

NCC 2025

Ventilation of Cavities

THINK
BRICK
AUSTRALIA

WHAT IS CHANGING

The National Construction Code (NCC) 2025 contains changes for how cavities in external walls need to be detailed. Moving forward, masonry cavities will need to be ventilated with openings at the top and bottom of the cavity. The requirements are stipulated below, as per Section 10.8.1 of the 2025 ABCB Housing Provisions Standard:

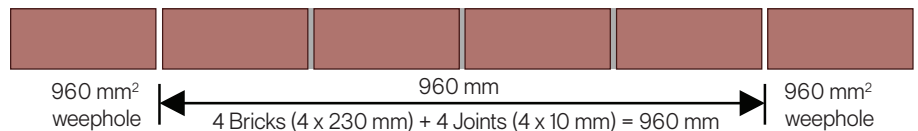
1. An external wall without a pliable building membrane or a water barrier between the cladding and the exterior side of the primary insulation layer, must incorporate a drained and ventilated cavity.
2. A drained and ventilated cavity must –
 - a) be located between the cladding and the external side of the primary insulation layer, or the outermost control layer; and
 - b) have a depth of at least 12 mm; and
 - c) be unobstructed by any insulation and/or control layers; and
 - d) be drained to the exterior; and
 - e) have openings with a free area of no less than 1,000 mm²/m of wall provided at –
 - i. the base and top of the cavity; or
 - ii. each storey of level to where the cavity is closed.
- 3) The requirements above do not apply to single skin masonry walls.

VENTILATION AT BASE OF CAVITY

As stated above, 1000 mm²/m of open area is required at the base of the cavity. Weepholes in masonry perpend joints can be installed in the brickwork to comply with this requirement. A weephole is created by omitting mortar in the joint, including the bed mortar immediately above and below.

A weephole for a standard brick would therefore have an area of 96 mm (76 mm + 10 mm + 10 mm) x 10 mm = 960 mm²

Weepholes shall be placed at a maximum of every fourth perpend for a standard brick to achieve a ventilation area of 960 mm²/960 mm which is equivalent to 1000 mm²/m as below:



WEEPHOLE SCREENS

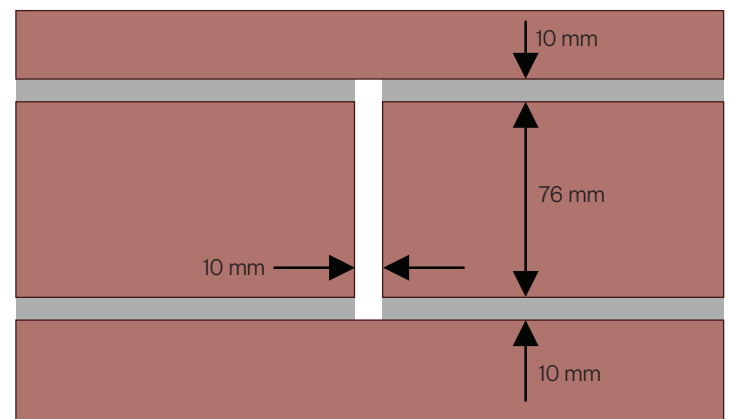
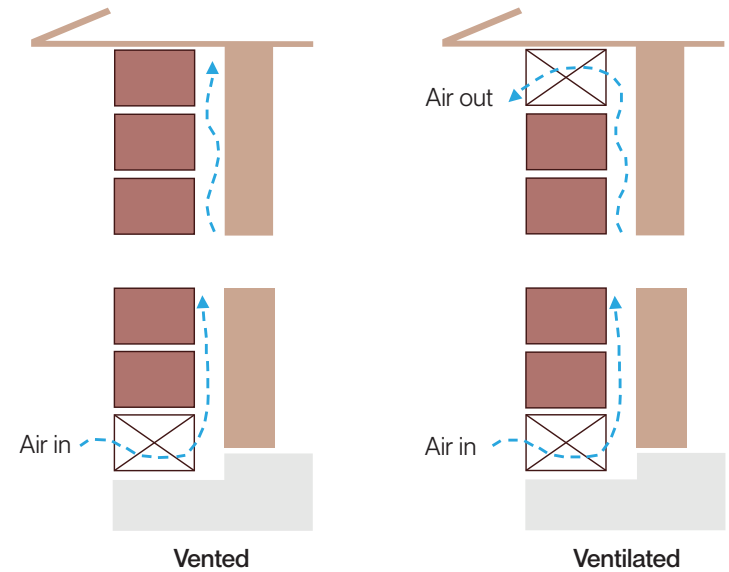
The explanatory information within NCC 2025 states that 'devices which restrict vermin entry or service penetrations may be used if they facilitate drainage and ventilation as required'. This means that weephole screens and mesh for bushfire protection can be installed into weepholes, provided that the number of weepholes meets the required 1000 mm²/m size prior to the screens/mesh being fitted.

For example, a standard *Weepa* weephole cover is 76 mm x 10 mm in size. These would cover a weephole area of 760 mm². As such, they would need to be installed at every *third* perpend joint on a standard brick size to achieve the open area requirement as stipulated in the NCC 2025.

VENTED VS VENTILATED

Traditionally, masonry cavities are 'vented' with weepholes at the base of the wall, as well as weepholes above window head and sill flashings.

Ventilated cavities ensure continuous airflow between the base and top of the cavity to reduce humidity and moisture build up.

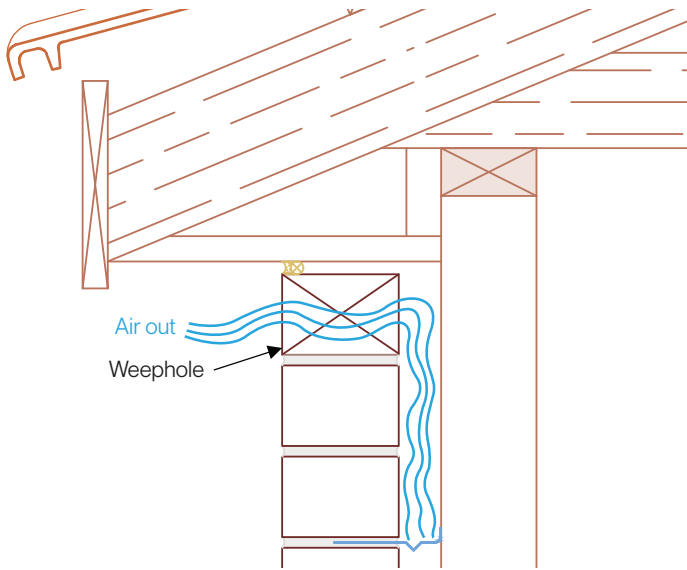


VENTILATION AT TOP CAVITY

The top of the masonry cavity must also have openings of 1000 mm² / m in a similar fashion to the base. The following options can be considered to achieve compliance:

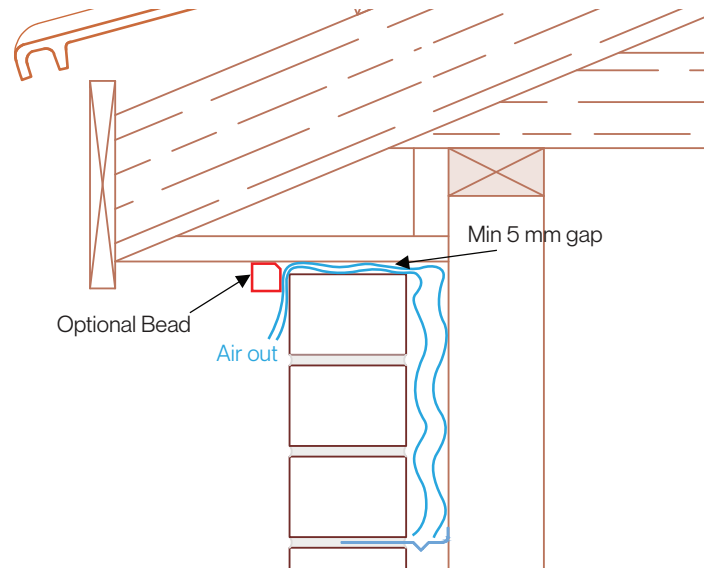
OPTION 1: WEEPHOLES

Weepholes can be placed at every third or fourth perpend joint to achieve compliance. Weephole sizing must be checked to determine spacing. For weepholes that are 96 x 10 mm as with bottom weepholes, spacing can be every fourth perpend. For smaller weepholes, they must be placed more frequently.



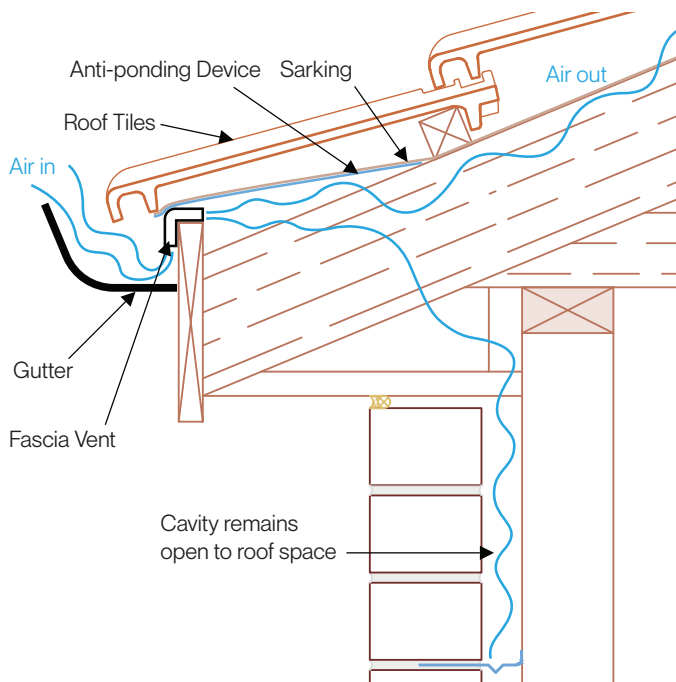
OPTION 2: CONTINUOUS OPENING

A consistent opening can be left above the topmost course of masonry to achieve the open area. This should be at least 5 mm to avoid the open space clogging. An optional bead can be installed to hide the opening, ensuring a gap remains.



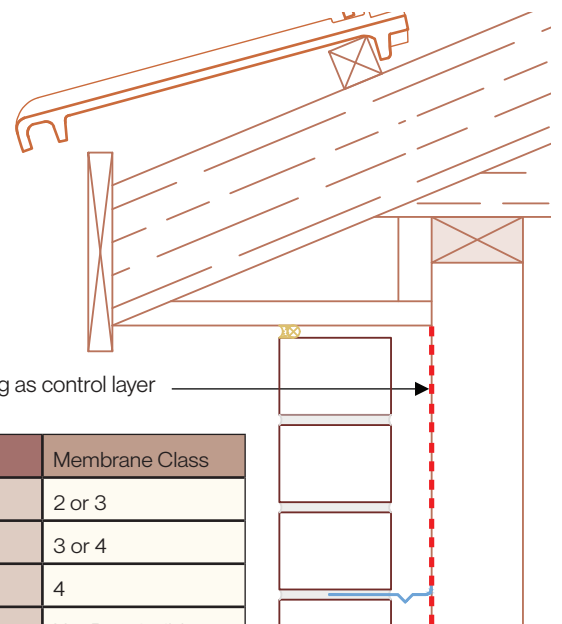
OPTION 3: VENTILATION INTO ROOF SPACE

In climate zones 6 – 8 where roof spaces must be ventilated, the cavity can remain open at the top, allowing air to ventilate into the roof space. This is only permissible where the roof space is ventilated in accordance with Section 10.8.3 or 10.8.4 of the NCC 2025 ABCB Housing Provisions Standard.



OPTION 4: VENTED CAVITY WITH MEMBRANE

If there is a desire to install a membrane as the moisture control layer, openings are not required, and the wall can be designed with a vented cavity, rather than a ventilated cavity. This is **advantageous in Climate Zone 2** as there are no minimum membrane requirements. The membrane must meet the required class per the table below.



Climate Zone	Membrane Class
1	2 or 3
3	3 or 4
4 - 5	4
6 - 8	Not Permissible

*Climate zone 2 has no minimum requirements