illbruck ME003 Vapour Control Barrier Membrane System

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System Components

- ME003 Vapour Barrier Membrane, supplied on a log 1500 mm wide by 50 m long.
- OT301 Endurance Adhesive supplied in 310 ml cartridges.
- Air sealing tape ME317 Internal Membrane Sealing Tape.
- Various primers are available. The preferred and more universal brush on primer is illbruck AT140 supplied in 500 ml & 5 l cans.

Usage and purpose

The ME003 Vapour Barrier Membrane system is a proprietary system that has been developed to provide a physical separation barrier between the internal conditioned environment and the external unconditioned environment in compliance with Accredited Construction Details for walls and junctions. Applied in accordance with this method statement, the ME003 system will prevent unplanned air loss and moisture migration through framed and sheathed walls. The ME003 Vapour Barrier system is normally applied to the internal side of the external wall between the stud framing system (timber, light weight steel frame or similar) and the internal gypsum plasterboard layer.

The completed application forms a monolithic layer and is sufficiently air and vapour tight for the vast majority of new-build RC frame, SFS, timber frame constructions and offsite modular systems.

The ME003 Vapour Barrier Membrane system is applied from floor to soffit and wall to wall in either a horizontal or vertical orientation according to the applicator's preference.

This method statement focuses on a vertical application.

Preparation

- Ensure that the application area is free from obstructions such as stored sheets or bulk materials and persons conducting other construction tasks.
- Ensure that the floor area and any other structural interfaces where the system will be applied is dry, free from dust, debris and grease.
- A flat surface, such as a purpose made table or similar makeshift arrangement, at least as wide as the membrane would be an advantage. This prevents the polyethylene sheet from becoming contaminated by dust particles. Cutting or slitting the membrane sections on the floor is a sure way to pick up unwanted detritus.

Tools

- Tape measure
- Laser capable of indicating straight and level lines (optional)
- Solid straight edge 1500 mm long
- illbruck cutting shears, preferred or a box cutter knife (with retractable blade)
- Disposable 25 - 50 mm wide paint brushes
- A pot for decanting primer
- An illbruck seam roller
- A "Sharpie" or similar permanent ink pen

Method Statement

Application to Internal Face of External Framed Walls (e.g. SFS)

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Application

Setting out. Vertically orientated.

Measure the height and width of the bay where the ME003 membrane will be applied.
Bear in mind that the membrane width is 1500 mm and that stud work is usually placed at 600 mm centres. Work out how many drops of the membrane are required to cover the wall bay including how and where the membrane will overlap itself. This can easily be achieved by offering up the log and marking on the framework where the extents of each drop will be. The objective is to avoid cutting the membrane down in width at any given time. The membrane can overlap adjacent drop layers as many times as is necessary.

Fig.1 Example shows a bay 4275 mm wide with a slab to soffit height of 3075 mm.

Fig.2 Shows that three drops would be required to cover the bay with the centre drop **C** over-lapping the two adjacent drops **A** & **B**.

Note that **A** & **B** drops are 50 mm narrower than the middle drop **C** - this is because a 50 mm return on to the column (left) and the dividing wall (right) is required.

In this example drop **C** overlaps **A** & **B** by 62.5 mm. There is no maximum overlap between drops, but the minimum should be no less than 50 mm.
You will also see that initially drops **A** & **C** cover the structural opening for the window. This will be cut out and sealed to the stud/framework in a later step.

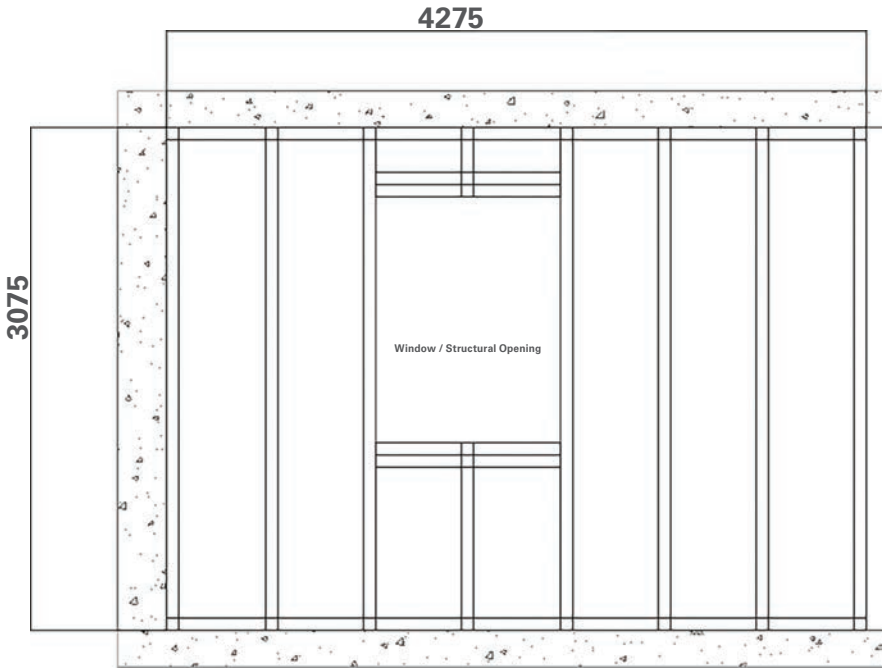


Figure 1

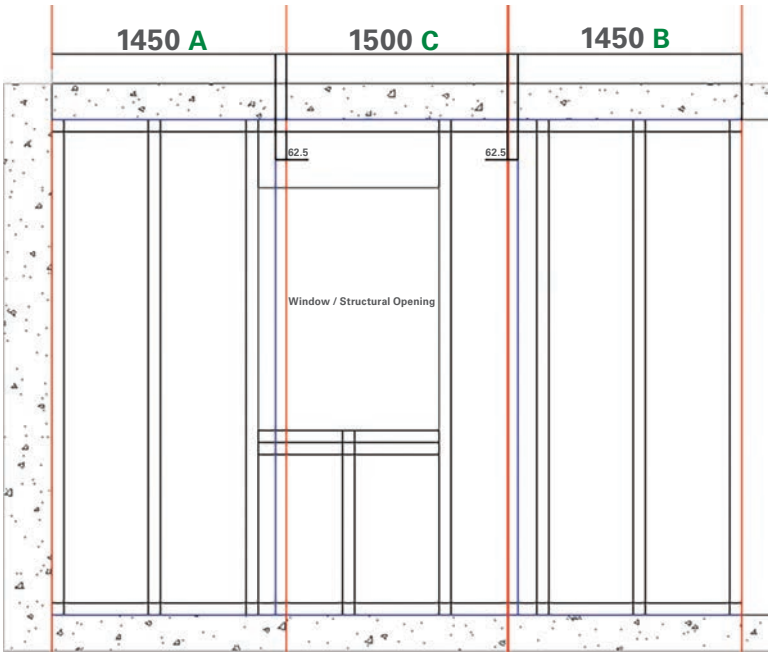


Figure 2

Application: Step 1 (working from the left)

Using Fig. 1 & 2 as a hypothetical reference cut a length of ME003 to size which should be equal to the floor to ceiling /soffit height plus an additional 50mm top and bottom. (e.g. 3072 mm + 50 mm + 50 mm = 3172 mm would be drop **A**)
This would be adjusted to suit your own project details.

1. Apply a 6 mm x 6 mm Ø bead of OT301 at the vertical junction of the column and framework. The bead should be uniform and only extend as far as the width for the first drop.
2. Apply a second bead to the head of the framework just short of the ceiling/soffit.
3. Apply a third bead to the base of the framework just above the floor/slab junction.
4. Apply random streaks of OT301 to the frame uprights no longer than 100 mm long and spaced at approx. 300 - 400 mm centres where the first drop will come into contact with the frame.

Application: Step 2

Applying ME003 vertically is akin to hanging wallpaper,
(i.e. work top down).
Turn the top edge & left hand edge of the ME003 over so that it returns to form a flap 50 mm wide.

It is possible to pre-crease the 50 mm flap by laying the membrane flat on the suggested table arrangement, folding it over and running along the fold, applying pressure with a seam roller.

Ideally working as a team of two, offer up the pre-cut length **A** of ME003 to the application site with the newly made creases facing towards you.

Press the ME003 into the adhesive ribbon applied to the head of the framework with finger pressure to bed it in making sure that the remainder of the loose hanging membrane sheet is plumb and vertical. Work from the corner along the width until located as desired with the 50 mm flap left loose and projecting back towards you.

A laser capable of projecting a straight line would be a handy accessory as this could be set up to project a line 50 mm off set from the frame on to the soffit/ceiling to ensure accurate placement.

Now do the same top to bottom in the corner where there is the long crease, which will abut the junction between the vertical framework and our hypothetical column.

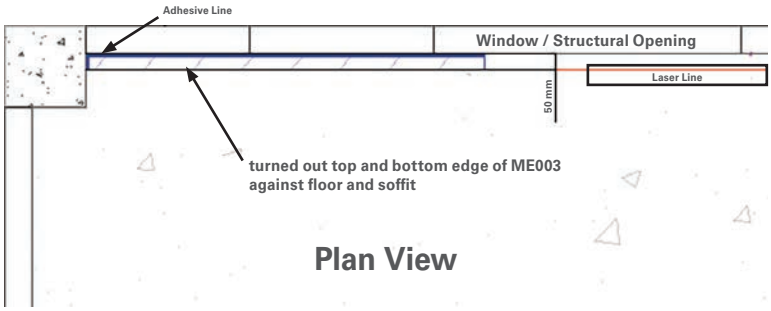


Figure 3

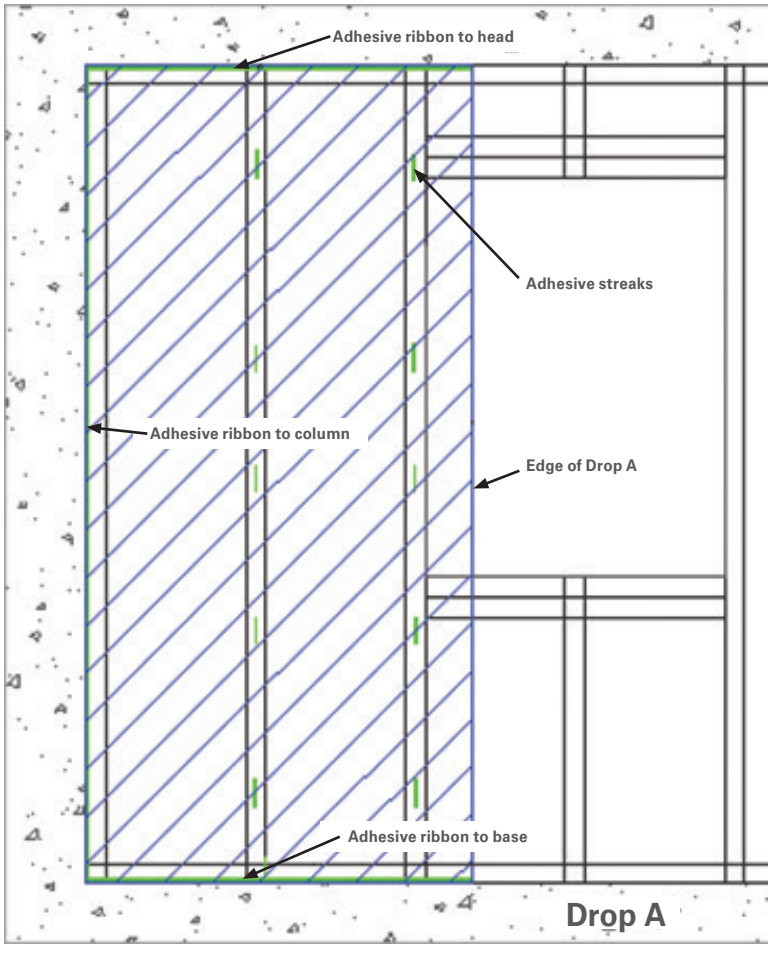


Figure 4

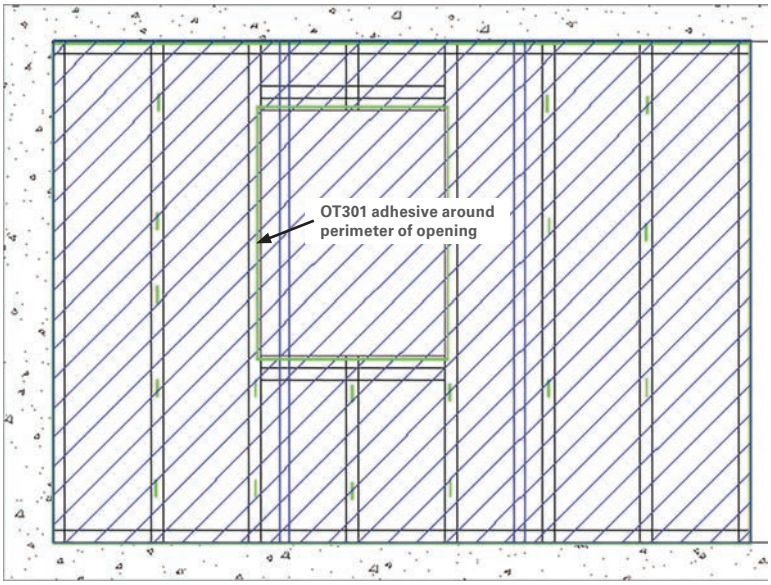
Once the membrane is located as a vertical sheet as desired repeat for the bottom seam.

The membrane should now be hung and possibly loose hanging over the remainder of the framework. Press the membrane with gentle hand pressure into the random adhesive streaks applied earlier until the membrane "bites" into the adhesive.

Repeat the process for drop **B** (without the vertical 50 mm creases).

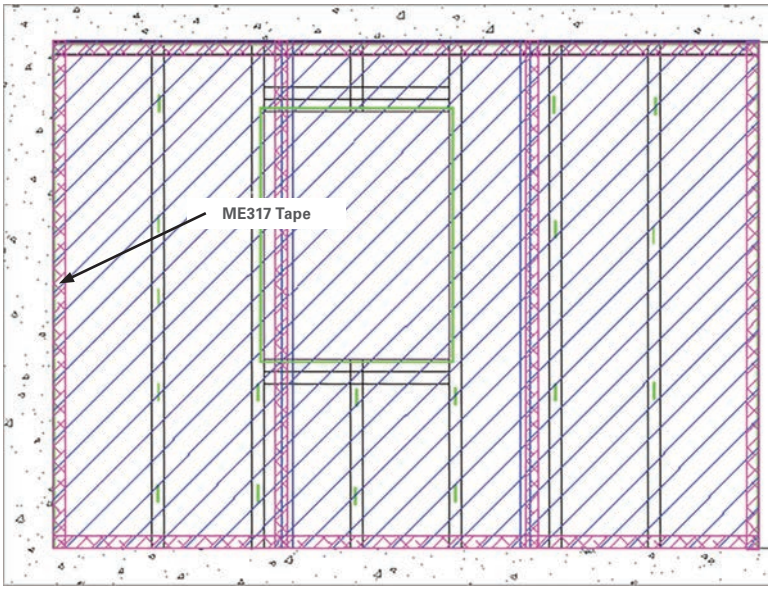
Before applying drop **C**, place a uniform 6 mm x 6 mm bead of adhesive around the entire perimeter of the internal face of the structural window opening in addition to the beads applied at the head and base. Drops **A** & **C** will initially over sail the opening.

Drop **C** will overlap drops **A** & **B** by the required minimum overlap of 50 mm. In our hypothetical example, the overlap would be 62.5 mm.



All three drops complete

Figure 5



All three drops complete and taped before cutting window opening

Figure 6

Application: Step 3.

Apply ME317 Internal Membrane Sealing Tape over the vertical overlap seams between drop **A** & **C** and **C** & **B**. The ME317 tape is 60 mm wide and should overlap 50/50 across the seams. All three sections should now be joined (do not place any tape on to the soffit/ceiling or floor just yet).

Application: Step 4

Decant some illbruck AT140 Primer into a pot or container.
Using a brush, apply a consistent coat of the primer to the solid substrates all the way around the perimeter of the now conjoined membrane. The primer should be applied just in front of the loose 50 mm wide flap that has been left. Leave the primer to flash off - depending on the ambient temperature this can be between 10 - 30 minutes. Do not over apply the primer - a visible thin and consistent coat is sufficient denoted by the slight discolouration of the substrate.

Whilst waiting for the primer to flash off, take care not to step onto the uncured/wet primer applied to the floor slab.

Application: Step 5

Once the primer has flashed off (should be dry, not tacky to the touch) apply ME317 Internal Membrane Tape to the loose perimeter edges overlapping 50/50 with the edge of the membrane and the primed substrates.

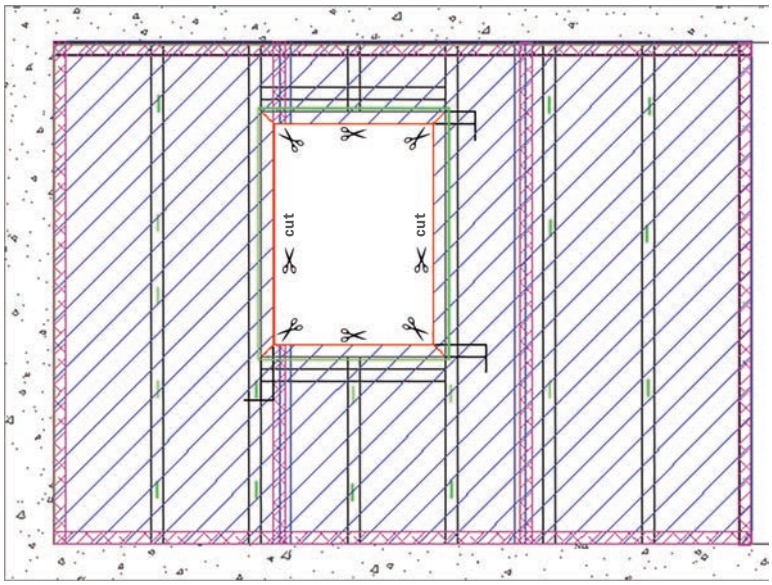
Once the tape is applied, using firm pressure and with an illbruck seam roller, roll over the ME317 tape to consolidate the bond between the tape and membrane, and tape and substrate. Only apply pressure where there is a solid substrate underneath.

It is not necessary to apply pressure to the vertically taped seams where the membrane overlaps with itself. Consolidation is only required around the perimeter.

Tapes should be applied wrinkle and bubble-free. See inset graphic **(i)**.

Application: Step 6 (cutting out and sealing window/door openings)

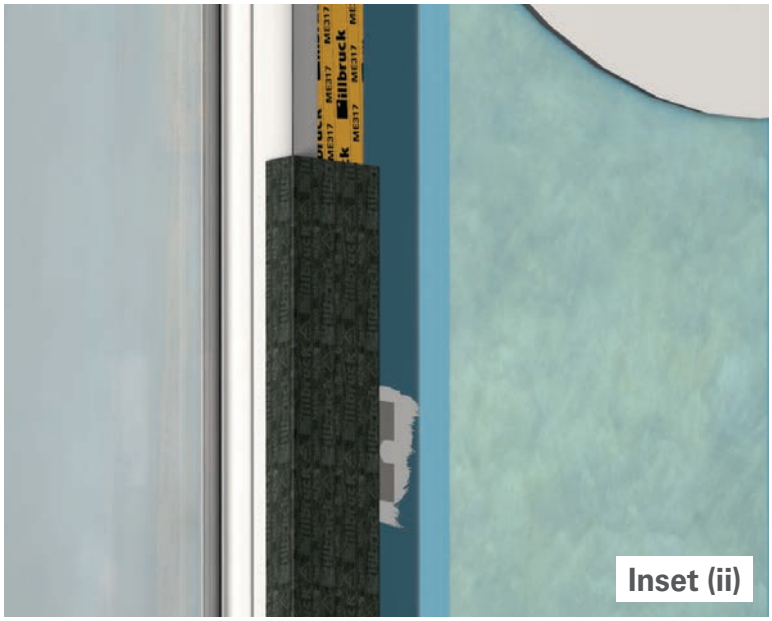
Using a straight edge, tape measure and Sharpie mark out an internal border where the conjoined membrane covers the structural window opening. The minimum border is 50 mm, maximum 75 mm.
Take care not to disturb the membrane where it is "glued" around the perimeter opening.
Use a box cutter or retractable bladed knife to cut a hole where the border has been marked out and remove the now unwanted section of membrane.
In each corner cut a 45° mitre up to the extent of the membrane where it comes into contact with the framework perimeter.



Cutting out the window opening

Figure 7

Fold and dress the loose mitred flaps of the membrane into the reveal and seal with ME317 tape, place 50/50 over the edges of the membrane and framework substrate. IF desired, a bead of OT301 can also be used to add a "belt and braces'' seal at this termination point. A primer is not usually necessary for this step, but in cold weather might be a wise precaution.
The ME003 Vapour Control Membrane should not be taped and sealed to the internal face of the window/ door or other glazed frame perimeter.
Another type of proprietary membrane is



required for this function, namely M508 Duo EW/F Membrane. In some cases, this membrane may have already been applied by the window installers, in which case the ME003, ME317 combination is simply taped and sealed to the insitu ME508 Duo EW/F.
If the ME508 Duo EW/F is not present, this will be sealed to the ME003/ME317 combination by others at a later date.

The purpose of two different types of membrane is to ensure that there are two properly calibrated and independent seals, one for the window interface (ME508) and the other for the structure (ME003).
See inset graphic **(ii)** showing the internal reveal interface.

Application: Final Step

Inspect the whole application and ensure that there are no gaps of any kind around the perimeter of the terminated junction within the reveal. Gaps are easily sealed with strips or sections of the ME317 tape. Any accidental tears or holes can be repaired the same way. If there are larger tears or accidental damage it would be a wise precaution to cut out a patch of membrane from the log and use it as a puncture repair. Seal the patch to the membrane using tape.

The application should now be a fully sealed monolithic covering to the internal framework.