BUILD RIGHT

BY GREG BURN,
STRUCTURE LIMITED

Installing wall underlay and flexible flashing tape

Getting building basics right is critical for weathertight construction. Here, we look at the correct way to install wall underlay and flashing tape to exterior window and door openings in light timber or lightweight steel-framed dwellings before installing aluminium joinery.

THERE IS potential over the life of a dwelling for water to enter through the exterior cladding into the wall assembly. This can occur through the junctions between the exterior joinery and the cladding or through the seals and joints of aluminium joinery, particularly at corners.

This ingress moisture may reach the wall framing, and as the framing is vulnerable, it needs protection.

Protecting framing from moisture

Under Building Code Acceptable Solution E2/AS1, exterior openings are initially protected with a combination of flexible wall underlay and flexible flashing tape.

While installing the protective layers of underlay and tape is relatively straightforward, it is critical that it is done accurately as it is inaccessible once the exterior cladding/joinery has been installed.

Flexible flashing tape

Flexible flashing tape is installed over the wall underlay to provide another layer of protection to the framing in critical areas of the window opening:

- at each corner including the exposed triangles of framing
- along the full length of the sill.

There are generally two types of self-adhesive flexible flashing tape available – conformable and non-conformable. The installation process is slightly different for each, as outlined below.
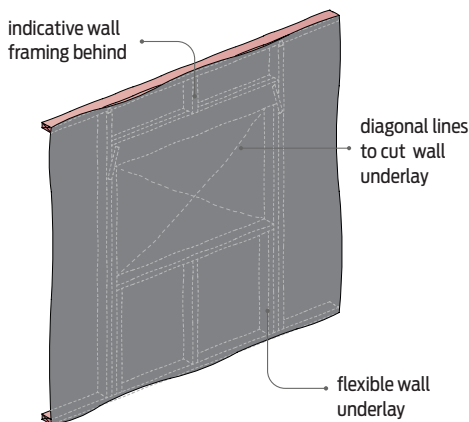
Step 1: Install the flexible wall underlay.
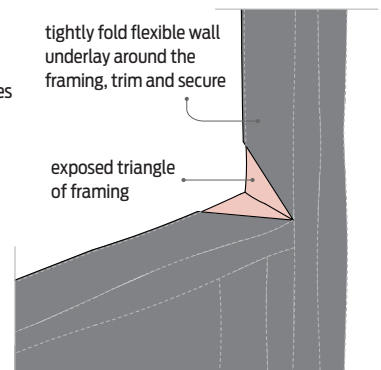
Step 2: Cut and fold in wall underlay.

Construction sequence starts the same

We step through the preparation of a typical window opening (with sill above floor level) and highlight some key considerations.

Step 1: Wall underlay

Install the flexible wall underlay (building wrap) to the exterior face of the wall framing and carry it completely across the window opening.

Step 2: Cut and fold wall underlay to opening

When ready for window installation, cut the wall underlay diagonally (at 45°) from corner to corner across the opening. Tightly fold it into the opening and over the full depth of the framing. Secure the underlay to the inside edge – for light timber
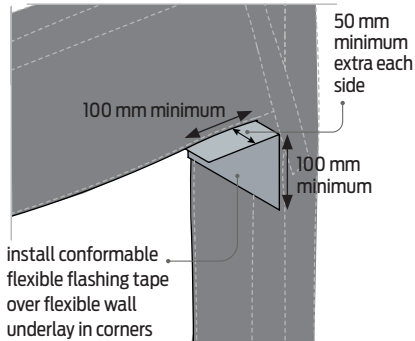
framing, generally secure with staples, and for lightweight steel framing, fix with flathead screws or double-sided construction tape (in accordance with the underlay manufacturer's instructions).

Trim off the excess underlay at the internal face of the framing. This leaves an exposed triangle of framing at each corner of the opening, which is covered with flashing tape at the next step.
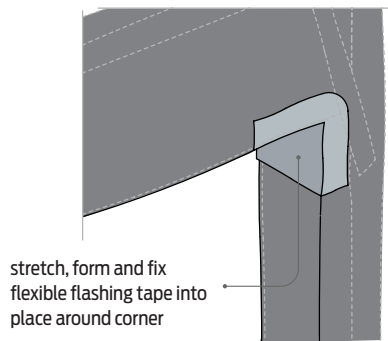
Conformable flashing tape installation (use steps 3–6)

Flashing tape is installed to the full depth of the framed opening as well as out over the face of the framing/underlay. Conformable tape may be
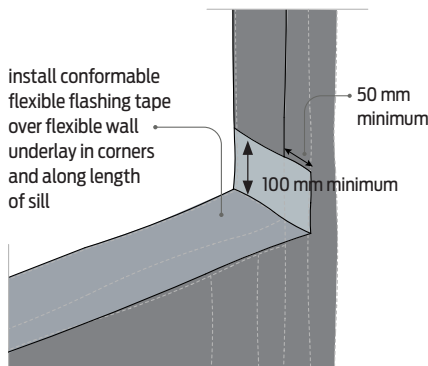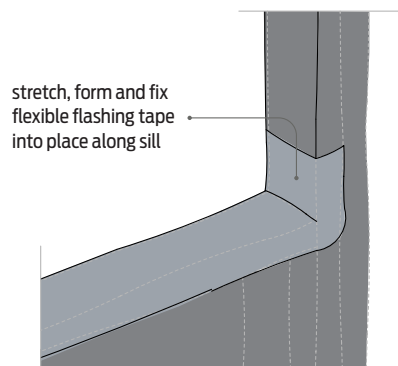
Conformable flashing tape

50 mm minimum extra each side

100 mm minimum

100 mm minimum

install conformable flexible flashing tape over flexible wall underlay in corners

Step 3: Start with top corners and install to full depth of opening and across face.

stretch, form and fix flexible flashing tape into place around corner

Step 4: Fold flashing tape back.

install conformable flexible flashing tape over flexible wall underlay in corners and along length of sill

50 mm minimum

100 mm minimum

Step 5: Install flashing tape to sill.

stretch, form and fix flexible flashing tape into place along sill

Step 6: Fold overhanging tape back for sill.

preferred as it can be stretched around and out over the face at corners.

Step 3: Install tape to the top corners

Begin by installing tape to the top corners. The tape width must allow for the depth of framing (generally 90 or 140 mm) plus a minimum of 50 mm lap out over the face of the framing/underlay.

Fix one length of tape (of the required length/width) to the underlay in the opening at each top corner for the full depth of the framing a minimum of 100 mm across the head and down the jamb.

The tape must overhang the outer face of the framing/underlay a minimum of 50 mm.

Step 4: Fold overhanging tape back

Next, fold the overhanging tape back, accurately stretching the tape to form it around the corner, and fix it to the outer face of the framing/underlay at the corner and across the head and down the jamb. Maintain a minimum of 50 mm cover.

Step 5: Repeat for sill

Follow the same initial process for the sill, with one length of tape running the full width of the sill, a minimum of 100 mm up the jamb at each corner and overhanging the outer face of the framing/underlay a minimum of 50 mm.

Step 6: Fold overhanging tape back

Again, fold the overhanging tape back, accurately

stretching the tape to form it around the corner, and fix it to the outer face of the framing/underlay at the corner, up each jamb and along the full length of the sill. Maintain a minimum of 50 mm cover.

Non-conformable flashing tape installation (use steps 7–11)

As this tape is unable to be stretched, the tape installed to the window corners and sill will need to be cut at the corners during installation. This allows it to be folded out over the face of the framing/underlay.

Step 7: Fix tape diagonally across corners

When the tape is ultimately fixed out over the framing/underlay, an untaped area of underlay at the face of each corner is left.

Prior to installing tape to the window corners and sill, these untaped areas must be protected by fixing a suitable length of tape, fully covering the area that would otherwise remain untaped diagonally across the face of each corner of the opening.

Step 8: Install flashing tape to the top corners

Next, install tape to the top corners. The tape width must allow for the depth of framing (generally 90 or 140 mm) plus a minimum of 50 mm lap out over the face of the framing/underlay.
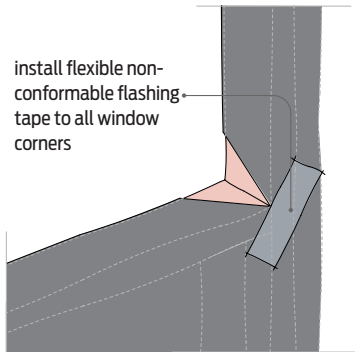
Fix one length of tape (of the required length/width) to the underlay in the opening at each top corner for the full depth of the framing a minimum of 100 mm across the head and down the jamb.

The tape must overhang the outer face of the framing/underlay a minimum of 50 mm.
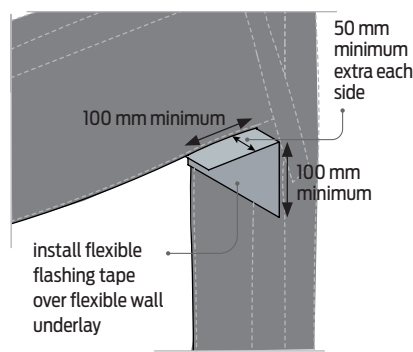
Step 9: Cut, fold and fix flashing tape

Cut the portion of overhanging tape at each corner. Fold the tape back and fix it to the outer face of the framing/underlay at the head ➤
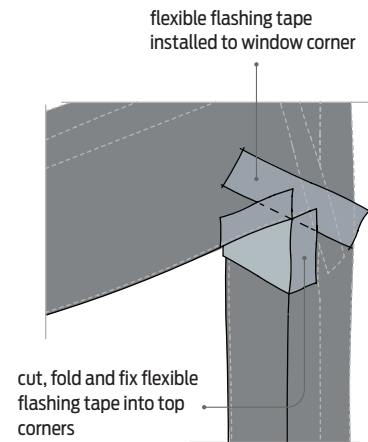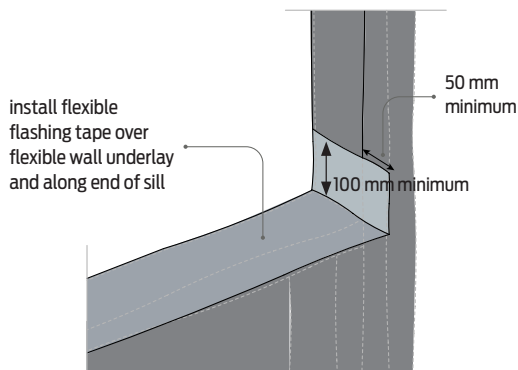
Non-conformable flashing tape

install flexible non-conformable flashing tape to all window corners

Step 7: Fix tape diagonally across all four corners.

50 mm minimum extra each side

100 mm minimum

100 mm minimum

install flexible flashing tape over flexible wall underlay

Step 8: Install flashing tape to the top corners.

flexible flashing tape installed to window corner

cut, fold and fix flexible flashing tape into top corners

Step 9: Cut, fold and fix flashing tape.

install flexible flashing tape over flexible wall underlay and along end of sill

50 mm minimum

100 mm minimum

Step 10: Install flashing tape to the sill.

cut, fold and fix flexible flashing tape to window corner
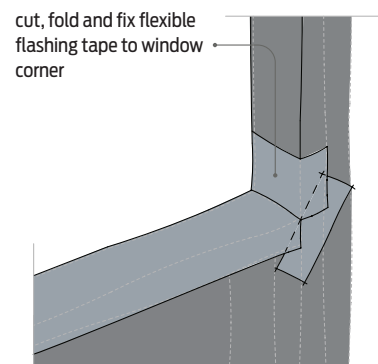
Step 11: Cut, fold and fix tape for sill.

and jamb and over the pre-installed diagonal tape at each corner. Maintain a minimum of 50 mm cover.

Step 10: Install flashing tape to sill
Follow the same initial process for the sill, with one length of tape running the full width of the sill, a minimum of 100 mm up the jamb at each corner and overhanging the outer face of the framing/underlay a minimum of 50 mm.

Step 11: Cut, fold and fix tape for sill
Cut the portion of overhanging tape at the corner, fold the tape back and fix it to the outer face of the framing/underlay across the width of the sill, up each jamb and over the preinstalled

diagonal tape at the corners. Keep a minimum of 50 mm cover.

Several key considerations
Accurate installation of flashing tape is critical as it protects the opening sill and corners, including the exposed triangles of framing at the corners not covered by wall underlay. Here are a few pointers:

- Ensure that the flexible flashing tape specified meets all relevant requirements and is compatible with the wall underlay.
- Follow all tape manufacturer's installation instructions.

- The face of the underlay must be clean, dry and dust free prior to tape installation. Some tapes may require a primer or extra adhesive to be applied to the surface prior to installation.
- Ensure the tape is well fixed to the underlay. It must be wrinkle and fold free – a flexible plastic applicator can be used to ensure accurate application and good adhesion.
- Avoid excessive tape build up, which can cause aluminium joinery and air seal installation issues and may result in damage to the tape. ◀