

Application of FR Breather Membranes

INSTALLATION GUIDANCE

FR Breather Membranes

illbruck FR Breather Membranes are vapour permeable, airtight and watertight and are used on the exterior side of lightweight steel and timber frame systems.

This document covers the different methods of installation for breather membranes without self adhesive strips. The method selected will depend on project and site specific requirements such as anticipated wind loads, length of exposure prior to the installation of the holding brackets for the cladding/finish, building height and location.

Please note:

The membrane must always be installed in the correct orientation and with the correct tape – please refer to the table below:

Product	Orientation	Tape	Reaction to Fire in accordance with EN 13501-1	Resistance to water penetration
FR Breather Membrane White (ME055)	Can be installed on either side	ME356 FR sealing tape (White)	Class A1	Class W2

Materials required:

- illbruck TF448 50 mm High Performance Bonding Tape
- illbruck ME315 Total Protection Tape
- illbruck AT140 Primer for Porous Substrates
- Mechanical fasteners/fixing
- Low tack masking tape
- illbruck FR Window & Door Sealing Membrane (ME010 or ME007)
- illbruck FR Membrane Adhesive (SP025)

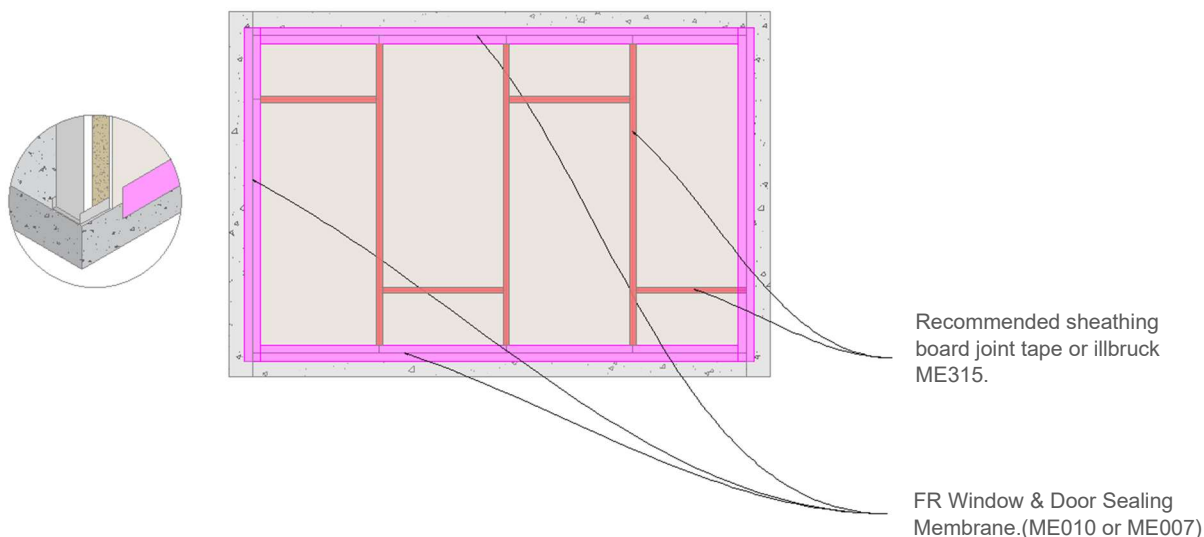
Tools and Accessories:

- Sharp retractable bladed knife and /or illbruck cutting shears
- Laser or chalk line
- 2" disposable paint brushes
- Pots for decanting AT140 Primer
- Stout seam roller
- Bench or table wide enough to accommodate the width of the membrane and long enough to accommodate the required cut lengths

Before commencing work:

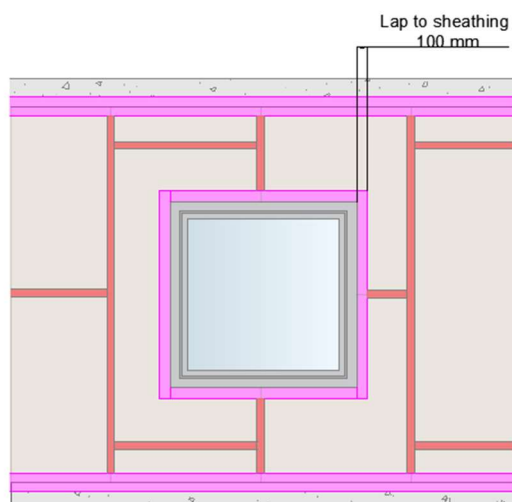
The working area must be dry and free from dust and debris. Scaffolding (if provided) should be clear of any other trades or obstructions left by others.

Ensure the sheathing board joints have been sealed in accordance with the manufacturers board joint sealing recommendations, or with illbruck ME315 Total Protection Tape.



The junctions between the sheathing boards and floor slabs or columns shall be sealed with illbruck FR Window & Door Sealing Membrane (ME010 or ME007), overlapping both the structure and sheathing board by min. 100 mm and bonded in place using FR Membrane Adhesive (SP025) in strict accordance with the illbruck method statement. Dependant on the substrate type, the use of an illbruck primer may be required to provide a satisfactory bond, please consult with Tremco CPG UK for further guidance. Illbruck AT140 primer should be used on any friable concrete substrates or over silicone based sealant compounds that may have been used to seal the joints between the sheathing boards.

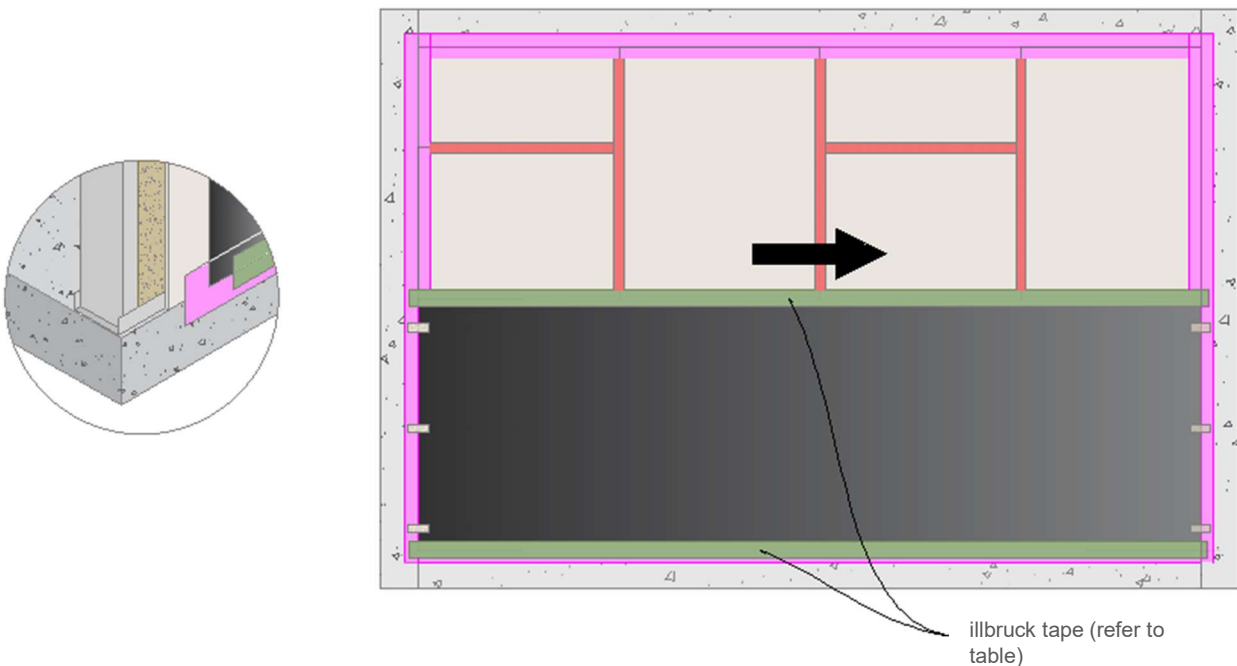
Prior to installing illbruck FR Breather Membranes all windows, doors and other openings should firstly be fully sealed with illbruck FR Window & Door Sealing Membrane (ME010 or ME007), or other specified illbruck window & door membrane, with a lap of 100 mm (minimum 50 mm) back to the substrate. Please refer to separate guide 'Application of illbruck membranes using paste adhesive'.



Method 1 – suitable for low to moderate wind loads or where the cladding bracket will be installed promptly after application of the membrane.

Installing the first layer of membrane

Start at the lowest elevation, stand the log upright and place the lower loose corner on the mid point of the overlapping FR Window & Door Sealing Membrane (ME010 or ME007) used to seal the foot of the sheathing board and secure temporarily with a low tack masking tape. The membrane must overlap the perimeter sealing membrane by a minimum of 100 mm.



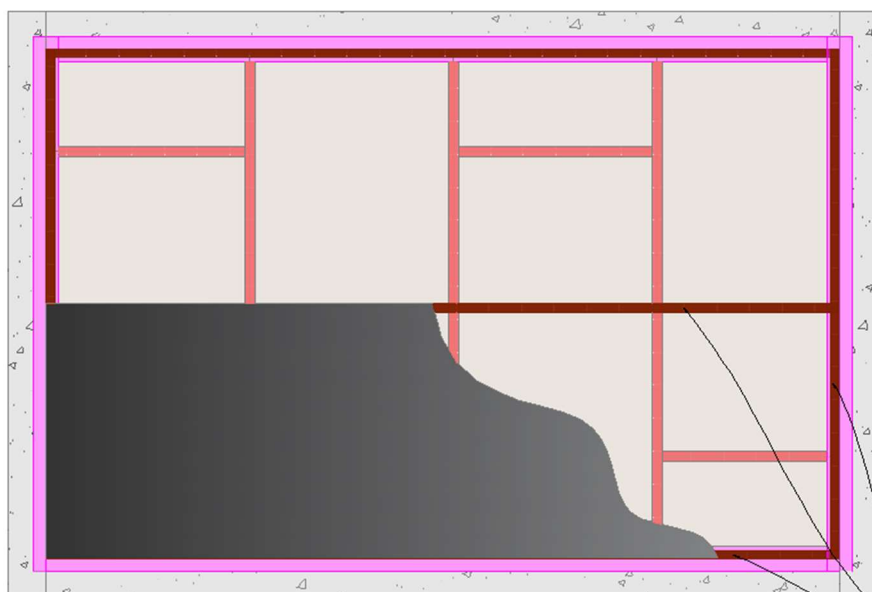
Unfurl the membrane horizontally until you have reached the end of the bay or an opening, applying more sections of masking tape at intervals of not less than 450 mm and not more than 1000 mm to temporarily secure the membrane in position.

Ensure that the unfurled membrane is plumb, a laser or chalk line may be of assistance.

Remove the temporary low tack tape and apply the correct illbruck tape (please refer to table on the first page of this document) to the top and bottom edges of the membrane forming a 50/50 lap between the membranes edge and the substrate, ensuring it is smooth and free from any wrinkling or bubbling, and consolidate the bond with a stout seam roller.

Method 2 - suitable for low, moderate or high wind loads where mechanical fastenings are not specified – TF448 option

The surfaces must be clean, dry and free from oil, grease, paint and other contaminants liable to impair adhesion.



illbruck TF448 tape at the perimeter of the membrane.

For low to medium wind loads the double sided tape should be applied around the entire perimeter of the membrane.

For higher wind loads, the bond can be further enhanced by installing additional vertical strips of TF448 High Performance Bonding Tape at 500 mm centres.

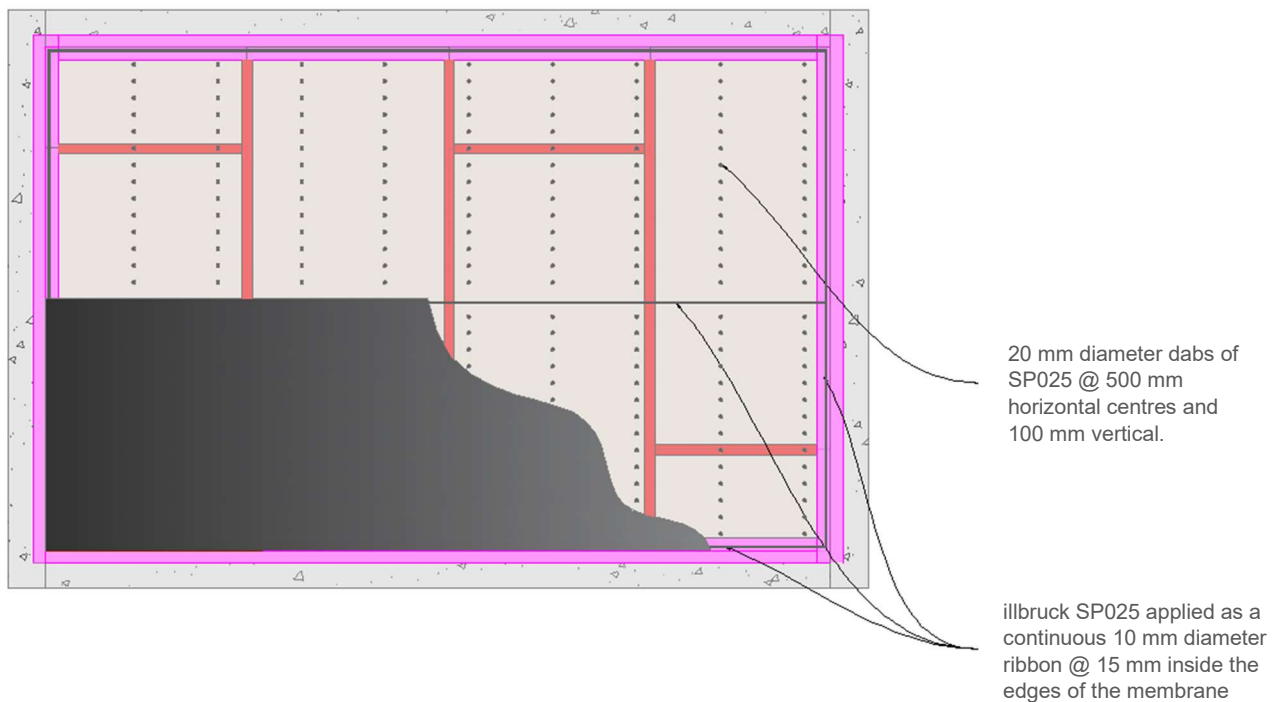
The TF448 High Performance Bonding Tape is pre-applied to the sheathing board to fix the FR breather membrane in place and provide support to the membrane during installation.

Remove the release liner and fix the TF448 High Performance Bonding Tape to the sheathing board, press down firmly to create an instant bond. The top liner can then be removed and the membrane installed. Start with the bottom left corner and unfurl the membrane horizontally ensuring the membrane is plumb and wrinkle free, carefully pressing the membrane on to the tape to bond into position.

For alternative option using SP025 adhesive – see Method 3.

Method 3 - suitable for low, moderate or high wind loads where mechanical fastenings are not specified –SP025 adhesive option

The surfaces must be clean, dry and free from oil, grease, paint and other contaminants liable to impair adhesion.



For low to medium wind loads a 10 mm diameter bead of SP025 adhesive should be applied around the entire perimeter of the membrane. For higher wind loads, the bond can be further enhanced by applying 20 mm diameter dabs of SP025 Fire Membrane Adhesive at 500 mm horizontal and 100 mm vertical centres.

Make a mark on the sheathing board to indicate the position of the finished installed membrane. Apply a consistent and uniform 10 mm diameter bead of SP025 Fire Membrane Adhesive 15 mm inside of the mark indicating the edges of the membrane. If the option for higher wind loads is required, then apply additional 20 mm diameter dabs of SP025 at 500 mm horizontal centres and 100 mm vertically between each dab.

Start with the bottom left corner and unfurl the membrane horizontally ensuring the membrane is plumb and wrinkle free, carefully pressing the membrane into position with all edges overlapping the centre of the adhesive ribbon by 15 mm.

Once in position, apply firm pressure with an illbruck seam roller over the top of the membrane near the edges where the adhesive is located underneath to consolidate the bond. When the visible ooze is a uniform 2 – 5 mm wide along the entire perimeter the adhesive is consolidated. The visible ooze should be left intact.

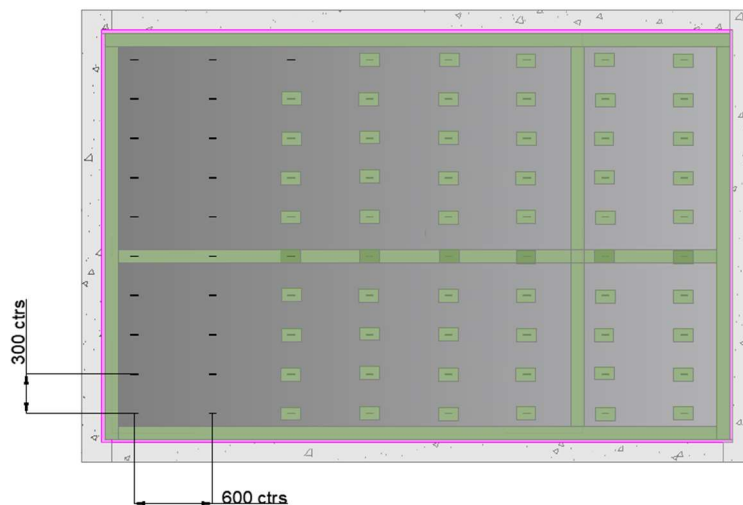
All edges of the membrane must be securely bonded and consolidated with an uninterrupted 20 to 30 mm band of continuous adhesive around the entire perimeter.

Where dabs are applied, consolidate each row of dabs using a seam roller as described above.

Method 4 - suitable for high wind loads using mechanical fasteners

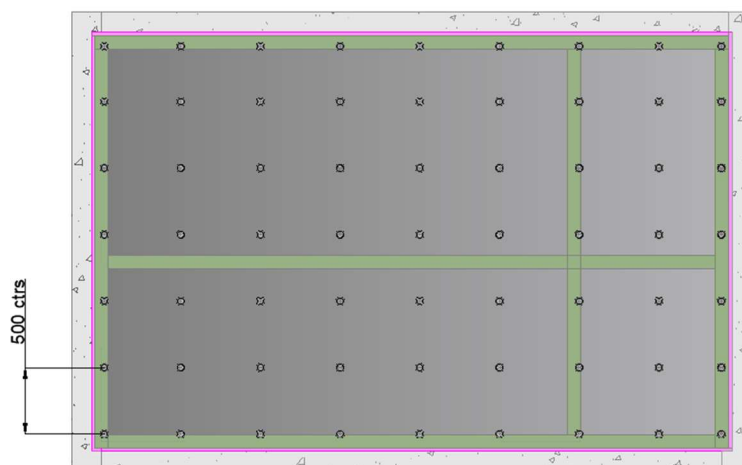
Stainless steel staples can be used as an option to provide a mechanical fix, where the substrate type is suitable to accept them (such as OSB or similar).

The staples should be installed at 600 mm centres horizontally and 300 mm centres vertically. Piercing the membrane with staples will compromise its effectiveness as an air and weather barrier, therefore the staples must be sealed with the correct illbruck tape, either in small patches as shown below, or applied in a single length covering a run of staples.



For other sheathing boards and substrates where staples are not suitable or for a more robust fixing method, stainless steel screws are installed through the sheathing board into the SFS at 500 mm centres vertically and to align with every stud.

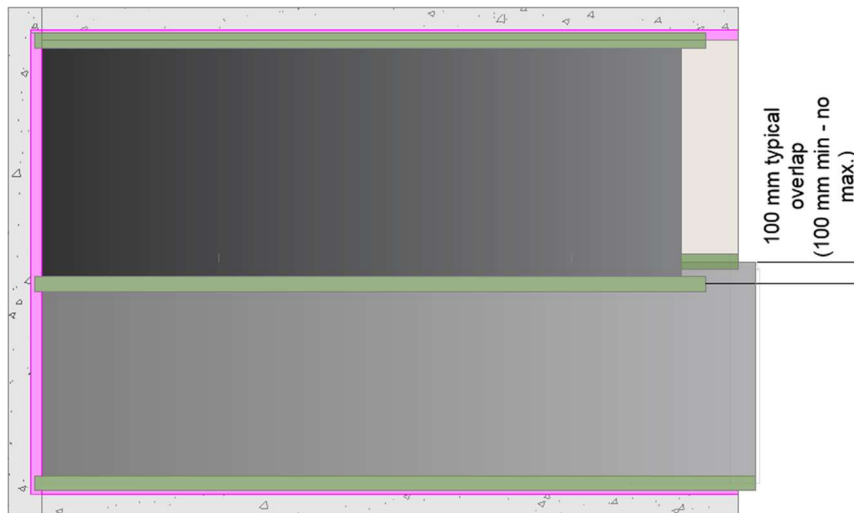
The screws should be a suitable drill-tip or self-tapping type and the screw head must sit flush with the surface (not countersunk). An EPDM /Butyl washer must be used between the screw head and membrane to avoid water ingress. Sealing the screw heads with tape is not necessary with the use of suitable washers.



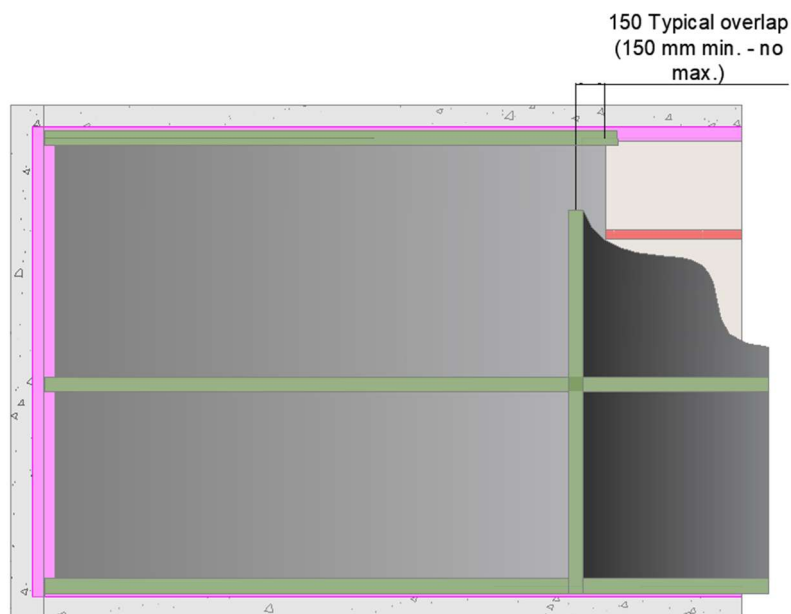
General guidance – all installation methods

Forming overlaps

All horizontal joints must be formed with a minimum 100 mm sealed overlap.



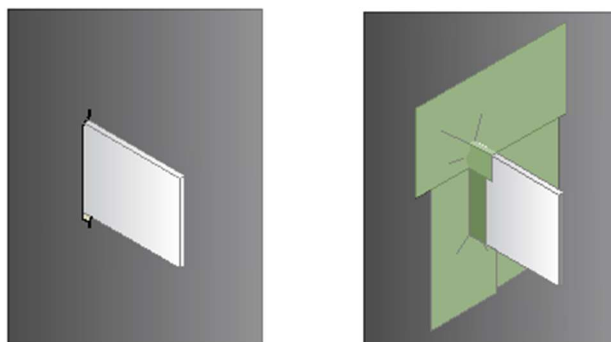
All vertical joints must be formed with a minimum 150 mm sealed overlap.



Once the joints have been formed and the membrane is temporarily secured, apply the correct illbruck tape to seal the overlap. The tape should be wrinkle and bubble free, and the bond consolidated with a seam roller.

Sealing cladding brackets and penetrations

The positions of any brackets or similar protrusions should be noted and small incisions made through the membrane with a box cutter or palette knife. Once formed the protrusion is carefully pushed through the incision.

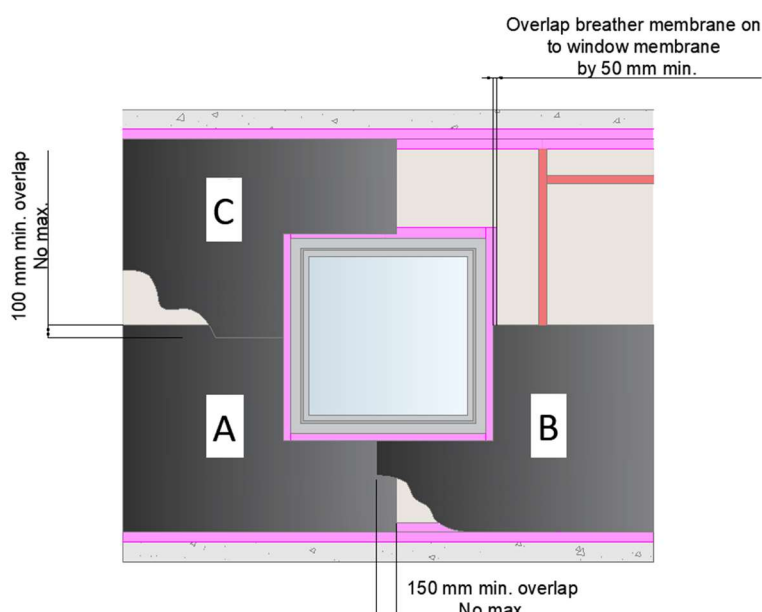


All incisions around any penetration are fully sealed with the correct illbruck tape.

Interfaces with window and door sealing membranes

Before installing the FR breather membrane all windows, doors or openings should firstly be fully sealed using a suitable and compatible illbruck solution, such as FR Window & Door Sealing Membrane (ME010 or ME007).

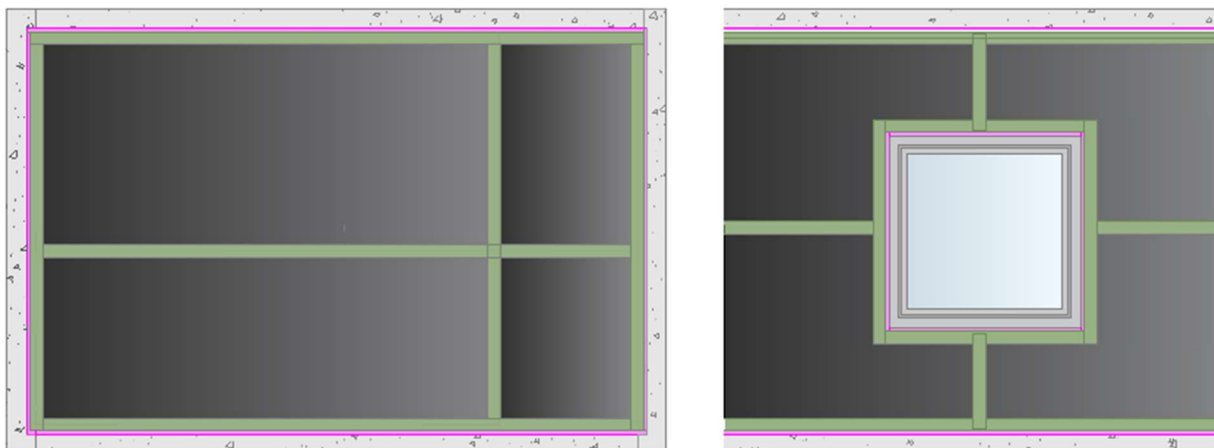
To install the FR breather membrane measure around the opening and cut the membrane to fit. The overlaps onto the FR Window & Door Sealing Membrane (ME010 or ME007) around the opening should be a minimum of 50 mm as shown below.



All overlaps are sealed with the correct illbruck tape, applied bubble and wrinkle free and the bond consolidated with a seam roller.

Completion

On completion of the installation, check that all overlaps have been correctly formed in accordance with this guidance document and the overlaps are sealed using the correct illbruck tape.



Support

Here at Tremco CPG UK Ltd, we have technical experts and field support teams who can help you – from specification to application, we're on hand.

If you're looking for more information about fire rated membranes, or how to pick the right membrane for your application, please contact our team: hello@tremcocpg.com.

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Issue 3 – 20/02/25