

Sisalation® pliable building membranes – water and vapour barriers

Introduction

This Installation Guide provides installation recommendations for Sisalation® pliable building membranes – water and vapour barriers in residential roofing and walling and commercial metal deck roofs. The products are:

Sisalation® Metal Roof MD (433) and HD (453)
Sisalation® Multipurpose EHD (456)
Sisalation® Tuff Wrap™ Standard

General information

- Sisalation® pliable building membranes – water and vapour barriers are supplied in rolls to allow easy installation along roofs and walls.
- Prior to installation calculate the amount of membranes and fixings required for the installation.
- Ensure laps in membranes to maintain weather tightness.
- Avoid gaps between membrane sheets other than where required around electrical fittings or as specified.
- All pliable building membranes shall be installed in accordance with AS/NZS 4200.2.
- Refer to latest ICANZ Installation Handbook Part 2: Professional Installation Guide for further information and tips.
- Ensure that all safety assessments are carried out relevant to the project and all site safety requirements are strictly adhered to.

Important notes

- Sisalation® pliable building membranes – water and vapour barriers are vapour barriers and may not be suitable for some applications in cold climates. Please consult your project requirements before install.
- Electric cables and equipment partially or completely covered with bulk thermal insulation may overheat and fail. Refer to AS 3999.
- Foil products conduct electricity. It is important that all safety requirements are adhered to when installing this product. As a minimum, have your electrician disconnect the electrical supply prior to commencing the installation to ensure that the foil is not 'LIVE'. Reconnect the electrical supply after installation and then test to confirm that the foil is not conducting electricity.

- Under no circumstances should Sisalation® foil membranes be applied horizontally in residential ceiling spaces and under-floor applications. Refer to the Australian/New Zealand Wiring Rules AS/NZS 3000 for detailed information.
- Where building membranes are used as a roof sarking, roofing materials must be installed immediately after membrane installation to protect from UV weathering degradation.
- Prior to and during installation the insulation must be kept dry.
- Where cutting is required, use a sharp knife and straight edge.
- Any damage or tears shall be repaired using Vapastop® 883 Reinforced Foil Tape to restore integrity of the membrane.

Materials required

- Refer to the project specification for the correct membrane specification.
- If a vapour permeable membrane is required, please refer to Sisalation® pliable building membranes – water and vapour barriers Installation Guide.
- If an air tight or water barrier membrane is required, then perforated membranes shall not be used.
- Coverage for each membrane roll is provided on the relevant technical data sheet.
- Simply divide the area to be insulated by the coverage per roll to determine the number of rolls to order.
- As a general rule allow for 5% wastage for simple areas and greater allowances for more complex areas.

Accessories

- Fasteners suitable to the application and framing system shall be used to fix the membranes in place.

Tools



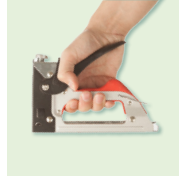
Tape measure

To measure lengths required.



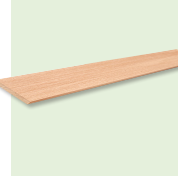
Sharp knife

With a plastic (non-conductive) handle for cutting insulation to size.



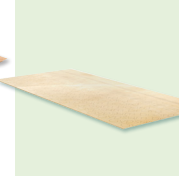
Staple gun

With non-metallic staples to staple tape or string, if required.



Straight edge

For cutting.



Cutting board

Or hard, durable surface.



Clothing & PPE

Appropriate wear for site (refer to the sections below).



Ladder

Or scaffolding as needed.

PPE

Personal Protective Equipment (PPE) must be compliant with the requirements of the specific worksite and relevant Australian Standards. Check with site foreman or site representative to ensure that required PPE obligations are met. As a recommendation for handling and installing insulation materials, the following PPE is recommended:



Eye protection

Suitable eye protection to AS 1336 reduces the risk of eye contact with dust or fibres. Safety glasses must be worn when installing from beneath the ceiling.



Gloves

Gloves are recommended, especially when cutting insulation.



Work clothes

Loose fitting clothes, including long sleeved shirts, long pants and cap or hard hat.



Dust mask

A dust mask is recommended when working in dusty areas.



Safety shoes

Safety boots/shoes must be worn to protect feet.



Separate wash

Wash work clothes separately and rinse the washing machine after use.

Safety

The following activities are recommended but not limited to these items. A full site-specific safety assessment must be completed to ensure installation is safe.



Assess

Assess the building structure and site for any safety issues prior to commencing work.



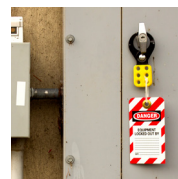
Check

Before entering a ceiling space, make note of the location of equipment in the ceiling such as lighting luminaires, exhaust fans and fire sprinklers.



Electrical wires

Ensure the work area is safe from hazards including electrical cabling. Do not touch any live electrical cables.



Isolate power

If accredited, isolate power at the circuit board where necessary and apply caution tags to circuit breakers.



Electrician

If not accredited, ask appropriate site representative to isolate power at the circuit board where necessary and apply caution tags to circuit breakers.



Limitation

Under no circumstances should Sisalation® pliable building membrane be applied horizontally in residential ceiling spaces and under-floor applications. Refer to the Australian/New Zealand Wiring Rules AS/NZS 3000 for information.



Height

Working at height can be dangerous, exercise caution when climbing ladders or accessing elevated platforms.

Residential metal and tiled roofing

- Always work from the lowest part of the wall or roof and install the membrane across the construction so the next layer of membrane will overlap the previous layer by 150mm minimum for effective weatherproofing.
- In residential sheet metal roofs, the Sisalation® pliable building membrane shall be installed as a continuous membrane, anti-glare side facing out, and laid loosely over rafters/ battens on 450mm centres with a minimum drape of 40mm. Refer to **Figure 1**. For larger rafter spacings (in metal roofs), the drape shall be increased to 60–80mm.
- At the ridge, pliable building membranes shall continue over the ridge no less than 150mm. Where ridge ventilation is designed and installed the membrane shall terminate at the ventilation where required.
- To facilitate drainage, joins must be overlapped by a minimum of 50mm when taped and a minimum of 150mm when not taped.
- Sisalation® pliable building membranes shall be installed to allow for drainage of liquid water into the gutter.
- When used under roof tiles, Sisalation® Pliable Building Membranes must be installed under the battens, with a sag not exceeding 40mm, in accordance with AS/NZS 4200.2. Refer to **Figure 2**.
- Where Sisalation® Pliable Building Membranes are acting as a water control, the membrane shall be installed at a slope of no less than 2° to facilitate drainage.
- For low pitch roofs (3° to 10° pitch) (Figure 2), Sisalation® pliable membranes must be installed horizontally (unrolled parallel to the fascia). The membrane shall be supported and overlaps shall be sealed to prevent water ingress.
- Where the Sisalation® pliable building membrane is intended to act as a vapour barrier and/or air barrier, tape and seal all overlapped joins, penetrations and discontinuities with 72mm Vapastop® 883 Reinforced Foil Tape to prevent air movement.
- At the valley edge the membrane shall overlap a minimum of 25mm and not impede drainage to the gutter.
- At the barge or fascia front edge, the membrane should extend no more than 25mm and not impede drainage to the gutter.
- Restore power, remove caution tags and test membrane to ensure electricity is NOT being conducted by the membrane when the job is complete.

Figure 1: Residential metal roof with Sisalation® Metal Roof MD (433) and HD (453) (vertical install method shown)

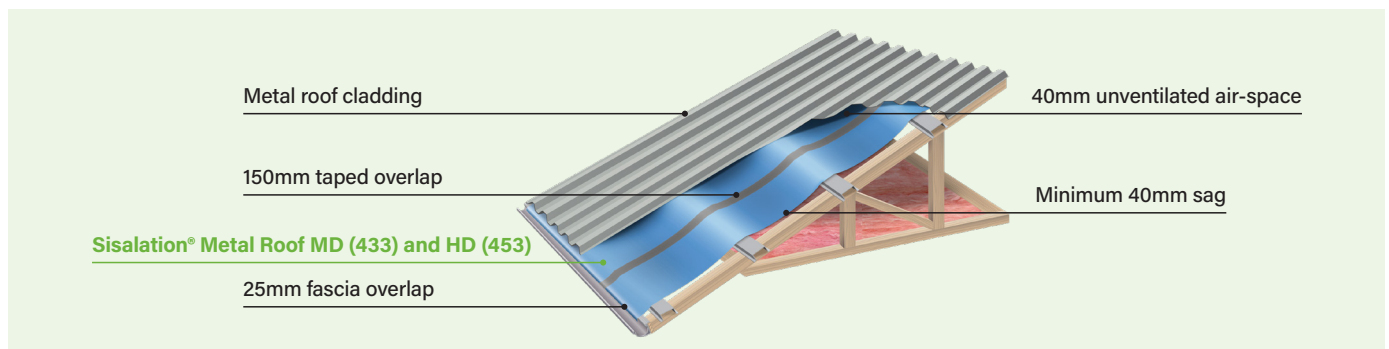
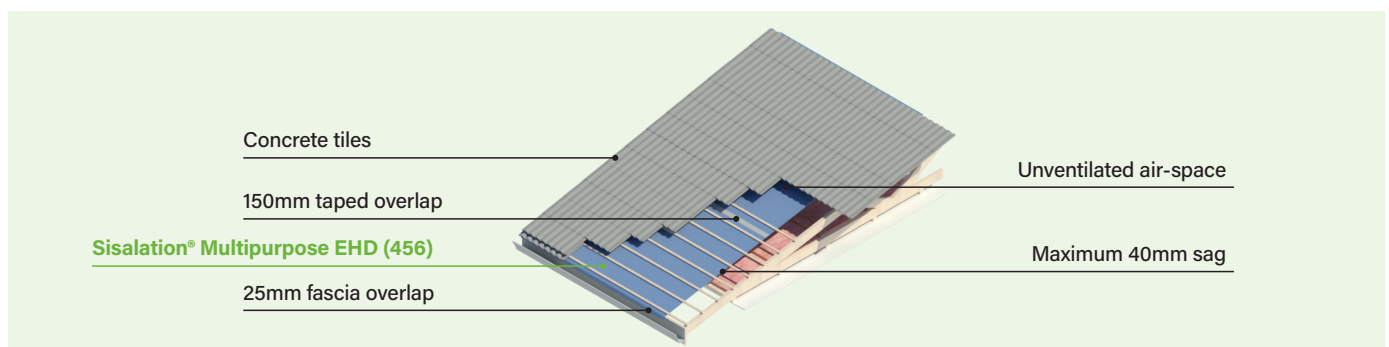


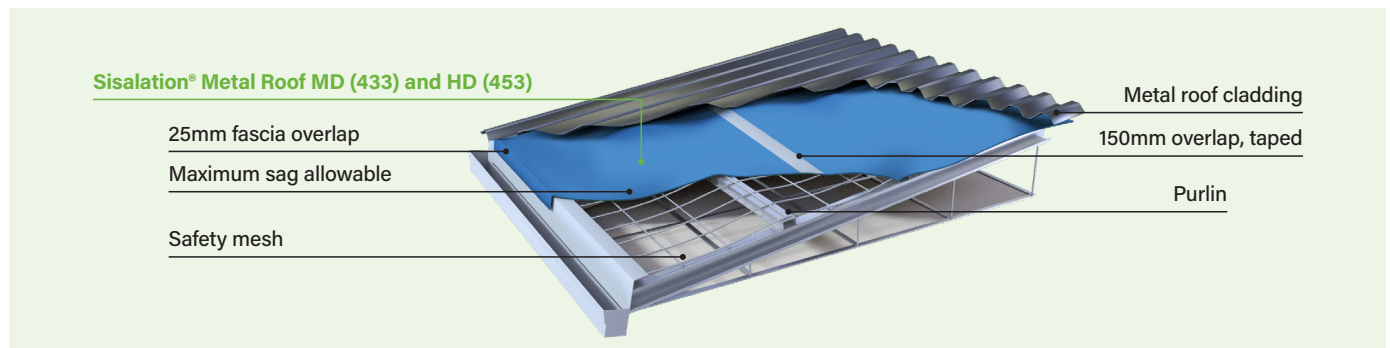
Figure 2: Low pitched residential tiled roof



Commercial metal deck roofing

- The Sisalation® pliable building membrane shall be installed as a continuous membrane, anti-glare side facing out, and laid with a maximum sag allowable by the safety mesh between purlins.
- Joins must be overlapped by a minimum of 50mm when taped and a minimum of 150mm (using the 150mm flap) when not taped.
- For low pitch roofs (3° to 10° pitch) (**Figure 3**), Sisalation® pliable membranes must be installed horizontally (unrolled parallel to the fascia). The membrane shall be supported and overlaps shall be sealed to prevent water ingress.
- Sisalation® Pliable Building Membranes shall be installed to allow for drainage of liquid water into the gutter.
- The roof sheet may be fixed by screwing through the Sisalation® pliable building membrane into the purlin.
- Restore power, remove caution tags and test membrane to ensure electricity is NOT being conducted by the membrane when the job is complete.

Figure 3: Commercial metal roof with Sisalation® Metal Roof MD (433) and HD (453) (horizontal install method shown)



Framed walls

- In framed walls and gables, the Sisalation® pliable building membrane (refer to **Figure 4 and 5**) shall be installed horizontally as a continuous membrane by fixing to all framing members with the anti-glare side facing out.
- Joins must be overlapped by 150mm to facilitate drainage, or all joins must be taped using 72mm Vapastop® 883 Reinforced Foil Tape to aid air-tightness and prevent water ingress.
- Horizontal joins shall be overlapped by 150mm minimum, and vertical joins shall be overlapped by 150mm–300mm.
- The Sisalation® pliable building membrane shall extend from the top plate to the bottom plate on concrete slabs or bearers in timber constructions.
- The wall wrap is tape sealed to the top plate to achieve the desired function of the membrane.
- Fixings are to be no more than 150mm apart for timber framed walls and 300mm for metal framed walls and should be installed using galvanised clouts or staples when fastening to timber construction and; TEK screw with a washer when fastening to steel constructions. It is recommended that flat punched multi-point fasteners or cap screws are used for fixing in high wind areas.
- Any damage made to the Sisalation® pliable building membrane during installation, including holes and tears, must be repaired with Vapastop® 883 Reinforced Foil Tape.
- Where the Sisalation® pliable building membrane is intended to act as a vapour barrier and/or air barrier,

tape and seal all overlapped joins, penetrations and discontinuities with 72mm Vapastop® 883 Reinforced Foil Tape to prevent air movement.

- At windows or openings, the membrane shall be cut and dressed in all sides to achieve its desired function and facilitate proper drainage to the building flashing. Refer to **Figure 9**.
- Restore power, remove caution tags and test membrane to ensure electricity is NOT being conducted by the membrane when the job is complete.

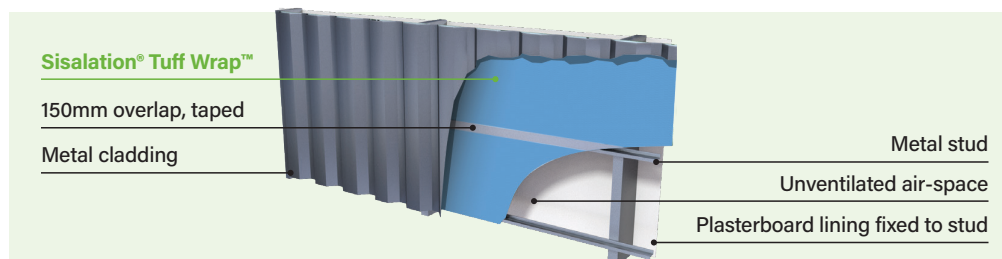
Drained and ventilated cavity requirements

In climate zones where a drained and vented cavity is required it must be ensured when Sisalation® vapour permeable membrane is adjacent to the external cavity, that it meets the below requirements:

- Be located between the external cladding and the Sisalation vapour permeable membrane.
- Must be unobstructed by any control layer.
- Be constructed from cavity battens, spacers or similar. Consultation with the selected cladding manufacturer is recommended to select suitable product (see examples below).
- The cavity must be drained to the exterior including where cavities are vertically compartmentalised. Openings must be no less than 1,000mm²/m at the base and top of the cavity or each storey/level to where the cavity is closed.

Please refer to Pliable building membranes in external walls (Building Classes 1, 2 & 4) NCC 2025 Technical Bulletin for further information.

Figure 4: Steel framed wall with Sisalation® Tuff Wrap™ (horizontal install method shown)



Drainage batten examples

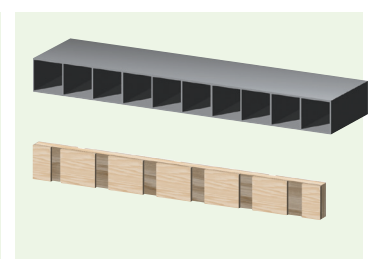
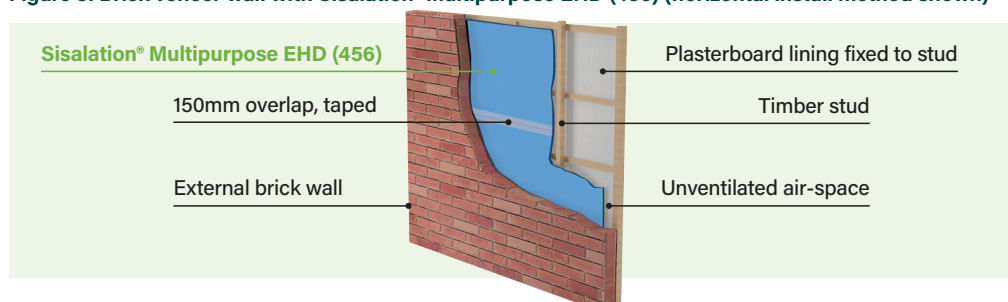


Figure 5: Brick veneer wall with Sisalation® Multipurpose EHD (456) (horizontal install method shown)



Double brick and masonry cavity walls

- Install the Sisalation® pliable building membrane before the second leaf of a cavity brick wall has been constructed.
- Sisalation® Pliable Building Membranes may be installed directly onto the internal leaf, or adjacent to the internal surface of the external leaf of a double brick wall. Refer to **Figure 6** and **Figure 7** below.
- An air gap/drainage plane (of width defined in AS 3700 or AS 4773) must be maintained between the Sisalation® pliable building membrane and the external leaf of bricks to maintain the moisture resistance of the wall construction.
- After the first leaf of the double brick or masonry cavity wall is laid, place suitable foam spacers onto the brick ties via the vertical slit provided. Install one cavity spacer per square metre to ensure the required air space is achieved. This will ensure the air gap is maintained.
- Install the Sisalation® pliable building membrane horizontally. Cut slits through the pliable building membrane at all brick tie positions and place Sisalation® pliable building membrane into position over the brick ties. Push the membrane and the cavity spacer into position against the brickwork.
- Place additional foam spacers over the brick ties and press against the Sisalation® pliable building membrane to establish the air gap on each side of the membrane.
- The overlap shall face downwards to facilitate a 150mm overlap. Ensure there are no obstructions to weepholes.
- Tape and seal penetrations as required.
- Restore power, remove caution tags and test membrane to ensure electricity is NOT being conducted by the membrane when the job is complete.

Figure 6: Double brick cavity wall with Sisalation® Tuff Wrap™ Standard

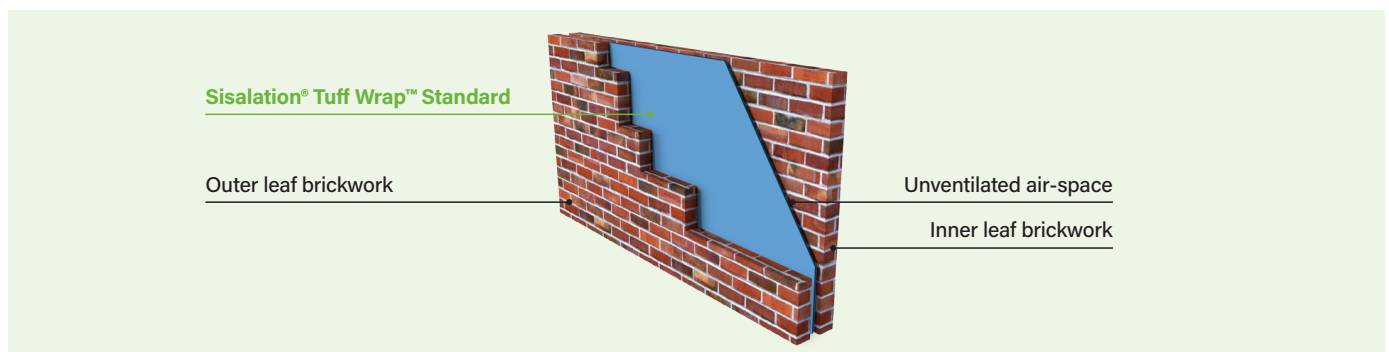
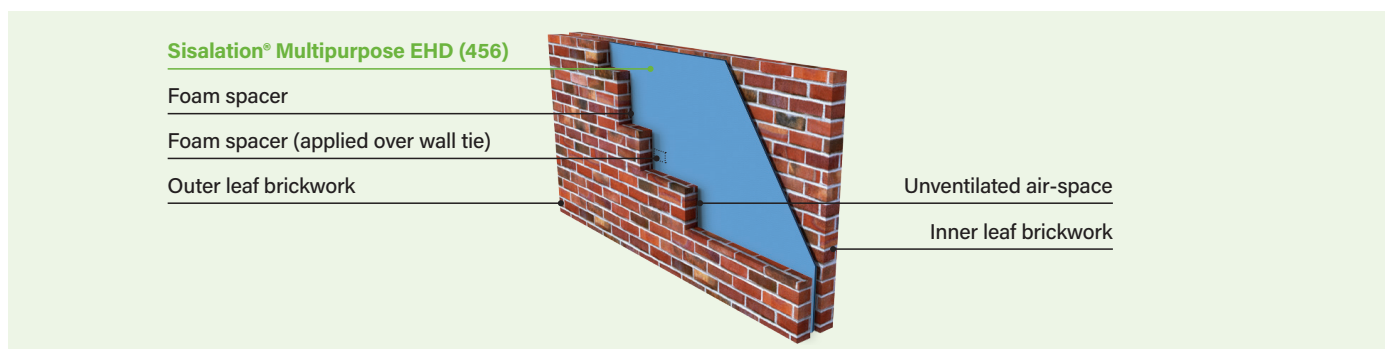


Figure 7: Double brick cavity wall with Sisalation® Multipurpose EHD (456)



Penetrations

- Any damage made to the Sisalation® pliable building membrane during installation, including holes and tears, must be repaired.
- Off cuts of the membrane may be used to flash below, beside and above a penetration (in this sequence), applying sheets from below the penetration upwards while maintaining suitable overlaps to drain moisture out and away from the building.
- Adhesive tape, such as Vapastop® 883 Reinforced Foil Tape, shall be used to seal the penetration, maintaining an air and water tight seal around the service. Refer to **Figure 8**.
- Where the Sisalation® pliable building membrane is intended to act as a vapour barrier, tape and seal all overlapped joints, penetrations and discontinuities with 72mm Vapastop® 883 Reinforced Foil Tape to prevent air movement.
- When the Sisalation® pliable building membrane is installed as sarking, all penetrations shall be sealed or turned up to facilitate drainage around penetrations. Ensure window and door openings are cut neatly and carefully and are properly fitted at flashing points. Refer to **Figure 9**.
- The Sisalation® pliable building membrane shall be cut back from any hot flue to reduce the fire hazard risk. This can be achieved by allowing for clear space of at least 50mm with non-combustible in-fill of gaps.

Note: If your application/installation is outside these guidelines, please contact Fletcher Insulation prior to commencing the install to obtain written approval for your specific application.

Figure 8: Vapastop® 883 Reinforced Foil Tape wrapped and adhered around external penetration.

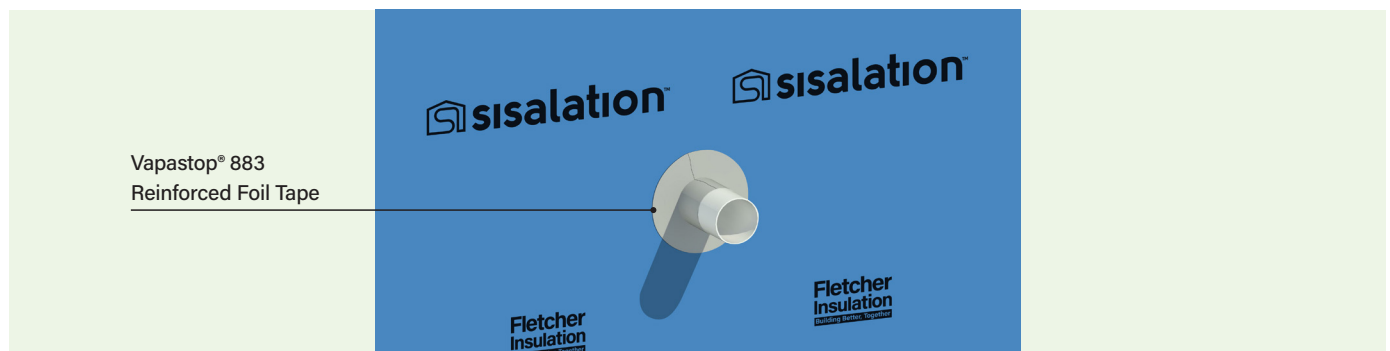
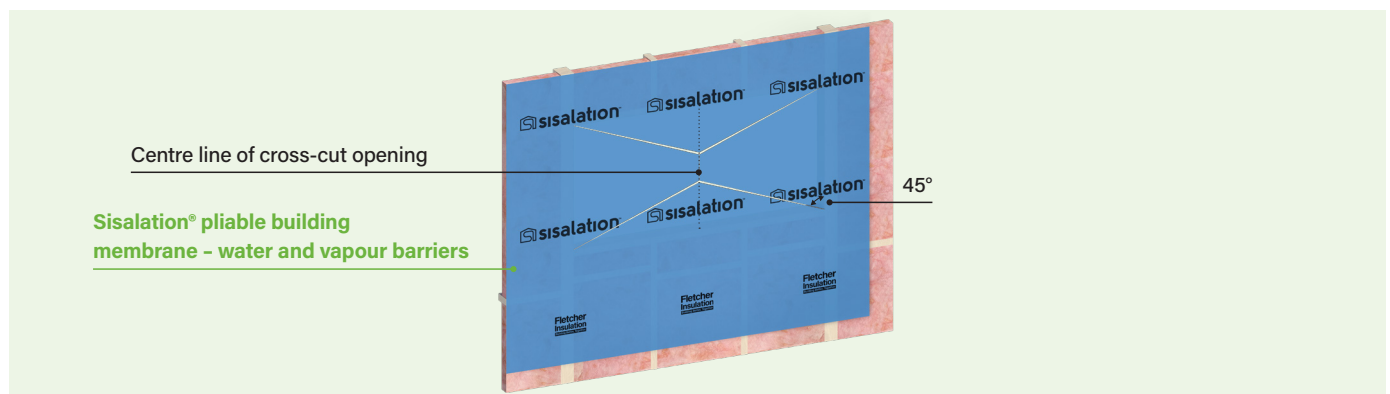


Figure 9: Building membrane vapour and water barrier installation on window frame.



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