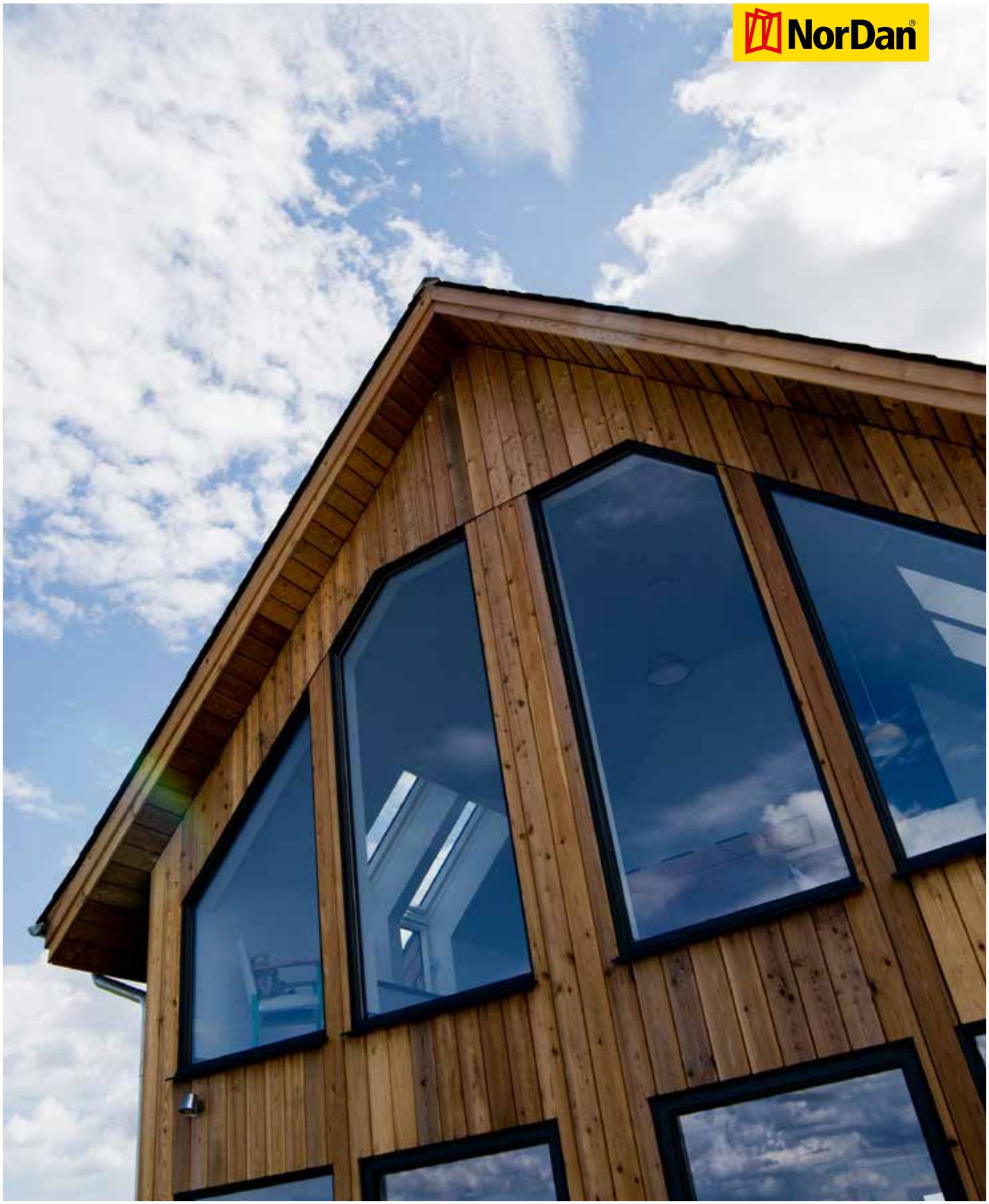


TIMBER KIT INSTALLATION GUIDE

NORDAN UK

WHY NORDAN?

Perfekt Samspill

We believe in our solutions and we believe in the responsible way that we integrate these into our lives. Our core values run throughout every team within our business.

We are constantly looking for perfect interaction between people, production, technology and employees. For the customer, we want the products to speak for themselves regarding perfect form and function - with lasting durability.

Vacuum Impregnated timber

There are many ways to protect timber windows, but the single most important factor for longevity is thorough and robust impregnation of the timber that is used to make the window. The process used by NorDan complies with the requirements of BS 8417 'Preservation of Wood Code of Practice', for a 60 year desired service life for external joinery components.

State-of-the-art Powder Coating

In February 2016, NorDan took ownership of a state-of-the-art powder coating line with FOX (Fast OXidising) pre-treatment, only the 5th plant of its type in the world and the only one in Europe. By supplying all aluminium profiles with this standard of quality for pre-treatment, NorDan has created a benchmark for the window manufacturing industry.

Expert Solution Providers

NorDan have a long history of assisting architects, contractors and clients in specifying high performance windows, for both large and small projects alike.

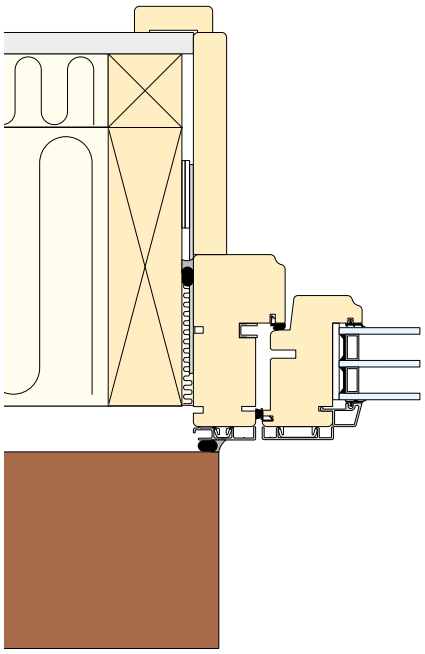
We have a model of continuous improvement and development. Working alongside respected experts in the fields of energy efficiency, lifetime running costs and environmental impact ensures that our products are always at the forefront of advances in the construction industry. We try to lead by example - we've done it for almost 100 years.

TIMBER KIT - SCOTTISH DETAIL

Check reveal

When installing in a check reveal, the frame should be positioned considering the following points:

1. The frame should be positioned directly behind the external skin and positioned centrally with a minimum overlap of the frame behind the external skin of 12mm on both sides. Where applicable, the frame should be positioned vertically with the head positioned behind the external skin at the head.
2. If a vertical DPC is installed in the check reveal, the frame should be positioned as far forward as possible with the vertical DPC between the rear of the external skin and the external face of the frame.
3. When installing in a check reveal aperture and the check is being used to hide the width of the frame jambs (i.e., box sash windows) to provide more visually acceptable aesthetics, the frame should be positioned considering the following points:
   - The frame should be positioned behind the external skin and positioned such that the external visible dimensions of the frame jambs are equal.
   - The frame should be positioned where applicable behind the head check with the frame weight suitably supported.



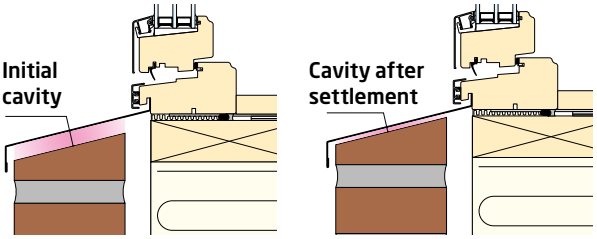
Building Settlement

It is important to use the fitting guides below and not to install any NorDan products using pinch battens.

Timber kit buildings will have a settlement over the first two years (starting when the kit becomes watertight), shrinkages of timber will occur in these first two years and will have an expected settlement of 5mm from the ground floor and 10-15mm for each additional floor.

Once a product is fitted with pinch battens it will typically settle with the build which may cause operation issues in the future.

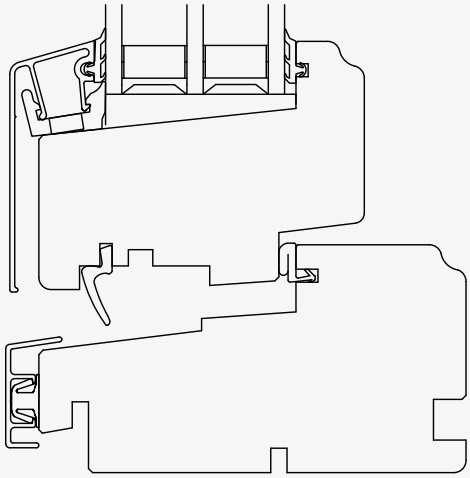
Adjustment to the frame cannot be made once a product has been attached with pinch battens, therefore NorDan has listed the following methods of installation, to reduce operational issues in the future and to allow for further adjustment to the frame without extreme damage to the surroundings.



Fitting of brackets

NorDan products should be installed in timber kit frames using brackets. The bracket allows minimal internal disruption to the kit if the product must be adjusted or replaced. Bracket fixed systems offer structural engineers the ability to calculate loadings of the product within the kit. Brackets should be used at all levels, including above 2 stories.

STRUCTURAL BASE SUPPORT FOR NORDAN PRODUCT TYPES

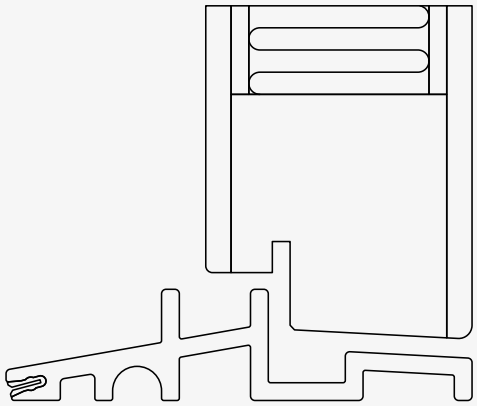


OUTWARD ◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇ INWARD

65 % SUPPORT

65 % SUPPORT

Windows are supported by a minimum of 65% of the product width, preferable past the glazing line to reduce the window wanting to cantilever, this can be done using individual "rot" proof packers or full support, design drawings and calculations are always preferred as below is guidance only.

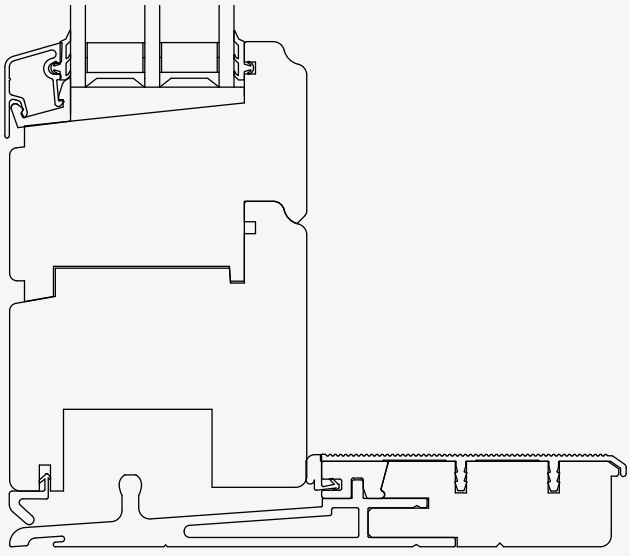


OUTWARD ◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇◇ INWARD

90 % SUPPORT

90 % SUPPORT

Hinged doors to have a minimum of 90% support across the width of the door, support avoids damage to threshold and doors dropping, design drawings and calculations are always preferred as below is guidance only.



OUTWARD ◇◇ INWARD

100 % SUPPORT

100 % SUPPORT

Sliding door sets have no manual adjustment. The threshold MUST be fully supported and on a solid base across the width of the product and should also be supported at the front external edge of the threshold. The threshold is to be packed and checked at every 300mm to make sure the door threshold is 100% level.

DOOR INSTALLATION SEQUENCE

STEP 1: Check your opening is debris-free and that all timber in the opening is fully supported and fixed correctly and that your opening size allows for 5mm of clearances around the frame (minimum), check that the threshold will be fully supported the whole length and width, if not attach a timber batten to the outside on the kit as temporary support for the threshold until a permanent base under the threshold is being installed.

NOTE: Check measurements of the opening match product for installation before offering the product into the structural opening.

STEP 2: Product to be removed from pallets and laid flat on workbenches. Manual handling assessment will be required.

STEP 3: Transport packers must be removed before installation.

STEP 4: Whilst products are laid flat on the workbenches now is the time to install steel fixing brackets by screwing into the product with two 30mm wood-screws. See pic 3.

NOTE: Recommend spacing for brackets should be 150mm from each corner and no further than 600mm apart. Positioning of fixings in line with industry guidelines. To be checked and clarified by a structural engineer.

STEP 5: Product to be measured for the correct setback from the external façade, internal structure, or gridlines, setting out to be agreed with the main contractor or as per design drawings.

STEP 6: Apply mastic along the door sill and the underside of the threshold to ensure a good seal underneath, door threshold to be fully supported and fixed down into the support using stainless steel screws, the threshold to be bedded onto silicone, adhesive, or external membrane, checking the threshold to make sure it is level.

STEP 7: Once the product is in position place packers behind every bracket attached to the frame to hold the frame in position, pack the frame level, square and plumb before you tighten the fixings.

NOTE: Once the product is level it must be checked for square and plumb.

STEP 8: Fix through each bracket using two wood screws, checking the level, plumb and square after securing any brackets to make sure the frame is correct.

NOTE: Fixings in line with industry guidelines. To be checked/certified by a structural engineer.

STEP 9: Where a product has an opening sash or door sash these need to be checked that they sit centrally within the mainframe if required adjustments can now be made by adding additional packers to the corners so that the sash sits centrally and operates correctly, the sash to be opened, closed, and operation checked.

STEP 10: Frame jambs must be square and plumb in both directions and the diagonals should be identical.

STEP 11: Check the rebate widths are equal across the hinge and locking points.

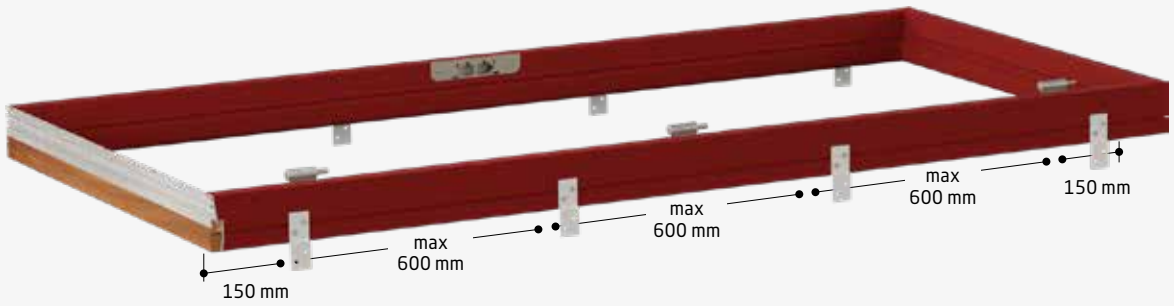
STEP 12: Once the product is level, square and plumb, fixings into the structure need to be checked by a structural engineer in line with industry guidelines and checked for embedment into the structure.

STEP 13: Apply expanding foam or foam tape (if applicable), making sure all fixings are solid and the cavity is not being overfilled with expanding foam as this could cause the frame to distort once the foam has hardened.

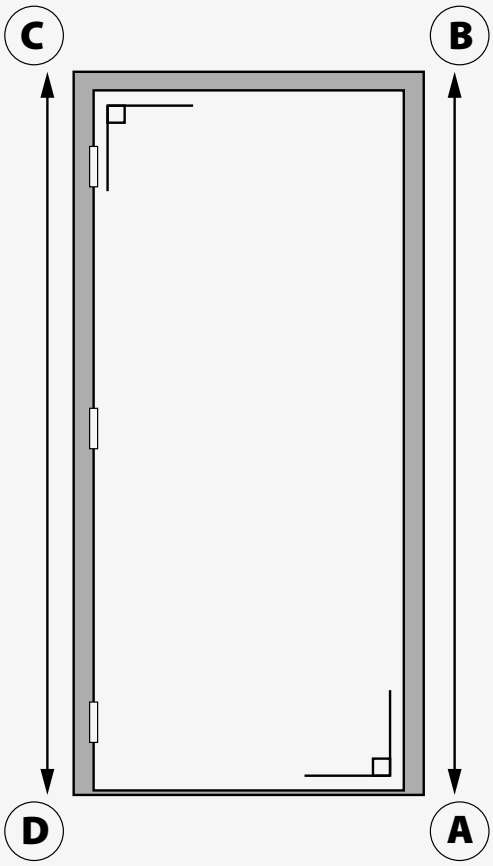
NOTE: When using a polyurethane foam, please ensure that the application is in accordance with the manufacturer's recommendations for the appropriate product type.

STEP 14: Apply mastic (if applicable), applying an even bead between the frame and wall junction.

NOTE: Spray all surfaces with water before using expanding foam. On doors over 2400mm in height or over 90 kg an extra bracket can be added on the hinge side at 200mm in from the corner.



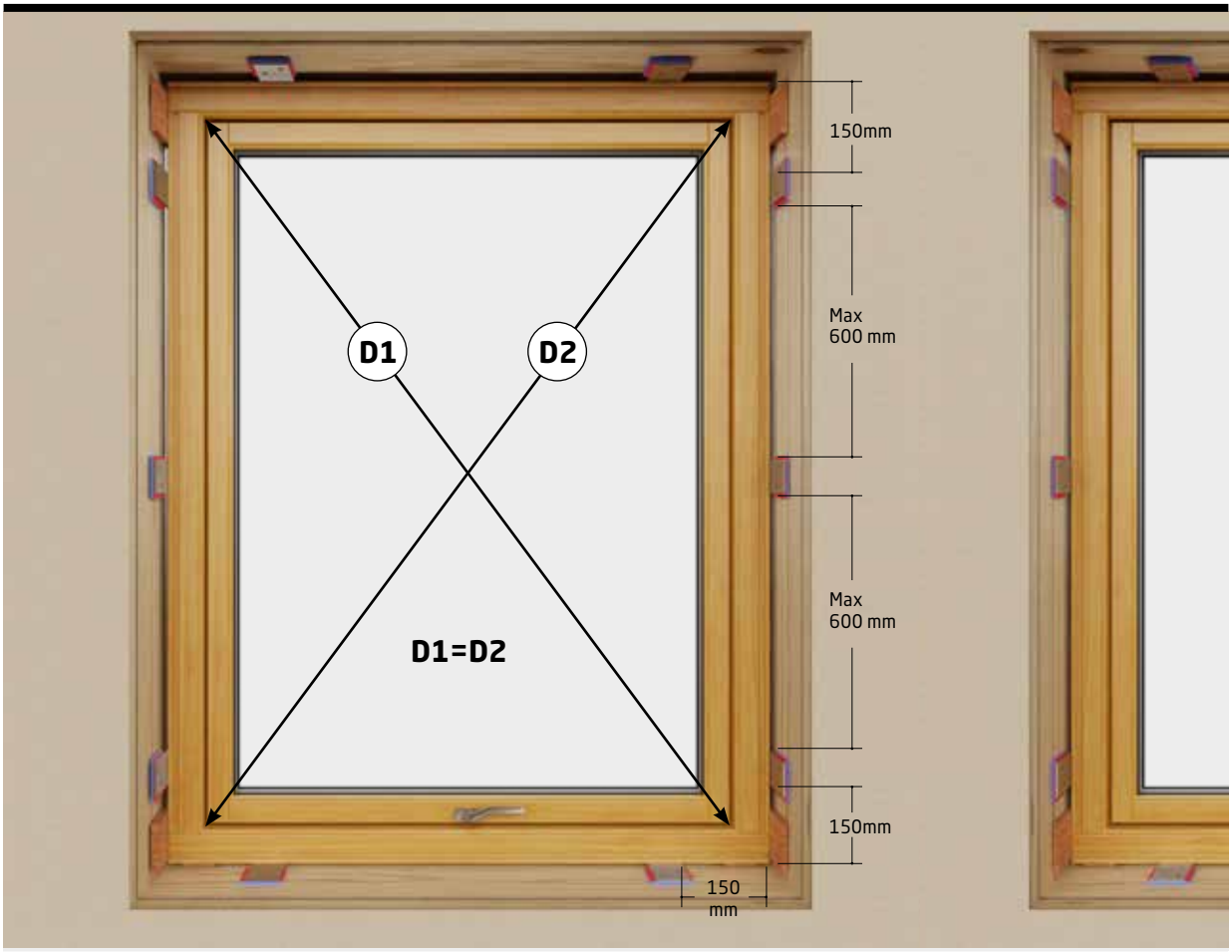
Pic 3

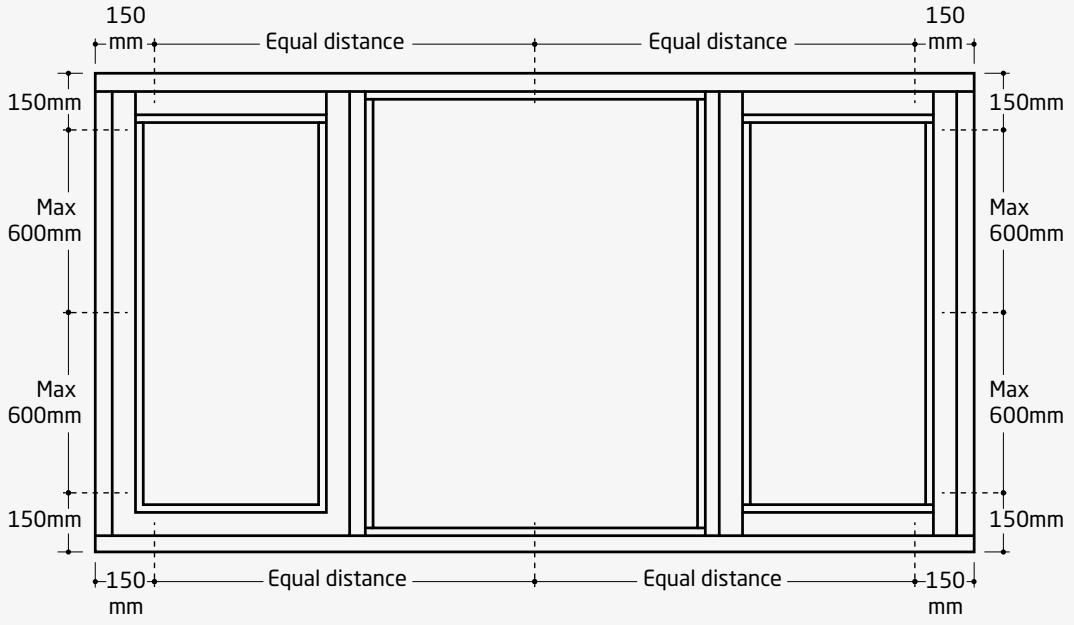


Final Checks

1. Check **A** to **B** is plumb then check **C** to **D** is plumb.
2. Check **D** to **A** is level and square and that **C** to **B** is also level and square.
3. Finally check that the door operates smoothly, once the door is closed against the frame.T
4. Check that the door is flush to the frame and not protruding at any point as this will affect the operation of the door.

WINDOWS





NOTE: On widows over 1800mm wide, central head & sill fixings should be fitted.

Check that the opening is clear of debris and is structurally sound. Check that the measurements of the opening match the window for installation allowing for tolerances and that the opening is plumb and square.

Use wedges for levelling the base of the product.

Check the level..

Insert the window.

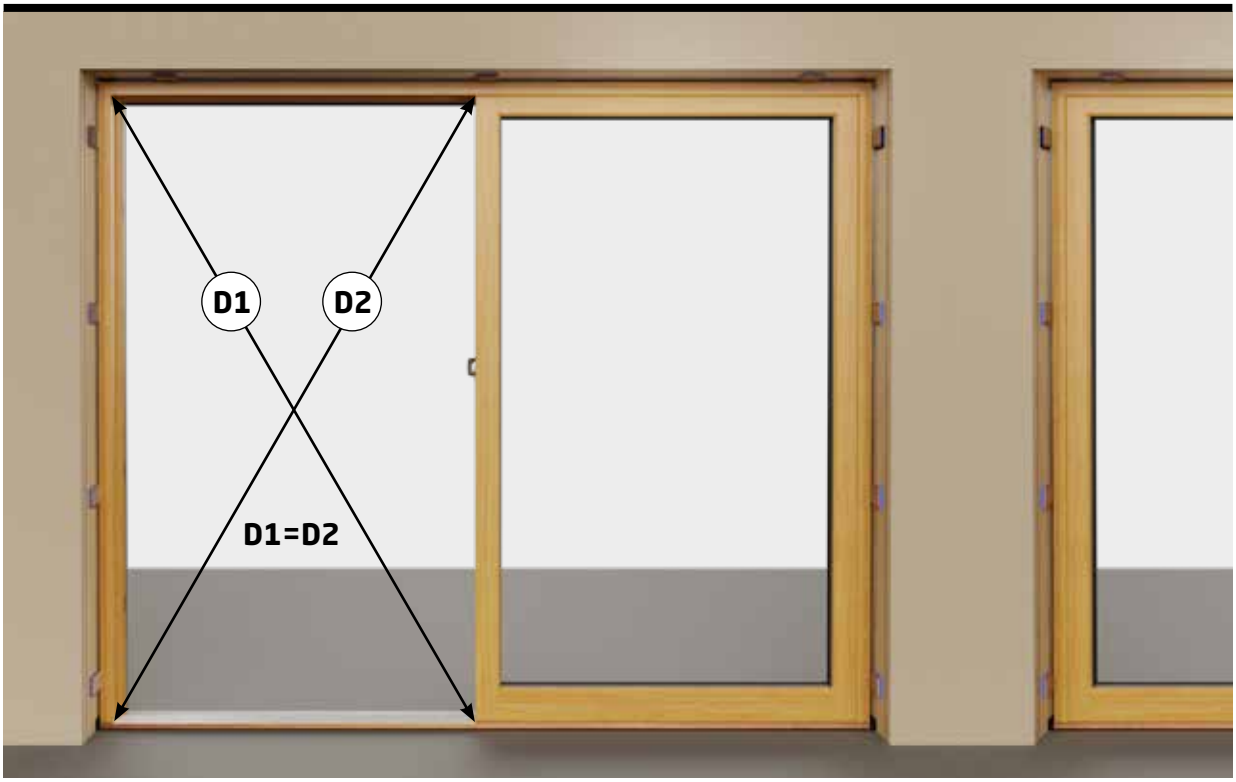
Temporary fixings to be installed into jambs – Once the window is in position fit temporary fixings to hold the frame in place, Check with a spirit level that the frame sides are plumb and square.

Nylon packers or steel shims must be installed on all four corners, behind the brackets. Once the product is level, square and plumb all fixings are added and tightened.

Fix the window.

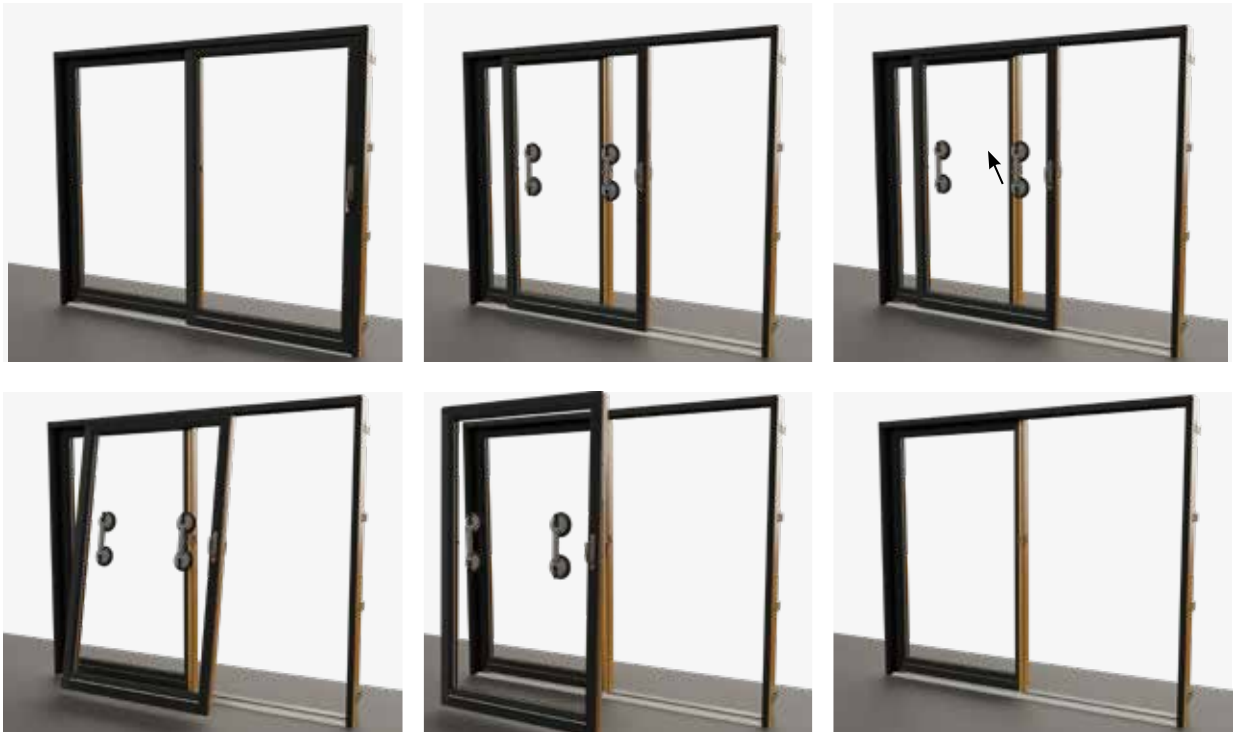
Remove wedges. Check levels and fixings.

SLIDING DOOR



Sliding doors have no manual adjustment the threshold MUST be fully supported across the width of the product and should also be supported at the front external edge of the threshold.

Attention must be paid to supporting the centre mullion. The threshold to be packed and checked for level at every 300mm Frame jambs must be square and plumb in both directions and the diagonals should be identical.



Manual handling assessment will be required. To remove the door from the frame, open the sliding part of the door fully until it hits the closer. Lift the door vertically so that the bottom rollers clear the sliding track. Lift the bottom of the door out at an angle and store safely.

Line base of opening with DPC.

Ensure base under threshold is flat & level.

Apply two lines of mastic above & below DPC over the whole width.

Place threshold onto a bed of mastic. Position frame in place according to a predetermined position.

Secure with wedges. Wedge at the bottom of each side (opposing wedges from inside and outside) so the top can be adjusted without the bottom moving.

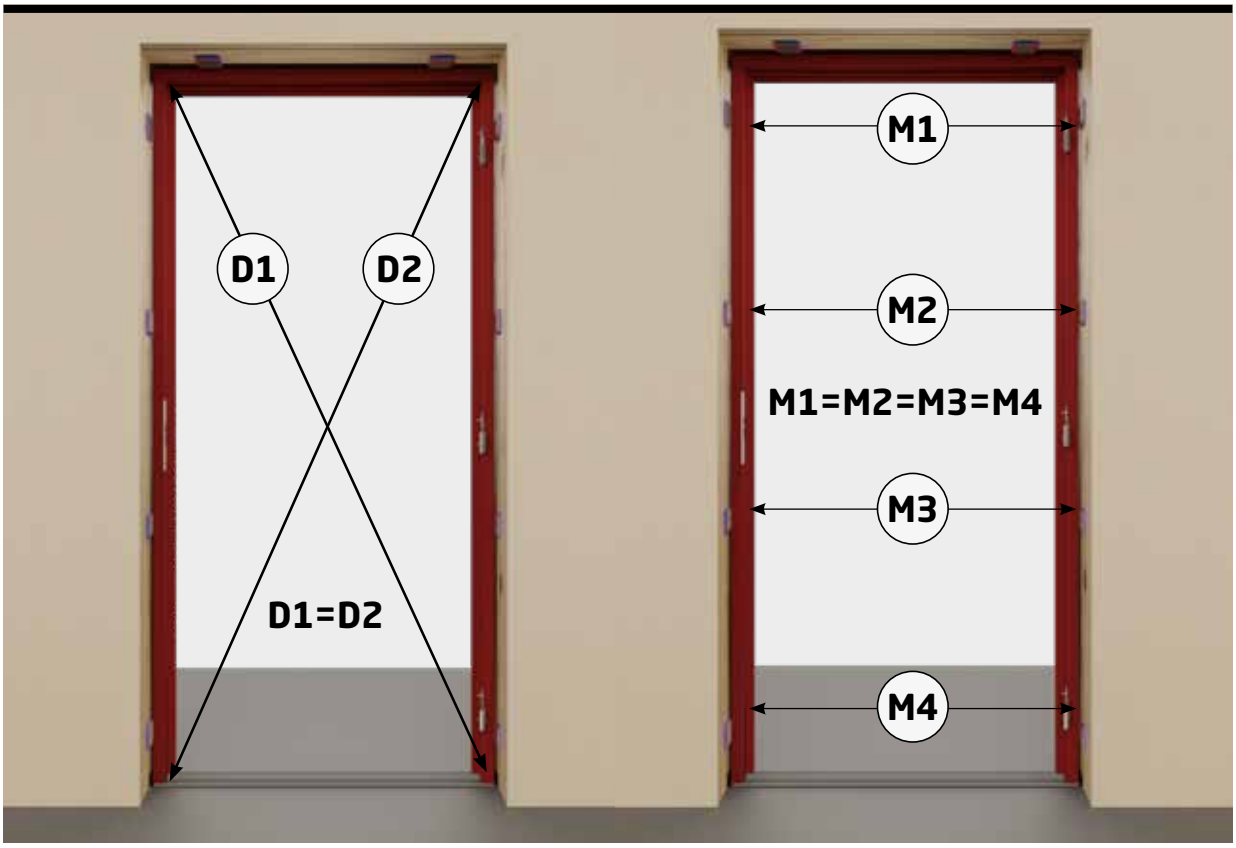
Temporary fixings to be installed into jambs – Once the door is in position fit temporary fixings to hold the frame in place, Check with a long spirit level that the frame sides are plumb and square.

Nylon packers or steel shims must be installed on all four corners, behind the brackets. Once the product is level, square and plumb all fixings are added and tightened.

Remove wedges. Check levels and fixings.

Refit the door. Fixings can be adjusted until the door operates smoothly. Check that there is an even clearance between the door and frame.

EXTERNAL DOORS



Frame jambs must be square and plumb in both directions and the diagonals should be identical.

Check the rebate widths are equal across the hinge and locking.

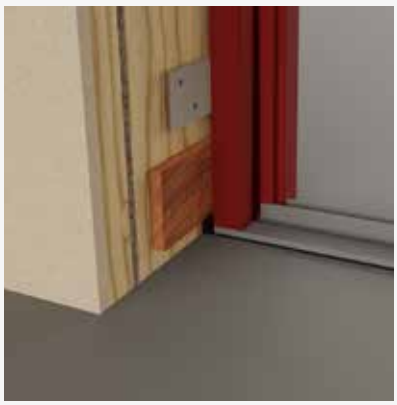
Remove the door from the frame. Do not attempt this on your own. Always observe health and safety guidelines. Open the door to approximately 90° or more so that the door blade clears the head of the frame. Lift the door blade off the hinges and store safely.

Line base of opening with DPC

Ensure base under threshold is flat & level

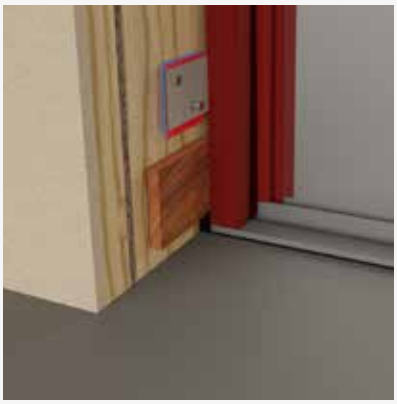
Apply two lines of mastic above & below DPC over the whole width

Place threshold onto a bed of mastic. Position frame in place according to a predetermined position.

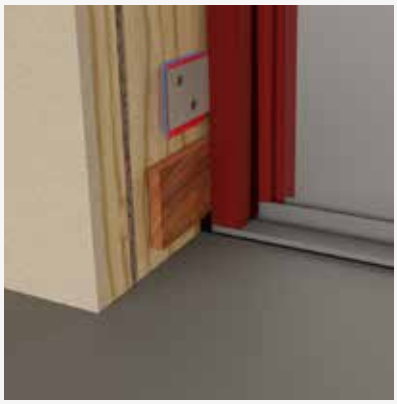


Wedge at the bottom of each side (opposing wedges from inside and outside) so the top can be adjusted without the bottom moving.

Temporary fixings to be installed into jambs – Once the door is in position fit temporary fixings to hold the frame in place, Check with a long spirit level that the frame sides are plumb and square.



Nylon packers or steel shims must be installed on all four corners, behind the brackets.



Once the product is level, square and plumb all fixings are added and tightened.

Remove wedges. Check levels and fixings.

Refit the door Fixings can be adjusted until the door operates correctly.

Check that there is an even clearance between the door and the frame.

FOAM AND MASTIC

Apply expanding foam or foam tape (if applicable), making sure all fixings are solid and the cavity is not being overfilled with expanding foam as this could cause the frame to distort once the foam has hardened.

Apply mastic (if applicable), applying an even bead between the frame and wall junction.

NOTE: When using a polyurethane foam, please ensure that the application is in accordance with the manufacturer's recommendations for the appropriate product type.

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May 2022