

INSTALLATION

**GENERAL GUIDELINES
INSTALLATION DETAILS**



Check the structure around the openings for any defects such as cracked mortar joints and that suitable lintels are in place. Report any defects to the customer in writing and agree on the method of proceeding.

NOTE. PVCU windows and doors are not designed to be load bearing

Check the openings for any service cables (e.g. TV Aerial cables or telephone lines), mark these on the survey and agree with customer on the method of handling.

Determine the exposure category of the site and ensure that the replacement windows and doors are suitable.

Ensure compliance with Building Regulations as these affect replacement products. Particular attention is drawn to the requirements of Approved Documents L (Conservation of Energy), M (Access) and N (safety). Also, the fitting of replacement windows and doors should not worsen the existing provision in respect of Approved Documents F (Ventilation) and B (Egress). Photographic evidence of existing windows and doors should be considered in respect of queries raised by FENSA inspectors etc.

Ensure there are no obstructions, either internally or externally, that will prevent the new windows or doors from functioning correctly (e.g. external rainwater pipes or internal taps).

Check that the design of product falls within the following recommended maximum size range:

Product	Maximum Width (mm)	Maximum Height (mm)
Top hung casement sash	1200	1200
Side hung casement sash	700	1400
Tilt & Turn sash	1500	1500
Single hinged door	1000	2100
Double opening door	2000	2100
Tilt & Slide Patio sash	1000	2200
French window sashes	700	1400

The majority of sizes stated above are based on actual performance tests (refer to section 4.4 for full details and guidelines on maximum sizes for multi-lights and exposure categories).

Reference to be made to the hardware supplier to confirm suitability of selected components for the sizes intended.

GENERAL GUIDELINES

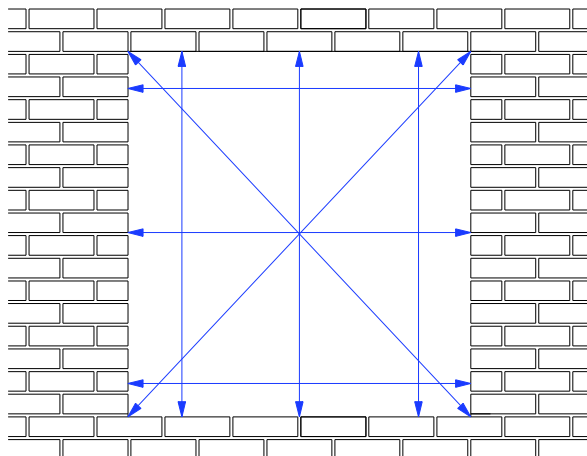


FIG 1

Take measurement of the width,height and diagonals as shown in Fig 1. The smallest measurement taken determines the tight overall width & height sizes.

The deductions shown in Table 1. should then be made all round the perimeter to allow for expansion and contraction, dependant on the size and finish of the new frames.

The sizes left are the manufacturing sizes for the new frames.

Determine if projecting sub-cills are to be fitted and where included ensure that a minimum projection of 25mm is provided beyond the structure.

Measure internal reveal sizes and compare with external opening sizes to ensure that opening lights are not impeded; this is important for inward opening doors and tilt & turn windows in particular. The thickness of external rendering should be checked for clearance of outward opening lights.

The survey should also determine the installation method to be used (e.g. through the frame fixing or with lugs) and ensure compliance with system designer and industry recommendations.

Width/Height of opening	White PVCU	Non White PVCU
Up to 1.5m	5mm	7.5mm
1.5m to 3.0m	5mm	7.5mm
3.0m* to 4.5m	7.5mm	11.0mm
Over 4.5m*	10.0mm	14.0mm

Table 1.

Deductions shown are per side not total.

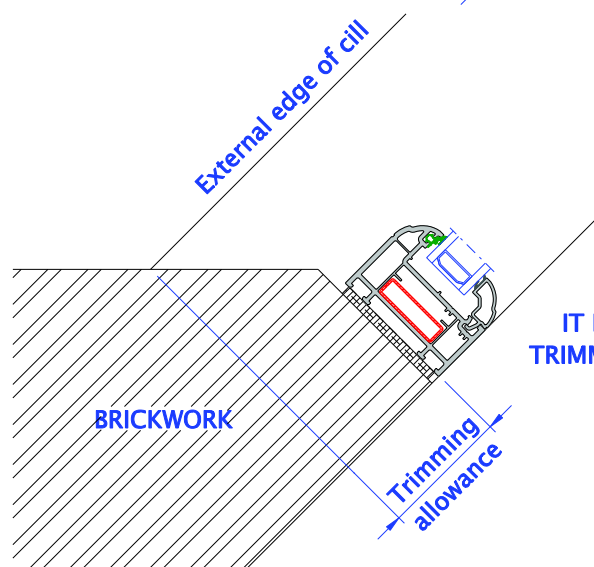
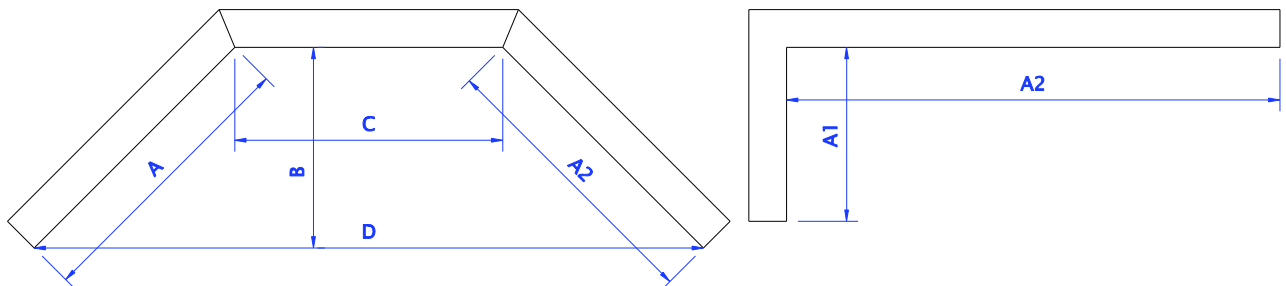
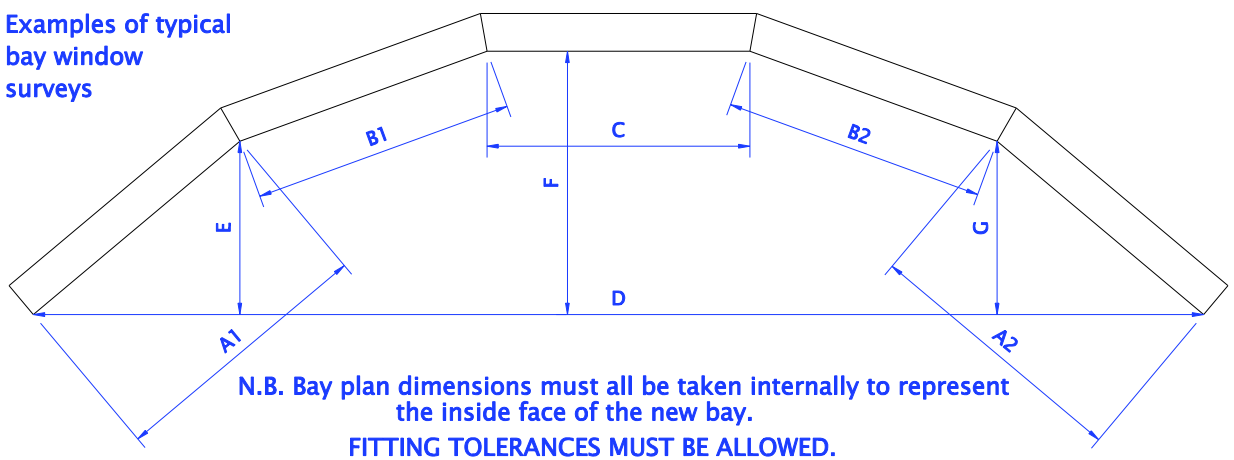
* Frames over 3.0m should ideally be coupled.

When surveying a bay window, make a note of the materials above the window (e.g. brickwork, hanging tiles, tiled roof, etc) as structural bay windows are required to have jacking poles to prevent any structural movement above the bay window. (Refer to section 3.2 Structural Bay Windows for details)

We recommend that for all bay window installations, the advice of a structural engineer is sought, to determine if the installation is load bearing.

When surveying a bay window, internal cill dimensions are required although fitting tolerances and trimming allowances must be taken into account.

Examples of typical bay window surveys



IT IS ESSENTIAL THAT SUFFICIENT TRIMMING ALLOWANCE IS ACCOUNTED FOR ON THE SURVEY

Transportation

When transporting glazed or unglazed frames, they should be firmly secured in an upright position on clean resilient packing. This will help prevent scratching of the surface of the profile. Frames stored on site should be treated in the same way and should be carried securely and placed in position without heavy impact. PVCu has a high resistance to weather, corrosion, and most materials found on building sites. However, as PVCu frames are delivered to the installer in a "completely finished" condition, care taken in transport, storage and handling will prove beneficial, thus ensuring a good installed appearance and customer satisfaction.

The protective tape on the PVCu frame(s) should be removed on completion of the installation, prior to final cleaning.

Protection

CEMENT, PLASTER AND SAND will not effect the properties of PVCu and may be easily cleaned from the surface – though care should be taken to avoid scratching. They may block drainage channels and so these should be checked and cleaned carefully before handover. Cement and plaster will corrode and spoil the action of gear and fittings so they should be cleaned off immediately.

TAR AND BITUMEN may stain the surface of white PVCu and contact should be avoided during storage and installation

SILICONE SEALANTS generally will have no effect on PVCu and may be used with confidence. However, mastic and sealant systems which include solvent based primers must not be used. If you are in doubt, consult the sealant supplier.

- Before removal of existing windows, it is of extreme importance that the following points are checked:-
 1. Check the structure around the opening for any defects such as cracked mortar joints and report any defects in writing to the customer before proceeding.
 2. Check the new windows have not been damaged in transit and that they have been manufactured in accordance with the customers original order.
 3. Check that the measurements of the new windows are correct so that they will fit into the aperture once the existing windows have been removed.
- Move any items of furniture away from the window aperture in order to avoid damage whilst removing the existing window or installing the new window.
- Cover carpets and soft furnishings with dust sheets so as to minimise the possibility of damage and to facilitate the "cleaning-up operation" after the installation.
- Using a craft knife or similar, score around the perimeter of the existing frame on the inside, where the plaster or wall decoration meets the frame. In most cases this will minimise damage.
- Remove all opening sashes and glass from the main frame
- Saw through any mullions or transoms and break these out of the main frame.
- Saw through verticals of main frame as far as possible without causing damage to internal reveals or structure.
- Protecting plaster and renderings with a bearing block, use a levering bar between the structure and the main vertical frame, to carefully lever the verticals inwards, and then complete the saw cut. Remove the vertical members completely from the aperture.
- Using the same procedure, remove the horizontal members of the outer frame from the aperture.
- Clean the aperture and remove where possible any mastic from the structure.
- Remove all debris from the site.
- Removal of sub-cills
Sub-cills – and sometimes heads, windowboards and mullions are often 'horned' into the fabric of the aperture. This may conceal damp proof courses and lead to difficulties in removal. Great care must be taken when cutting and levering these items to reduce damage to plaster, renders and brickwork to a minimum. If the DPC is damaged, then it must be replaced.
- Removal of 'Box-Sash' windows
Most box-sash windows pre-date cavity walls, and are built into the internal reveals of solid brickwork. The sashes are removed fully glazed.
 1. Remove the mitred beading from around the frame.
 2. Cut the sash cords to release the weights.
 3. Remove the bottom sash, then take off the parting bead and take out top sash.
 4. Cut the outer frame from the aperture, leaving the horns in the structure.
 5. Remove the counterweights from the sash box.
 6. Remove the sub-cill, if this is not part of the outer frame.

In order to maintain the structural integrity when replacing a bay window, it is essential that temporary supports are used. Care must be taken to ensure that they are placed in such a position to support all the super-structure without causing damage to ceilings or floors. In some cases temporary supports are needed both internally and externally

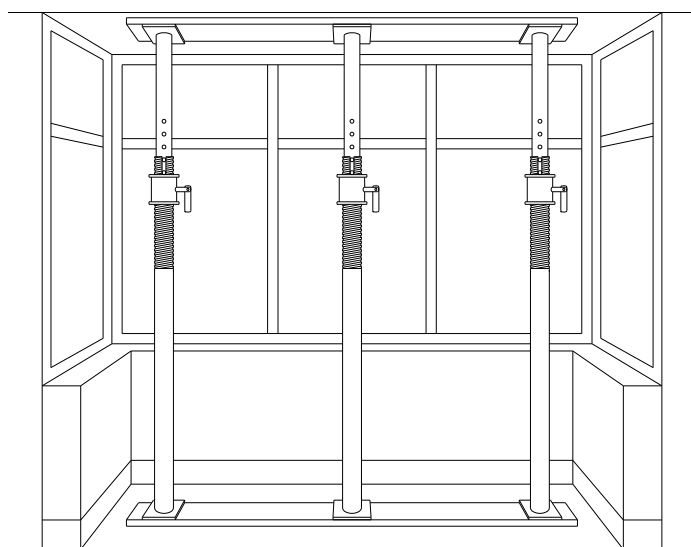
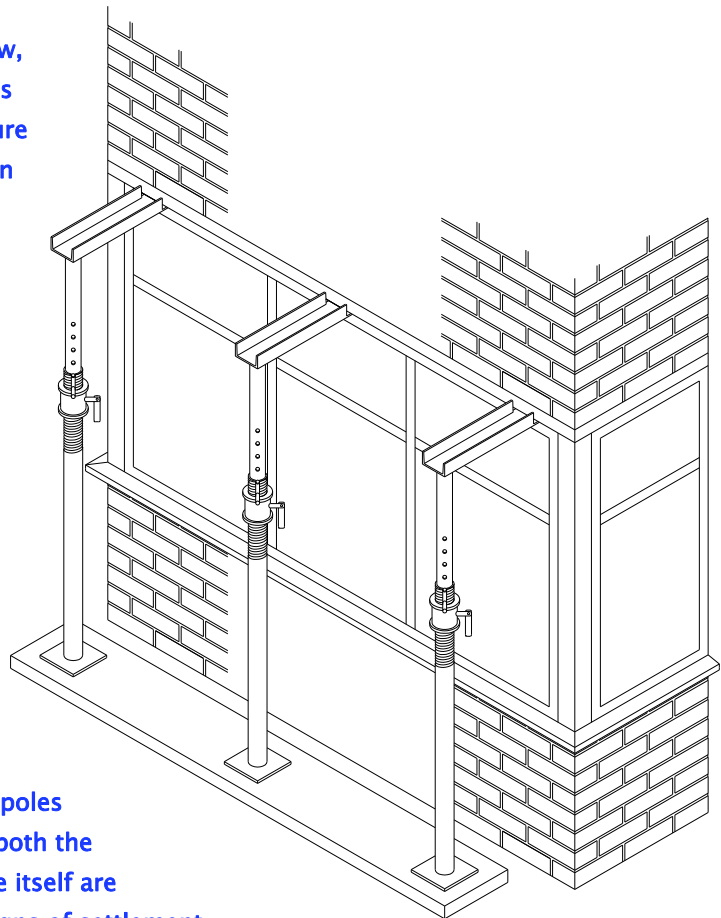
After supporting the bay structure the windows should be removed carefully, ensuring that the minimum of damage is caused to the reveals, plaster finishings and trims. Any trims that will be re-used should be carefully checked for defects such as rotting, and appropriate action should be taken

It is recommended that load bearing poles are removed one at a time, and that both the temporary supports and the structure itself are closely monitored to check for any signs of settlement.

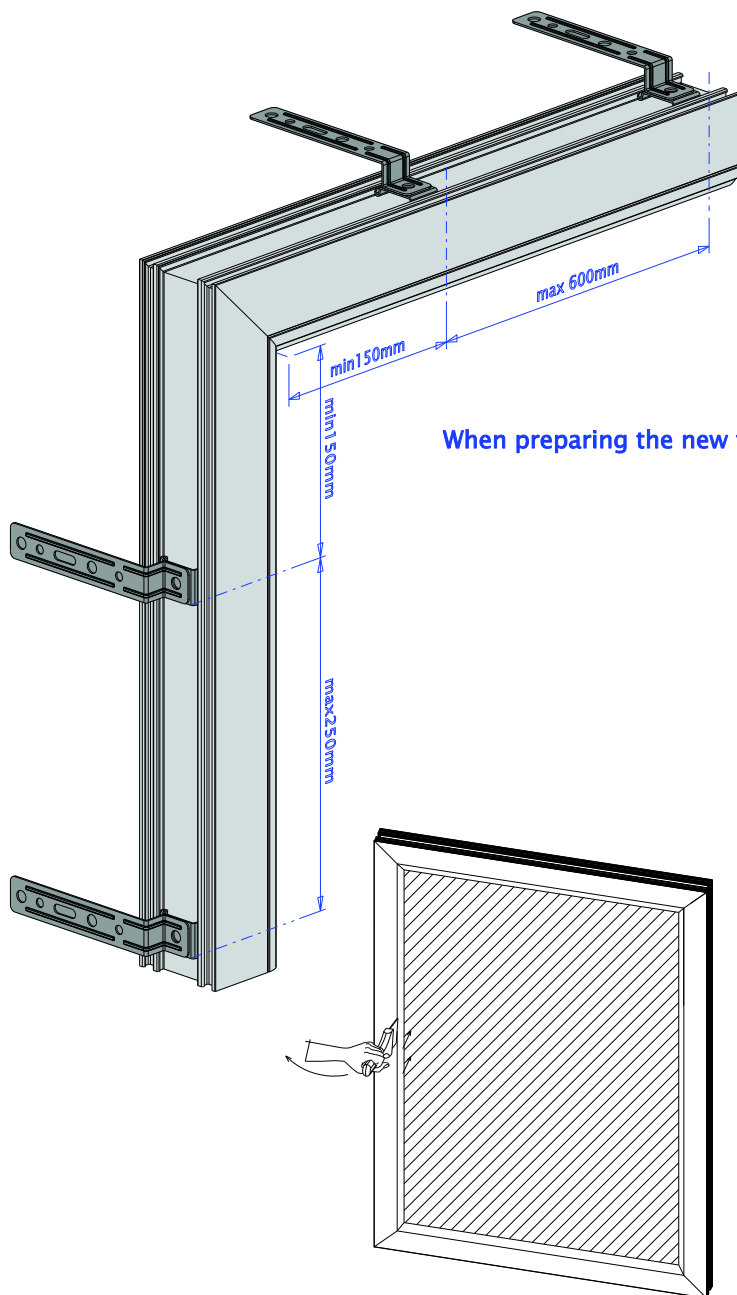
Any heavy furniture in the upper floor bay area should be cleared before removing the old bay window.

Changes to the building regulations make it necessary to use jacking poles on structural bays. Checks should be made with your local building control department or seek the services of a structural engineer if you have any uncertainty regarding this area of an installation

For details on jacking poles see section 3.2, Structural Bay Windows



GENERAL GUIDELINES



When preparing the new frame, the following points should be followed :-

If you are using fixing brackets, these should be firmly attached to the outer frame, starting at no less than 150mm from the corners and at no more than 600mm centres.

If you are to screw through the main outer frame into the structure, then the glass in the appropriate fixed light must be removed. If the window is too heavy for convenient handling, the glass units may have to be removed.

Choosing one of the longest beads first, push a sharp chisel or rigid putty knife into the bead/ frame joint at approximately the centre point. Apply force to lift the bead up and out. Starting at the end of the next bead, the remainder can now easily be removed. Make a note of the positions of each bead to ensure correct positioning later.

Carefully remove the glass unit, taking care not to disturb the packers. When windows are received unglazed see section 5.6, Glazing Packer Position. Store any glass you have removed safely away from where you are working.

With sash windows it may be more convenient to remove the sash or sashes. To remove the sash from the frame, open the sash to its full extent and keep fully supported. Carefully remove the screws from the friction stays on either the sash or frame. Refitting is the reverse of this procedure. It is important to ensure that the screws locate into the original fixing holes. Finally, check for squareness of vent in frame aperture.

If a cill is required and has been supplied separately from the window, then it must now be attached. If the cill is to be fixed to the window frame with screws, always screw from the underside of the cill into the frame. It is important that fixings do not penetrate drainage channels.

LEGEND

BUILDING DETAILS



Adhesive tape



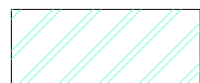
Silicone



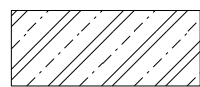
Insulation (flange)



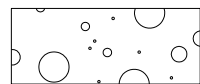
Insulationpanel



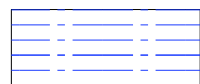
Aluminium



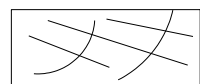
Bluestone



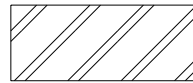
Concrete



Glass



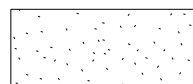
Wood



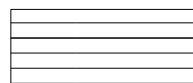
External wall



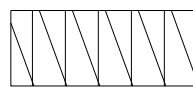
Internal wall



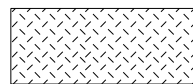
Mortar



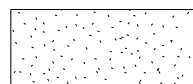
Multi-ply board



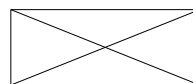
Adhesive tape



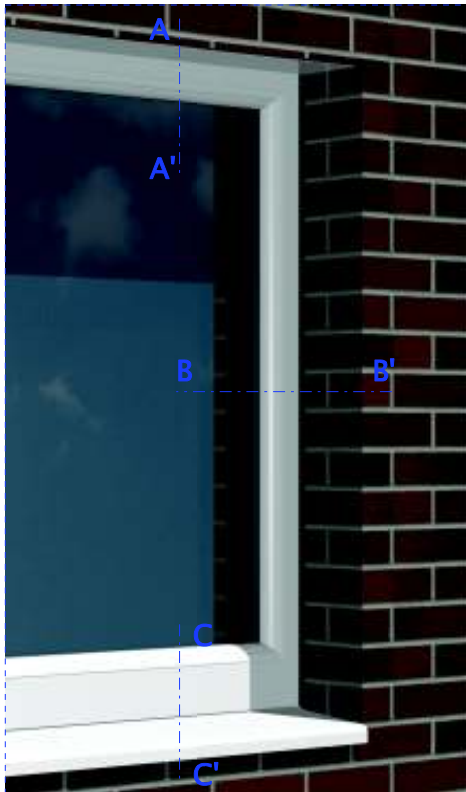
Sand



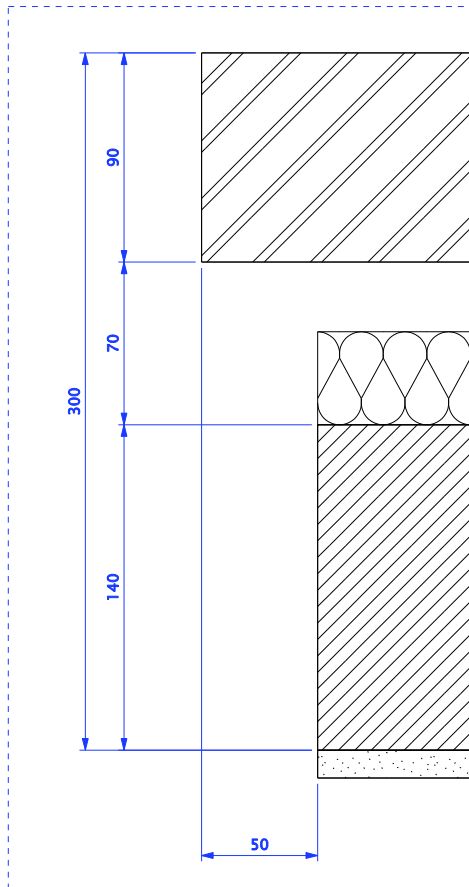
Stucco



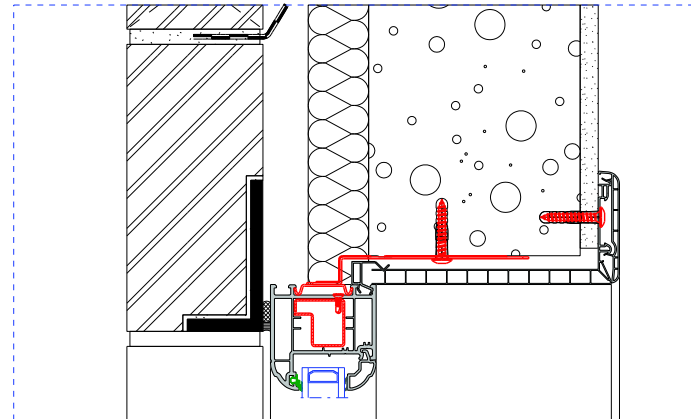
Wood



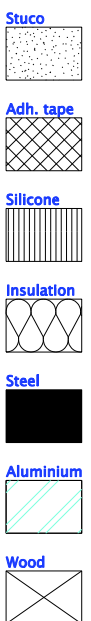
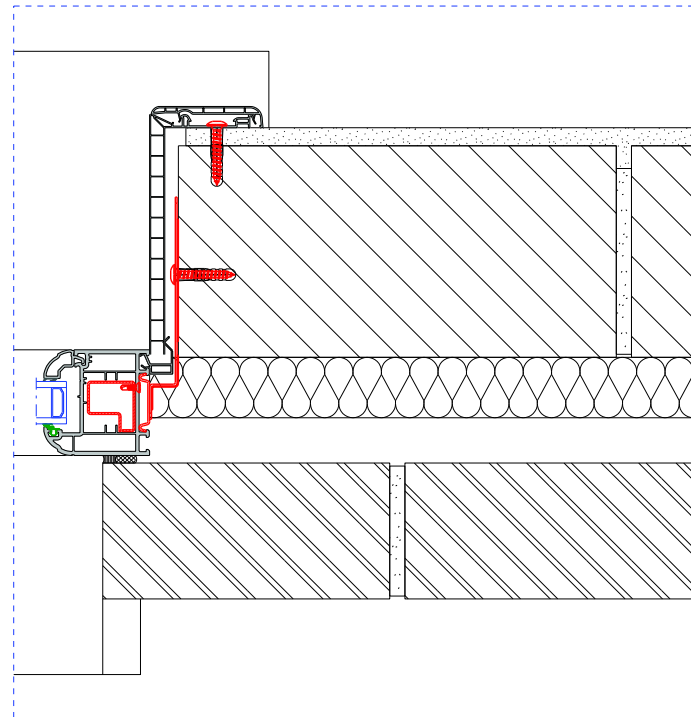
Wallsection



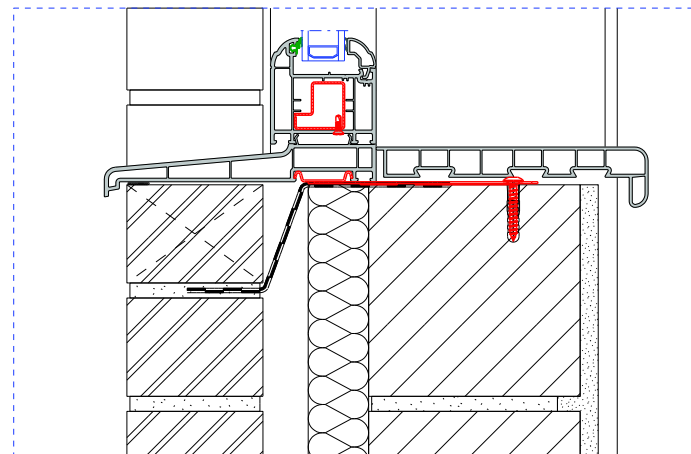
Section A-A'



Section B-B'



Section C-C'



INSTALLATION DETAILS

1. Offer the window into the aperture, bedding in the appropriate manner as illustrated on the following page, temporarily wedging it into position making sure it is level & plumb. Ensure perimeter clearances are retained by using appropriate fixing packers. Mechanical fixings should be made through the packers. The packers themselves must be made of a non-degradable material (e.g. plastic).
2. Fix the window into the aperture using either fixing brackets or by drilling and fixing through the outer frame. Fixing locations should be no closer than 150mm from corners and intermediate transoms/mullion joints and at max. 600mm centres elsewhere (see Fig 1.)

Windows over 1800mm wide should be fixed centrally at both head and cill.

A minimum of 2 fixings per jamb must be achieved.

The use of polyurethane foam is permitted where it is impractical to achieve mechanical fixing in the normal way. The manufacturers guidelines must be followed for application. Foam fixing will not be accepted as a sole means of fixing a frame.

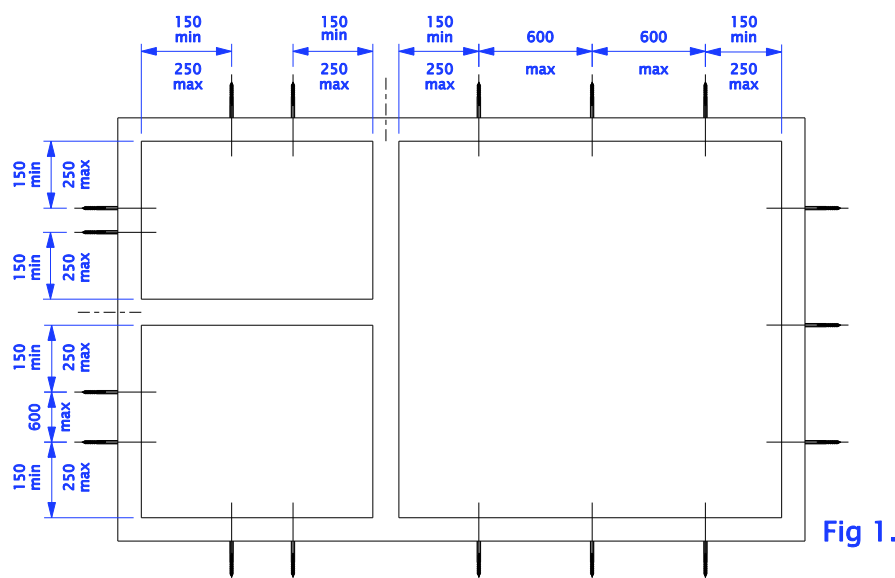


Fig 1.

3. If it is necessary to fix through the bottom member of the outer frame, where water can collect, adequate sealing over screw heads is recommended. Where possible, fixing brackets should be used for this application.
4. Re-fit any of the glass units you have removed, making sure they are sitting on the necessary glazing blocks. (Refer section 5.6 Glazing Packer Positions).
5. Re-fit the glazing beads taking extreme care not to damage the glass.
6. Re-fit sash or sashes you have removed. See section 3.1, New Frame Preparation.
7. Check the window for correct operation before proceeding with the mastic seal or making good.

DRAINAGE

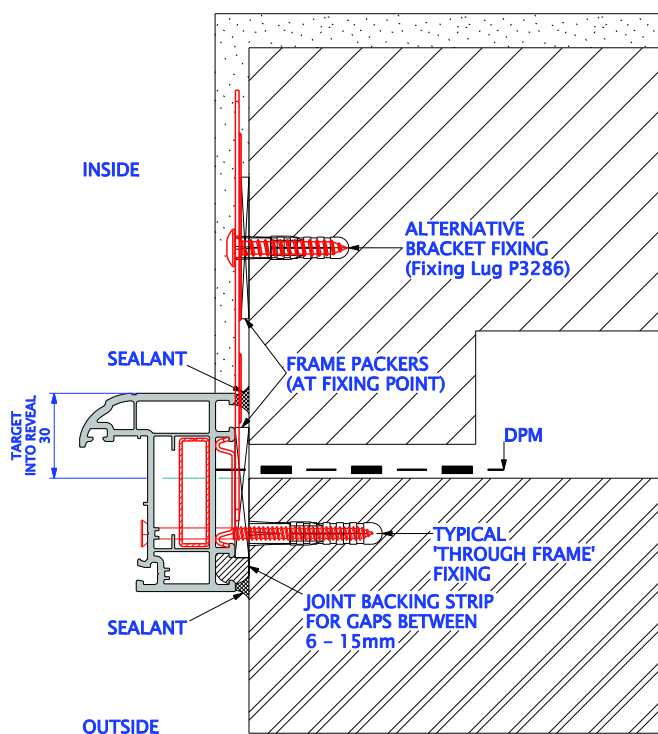
It is essential that our recommendations for securing the glass in place are followed. Specifically, care must be taken to ensure that glazing blocks or spacers do not obstruct drainage of the water from the glazing rebate.

The details contained in "Limiting thermal bridging and air leakage : Robust Construction details for dwellings and similar buildings" (TSO 2001) are applicable to new build applications under Building Regulations (Approved Document L) but also make good practice on replacement work where possible.

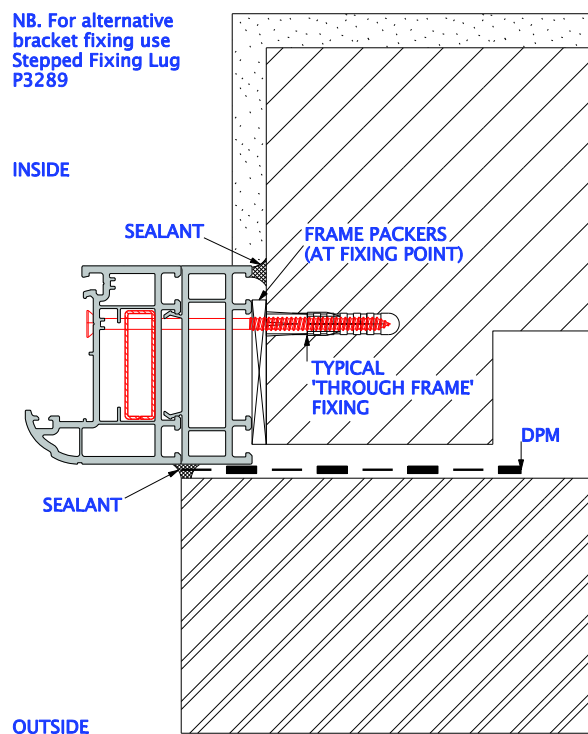
Frame fixings should penetrate a minimum of 25mm into timber and 40mm into plugged brick or block work. Separate fixing details apply when fixing to timber kit framing, steelwork and thin gauge metal pressings. In all situations the facility for PVC U frames to expand and contract must be provided.

Details shown on following page provide further examples of fixing PVCU frames.

Typical Jamb Detail:
Section through flush reveal:

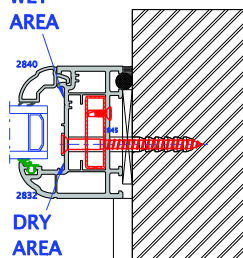


Typical Jamb Detail:
Section through stepped/rebated reveal:



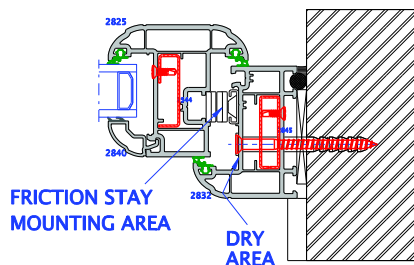
INSTALLATION DETAILS

WET
AREA



EXTERNAL BEAD FIXED

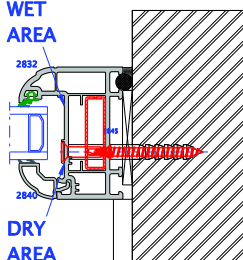
Typical through the frame fixing showing screw in dry area.
Typical for all externally beaded fixed glass situations.



OPEN OUT

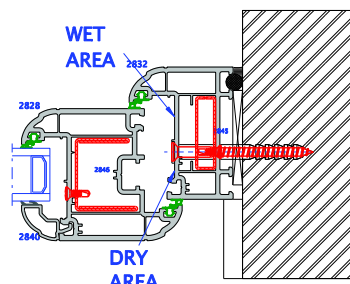
Typical through the frame fixing showing screw in dry area.
Typical for all opening out windows avoiding the friction stay mounting area and for residential doors which open outwards.

WET
AREA



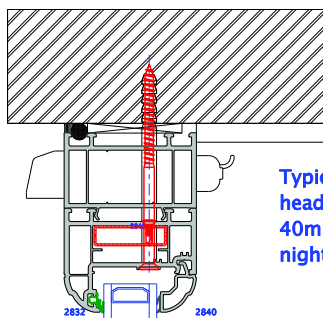
INTERNAL BEAD FIXED

Typical through the frame fixing showing screw in dry area.
Typical for all internally beaded fixed glass situations.

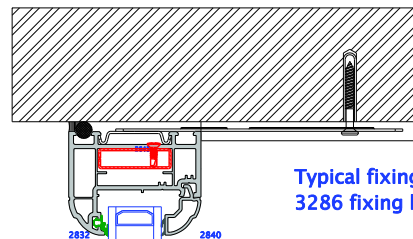


OPEN IN

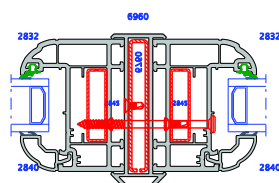
Typical through the frame fixing showing screw in dry area.
Typical for opening in windows such as tilt & turn also for residential doors which open inwards.



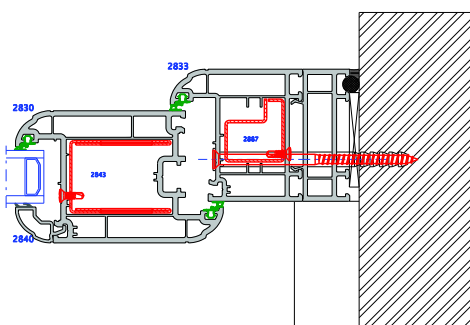
Typical fixing through the head example shows 3301 40mm add-on used for a night ventilation arrangement



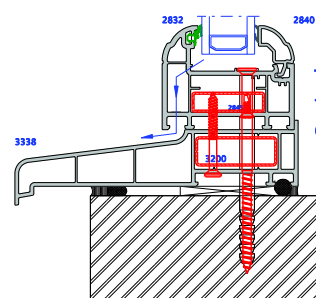
Typical fixing at head using 3286 fixing lugs.



Typical arrangement of frame to frame coupling example shows two 2832 outerframes coupled with 6960 overlapping coupler.



Typical fixing with deep plaster line roomside using 3300 25mm add-on Hinge side shown



Typical through the frame fixing showing screw in dry area.

It is expected that bay windows will shortly come under Building Regulations at least with regard to structural integrity. Currently FENSA inspectors will check that provision has been made for suitable corner posts to suit load bearing situations. Future requirements may well see demands for calculations on loads applicable and how these are met by the bay system used.

Deceuninck have teamed up with specialist supplier Nicholls & Cooke of Southampton to develop a range of adjustable structural jacking corner post designs to suit the 2800 Series for both splayed and square bay types.

For splayed bays two options exist – one using 6916 PVC tube with 3311 frame adaptor and the second uses the smaller 3313 tube with 3327 clip in adaptors to provide an option with slimmer sightlines. For square bays 6920 PVC tube is used. In all situations Deceuninck have opted to use seam welded galvanized steel tubing for the structural element to maximise load bearing. Standard aluminium bay tubes are unlikely to have the required mechanical strength.

Bearing Plates:

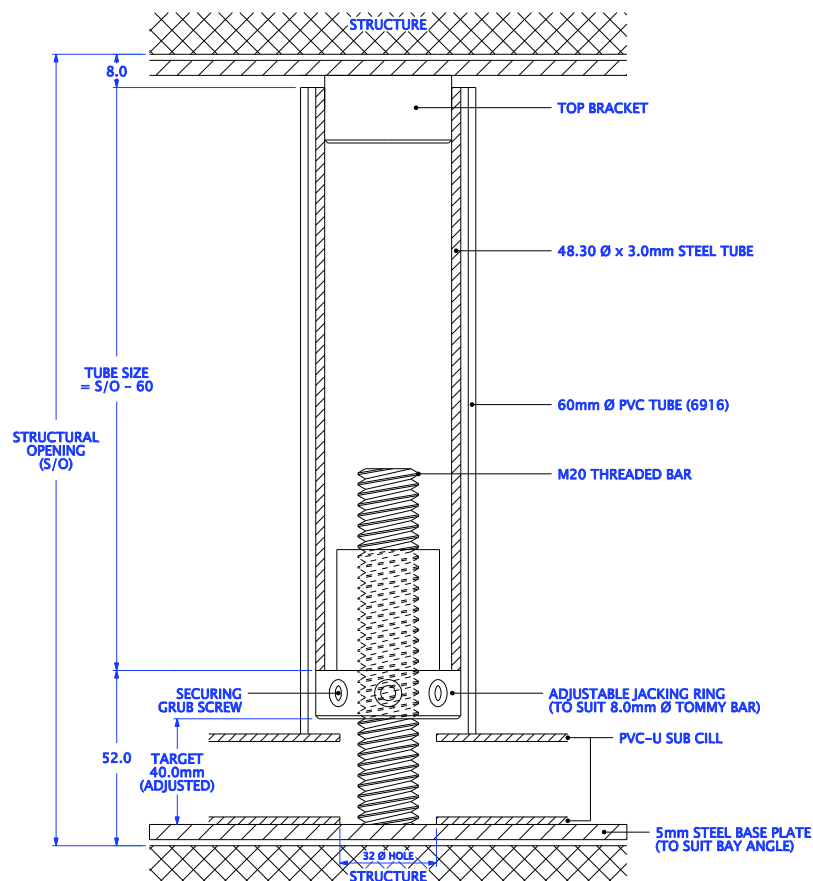
Bearing plates should be made from steel with a minimum thickness of 3mm, or aluminium with a minimum thickness of 5mm.

The area of the bearing plate should be a minimum of 1800 sq.mm.

Provision must be made to prevent the plate moving relative to the bay pole.

The bearing plate must completely cover the end of the bay pole.

Further details of the system can be found in a separate publication “Manual for the construction of the Nicholls & Cooke Structural Bay System for the Deceuninck 2800 System”.



Site glazing to be completed as required. The contractor must utilize the glazing methods described within this technical manual. The location of glazing packers to be suitable for each application. Glass units must be installed clear of designated 'wet' areas in the framing and be packed to prevent opening lights from dropping.

On completion of glazing, and the attachment of any special fittings, the contractor will check the correct functioning of all windows and doors installed making adjustments where necessary.

The contractor will be responsible for cleaning the framing and glass with approved agents. The protective tape on the framing should then be removed.

The contractor will carefully point an approved low modulus silicone sealant to the joint gap between frame and structure on the outside (Fig 1.). Care should be taken not to seal the drainage path for such as metal lintels.

The 'Robust Detailing' methods referred to in Approved Document B of the Building Regulations stipulate that an additional seal line is also placed to the inside gap between frame and structure on new build applications. The use of backing strips for gaps between 6mm – 15mm should be adopted, and the sealant manufacturers guidelines followed (Fig 2.).

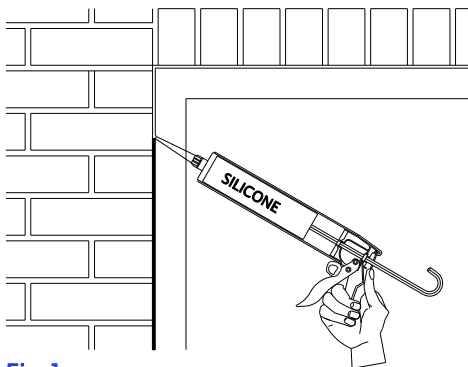


Fig 1.

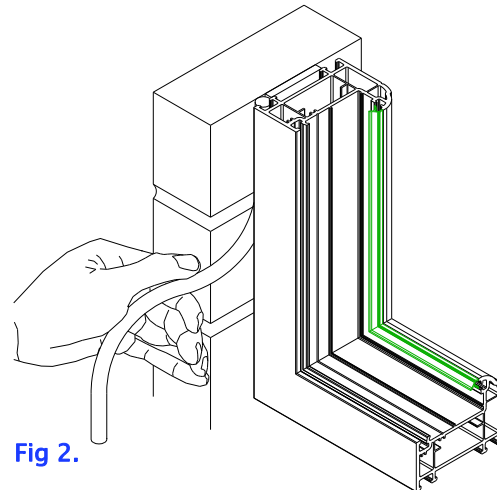


Fig 2.