BUILD RIGHT

Pressure on air seals

Air seals play an important part in stopping air carrying water into a building. Understand why they are used and how to install them, and you should get them right every time.

BY TREVOR PRINGLE,
ANZIA, BRANZ PRINCIPAL WRITER

AIRFLOW THROUGH A WALL system will carry any water that might be present into the framing cavities and potentially inside the building.

A key function of drained and vented cavities is to ensure the air pressure behind the cladding is the same (or almost the same) as the pressure on the outside face of the cladding. This prevents air flowing across a wall system as the pressure inside the building is typically lower than that outside.

Need air seal and air barrier

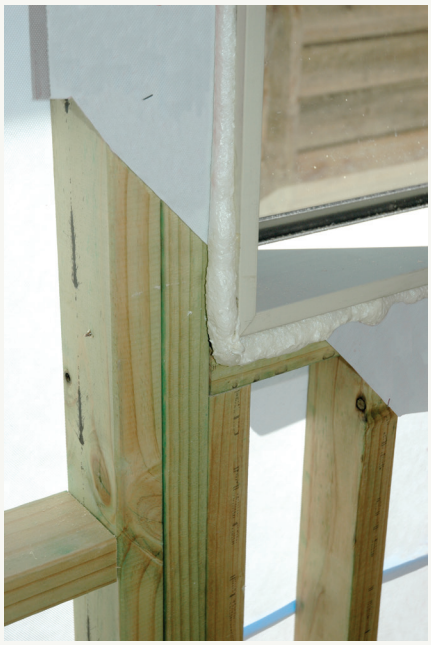
To keep the air pressure within the cavity and in the voids around the window as close as possible to the outside pressure, walls must incorporate:

- an air barrier – typically the tight stopped plasterboard internal sheet linings, but it can also be a rigid underlay, a proprietary rigid air barrier or a flexible wall underlay meeting the airtightness requirements of E2/AS1 Table 23
- an air seal – around penetrations such as windows, doors and meter boxes.

Get the air seal right

There are several things to get right to ensure the continuity of the air barrier:

- Air seals must be continuous around the opening, sealing the gap between the sides and top and bottom of the window/door reveals/jambs/sill and the framing that trims the opening.



Continuous air seal before trimming.

- Air seals must be expanding polyurethane foam or sealant installed over a PEF backing rod to meet the requirements of E2/AS1. The backing rod controls the depth of the seal and prevents it filling up the gap around the penetration. (Leaving most of the void around a window and door open allows that void to pressure equalise with the outside pressure.) A foam seal that completely fills the void may form a moisture bridge to the interior.

Potential gap at packer.

- Air seals must cover any packers used when installing the windows – packers should be inset 6–8 mm from the inside edge of the reveal to allow a continuous seal.
- Air seals must be compatible with the flexible flashing tapes used – some sealants can react with bitumen-based flashing tape, preventing full curing of the sealant.