

**BUILD
RIGHT**

Rigid wall underlays

WHEN RIGID WALL UNDERLAYS ARE REQUIRED BY ACCEPTABLE SOLUTION E2/AS1 AMENDMENT 5, THEY MUST BE USED WITH, NOT INSTEAD OF, A FLEXIBLE WALL UNDERLAY.



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AIR BARRIERS FIRST came into prominence in the third edition of E2/AS1 in 2005. Their function was to minimise the pressure difference across wall construction and reduce the potential for water entry through air movement.

At that time, air barriers generally consisted of interior sheet linings with all joints stopped. Where walls were not lined, such as attic spaces at gable ends or where there was an air-leaking interior lining such as T&G, an air barrier was required.

Needed in extra high wind zones

E2/AS1 Amendment 5 requires a rigid wall underlay to be installed under all claddings in extra high (EH) wind zones (as determined by NZS 3604:2011 Section 5). A rigid wall underlay is usually installed with a drained cavity (see Figure 1) since all claddings in extra high wind zones require a drained cavity except direct-fixed vertical corrugated steel cladding.

A rigid wall underlay installed behind a drained cavity lowers the risk of weathertightness failure by taking the pressure on the outer face of the framing rather than on the sheet lining. It also prevents insulation from bulging and bridging across the cavity.

No rigid wall underlay is required in direct-fix options permitted under E2/AS1 as the weathertightness risk is regarded as low, but they may be used.

The only other situations requiring an air barrier are external walls of attached, unlined garages and where walls are not lined such as attic spaces at gable ends.

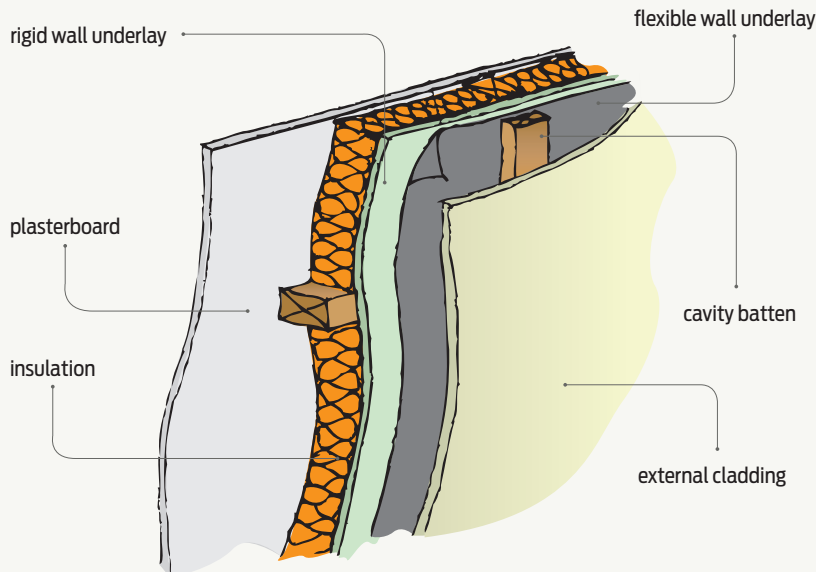


Figure 1 Rigid wall underlay installation.

Use the right materials

E2/AS1 allows rigid air barriers to be either a minimum of:

- 7 mm thick H3-treated plywood, or
- 6 mm thick fibre-cement sheet.

Rigid wall underlay must have sheet edges fixed over solid framing. Fixings must meet the durability requirements of NZS 3604: Section 4, Durability. Nails and screws must meet not less than 15-year durability and may be hot-dip galvanised steel.

A flexible wall underlay (see page 25 *Selecting a flexible wall underlay*) must be installed over the rigid wall underlay.

Proprietary rigid air barriers

Proprietary rigid air barriers are outside the scope of E2/AS1 and generally do not require a flexible wall underlay as the sheet is sealed and flashed. The use of proprietary rigid air barriers must be submitted for consent as an alternative method. ◀