

Table 6.5 AS/NZS 2032.2006

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Note, Downpipe Expansion

Downpipes do not normally need special provisions for expansion and contraction, however when a downpipe is connected to a stormwater pipe or otherwise restrained at the discharge point, provisions shall be made to allow the pipe to expand and contract. Downpipes shall have a support system that permits thermal expansion without detriment to the down pipe or accessories.

Related Documentation

- National Construction Code 2019 Volume Three - Plumbing Code of Australia
- Australian Standard 2032 Installation of PVC pipe systems
- Australian Standard 3500.2022.2

List of Amendments

- Update format and content review.

Document history

Sector	Plumbing
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