Plumbing Practice Note RP-04: Downpipes

This Practice Note specifies the requirements for the installation of downpipes.

The figures and context below provide guidance for:

- What is a downpipe?
- What materials and products are fit for purpose?
- External downpipe locations
- Internal downpipe installations
- Downpipe support systems

For guidance on regulatory frameworks, please refer to Practice Note: Roof Plumbing- RP01: Regulatory Framework for Roof Plumbing

What is a downpipe?

A downpipe is defined as "a pipe that conveys water from a roof catchment to stormwater drains or storage tanks and is inclusive of both vertical and horizontal systems", as per AS/NZS 3500.3 clause 1.4.4.

What materials and products are fit for purpose?

Downpipes materials are commonly metal or PVC. The following materials are also acceptable if in compliance with the relevant Australian standards:

- Copper complying with AS 3795 (pipe) and AS 3517 (fittings)
- Aluminium complying with AS/NZS 1866
- Ductile iron complying with AS/NZS 2280
- Galvanised iron complying with AS 1074
- Polyethylene

As per, AS/NZS 3500.3 clause 2.3.1 roof drainage system components may be made from aluminium alloys, aluminium/zinc and aluminium/zinc/magnesium alloy-coated steel, copper, copper alloys, zinc-coated steel, stainless steel, and zinc if they conform with AS/NZS 2179.1.

Note: downpipes used for the collection of roof water supplying a rainwater tank that is used for drinking water must be AS/NZS 4020 compliant: Testing of products for use in contact with drinking water.

External downpipe locations

Downpipes must have support systems that permit thermal expansion without detriment to the downpipe or accessories.

As defined in AS/NZS 3500.3 clause 4.5.6 when installing a downpipe, the location of downpipe shall be located:

- so that they do not interfere with the normal operation of any door, window, access opening or occupancy of a building
- where they do not cause a nuisance or lead to injury of a person
- as close as practicable to the supporting structure
- so that they are protected from mechanical damage

When installing a downpipe within buildings, the downpipe must be tested in accordance with AS/NZS 3500.3 Section 9 and must not have combustible downpipes in the encroachable space, as per the NCC: Volume 2.

Internal downpipe installations

Downpipes within buildings must be free of leaks when subjected to either—

a) a water test at a pressure of a head of water equal to the lesser of 10 m or the length of the downpipe for a period of not less than 10 min; or
b) an air test at a pressure of not less than 30 kPa for a period of not less than 3 min. Note: 1 kPa = 100 mm head of water.

The seams and joints must be watertight and—

a) clear of any structural member (e.g., beam, column, or party wall); or
b) not concealed in any wall construction in a manner that could interfere with the structural integrity of the wall.
c) Connections within buildings where a downpipe is connected to a site stormwater drain located below a slab-on-ground, the connection shall be located above the level
d) Inspection openings where provided must be accessible for testing and maintenance purposes, inspection openings shall have a nominal size of not less than the nominal diameter of the downpipe.

Downpipe support system

As defined in HB 39 Figure 5.7.6 downpipes must have support systems that permit thermal expansion without detriment to the downpipe or accessories.

As per Figure 1, the support system must have clip spacings

- Horizontally 1 metre
- Vertical 2 metres

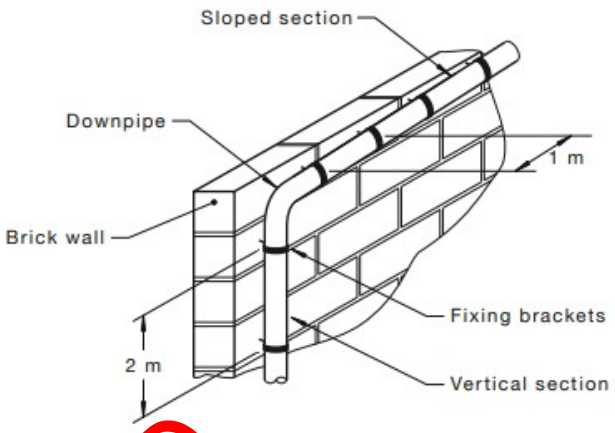

Figure 1: Downpipe fastenings, *referenced from HB 39, Figure 5.7.6*

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The performance requirements of the PCA can also be met by a performance solution. Refer to the PCA on the requirements to develop a performance solution.

Referenced Technical Documents

- National Construction Code, Volume 3, Plumbing Code of Australia (PCA) 2019: Victorian variance F- Stormwater drainage systems
- AS/NZS 3500.3 Stormwater Drainage
- HB 39 Installation code for metal roof and wall cladding
- AS 4020 Testing of products for use in contact with drinking water

Related Documentation

- Practice Note RP-01: Regulatory Framework
- Practice Note RP-02: Box Gutters
- Practice Note RP-04: Downpipes
- Practice Note RP-05: Flashings
- Practice Note RP-06: Roof sizing and calculations

Contact Us

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