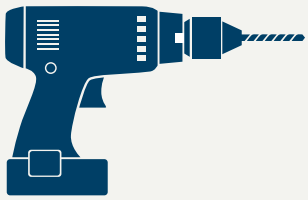
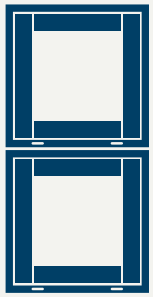
Westcoast Windows®





Your Windows

Delivery & Installation Handbook

TEL: 01359 241944 | EMAIL: info@westcoastwindows.com | www.westcoastwindows.com

Westcoast Windows®

Welcome

Thank you for choosing Westcoast Windows. Our unique system has been developed, tested and proven in one of Scandinavia's toughest climates, the West coast of Sweden.

Westcoast Windows have a proven reputation for outstanding quality, performance and durability. We believe our windows to be of the highest possible standard and to ensure the performance and longevity of your window it is important that they are installed and maintained in accordance with the instructions shown in this System Handbook.

After reading this handbook, if you are still unsure about how to install our products, then please either contact your distributor or Westcoast Windows UK via the contact details below.

Contents

Delivery

We take great pride in ensuring that your windows and doors are delivered to you exactly the way they left the factory. Please read the following information carefully to ensure that your purchases have arrived in accordance with your order.

NOTE: Upon receipt of delivery the purchaser must check the consignment matches the order details and inspect the products for signs of damage that may have occurred during transportation (take photographs if applicable). In the event of any damage being identified, note on the driver's delivery documentation details of the damage before signing the delivery note.

Under no circumstances should delivery documents be signed 'unchecked' as this may invalidate any future claim. If there is any cause for complaint please contact your supplier within 24 hours.

Order Confirmation

As soon as you have placed your order you will be sent a document similar to the one below. This contains details of the products you have ordered as well as important information including order number, production week number and delivery address. Please keep this document safe to check against the delivery note which will arrive with your consignment.

Westcoast Windows®

Order Confirmation 000000

Your order number

Delivery address

Deliveryaddress:
Company Name
Company Address 1
Company Address 1
XX12 3XX COUNTY
Delivery instr.: 00000 000000

Company Name
Company Address 1
Company Address 1
XX12 3XX COUNTY
UNITED KINGDOM

Customer address

Sales contact

Client nr: 00000

Your name & contact details

Requisn.:	00000	**Our ref.:**	Contact Name	**Order Date:**	
Your ref.:	Your Name	**Payment:**	00 days net	**Rev. Deadline:**	
Cust. phone:	0000-0000000000	**Del.Terms:**	XXX	**Prod. Week:**	
Project:	XXX XXXXXX	**U-val/area:**	0,00 / 0,00	**Dispatch Week:**	
Marked:	XXX XXXXXX			**Currency:**	GBP

Production Week 14, 2016

With regard to the above project, we herewith acknowledge the order for Westcoast Windows products.

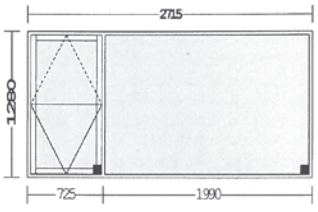
If you are happy for the Order to now progress into production we need you to formally approve this schedule by signing and dating the Acknowledgement at bottom of this page and returning to Westcoast Windows. Please note that by signing this document you will agree to our Standard Terms and Conditions and we cannot guarantee that any subsequent amendments will be able to be catered for.

Please carefully check all details included in the Order Acknowledgement paying special attention to;

- Finishes
- Sizes
- Handings
- Product functions
- Glass specifications

Window reference number. (This will match the label on the delivered window)

UF (2715x1280)	**W1 Kitchen**	**1 no**	**000,00**	**000,00**

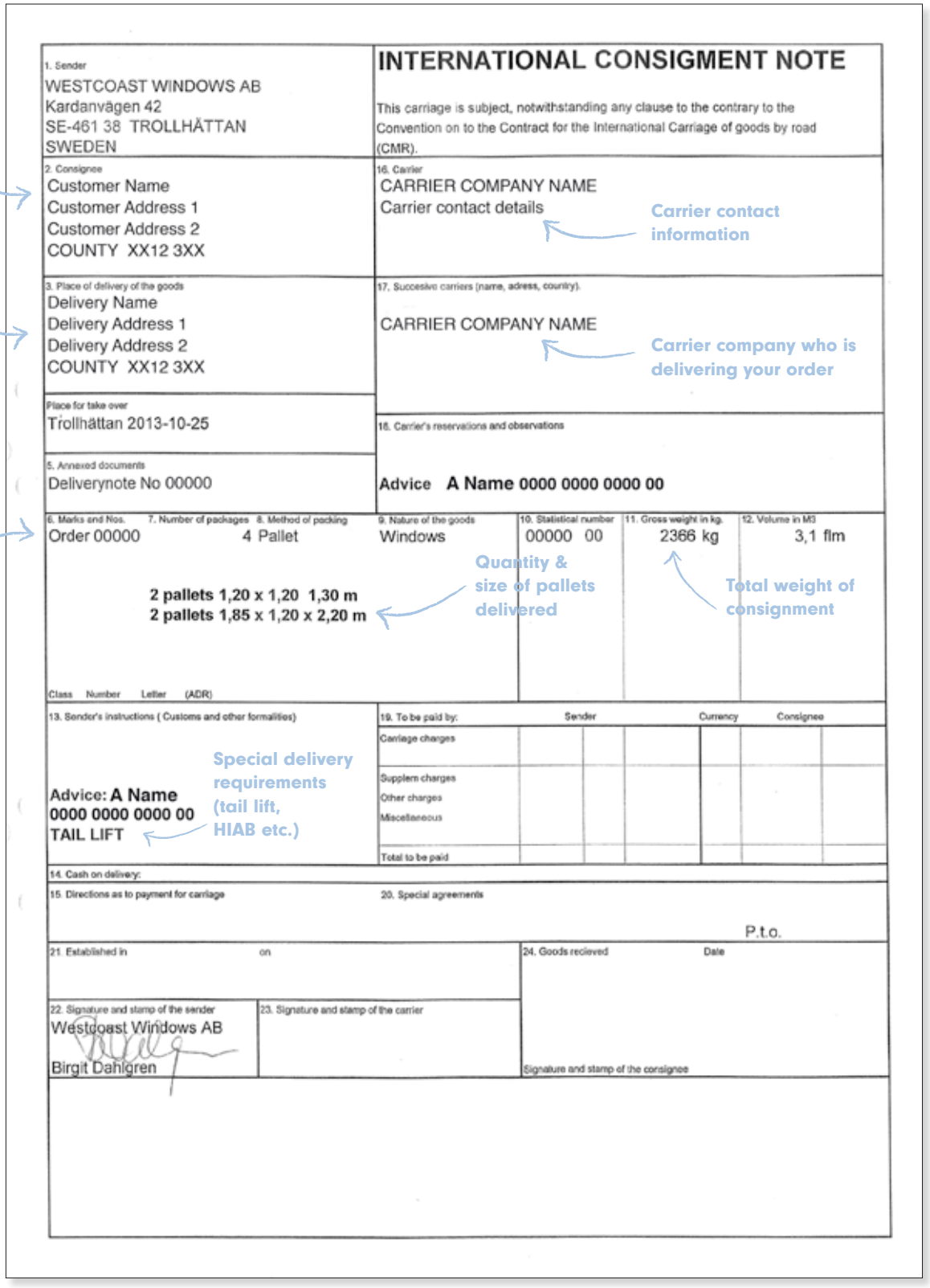


Outward Opening System
TSG180 Top Hung Reversible
Fixed light
100mm Frame Depth
4 Tgh - 20ArV - 4 Tgh LowE
Grey glazing gasket externally
Grey glazing gasket internally (21)
Grey Glazing gasket FKG internally (11)
UT95 Tokyo key-locking handle.
0710EVKS/6 F1 7/50 H
Alum:RAL/70 GLANS: RAL 9016
Timber: WCW 20 Clear Lacquer
Mullion
Export XS palleting
U-value1.4
Individual weight. 93 kg

Product description (size, quantity, colour, glazing & ironmongery etc.)

Consignment Note

In the event that your order is to be delivered to you directly from our factory, you will receive an International Consignment Note (see below). This informs you that your order has left the factory in Sweden and is on its way. It gives information on how many pallets of windows you will receive together with their size and weight and who will be delivering the consignment. Please check the address and contact the carrier if it is incorrect. Within the next few days you will receive a call from the carrier giving you an exact delivery date and approximate time of arrival. Please ensure you are prepared and ready to receive the consignment in order to avoid demurrage costs.

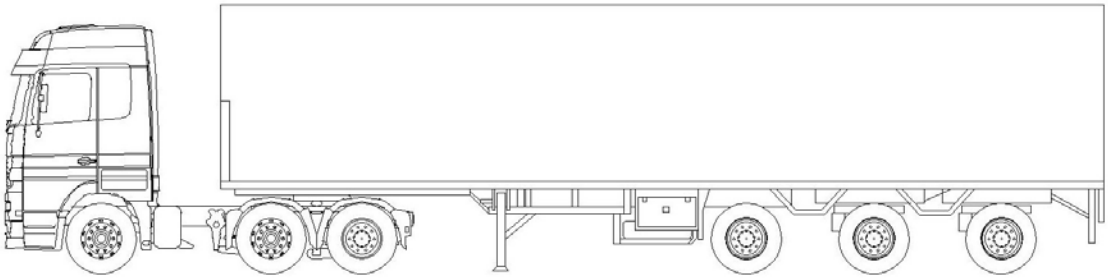


Delivery Vehicle

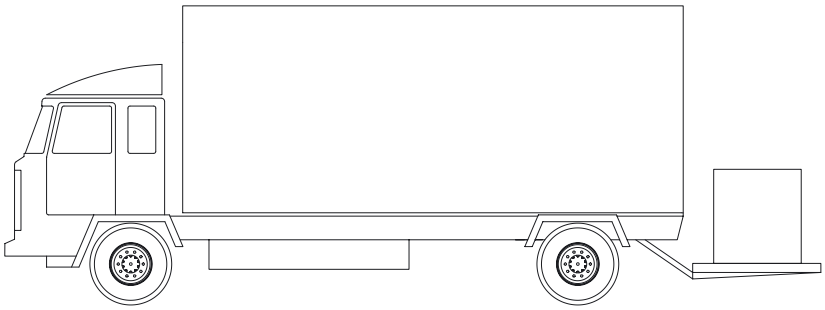
Your order with Westcoast Windows will normally be delivered either on an 18m articulated lorry or on a 13.6m rigid vehicle. At order stage, please confirm any difficult site conditions or traffic restrictions. Please request a smaller vehicle if you have any doubt about access issues. If you are using a crane or Hiab to lift the pallets then please ask for crane-offload pallets, otherwise never lift a standard pallet. 48 hours before delivery a Westcoast Windows representative or the carrier will contact you to agree the delivery date and time.

The cost of this articulated lorry is already included in your order total. We can arrange for delivery via a smaller vehicle but this may result in additional costs.

Additionally there should be a forklift or crane available on site for unloading purposes.



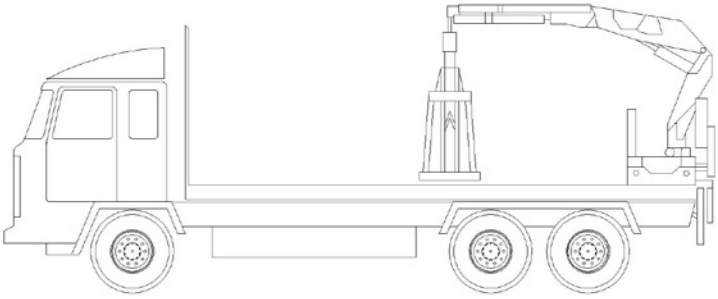
Example of 18m articulated lorry



Example of 13.6m rigid lorry with tail lift

Note:
maximum pallet size for tail lift = 2250mm width, 2100mm high

Rigid vehicles can also be provided which have a tail lift. Pallets can be taken down to ground level from where they can be moved by pallet truck.



Example of 13.6m Hiab lorry

If there isn't a crane or forklift available on site then we could deliver your order on a rigid vehicle with Hiab equipment. The truck's own crane can take a pallet weight of 700 kg and will reach 6 metres from the truck (under stable ground conditions).

Always explain your site details to the carrier in order that they can provide the right vehicle for delivery.

Unloading the Vehicle

PRIOR TO UNLOADING:

- Always ensure operatives are fully trained and competent to carry out the proposed task.
- Inspect the pallets whilst on the vehicle for any signs of damage to the pallets or pallet protection.
- Confirm that the pallets have been strapped to the deck of the vehicle and have not moved during transportation.

DURING UNLOADING:

- Always ensure the load is safe to lift and the equipment to be used is suitable for the activity. Do not lift unbalanced loads under any circumstances.
- Ensure that lifting forks are inserted completely underneath the whole pallet to avoid damage to frames when forks are tilted. (see picture on page 10)

Unloading by Forklift: We would recommend that the pallets should be unloaded by forklift. Care should be taken not to damage the underside or faces of the windows. We strongly suggest that you also place protection on the forks to avoid damage to the frames. Forks should be a minimum of 1200mm long to reach under entire pallet.

Unloading by Crane-lift: Due to site restrictions off-loading by crane may be the only option. If we have been advised at order stage, your pallets will have been packed specifically for crane off-loading with additional bracing. If you require crane off-loading please remember to select a sliding roof articulated vehicle or Hiab / Flat-bed when placing your order.

Unloading by hand: To unload by hand, pallets will need to be 'broken down' on the lorry and individual frames manually off-loaded. The windows and doors are heavy and great care should be taken when off-loading manually. We recommend you undertake a risk assessment before proceeding, and ensure you take account of the current regulations for manual handling and working at height. There are time limits for unloading so please ensure you have the equipment or manpower available when organising your delivery time.

Unloading by Tail Lift and Pallet Truck: When delivery is arranged by rigid vehicle, it will be equipped with a tail lift. A pallet truck (provided by the haulier) can manoeuvre most pallets on to a hard standing area.

AFTER UNLOADING

Count the number of pallets delivered and reconcile the quantity with the consignment note. Re-inspect the pallets for signs of damage that may have occurred during transportation and take photographs if applicable.

In the event of any damage being identified, note on the Driver's delivery documents, details of the damage before signing the delivery note. Under no circumstances should delivery be signed 'unchecked' as this may invalidate any future claim.

Report the circumstances to both the carrier and your supplier.

In the case of ancillary items such as handles, trims, flashings, cover mouldings and vents packed in separate boxes, the consignee must check for missing or damaged items and report any issues within 3 days of receipt of goods.

Delivery Note

You will receive a delivery note (see below) with your pallets. It will probably be attached to the pallet in a protective wallet. This document will be a simplified copy of your order confirmation.

Please inform your Westcoast representative of any missing items or if the delivery note is incorrect. Some items may be delayed for a valid reason but you should be made aware of these prior to delivery. These items will be delivered at a later date. Please move your pallets to a location of safe, dry storage.

Westcoast Windows®

Packing slip 104904

Deliveryaddress:
Company Name
Company Address 1
Company Address 1
XX12 3XX COUNTY

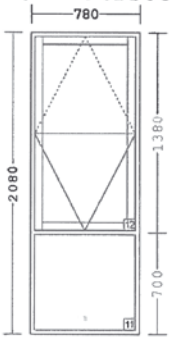
30269
Westcoast Window Systems Ltd
Unit 8 Brickfields Business Park
Old Stowmarket Road, Woolpit
IP30 9QS BURY ST EDMUNDS, Suffolk

Method of delivery

Phone:	00000000000000	**Payment:**	00 days net	**Date:**	0000 00 00
Fax:	00000000000000	**Del.cond.:**	DAP	**Ordernumber:**	000000-0
Your ref.:	Your Name	**Del.mode:**	Rigid with tail lift	**Packaged by:**	
Our ref.:	Contact Name	**Marked:**	Tottenham RD - GROUND	**Consignmentnumber**	
Project:	XXX XXXXXX	**Requisn.:**	XXXXX		
Delivery inst	Name 00000000000000				

Individual weight of frame

Ref	Product/Drawing	Description:	Weight	Qty	Unit	Qty delivered	Remainding
10	T1 & T1 b S UF (780x2080)		76,0	4	Stk	4	0



Outward Opening System
TSG180 Top Hung Reversible
Fixed light
100mm Frame Depth
4 Tgh LowE - 16ArV - 4 FL - 18ArV - 6.38 Lam LowE (11)
4 LowE - 16ArV - 4 FL - 18ArV - 6.38 Lam LowE (12)
Black glazing gasket externally
Black glazing gasket internally
UT95 Tokyo key-locking handle.
0710EVKS/6 F1 7/50 H
Alum:RAL 7005 70% gloss
Timber: White Painted NCS S 0502-Y
Transom
* Enhanced Security TSG180
* Enhanced Security FKG
Export Palleting

Quantity of windows delivered

Westcoast Windows AB
Kardanvägen 42, SE-461 38 Trollhättan, Sweden | Org. nr 556528-1200
E-mail: Info@westcoastwindows.se | www.westcoastwindows.se
Tel. +46 [0]520 47 17 00 | Fax +46 [0]520 47 17 29

1 av 15

Pallets

BREAKING DOWN

Pallets will arrive film wrapped (not waterproof). When removing the protection, take care not to damage the contents of the pallet.

Remove frame corner protectors. These should pull off but the use of pliers may help release the staples.

Unscrew retaining screws that fix the windows to the pallets and the bracing timber. Use a T20 Torx head bit and cordless drill.

As you remove individual window frames, make sure the remaining windows are still secured in a safe upright position.

MANUAL HANDLING

The first rule of manual handling: Mechanise wherever possible.

If this is not possible / practicable –

- Reduce the size of the load.
- Calculate / Know the SWL (safe working load).
- Get a suitable amount of people around the load.

It is always good practice to get a breakdown of the weights of the windows/doors. 25kgs per man **(window weights are on your delivery note)** is the benchmark for manual lifting, however this is not always practical. Kinetic lifting practices must be used at all times to prevent injury and damage to products. Always remember, never continue with a lift if one member of the team is not comfortable.

Other things you need to remember:

- Ensure the correct PPE is available and worn. (PPE gloves, eye protection, hat, boots)
- Use mechanical lifting equipment where possible.
- Make sure the route to destination is clear.
- Check the final storage point is ready.
- Ensure safe access and egress to the workplace.
- Ensure all persons involved with lifting understand what is required.

In the event of any glass units being broken, dispose of glass using the following guidelines:

- Glass should be removed directly to a designated skip wherever possible.
- Utilise steel/plastic bins if carrying glass to the skip.
- If possible, apply self adhesive film to the glass before breaking/removing.
- Always wear gloves, goggles/glasses and wrist protection.

STORAGE

Westcoast Windows always recommend storing products in a dry and secure area and out of the way from potential damage whenever possible. Whilst this is not always convenient, please be aware of the points below to ensure your windows and doors remain in the condition that they left the factory.

Make sure your window is stored securely to avoid the risk of theft.

Your window should be stored on a firm and level standing within a building if possible and clear of any hazardous areas or walkways. If stored outside, the window is best kept on its pallet or if removed then units should be placed on bearers to ensure that it is clear of the ground and any groundwater or contaminants.

Necessary care must be taken to prevent water from contaminating your timber frame mortice joints, any fixing holes and ironmongery components.

If the unit must be stored under the tarpaulin then please ensure that the tarpaulin covers the top and sides of the window to protect against the rain. Please ensure there is adequate ventilation around the unit in order to reduce the risk of condensation forming and excess heat building up from the exposure to direct sunlight.

Do not use transparent material to cover the windows as they tend to increase the risk of condensation to the underside of the covering material and the product underneath it. Excess humidity is also best kept a minimum.

Timber frames must be protected from direct sunlight during storage as this can also result in differential colour change.

Any separate glass units should be stored under a roof structure or preferably inside away from potential harm. Fittings and other items delivered separately should also be stored indoors.

The window should remain wrapped and protected until it is ready to be installed to protect from moisture, dust and debris. Do not use chemical or pressure washers to remove site debris. In any event, do not place heavy weights on top of your unit.

Your window will be unprotected during installation so please ensure that hazardous operations, (i.e. welding, abrasive wheels or similar) should not take place in the vicinity of the unit unless it has been adequately protected. The window must not be exposed to paint, plaster or other corrosive materials. Do not use plastic film or tape to protect the window. Only use masking tape which is intended for this purpose and remove it immediately after work has finished. Do not leave the window open for a long period of time after installation to prevent damage from moisture.

WARNING!

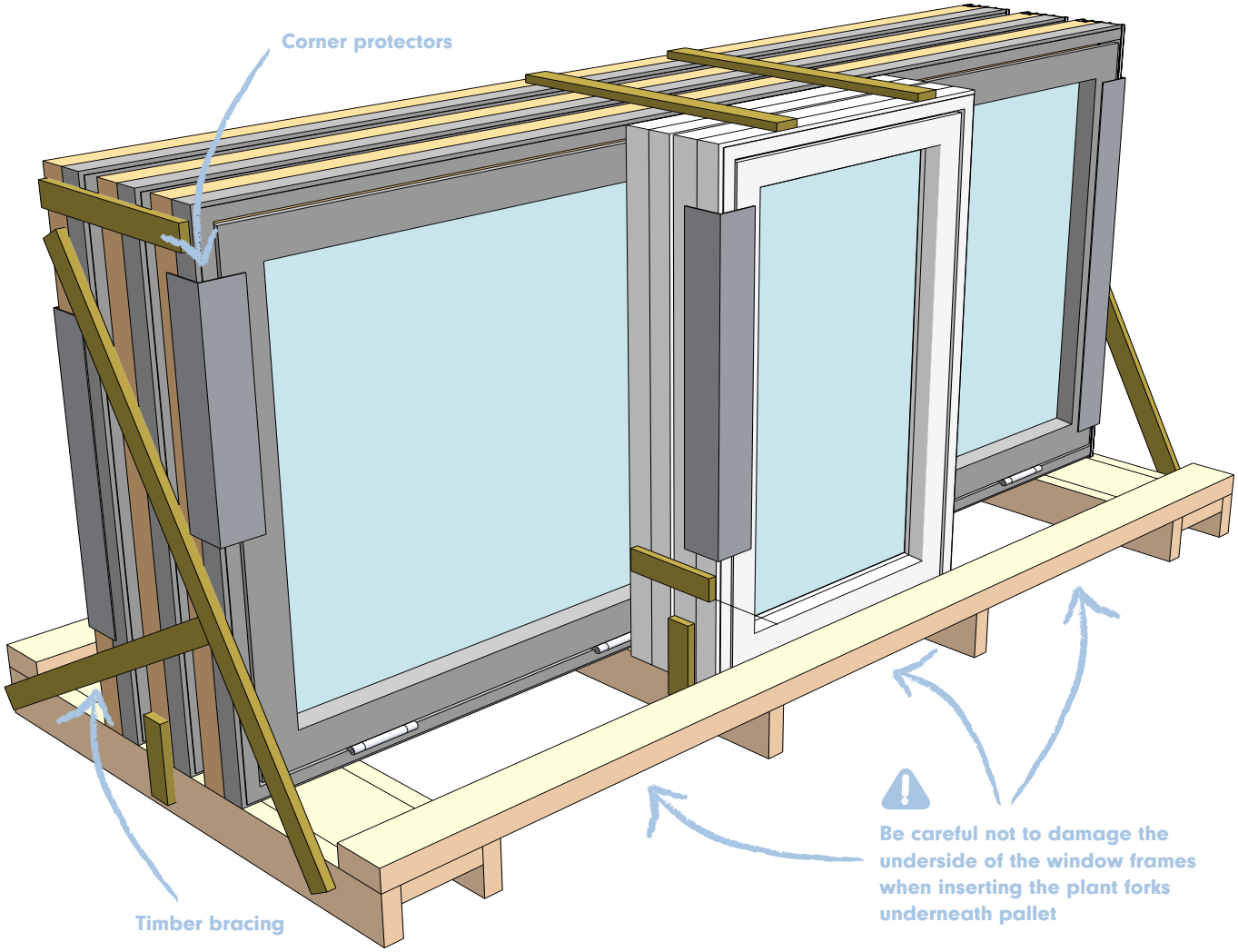
DO NOT ALLOW INTERNAL TIMBER PROFILES TO BE EXPOSED TO RAINFALL OR DAMP CONDITIONS. EXPOSURE WILL LEAD TO EXCESSIVE MOISTURE CONTENT IN THE WOOD, THE POTENTIAL FOR SWELLING, THE DISTORTION OF JOINTS AND FINISHES, WHICH MAY EFFECT THE PROPER OPERATION OF OPENING LIGHTS AND DOORS.

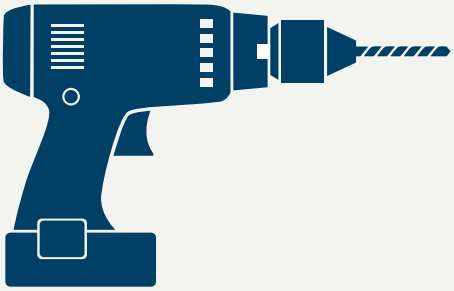
PROTECTION!

TYPICAL EXPORT PALLET

An example of a typical Export pallet. Only suitable for a forklift or telehandler offload.
If crane offloading is required then please ask for a Crane pallet.

**Always make sure that the load is balanced before lifting and moving.*





Installation

Correct installation is very important for the operation and life span of the window and should be carried out by a skilled operative who is trained in the installation of external windows and doors (preferably composite Scandinavian products).

The following instructions are designed to aid the installer with all aspects of fixing Westcoast Windows products. Please ensure that you use these instructions together with any bespoke fixing details that may have been provided by your dealer or project architect.

If you have any special fixing requirements not covered in these instructions then please contact your Westcoast dealer or the UK technical office (see contact details on front cover).

Terminology

The drawings below show some of the technical terms that are used in the installation section of the handbook.

OUTSIDE

1 Timber rebated edge

2 Perimeter tolerance gap (filled by external Perimeter Seal)

3 Glass unit (double or triple glazed)

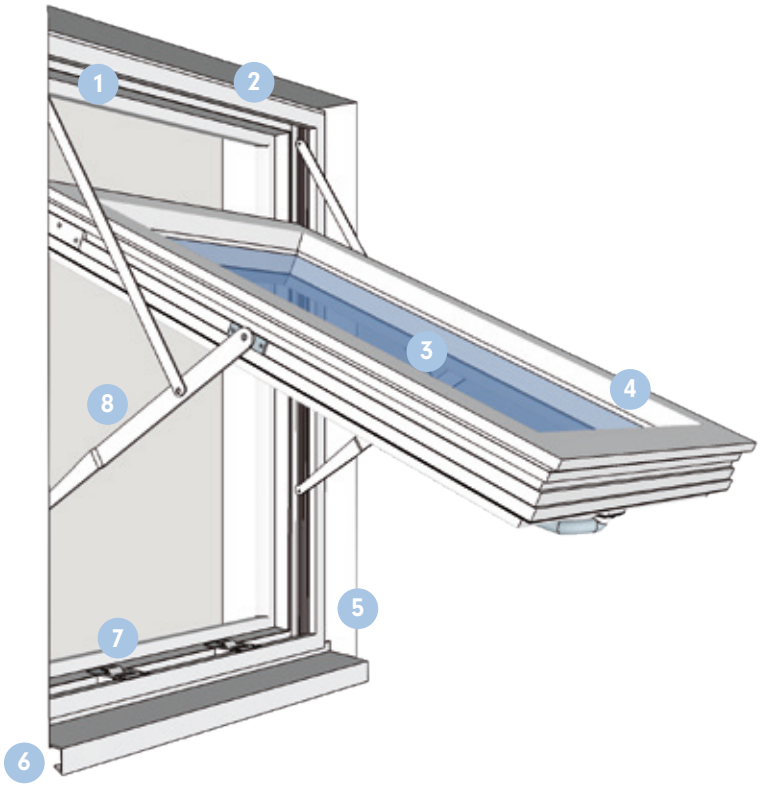
4 Opening sash (Head rail, Bottom rail and Stiles)

5 Reveal depth (distance face of window is from face of wall)

6 External aluminium cill flashing

7 Espagnolette receiver

8 Hinge assembly



INSIDE

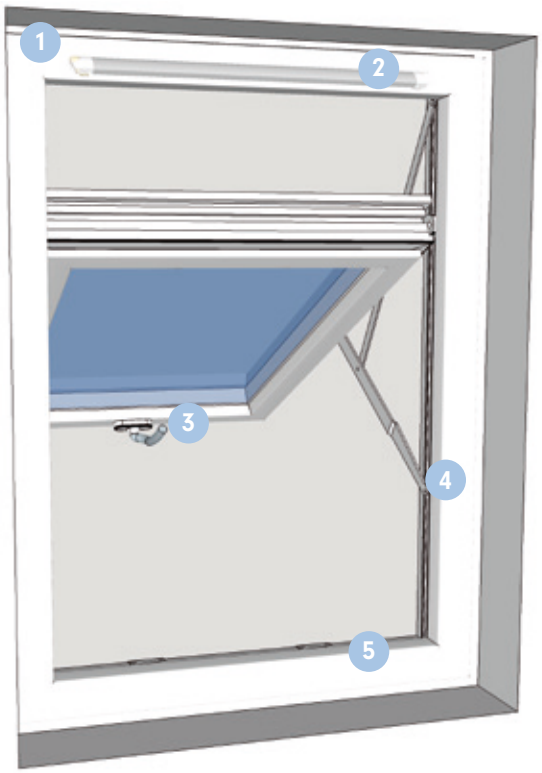
1 Timber frame head

2 Trickle ventilator

3 Window handle

4 Timber frame jamb

5 Timber frame cill (aka threshold for doors)



THINGS TO CONSIDER BEFORE WE START

First measure the aperture to check that the window will fit. Basically the window needs to be smaller than the opening by 5-10mm around the perimeter of the frame to allow for a suitable seal and to reduce frame distortion.

It is not advisable to install a window into an incomplete opening, so clear the opening of all debris and check that the wall aperture is sound and robust.

Make sure the threshold or cill of the opening is level and can support the weight of the window unit. The job of the aperture is to withstand the forces transmitted from the dead load of the window and from any wind or barrier loads without deformation.

Give thought to how you will lift the product into the opening and how you will hold it in position while it is being fixed. Products are very heavy and will need to be securely held. Westcoast Windows always advise installation of any product by a minimum of two able persons.

In the UK, all windows and doors should be installed in accordance with BS8213. It might be useful to read this document if you are new to window installation. You might also want to check that the installation adheres to current UK building regulations.

Westcoast Windows do not recommend building in products or using pinch battens. This may affect the guarantee.

Make sure enough height is provided at the head of the window internally for the trickle vent. Any reveal linings such as plaster board should not impinge on the vent operation.

When installing inward opening doors please allow adequate room on the hinge side so the door can open fully to 90 degrees without clashing with skirting board.

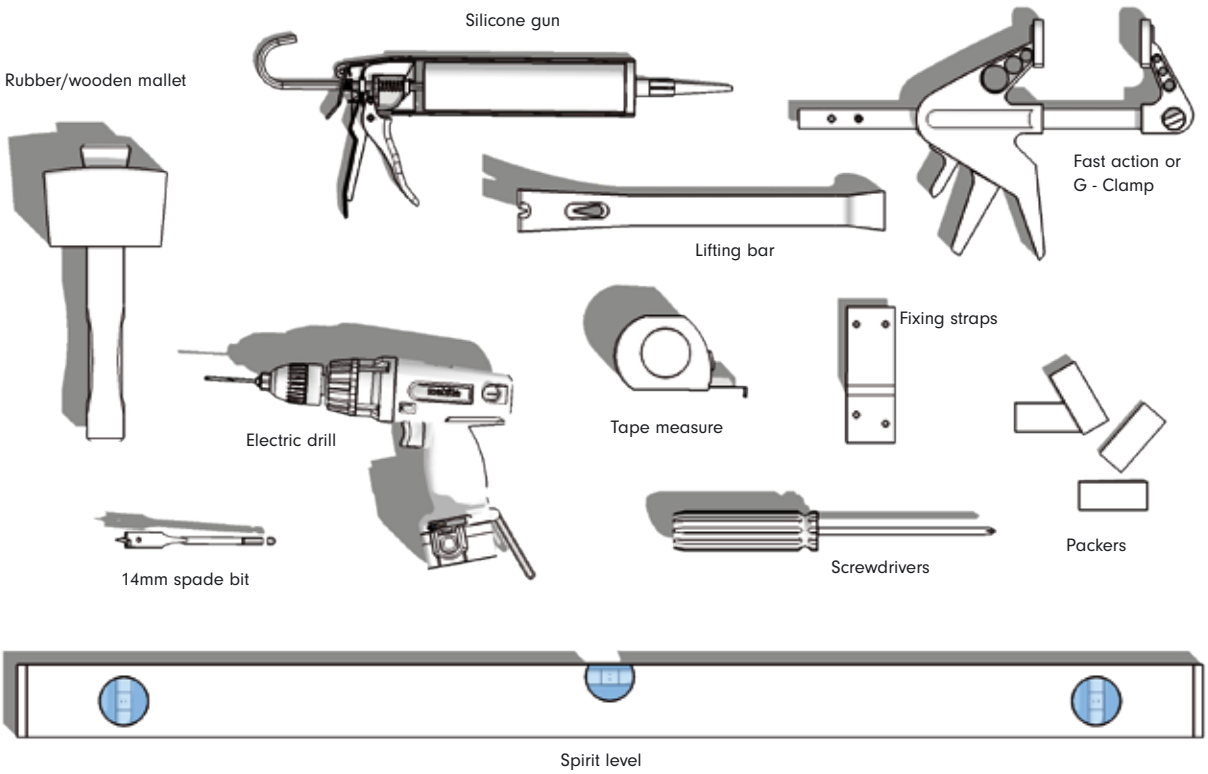
Also allow enough space between the underside of the door leaf and the floor finish for the door's entire swing.

Do you have the correct tools to do the job? See below.

TOOLS THAT YOU WILL NEED

Please make sure that you have the necessary tools available before you start installation. Westcoast suggest the following tools and equipment as a minimum.

- Spirit level (the longer the better).
- Powered drill with a selection of drill bits for timber, metal and masonry substrates.
- 14mm spade bit – if nylon caps are to be used.
- A range of screwdrivers unless the drill has this facility.
- Tape measure – calibrated.
- Lifting bar – suitable for levering heavy windows and doors and to help with levelling and packing.
- Silicone gun – if using silicone as an external seal.
- Fixing straps – pre-formed galvanised metal straps/brackets of the correct length. Enough to meet the minimum fixing points. (see page 17)
- Cover caps/bungs – to hide screw heads if direct fixing.
- G-clamp – for help in coupling frames together.



CHOOSING A FIXING METHOD

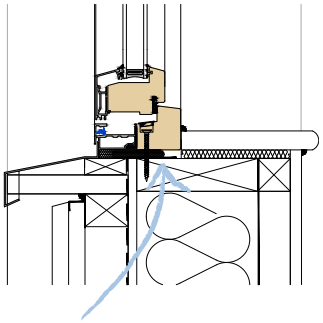
It is advisable to think about this issue prior to fitting the frame. Consider the make-up of the wall in which the product will be installed.

- What is the overall depth of the wall?
- Does the window bridge the cavity?
- What is the set-back (or reveal depth) of your window from the front face of the wall?
- Is there a proprietary cill already installed onto which the window must sit in a specific way?

All these questions will determine how you install the product. Direct or in-direct fixing.

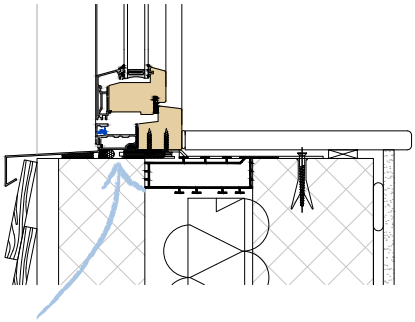
Your dealer or project architect should be able to advise you of the best method of fixing depending on the construction of the openings. You may need to use a combination of both methods as your project may have a mixture of wall constructions. For further information see typical fixing details on page 41.

Direct fixing is typically used in timber frame construction



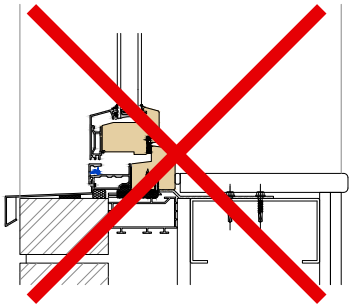
Note: 50% minimum frame support

In-Direct fixing is typically used in cavity wall and rainscreen construction



Note: 50% minimum frame support

Unsupported Frame



Less than 50% frame support

Direct Fixing – can be used when the frame is in line with a suitable load bearing wall member. A metal fastener is direct fixed through the timber frame into the structure. For fixed light windows the arrangement is slightly different – please see typical fixing details for further information. Note cover caps are used to hide all direct fixings.

In-Direct Fixing – a 'strap' is fixed to the outer edge of the frame and then taken back to a suitable load bearing internal wall member. 'Brackets', 'lugs' or 'straps' are the common terminology used to describe the mild or stainless steel bar that is used to restrain the window back to the structure. These bars are usually cranked to take up the tolerance gap between frame and structure and are of varying lengths according to the wall depth and window set-back. All fixings are hidden.

WARNING! ALWAYS PROVIDE STRUCTURAL SUPPORT TO AT LEAST 50% OF THE WINDOW FRAME AT CILL, JAMB & HEAD (FOR THE STANDARD FRAME = 50MM)

CHOOSING SEALING METHOD

Also consider how you are going to seal the window into the aperture. If using a traditional silicone mastic then this can be done after the window is installed. However, if an impregnated seal ('Compriband') or an EPDM/intelligent membrane is to be used then these items may need to be attached to window frame prior to installation in the opening. See information on sealing types and materials (page 31).

Once you have decided on the method of fixing and sealing then you can move onto setting the frames.

Setting the Frame & Fixing – Overview

The basic aim is to position the frame level and have a uniform tolerance gap around the perimeter (Westcoast recommend a minimum 10mm gap around the perimeter of the frame). It is imperative that the window or door is level and plumb in the aperture. Failure to manage this means the product's operation may be compromised.

Support packers or blocks will be used to set the frame level and plumb (nylon packers are recommended as they are made of a dry, rigid and rot-proof material and come in a variety of size and thickness – see page 39 for recommended fixing materials). Packers must be of a suitable size and shape to effectively transfer the fixing load into the main structure without distortion of the frame.

The basic installation of all products can follow these 4 simple steps.

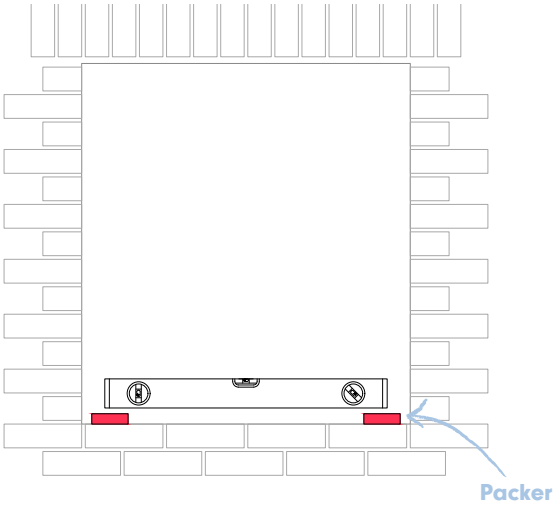
STEP 1

You should now have the window/door you want to install next to or close as possible to its opening. Place the window or door unit on something soft in order to protect the frame and do the same if leaning the product up against a wall. Some packing material like cardboard will be sufficient.

First check the opening is reasonably level and remove all loose debris. Position packers on to the base of the opening and up against the corners. You will sit the frame upon these packers so remember to place them in accordance with your desired setback.

Use your spirit level to get these packers exactly horizontally level.

WARNING! IF USING THE IN-DIRECT FIXING METHOD THEN BRACKETS WOULD NEED TO BE ATTACHED TO THE FRAME PRIOR TO INSERTION.



STEP 2

Place the window into the aperture and onto the packers. Adjust packers until the window is level (a lifting bar will be helpful especially if the window is heavy).

Wedge packers at all four corners of the frame. These packers will need to be tightly fitted.

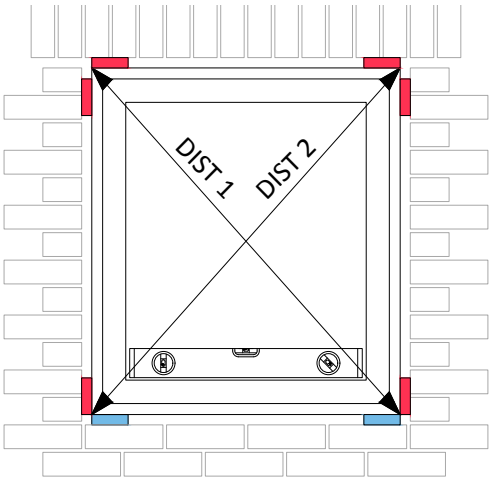
Make sure that the distance between frame and wall is the same for both sides to ensure the frame is centralised in the aperture.

Check the frame is square by measuring the diagonal distance between opposing corners. Dist1 should equal Dist2. (Tolerance + or - 1-2mm).

Adjust the corner packers until the frame is square.

Use a spirit level to check the frame neither slopes inwards or outwards. Adjust frame until it is vertically level

Don't start any fixing until the frame is square and level horizontally and vertically. Repeat steps again if necessary.



WARNING! MAKE SURE THE WINDOW CANNOT FALL OUT OF THE OPENING. SECURE WITH A TEMPORARY FIXING OR HAVE ANOTHER PERSON HOLD THE WINDOW IN PLACE.

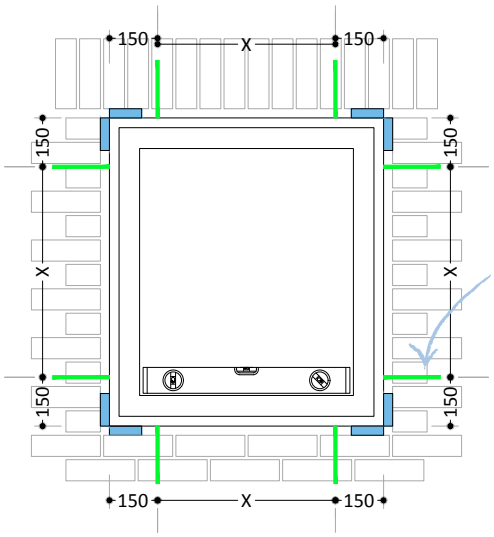
STEP 3

Once you are satisfied with the position of the frame you can start fixing your window. Packers must be placed alongside your proposed fixing locations. Remember all fixing points must be packed.

It is important that these packers must be just 'finger' tight, not loose but they must be able to be moved in and out by finger. Do not force these packers as they will bow the frame.

The number of fixing points is dependent on the size of the frame, its substrate wall type and any special loadings that may be apparent. See page 17 for recommended fixing centres and suggested mechanical fasteners.

Westcoast Windows recommend minimum fixing locations of 150mm from frame corners and at no more than 600mm centres along the jambs, head and cill.



STEP 4

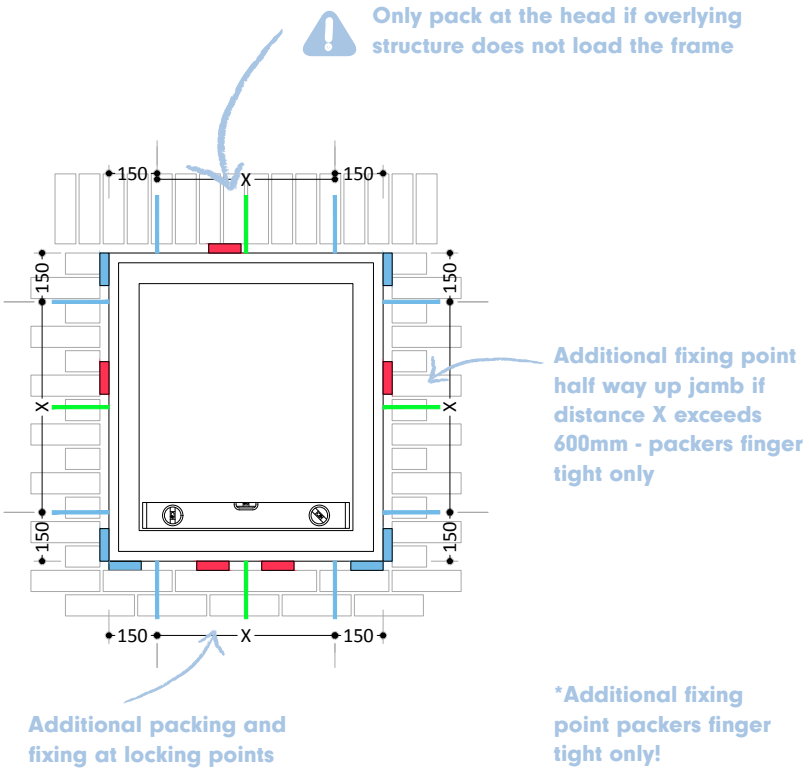
Once you are satisfied with the basic configuration of the fixing locations then you can begin the process of fixing the frame. Either with through frame screws or with straps that you have already attached.

Open sash and pre-drill pilot holes in the frame for your chosen fastener (Direct fix). For more details see page 18.

Fix straps back to substructure using suitable fastener for substrate. Place shims between strap and substructure rather than bend the strap (In-direct fix).

Repeat levels check. Check the operation of the sash or leaf and that it doesn't bind anywhere along its full travel. Check frame is not bowed.

NB. You must also pay attention to some special fixing and packing points for some products. Details of these can be found overleaf, i.e. hinge locations, locking points and threshold support etc.



Packing – in more detail

Find below some special packing arrangements. Packing all four corners of each frame and beside all fixing points is mandatory for all products. However, other packing locations must also be considered so that your window or door maintains functionality and operation.

HINGE LOCATIONS

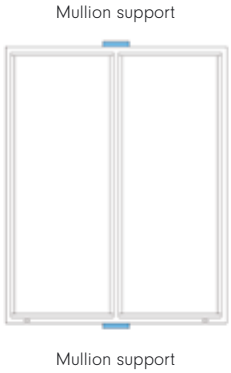
Packing next to hinges helps prevent any lateral movement in the hinge which therefore prevents the sash or door leaf dropping. This is most apparent in full size glazed doors where the leaf is of a considerable weight.

THRESHOLDS

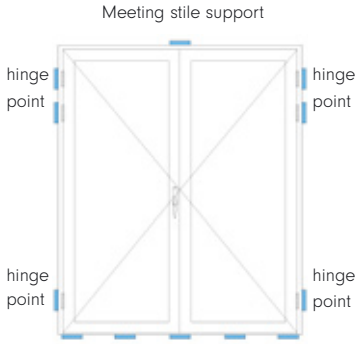
These frame locations where weight is borne by persons standing on them need particular care when packing in order to provide the correct amount of support. Westcoast Windows recommend packing at minimum 250mm centres along the entire length of the threshold.

VERTICAL FRAME MEMBERS

Support packers should always be placed underneath all mullions, meeting stiles and vertical frame couplings.



Windows

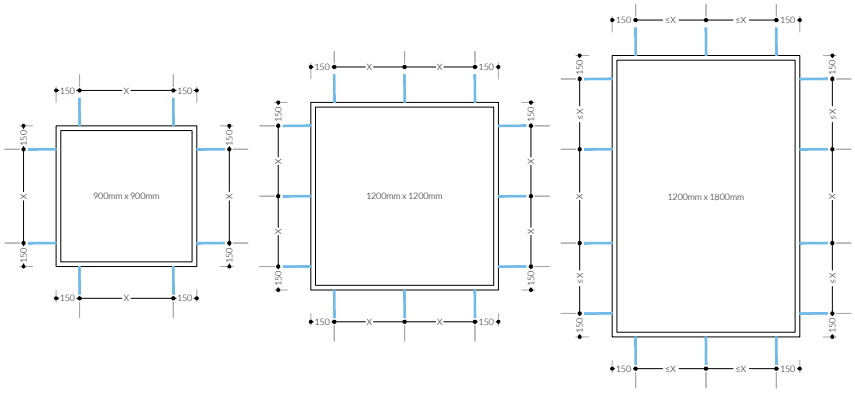


Doors and butt hinged products

Sliding doors

Fixings – in more detail

Westcoast Windows recommend fixing centres of 150mm from frame corners and maximum 600mm centres thereafter. This should be sufficient for most standard wind-load conditions in the United Kingdom. Please seek advice from a structural engineer if you feel your project location is subject to high wind exposure or has other specific requirements. If wind-load and the load bearing structure is not known then it is recommended to decrease the fixing centres down to 450mm.



SUBSTRATE FASTENERS – GUIDANCE ONLY

It is always recommended to seek advice from a qualified structural engineer but here are some suggested fasteners for different substrates. We recommended A2 stainless steel or passivated fixings.

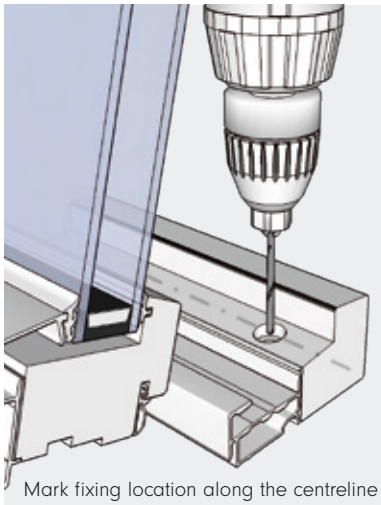
SUBSTRATE	DIRECT FIX	IN-DIRECT FIX (BRACKET)	COMMENTS
Brick/Block	5mm x 90mm (3 ½" x 10) with 8mm rawl plug	5mm x 50mm (2" x 10) with 8mm rawl plug - 2 no. fixings	Fix closest to the centre line of brick/block, maximum 10mm packing
Timber	5mm x 90mm (3 ½" x 10)	5mm x 50mm (2" x 10) – 2 no. fixings	Maximum 10mm packing
Light Steel (SFS)	5mm x 50mm self drilling screw (TEK)	5mm x 30mm self drilling screw (TEK) – 2 no. fixings	Maximum 10mm packing

Fixing the frame – in more detail

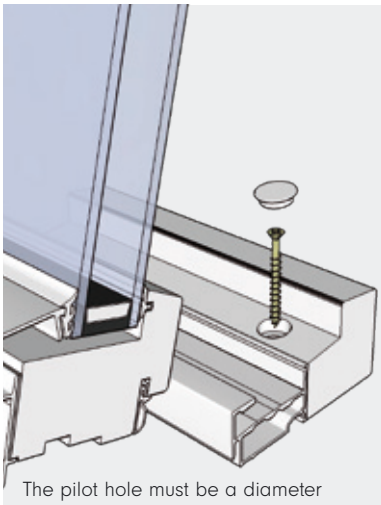
The following information gives more specific details of typical direct and in-direct fixing methods. The Westcoast Classic outward opening system has been used to produce the following pictures although the principals are the same for inward opening and sliding door frames. Specific details for each type of frame within the Classic, Antik and Design ranges follows this section.

TYPICAL DIRECT FIXING – OPENING SASH WINDOW/ DOOR

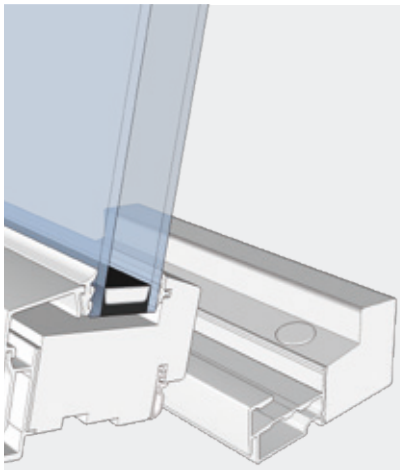
Open the window sash or door leaf to gain access to the inside of the timber frame rebate.



Mark fixing location along the centreline of the timber rebate. Counter-bore a hole of 14mm diameter and 10mm in depth. Drill a pilot hole in the centre of the counter-bore hole and drill through the frame.



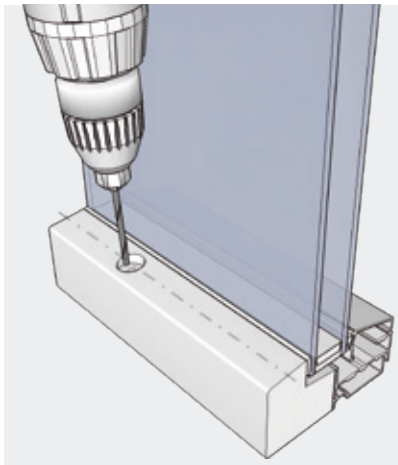
The pilot hole must be a diameter suitable for the substrate fastener. Insert chosen fastener for your substrate (i.e. block, timber, Metsec etc.) through the frame and into the substrate. Tighten fastener with screwdriver or impact driver to desired torque.



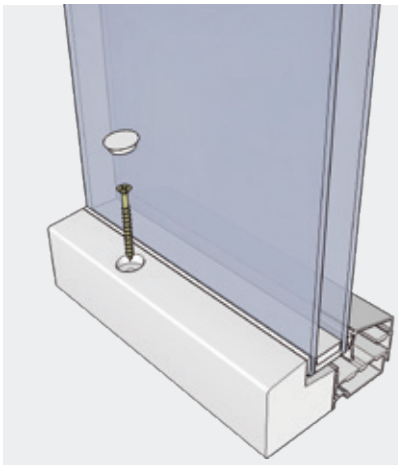
Insert nylon cover cap into counter bore hole to hide the fastener. Beige caps complement natural timber finishes.

TYPICAL DIRECT FIXING – FIXED LIGHT WINDOW

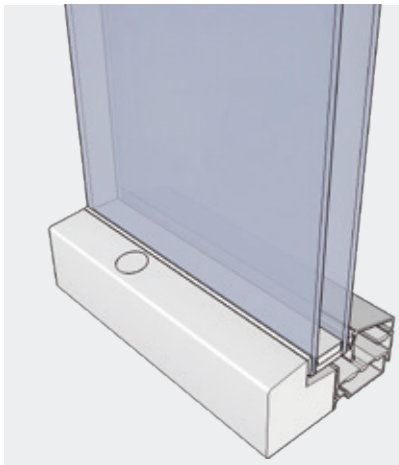
Frame is fixed through the back of the timber frame. If hidden fixings are required then the window must be de-glazed. (Seek technical advice).



Mark fixing location along the centreline of the timber frame. Counter-bore a hole of 14mm diameter and 10mm in depth. Drill a pilot hole in the centre of the counter-bore hole and drill through the frame.



Insert fastener/screw and/or plug through frame and into substrate. Tighten with screwdriver or impact driver to desired torque.

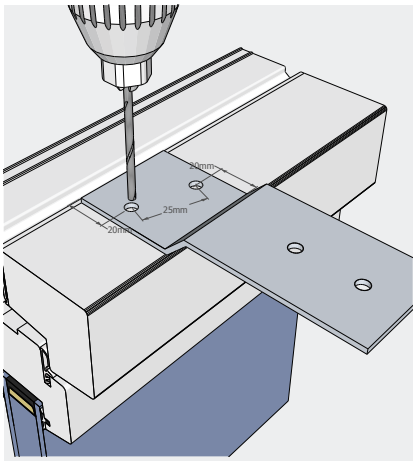


Insert nylon cover cap into counter bore hole to hide the fixing. White caps complement a white painted finish.

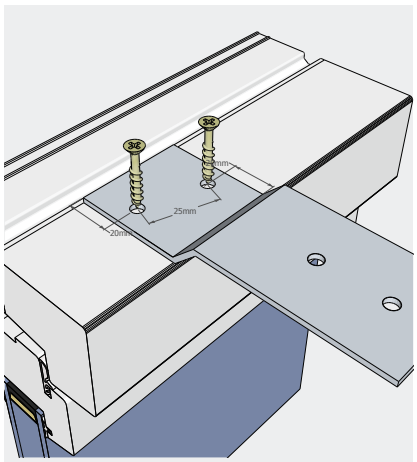
Fixing the frame – in more detail

TYPICAL IN-DIRECT FIXING – OPENING AND FIXED PRODUCTS

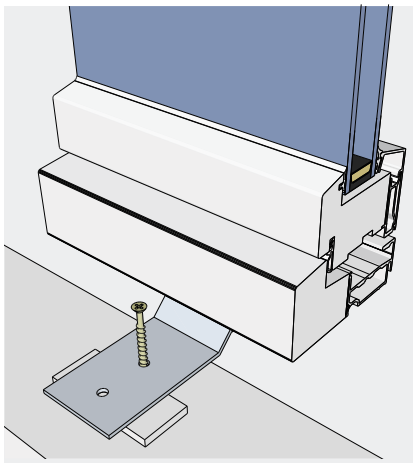
Straps are attached to the unfinished face of the timber frame. Straps are used if you don't want to see any visible fixings or the wall construction determines it. Please be aware that straps need to be attached to the window or door prior to setting the frame.



Offer up the cranked strap perpendicular to the outside of the frame.
Mark location and drill pilot holes.
See recommended fixings (page 40) for the exact strap design, 2 no. fixings into the frame.



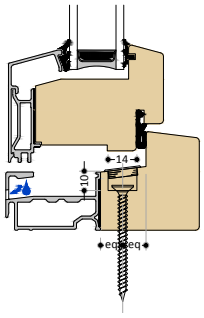
Insert and tighten 2 no. wood screws (5 x 30 /No.10 x 1¼). Screws should be positioned a minimum 20mm from edge of timber and offset from each other at a minimum 25mm apart. (This prevents the frame timber from splitting).



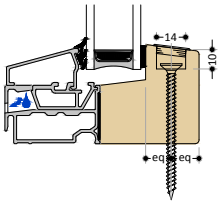
Insert and tighten chosen substrate fasteners into pre-drilled holes.
Place shims between strap and substrate to take up any gap that still may exist beyond that of the crank. Do not bend strap as this can compromise performance of the fixing and also twist the frame.

Fixing details

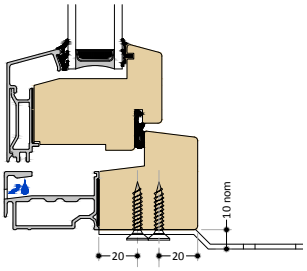
Find below typical fixing details for each type of Westcoast product.
Further drawing details are available on page 41 – typical fixing details.



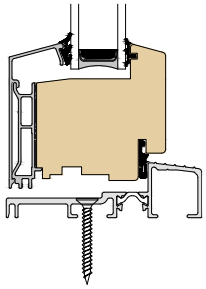
SASH DIRECT FIX



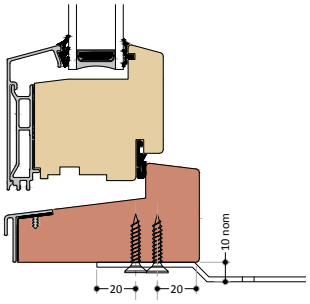
FIXED LIGHT DIRECT FIX



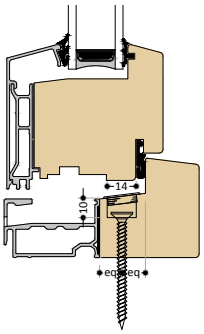
SASH IN-DIRECT FIX



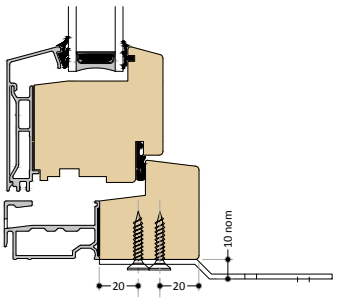
LOW PROFILE THRESHOLD
DIRECT FIX



TIMBER THRESHOLD
IN-DIRECT FIX

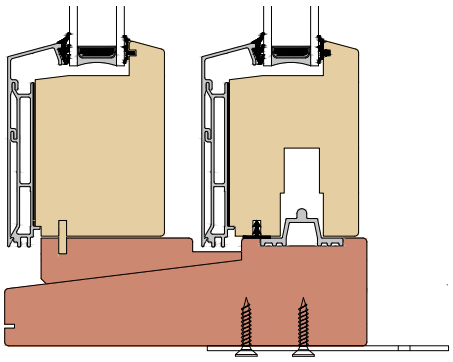


FRAME THRESHOLD
DIRECT FIX



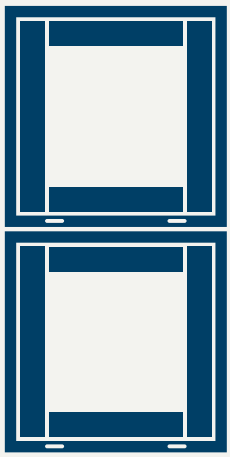
FRAME THRESHOLD
IN-DIRECT FIX

SLIDING DOOR SYSTEM



SDA/SDC THRESHOLD IN-DIRECT FIX
(only if really required, as self weight
of door prevents lateral movement)

See typical fixing drawings (page 39) for more details



Coupling

When apertures are too large for single window units then frames need to be coupled together.

The procedure is typical for all the open out, open in and sliding systems whether Classic, Antik or Design profiles are being used. Frames are coupled together by attaching the outside faces of the perimeter frame together. Frames can be coupled horizontally to produce ribbon windows or vertically to make full height storey screens or even multi-storey window walls. Flitch plates can also be installed in between frames to help prevent deflection when frames are tall or wide or subject to high wind-loads. Please contact your Westcoast dealer for information and advice when constructing window walls or large screens.

THINGS TO CONSIDER BEFORE COUPLING

First measure each window frame and make sure that once they are coupled together that they will fit into the aperture.

Essentially both frames are fitted in the same way as a single unit but care must be taken to ensure the internal and external faces of each frame are in alignment.

It may be prudent to invest in tools that will help you line up the frames so they are exactly aligned in the same plane i.e. a string line or laser and fast action clamp.

Vertical Joint Coupling Overview

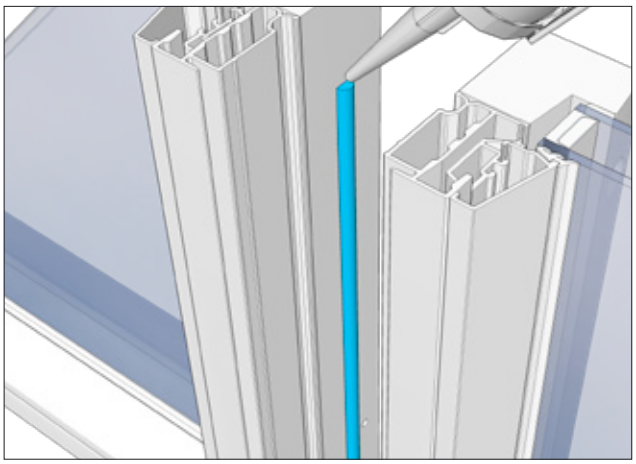
Supplied kit - 1 no. External joint plate, 1 no. Optional internal cover moulding TMA1243

STEP 1

It is advisable to fix the first frame into the opening. Next, run a continuous bead of silicone mastic down the jamb of the window frame (timber part only).

This will form a secondary weathertight joint between the frames once they are attached to one another.

WARNING! BE CAREFUL NOT TO OVER-APPLY THE FRAME WITH SILICONE AT THE EDGES BECAUSE THE SILICONE WILL OOZE FROM THE JOINT AND BECOME A CLEANING ISSUE.



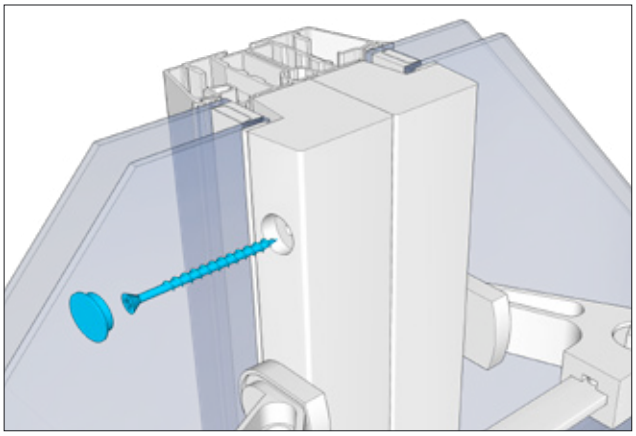
STEP 2

Before you place the second frame into the opening it is advisable to mark and pre-drill the holes for your coupling screws. Use the same principle of fixing centres as single frames i.e. minimum 600mm centres and 150mm from frame corners.

Remember to counter-bore (14mm diameter, 10mm deep) before piloting the holes.

NB. When making pilot holes it's good practice to remove any timber swarf or chips from where the pilot hole emerges. Otherwise this will prevent the frames from being pulled together easily.

Next take the second frame and place it into the remaining opening – this may entail angling and turning the frame if the aperture is dimensionally tight.



STEP 3

Make sure the second frame is aligned with the first by string line or similar method.

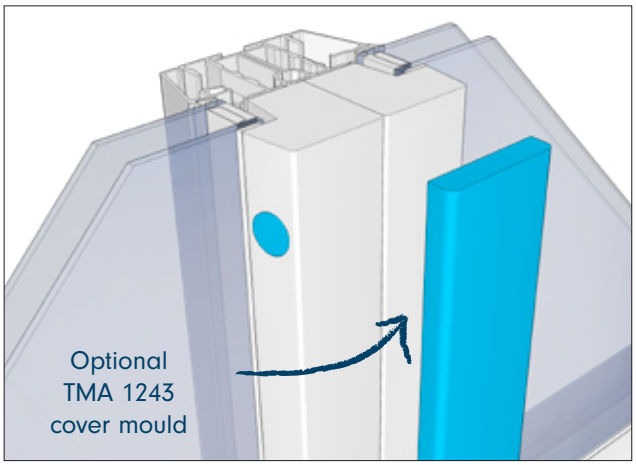
When the position is finalised, plumb, square, level and packed then start to fix the frames together using a through frame fixing.

For a standard frame to frame coupling use a 65mm long 5mm timber screw.

Tighten screws until the second frame is pulled tightly together with the first.

Use standard cover caps to hide holes and screw heads. If non-visible fixings are required then the windows will need to be de-glazed. (In this situation seek advice from your Westcoast dealer).

Internal cover moulding option (TMA 1243) – if using this item then please check it is the correct length as the frame height.



Vertical Joint Coupling Overview

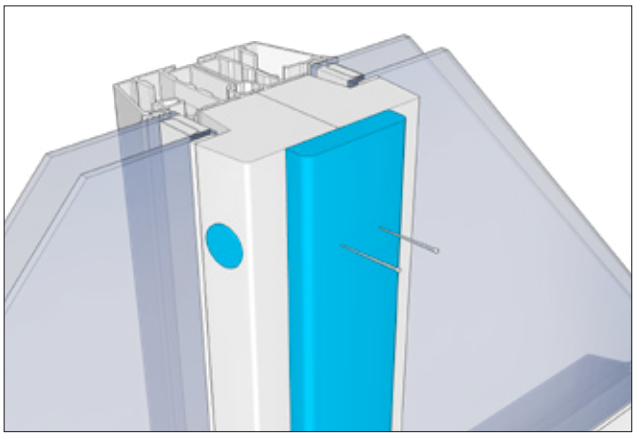
STEP 4 (OPTIONAL)

Cover moulding TMA 1243 can be useful to hide any damage to the frame edge that has taken place during installation or it can be an aesthetic choice.

Place timber cover moulding centrally between the first and second frames.

The moulding can be attached to the frames by adhesive glue, mechanical fixings or by both.

Westcoast suggest using 2 no. panel pins (30mm long) at 300mm centres. These are 'lost head' type pins so they do not protrude from the moulding. Cover heads of pins with Liberon wax or equivalent to match timber finish.

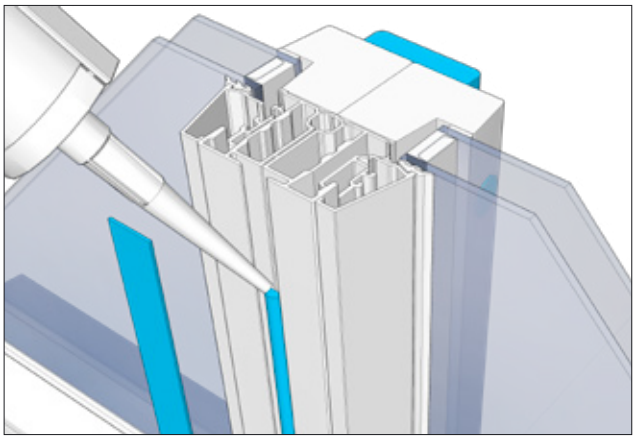


STEP 5

You have now completed the coupling internally. Next move outside and install the external joint plate. The installation of the joint plate is **mandatory** as it acts as the primary external water and airtightness seal.

Joint plates will be delivered fully finished in the same matching polyester powder coating as the window/door frame itself.

Run a continuous bead of clear silicone mastic down and between the first and second frames. The external aluminium section has a small recess where this should be applied.



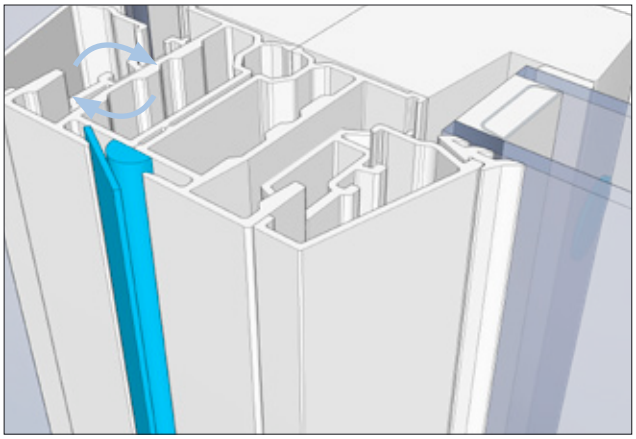
STEP 6

The intention is to adhere the aluminium joint plate into this recess. Notice a small slot either side of the recess. The joint plate needs to be tucked into these slots which prevents it falling out.

The joint plate will need to placed by angling and turning the plate into the slot from one side first. For a standard coupling the joint plate will be 1.1mm gauge, 20mm in width and the same height as the frame.

NB. Only use 1.1mm gauge because there must be enough space left in the recess for other linking flashings or joint plates.

Once in the first slot the plate can then be shuffled across into the opposite slot.

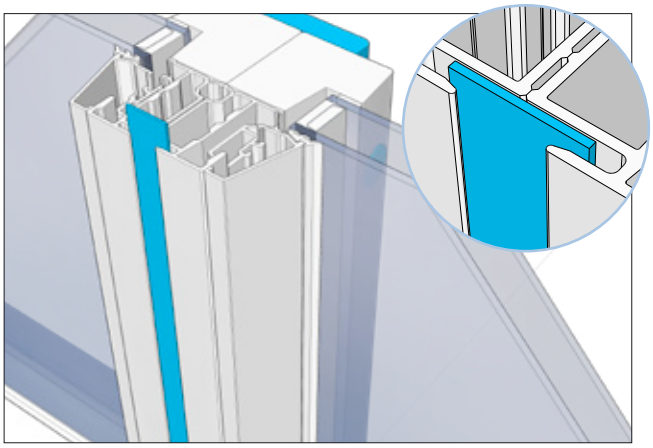


STEP 7

Centralise the joint plate in the recess and push firmly to squeeze the silicone mastic flat. This will provide more surface area for the plate to adhere to the painted surface of the frame.

Hold in position with tape if necessary and allow at least 24 hours for the clear silicone mastic/adhesive to cure. (See recommended fixing materials section for suggested silicone adhesives).

Remove temporary holding tape if used.



Horizontal Joint Coupling Overview

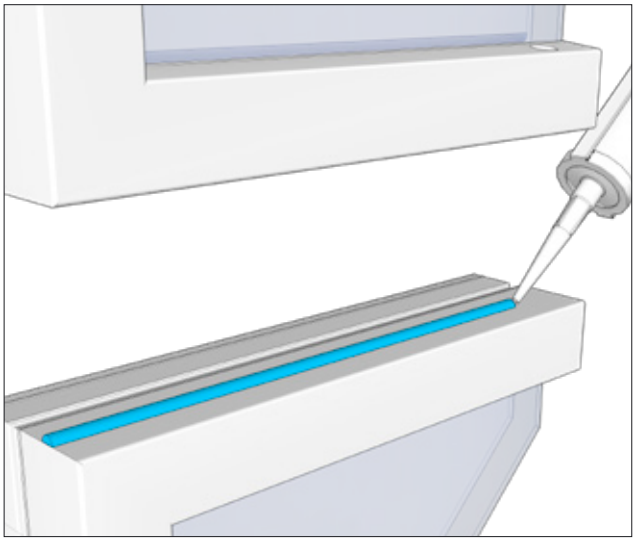
Supplied kit – 1 no. External Z- joint plate, 1 no. Optional internal cover moulding TMF833

STEP 1

As with vertical couplings it is again advisable to fix the first frame into the opening. The first frame is likely to be the lower frame of the screen/window wall.

Next, run a continuous bead of silicone mastic along the head or cill of the window frame along the timber part of the frame.

The fixing of a horizontal coupling has exactly the same principle as vertical couplings. So counter-bore and pre-drill pilot holes beforehand.



STEP 2

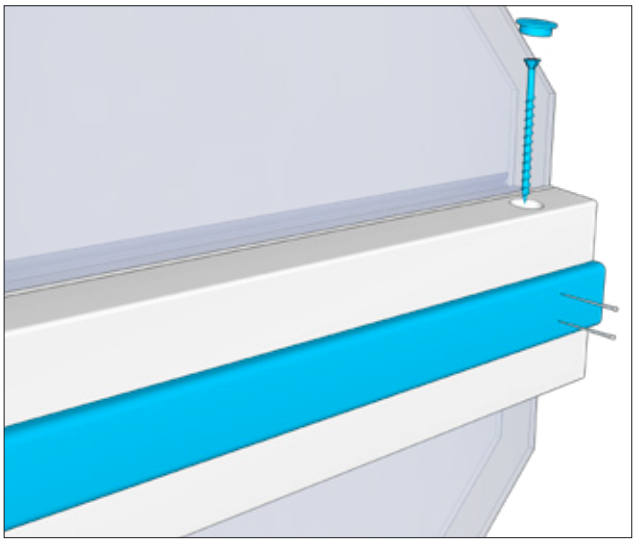
Next take the second frame and place it on top of the lower first frame in the remaining opening – this may entail angling and turning the frame if the aperture is dimensionally tight.

Westcoast advise this task is undertaken with a minimum of two operatives. Make sure the upper second frame cannot fall out of its opening!

Check alignment with a plumb line or similar method. Secure through frame fixings (65 x 5mm timber screw) and attach optional timber cover mould if desired. Fix moulding as per vertical coupling instructions.

NB. This moulding (TMF833) is smaller than the vertical cover moulding. The two mouldings are different so they form a specific detail when linked.

Optional TMF 833 cover mould

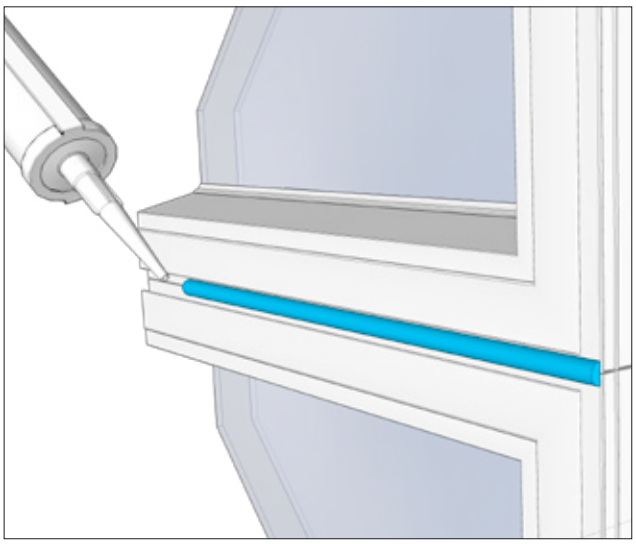


STEP 3

You have now completed the coupling internally. Next move outside and install the external Z-joint plate. The installation of the Z-joint plate is **mandatory** as it acts as the primary external weather seal.

The Z-joint plate also acts as drip flashing by encouraging water away from the frame joint and to the cill flashing below.

Next, run a continuous bead of clear silicone mastic along and between the first and second frames for the entire frame width. The external aluminium section has a small recess where this can be applied.

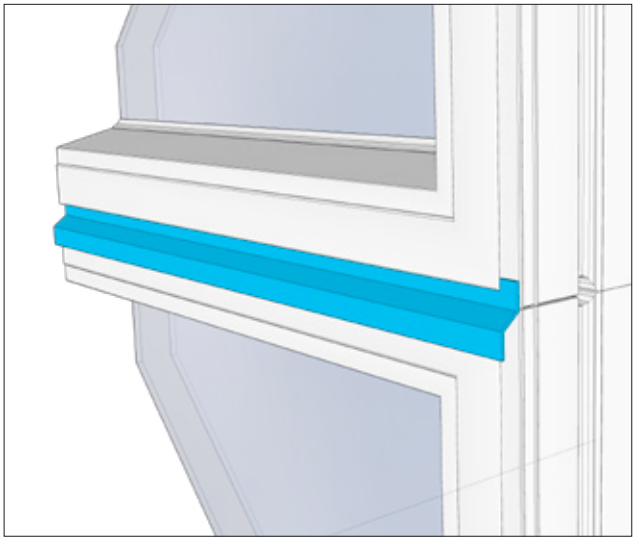


Horizontal Joint Coupling Overview

STEP 4

The intention is to adhere the aluminium Z- joint plate into this recess. Tuck the Z-joint plate into the upper frame slots which prevents it falling out.

Slide the Z-joint plate vertically upwards and downwards until it is centralised between the frames.

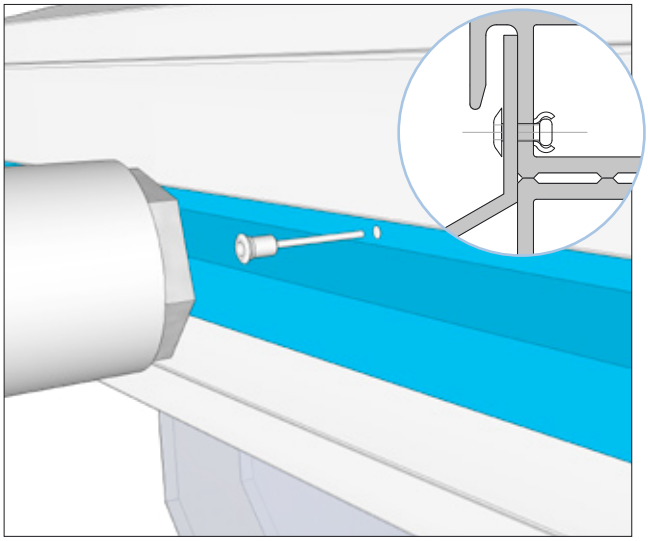


STEP 5

Westcoast advise using a secondary mechanical fixing to make sure the Z-joint plate doesn't fall out while the adhesive cures. Mechanically fixing will also make the joint more robust.

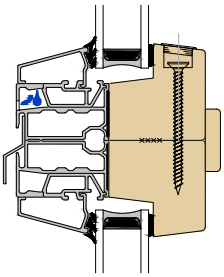
Rivets are fitted at 600mm centres. Drill a 2.5mm pilot hole through the face of the Z-joint plate and through into the aluminium frame as per picture.

Next insert a 2.5mm galvanised rivet into hole using a suitable rivet gun. Repeat at 600mm centres along the Z-joint plate. Use touch-up paint on the rivet head, if required.

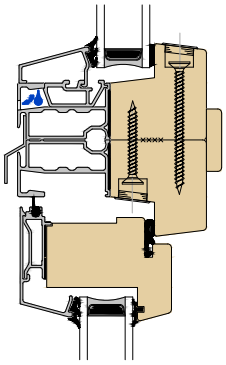


Coupling details by system profile

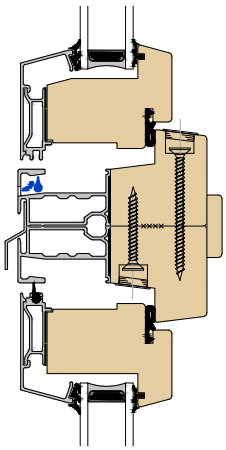
Find below typical coupling details for each type of Westcoast product including standard corner post and special couplings incorporating anti-deflection flitch plates. See coupling detail drawing CP series for more detail. Available to download at **www.westcoastwindows.com**



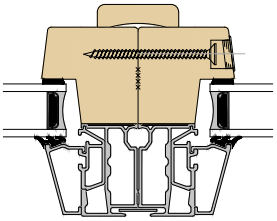
HORIZONTAL JOINT COUPLING FIXED – FIXED (CP01)



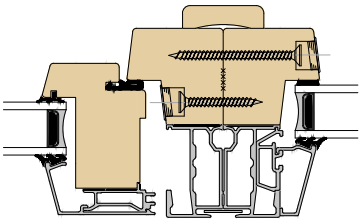
HORIZONTAL JOINT COUPLING SASH – FIXED (CP03)



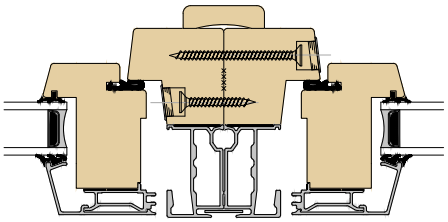
HORIZONTAL JOINT COUPLING SASH – SASH (CP05)



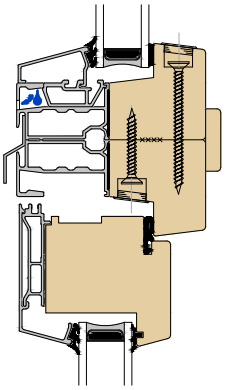
VERTICAL JOINT COUPLING FIXED – FIXED (CP02)



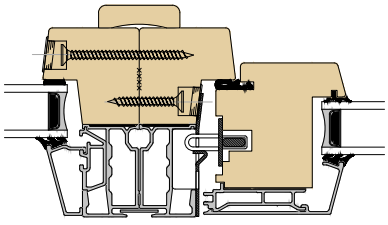
VERTICAL JOINT COUPLING SASH – FIXED (CP04)



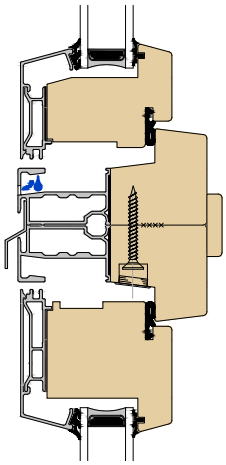
VERTICAL JOINT COUPLING SASH – SASH (CP06)



HORIZONTAL JOINT COUPLING DOOR – FIXED (CP07)



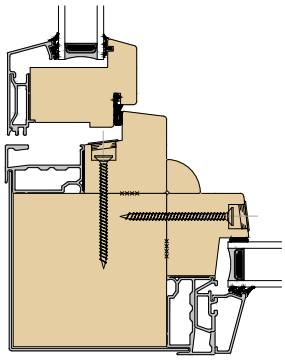
VERTICAL JOINT COUPLING DOOR – FIXED (CP08)



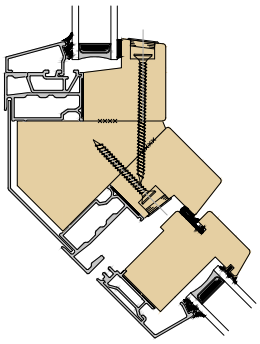
HORIZONTAL JOINT COUPLING DOOR – SASH (CP09)

Coupling details by system profile

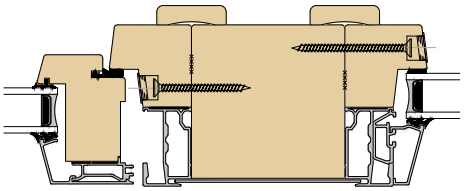
STANDARD CORNER POST COUPLINGS



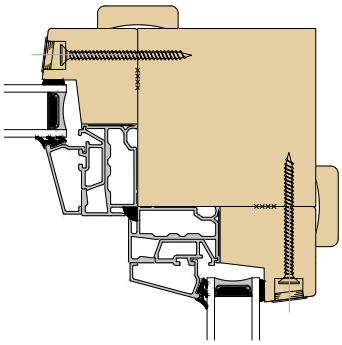
CLASSIC 28 EXTERNAL 90° CORNER POST
(CP23)



CLASSIC 28 EXTERNAL 45° CORNER POST
(CP24)

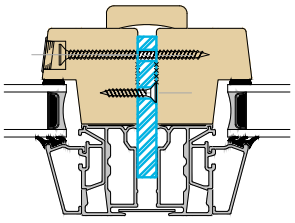


CLASSIC 28 INTERMEDIATE POST
(CP25)



CLASSIC 28 INTERNAL 90° CORNER POST
(CP26)

STANDARD FLITCH PLATE COUPLINGS



CLASSIC 28 FLITCH PLATE
(CP31)

Perimeter Sealing

To prevent air leakage, water penetration and to maintain a bond between frame and structure.

As buildings have become more energy efficient so the performance of the windows and doors has increased. Part of the solution to energy efficiency is to reduce both warm air leaking out and cold air leaking in and a good perimeter seal around the window will be paramount to achieving this primary objective. Most new buildings will be subject to a mandatory air test so thought must be given to how this can be met. We hope the following information will give you a basic understanding but we also advise speaking to a consultant or manufacturer of sealing products who can offer guidance with your particular project.

Westcoast window products have exceptional water and air tightness performance. To warrant this investment they must be installed correctly with a complementary high performance air and watertight perimeter seal. Good quality control on site will make sure this seal lasts the lifetime of the building and will also offer the following benefits:

- Draught free window openings
- Better thermal efficiency
- Better durability
- Improved acoustic performance
- Reduced risk of condensation and mould between window and aperture
- Improved build quality (less call backs to site)

Things to consider before sealing

For all refurbishment projects remove all existing mastic/sealant and DPM /DPC as this can affect the performance of your chosen perimeter sealant.

Choose a sealant that is appropriate to the frame surface (timber/PPC aluminium) and also the substrate (masonry, timber etc.) see recommended fixing materials page 39).

Consider how large the joint size is going to be and if the product can perform in these conditions. Anticipate any possible joint movement or settlement that may happen after installation.

If the sealant relies on atmospheric curing then do not overfill the joint. Do not overfill the gap with PU foam as this may distort the frame and impede operation of the window or door (see specific instruction over leaf).

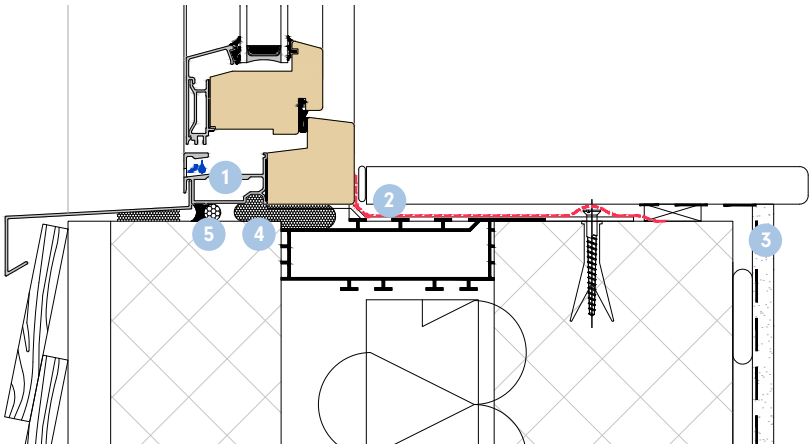
A foam seal alone cannot be used to create a perimeter seal. It can degrade when exposed to UV radiation from the sun.

Sealing a Window – Overview

The following drawings are examples of typical sealing details. The external seal is the primary defence against the weather and is either a traditional silicone sealant or a more modern intelligent compressible tape. They are both watertight and perform the same job but are distinct in that the impregnated tape is breathable. The tape allows the passage of moisture out from the joint, whereas the silicone is not breathable and must have a ventilation zone behind it. These are the basic methods of external sealing and secondary products can be added to enhance the weather and airtightness.

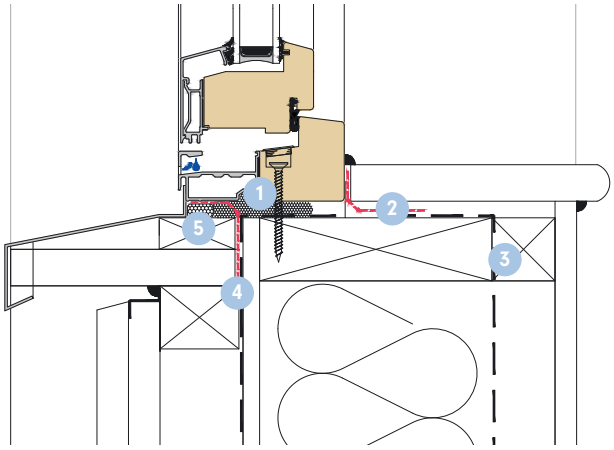
SILICONE SEALANT PERIMETER

1 Ventilation zone (15mm)
2 Optional internal airtight membrane
3 Building vapour control layer (VCL)
4 Continuous PU foam seal
5 Silicone sealant bead on PU backing rod



IMPREGNATED TAPE PERIMETER

1 Continuous PU foam seal
2 Optional internal airtight membrane
3 Building vapour control layer (VCL)
4 Optional external airtight membrane
5 Impregnated tape



Sealing a Window – in more detail

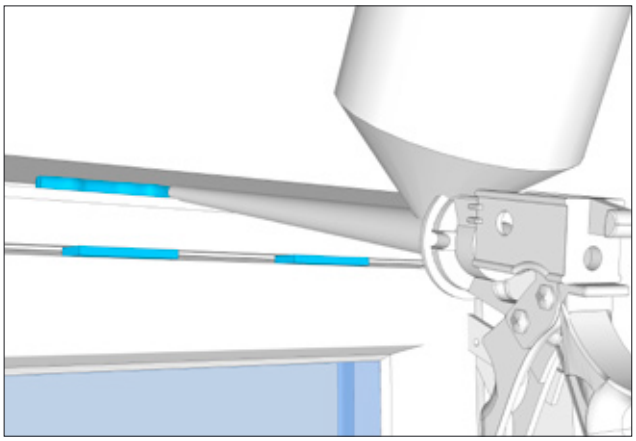
PU FOAM SEALANT

Apply foam (gun grade) using a commercial applicator gun. This is best applied by an experienced installer as care must be taken not to over fill the gap. Remember the foam can expand many times its original size but try to aim for a depth of 50mm.

It's a good idea to spray the area to be foamed with water as this aids the expansion and adhesion of the foam. Please read the manufacturer's literature.

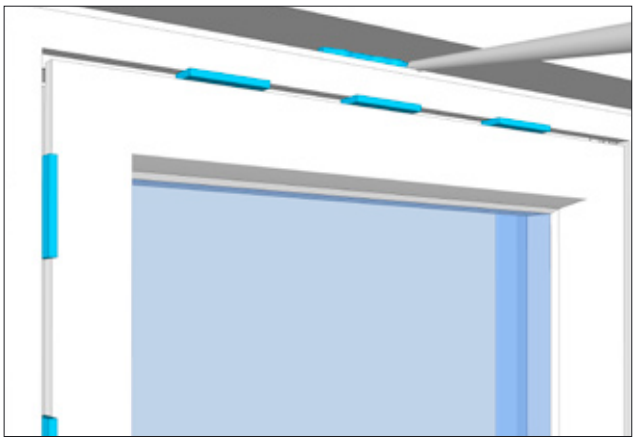
Wait for the foam to cure before using any external or internal sealant on top of it.

A well applied foam seal will create a watertight frame and a thermal barrier.



To prevent distortion of the frame when applying foam it is prudent to place packers between the sash and the frame. A 5mm or 6mm packer should be suitable.

The most helpful packer positions are along the centre point of the head rail, bottom rail and stiles of the frame as this is where the frame can be susceptible to bowing.

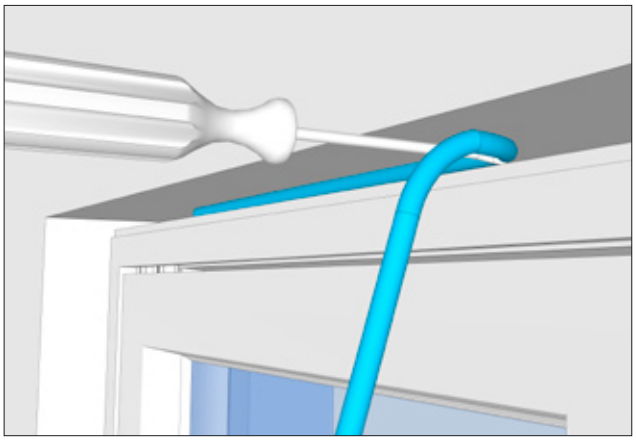


If applying a silicone sealant

BACKING ROD

Pack the closed cell backing rod into the joint to a depth recommended by the silicone manufacturer. Make sure it covers the full perimeter of the opening. Use a suitable tool to help you push it into the gap (nominal 10mm).

Remember to leave a ventilation gap between the backing rod and any PU foam seal that you have applied.

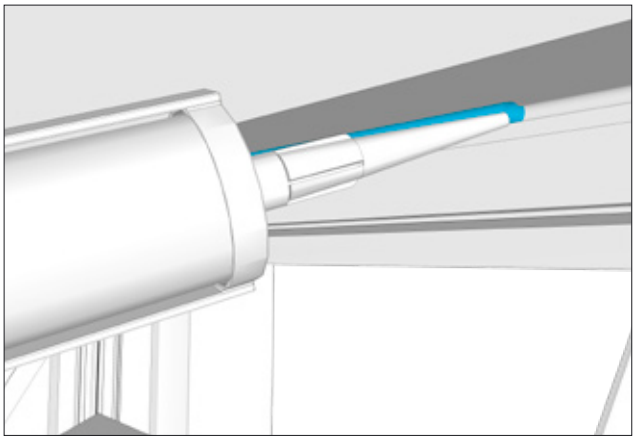


SILICONE SEALANT (LOW MODULUS)

A continuous perimeter seal is then applied using a silicone gun onto the PU backing rod. Be careful not to make it too deep (maximum 10mm) as the sealant will need to be cured by exposure to the air.

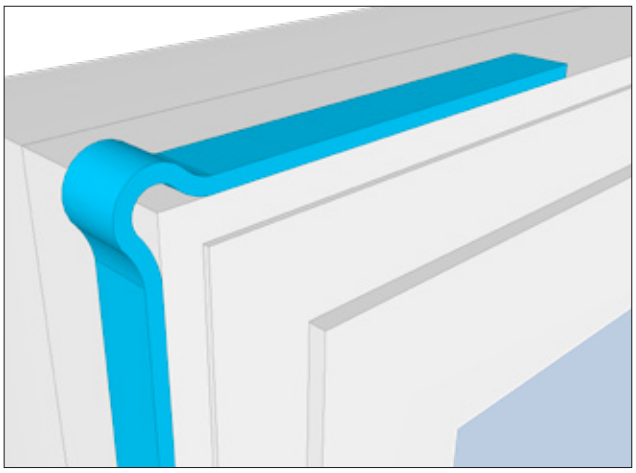
Smooth the sealant down using a suitable tool or by hand.

TIP - Spray silicone bead with soapy water to help produce a smooth skin to the bead.



ALWAYS READ THE SEALANT MANUFACTURER'S INSTRUCTIONS

If applying an impregnated tape



TAPE

Tape can be applied before installing the window into the aperture or after installation. It is a personal choice but bear in mind how quickly the tape can expand.

Whichever method is used, the tape should be adhered to the same position on the frame – just back from the front of the aluminium section of the frame.

If applying tape before installing the window then a PU foam seal is best applied afterwards.

If applying tape after installation, then using a filler knife and spraying the joint with water can help insertion into the gap.

Please read the following information from Illbruck who manufacture the leading brand of impregnated tapes – Compriband 600. Guidance is provided on choosing the correct tape for the joint depth and how to install the tape. The following points below will ensure a quality installation every time.

- Always make sure tapes are pushed tightly into corners of the structure (make a loop in the tape at the corners as above).
- Never wrap the tape tightly around corners – leave a loop as in the picture above so the tape expands right into the corner.
- Never stretch tapes.
- Try not to join tapes.
- If joining tapes do not use mitred joints.
- If joining tapes make sure the ends are pushed tightly against each other.
- Always apply the correct sized tape to all parts of the window frame (head, cill and jambs in all instances).
- Once the tape has expanded fully, expanding foam can't then be applied.

For more information visit **www.Illbruck.com**

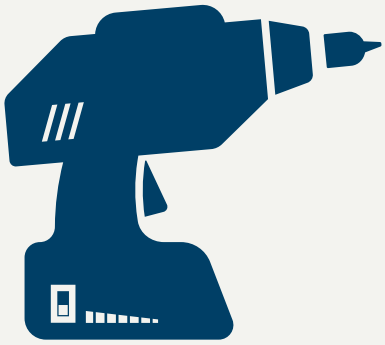
illbruck
making it perfect.

AIRTIGHT MEMBRANES

When a very low air leakage rate is required then the application for an airtight membrane is recommended. These are intelligent membranes that are airtight and weathertight but are permeable so they allow moisture to escape the building. They are sometimes called 'EPDM' membranes.

Membranes can be applied externally or internally depending on wall construction and purpose. Westcoast Windows recommend SIGA Fentrim products which are self adhesive. Full training is recommended by a SIGA representative to ensure the membrane is installed correctly to meet the critical air leakage compliance. (See recommended fixings page 39).

Westcoast Windows®



Fixing Accessories

Windows are delivered glazed and factory finished but some items are supplied loose so they can be protected during transit.

Here follows information on fixing loose accessories, including window and door handles, trickle vents and cill flashings.

Fixing Accessories

Windows are delivered glazed and factory finished but some items are supplied loose so they can be protected during transit.

Window Handles

ATLANTA HANDLES

Handles are supplied loose in their own bag with a key if it's a locking type. Atlanta handles will have a cover cap that sits between the baseplate and handle which hides the fixing screws.

To fix the handle to the sash, first open the sash. Align the baseplate stubs with the pre-drilled holes in the timber rail. Turn the handle to the open position.

Twist the cover plate 90 degrees to expose the baseplate fixing holes.

Secure both handle screws tightly and turn the baseplate cover back to its closed position.

Close the sash, turn the handle to the locked position to check operation.

TOKYO HANDLES

Handles are slightly different to Atlanta style and come with a small plastic cover cap to hide the exposed fixing screw.

To fix the handle to the sash, first open the sash. Align the baseplate stubs with the pre-drilled holes in the timber rail. Turn the handle to the open position.

Secure both handle screws tightly.

Close the sash, turn the handle to the locked position to check operation. Press the small plastic cover over the exposed fixing.

Door Handles

Due to the numerous configurations and complexity of the door handle and lock range, Westcoast Windows provides a set of instructions supplied with each handle set that is delivered with every door. Look out for Hoppe branded blue boxes.

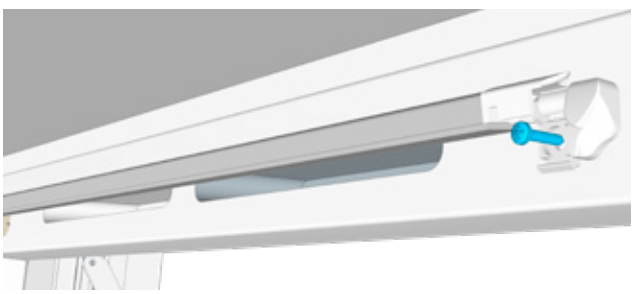
Trickle Vents

Trickle vents will be supplied loose and need fixing. The standard vent is a Titon SFXtra model.

TITON SFXTRA

Lift metal vent body upwards whilst holding plastic ends to expose the fixing holes. Align vent with it pre-routed slots.

Pilot holes will already be pre-drilled and 2 no. dome head screws supplied to secure vent to the frame.



Cill Flashings

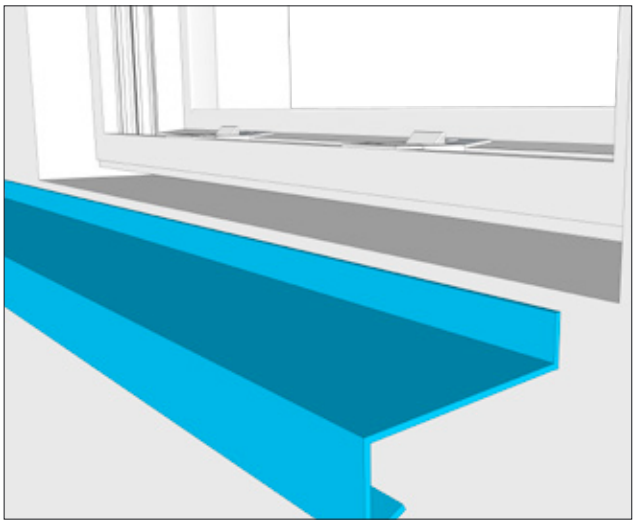
Westcoast Windows can supply cill flashings to complement the windows which will ensure both items are finished to the same colour and gloss level. Many cill flashings are project bespoke and might have more than three bends, end-caps, turned-up ends and a different fixing method, but the information that follows shows how to fit a Westcoast standard cill flashing.

STEP 1

Offer up supplied cill with the opening.

Check the flashing fits by temporarily inserting the cill up-stand under and into the frame recessed slot at the underside of the cill of the window.

If it fits then remove it again and place down in a safe place so as not to damage the finish.

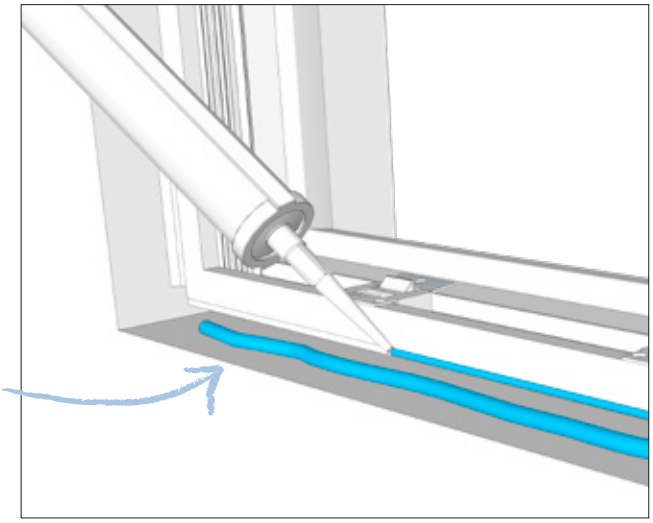


STEP 2

Run a continuous bead of silicone adhesive along the front face of the aluminium frame, just below the recessed slot.

This will help the cill flashing adhere to the frame and also make it watertight.

Also run a continuous bead of PU foam along the bottom of the aperture which will support the flashing if compressed. It also helps to hold it down by creating a permanent bond between cill flashing and substrate.

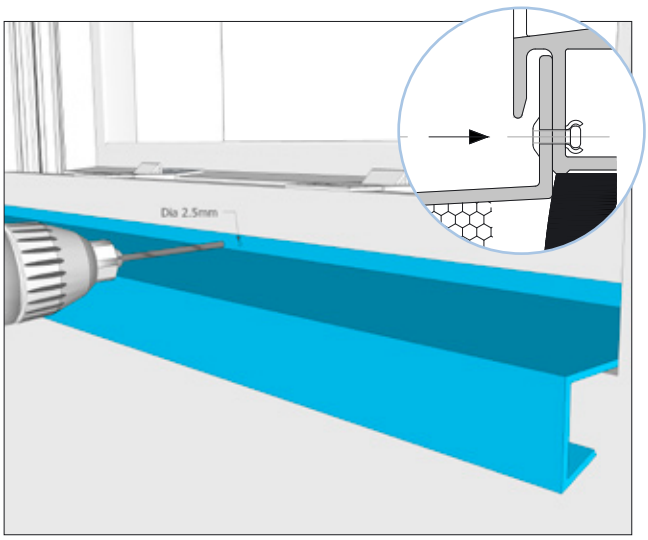


STEP 3

Drill pilot holes of 2.5mm diameter at minimum 600mm centres along the width of the cill flashing and at 25mm from each end.

Make sure the drill hole goes right through to the aluminium frame behind.

Next insert a 2.5mm galvanised rivet into the hole.

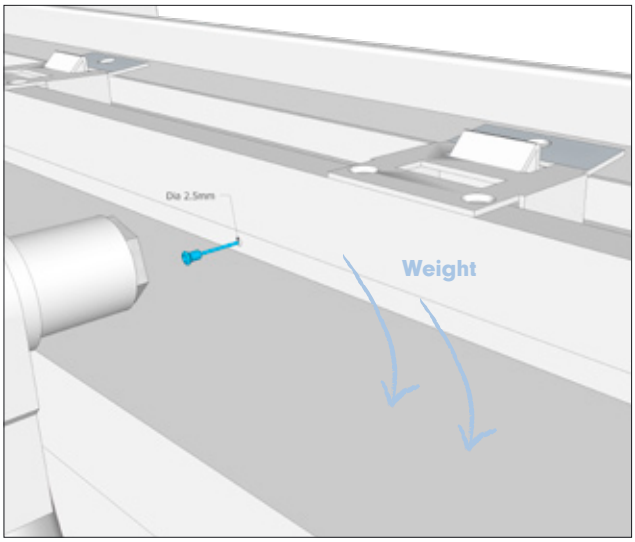


Cill Flashings

STEP 4

Secure galvanised rivets (2.5mm) with a rivet gun to ensure a good mechanical fix. Colour match head of rivets to match frame if desired.

Add a suitable weight onto the flashing to keep it in place whilst the PU foam cures.

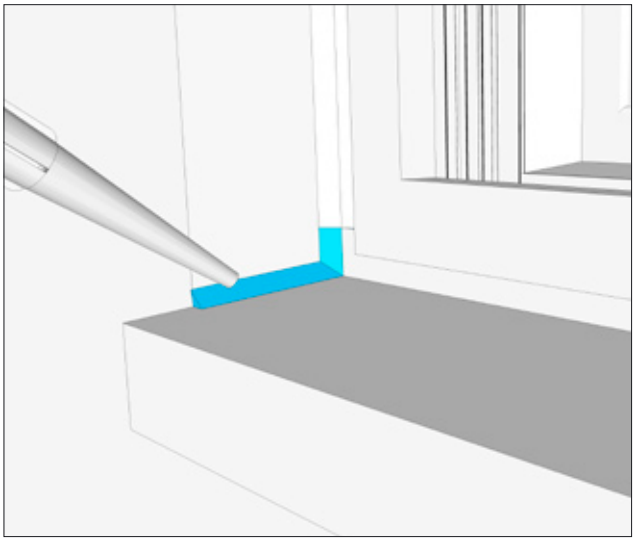


STEP 5

Once the flashing is secured and the PU foam bedding is expanded and cured then the interfaces between cill end and reveal can be joined.

Seal and join the cill end by silcone sealant and join this to the perimeter seal around the window frame.

On site this procedure will normally be completed at the end of the window installation together with perimeter sealing.



JOINING CILLS

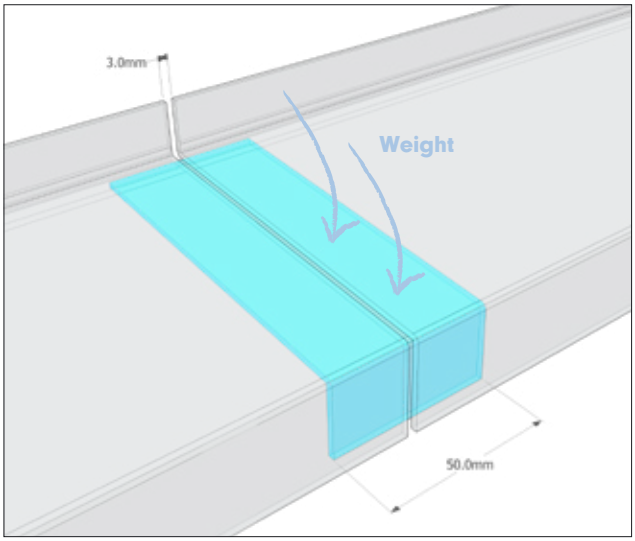
Some long windows or ribbon type screens will usually require several cills to be joined together. For pressed cills the maximum length for a flashing is usually 4000mm.

So if the aperture width is more than 4000mm then two cills will need joining.

Joint plates are typically 50-100mm wide and extend to the girth of the cill.

Once the first cill (with joint plate) has been installed, place the second cill on top of the joint plate ensuring it's bedded upon a continuous bead of silicone adhesive. Add a suitable weight onto the second cill to keep it in place whilst the silicone cures.

Leave a gap between both cills of at least 3mm (for expansion). Fill this expansion joint with a flexible silicone sealant and smooth flush with the surface of the flashings.



Recommended Fixings

Westcoast recommend the following materials and suppliers.

Fixing straps, sometimes referred to as 'VIMO' type lugs.
(See drawing details on page 40)

Also general metal fabrication services – cill flashings, flitch plate etc.

NEWBREL LTD
Amber Way, Gainsford Drive, Halesowne Industrial Park, West Midlands B62 8BQ
Tel: 0121 585 2745 **www.newbrel.com**

DARNBRIDGE LIMITED
Unit 20, Ffordd Las, Rhyl, LL18 2QD
Tel: 01745 356840 **www.darnbridge.co.uk**

FINISH ARCHITECTURAL LTD
215 Tame Road, Witton, Birmingham B6 7DQ
Tel: 0121 327 0523 **www.finisharchitectural.co.uk**

Silicone Sealant
Arbosil LM, 1090, 1090 or similar

ADSHEAD RATCLIFFE & CO. LTD
Derby Road, Belper, Derbyshire DE56 1WJ
Tel: 01773 826661 **www.arbo.co.uk**

Impregnated Sealing Tape
Compriband 600

TREMCO ILLBRUCK LIMITED
Coupland Road, Hindley Green, Wigan WN2 4HT
Tel: 01942 251400 **www.illbruck.com/en_GB**

PU expanding foam
FM230 Pro Foam

TREMCO ILLBRUCK LIMITED
Coupland Road, Hindley Green, Wigan WN2 4HT
Tel: 01942 251400 **www.illbruck.com/en_GB**

PU expanding foam
GREAT STUFF™ PRO

DOW CHEMICAL COMPANY LTD
Dow Building Solutions, Diamond House, Lotus Park Kingsbury Crescent, Staines TW18 3AG
Tel: 020 3139 4000 **www.building.dow.com**

Membranes
Siga Fentrim 2, 20

AIRTIGHTTAPES.CO.UK
1 Sarah Court Piperell Way, CB9 8PA Haverhill
Tel: 01440 710747 **www.airtighttapes.co.uk**

Foam Backing rod

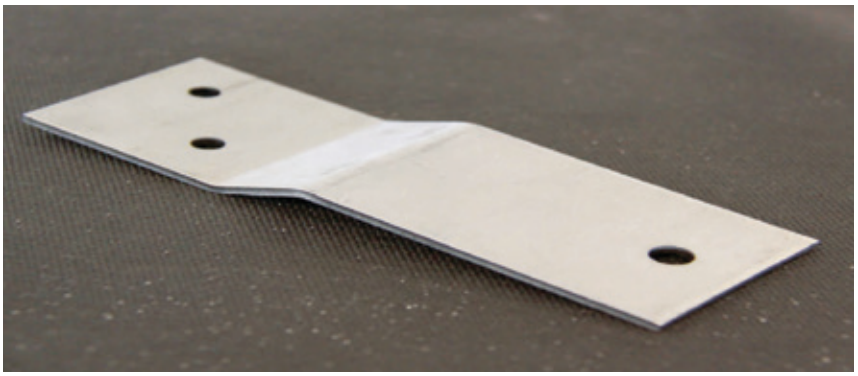
STICKY PRODUCTS
Markham House, Atkinsons Way, Foxhills Ind. Park, Scunthorpe,North Lincolnshire DN15 8QJ
Tel: 01724 749020 **www.stickyproducts.co.uk**

Cover Caps

WESTCOAST WINDOW SYSTEMS LTD
Unit 8 Brickfields Business Park, Old Stowmarket Road, Woolpit, Bury St Edmunds, Suffolk IP30 9QS
Tel: 01359 241944 **www.westcoastwindows.com**

Nylon Packers

WINDOW WARE (WEB BASED)
Telford Way, Cross Park, Bedford MK42 0PQ
Tel: 01234 242 724 **www.windowware.co.uk**

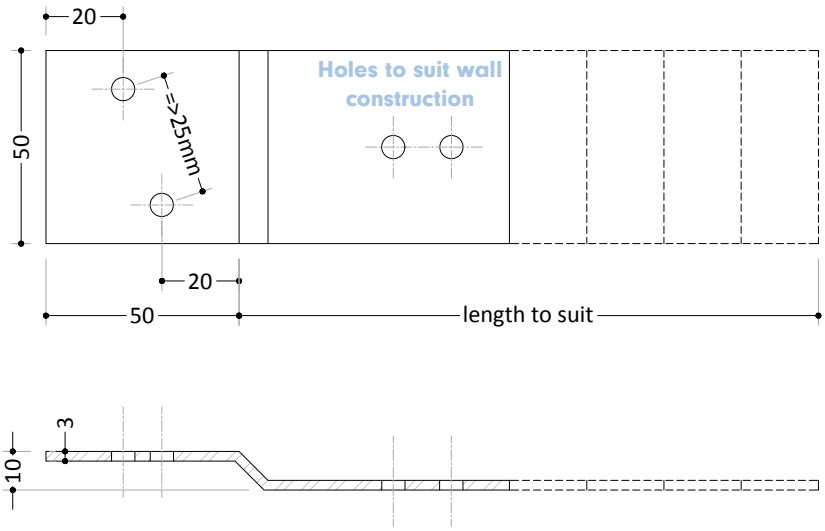


TYPICAL FIXING STRAP

Westcoast Windows suggest a strap of 2.5-3mm thick mild galvanised steel, 10mm cranked with 2 no. pre-punched holes (6mm diameter) for attachment to the timber frame of the profile.

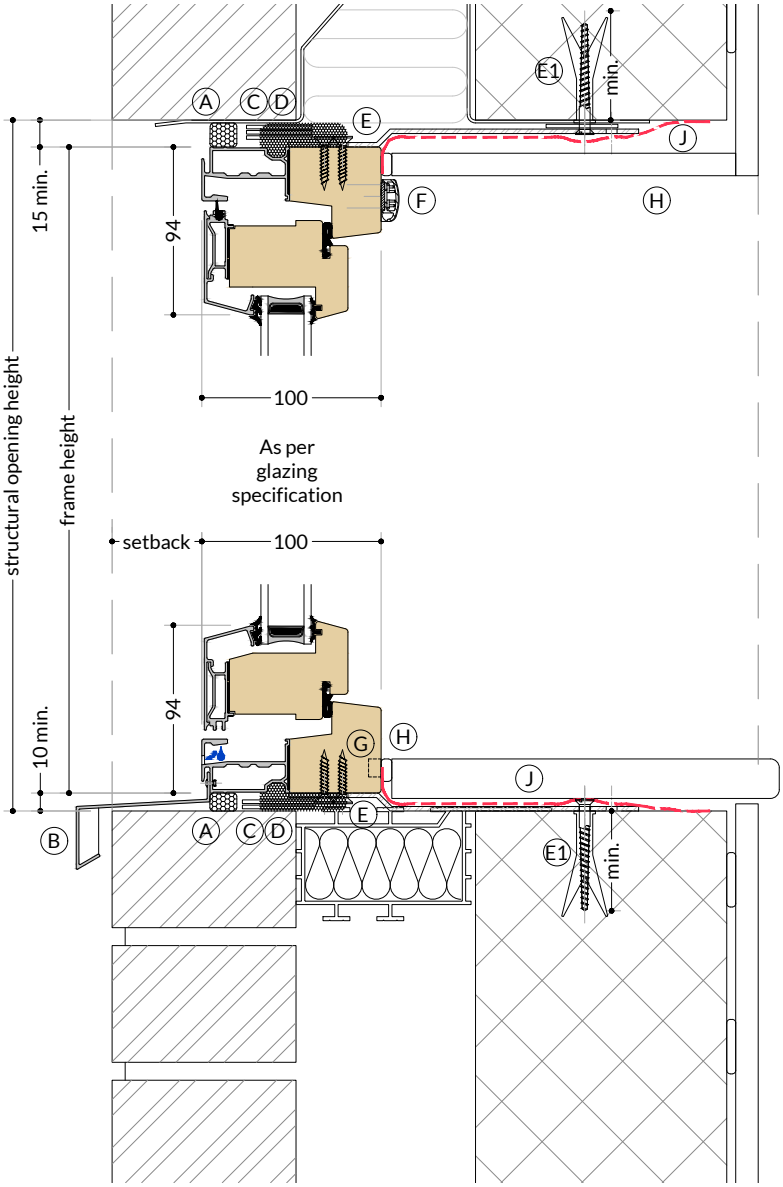
Ideally, locations of holes 20mm from edge of timber frame and a minimum 25mm apart from another and staggered.

Strap length bespoke to suit project but usually 100mm minimum and increments of 50mm thereafter should suit most situations.

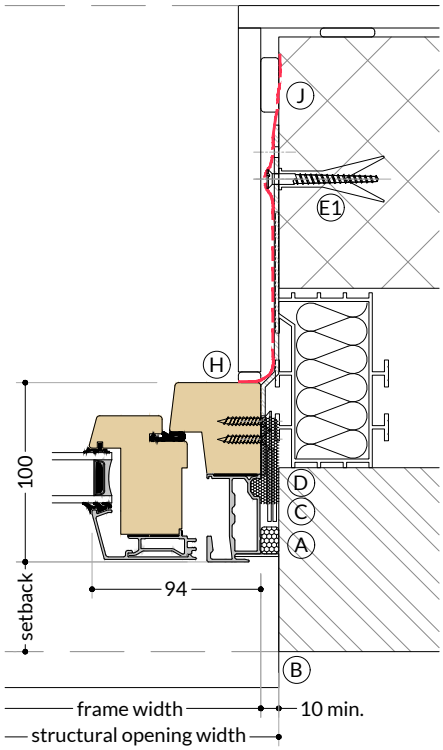


Typical Fixing Drawings

BRICK & BLOCK (NOT TO SCALE)



Head & Cill detail

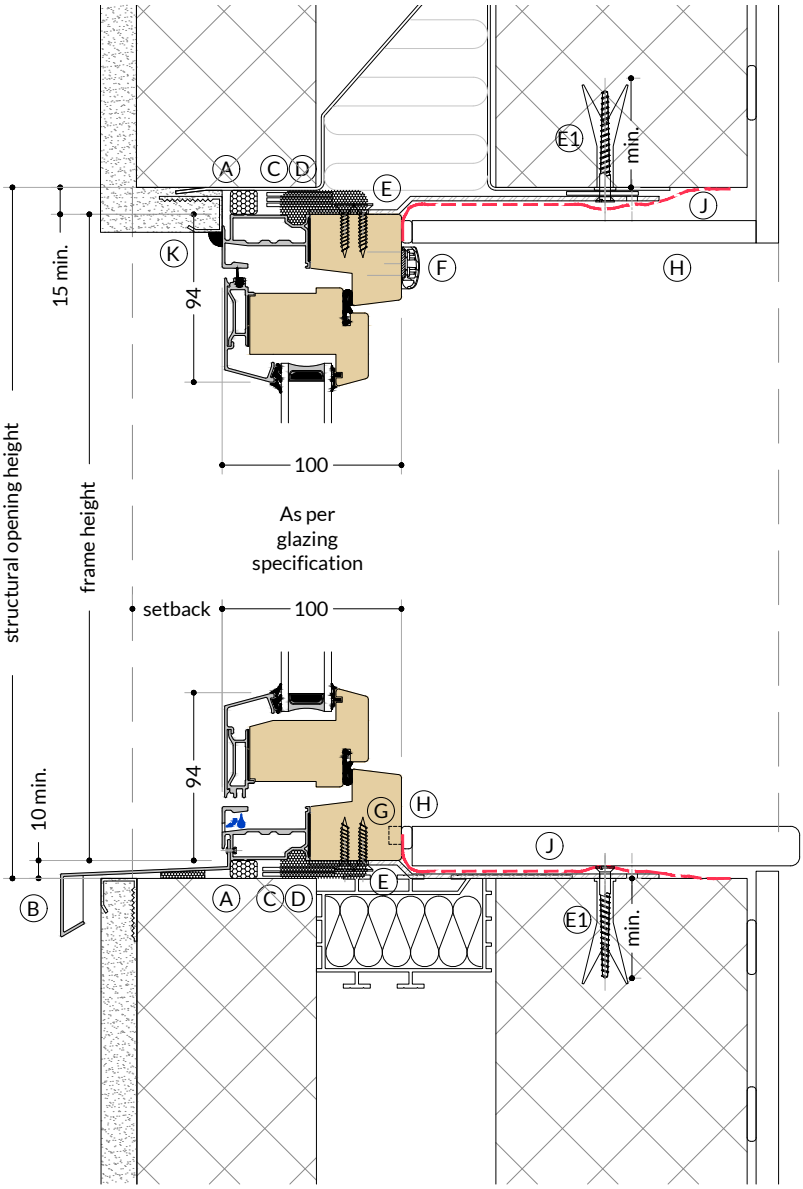


Jamb detail

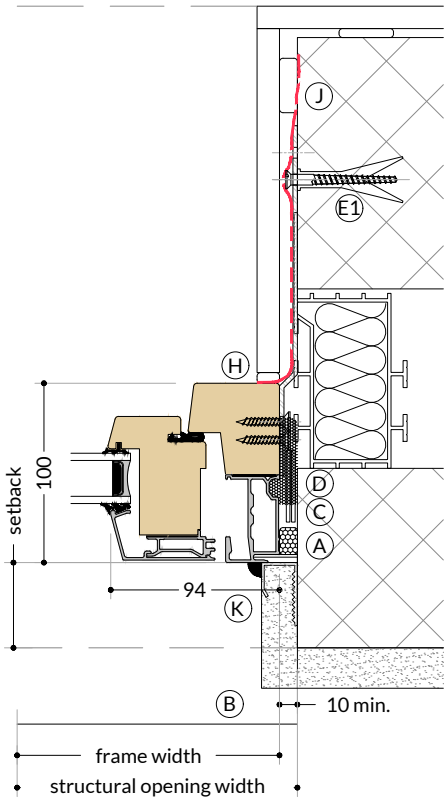
Key

A	Weathertight silicone seal (Arbosil LM 1090 Low Modulus or similar on closed cell foam backing rod) OR impregnated sealing tape (Compriband or equivalent).
B	3 x bent aluminium cill pressing, PPC to match frame bedded upon PU expanding foam. Cill upstand slotted into the frame recess and fixed mechanically by 2.5mm rivets at 600mm centres and with a bead of clear silicone sealant adhesive.
C	Tolerance packers as required (nylon or suitable inert material).
D	PU expanding foam seal (allow a minimum 15mm ventilation gap between foam and primary external seal).
E	2.5mm x 30mm galvanised bracket. 2 no. 5 x 30mm (10x1 1/4) wood screw into frame, min. 20mm offset. Fitted 150mm from corners and every 450mm centres.
E1	6mm Rawl plug + 5 x 50mm (10x2") screw for masonry, minimum 50mm embedment.
F	Optional Titon SFXtra trickle vent.
G	Optional cill groove for window board.
H	Internal finishes by others (window board, caulking seal, plasterboard etc).
J	Optional intelligent membrane (EPDM), Siga Fentrim or equivalent.

RENDER (NOT TO SCALE)



Head & Cill detail

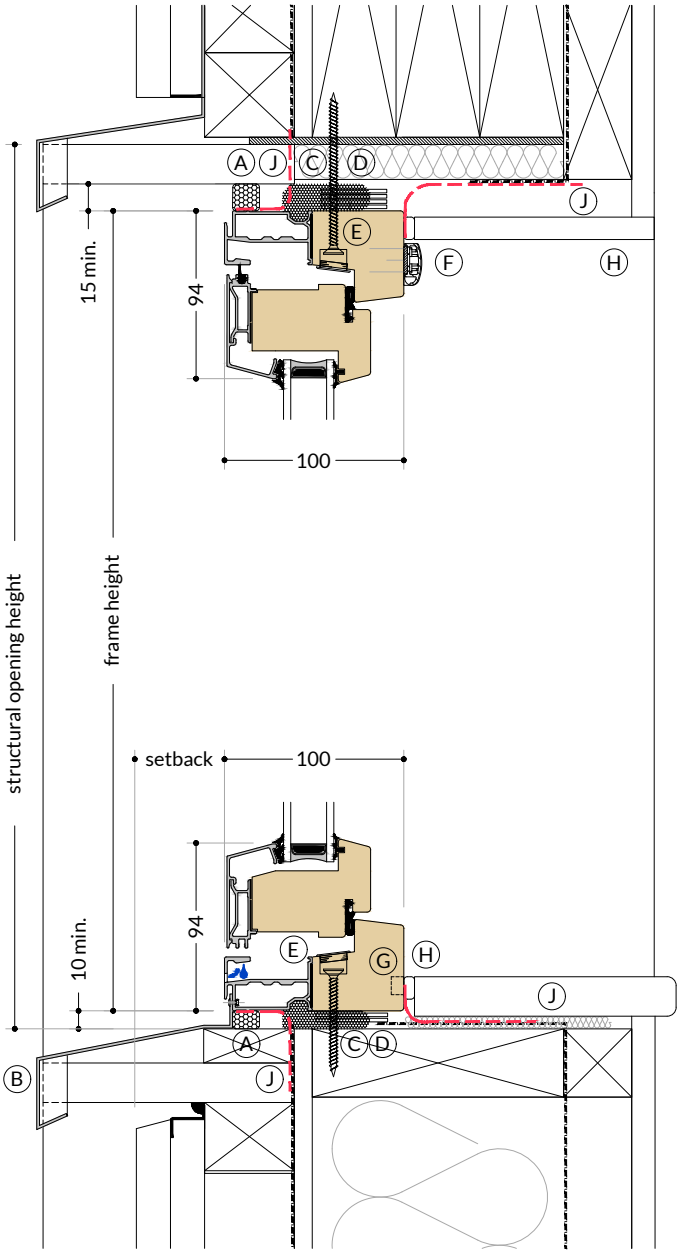


Jamb detail

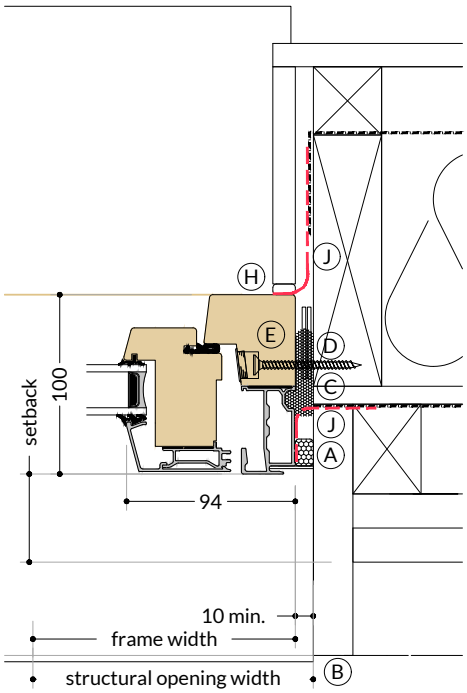
Key

A	Weathertight silicone seal (Arbosil LM 1090 Low Modulus or similar on closed cell foam backing rod) OR impregnated sealing tape (Compriband or equivalent).	F	Optional Titon SFXtra trickle vent.
B	3 x bent aluminium cill pressing, PPC to match frame bedded upon PU expanding foam. Cill upstand slotted into the frame recess and fixed mechanically by 2.5mm rivets at 600mm centres and with a bead of clear silicone sealant adhesive.	G	Optional cill groove for window board.
C	Tolerance packers as required (nylon or suitable inert material).	H	Internal finishes by others (window board, caulking seal, plasterboard etc).
D	PU expanding foam seal (allow a minimum 15mm ventilation gap between foam and primary external seal).	J	Optional intelligent membrane (EPDM), Siga Fentrim or equivalent.
E	2.5mm x 30mm galvanised bracket. 2 no. 5 x 30mm (10x1 1/4) wood screw into frame, min. 20mm offset. Fitted 150mm from corners and every 450mm centres.	K	External seal by render contractor.
E1	6mm Rawl plug + 5 x 50mm (10x2") screw for masonry, minimum 50mm embedment.		

TIMBER FRAME (NOT TO SCALE)



Head & Cill detail

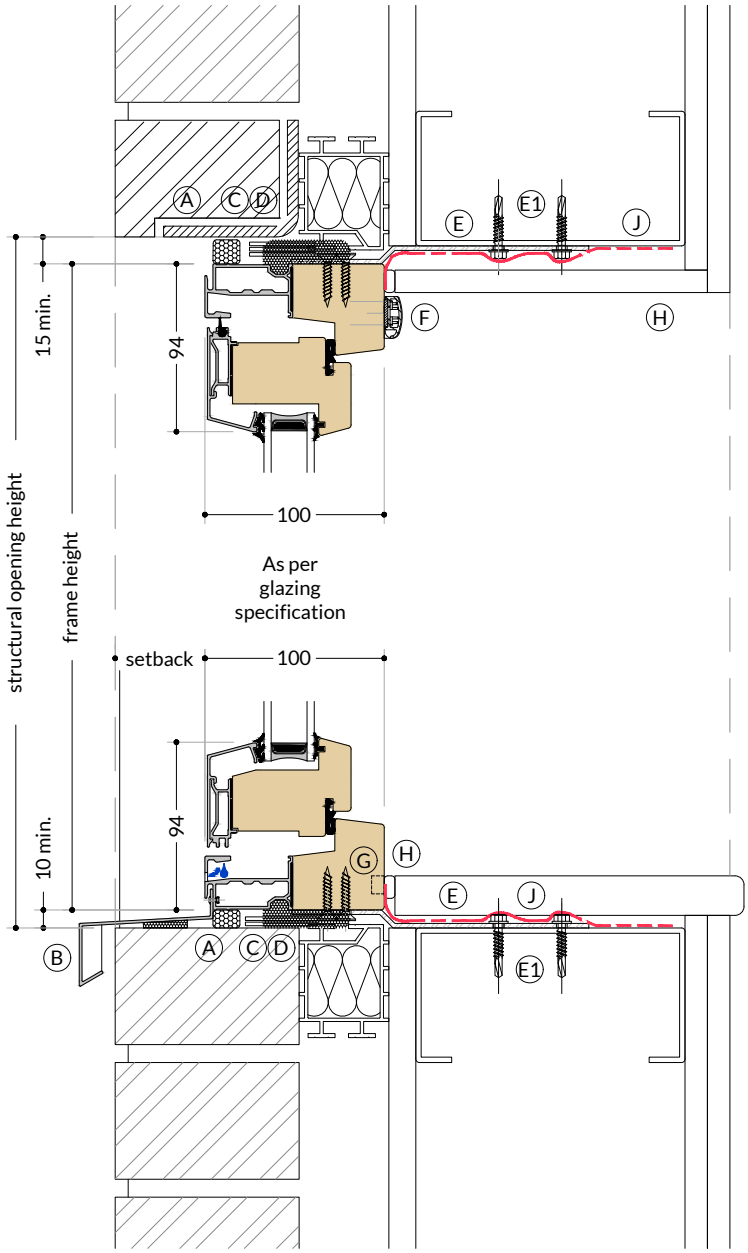


Jamb detail

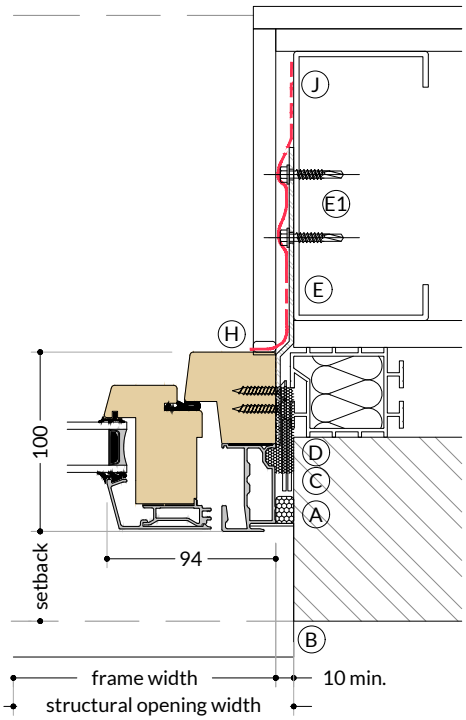
Key

A	Weathertight silicone seal (Arbosil LM 1090 Low Modulus or similar on closed cell foam backing rod) OR impregnated sealing tape (Compriband or equivalent).	F	Optional Titon SFXtra trickle vent.
B	3 x bent aluminium cill pressing, PPC to match frame bedded upon PU expanding foam. Cill upstand slotted into the frame recess and fixed mechanically by 2.5mm rivets at 600mm centres and with a bead of clear silicone sealant adhesive.	G	Optional cill groove for window board.
C	Tolerance packers as required (nylon or suitable inert material).	H	Internal finishes by others (window board, caulking seal, plasterboard etc).
D	PU expanding foam seal (allow a minimum 15mm ventilation gap between foam and primary external seal).	J	Optional intelligent membrane (EPDM), Siga Fentrim or equivalent – internal or external.
E	Direct fix with minimum 5 x 60mm woodscrew. Fastener is 10mm counter bored and hidden by a nylon cap. Fitted 150mm from corners and every 450mm centres.		

LIGHT STEEL FRAME (NOT TO SCALE)



Head & Cill detail



Jamb detail

Key

(A)	Weathertight silicone seal (Arbosil LM 1090 Low Modulus or similar on closed cell foam backing rod) OR impregnated sealing tape (Compriband or equivalent).
(B)	3 x bent aluminium cill pressing, PPC to match frame bedded upon PU expanding foam. Cill upstand slotted into the frame recess and fixed mechanically by 2.5mm rivets at 600mm centres and with a bead of clear silicone sealant adhesive.
(C)	Tolerance packers as required (nylon or suitable inert material).
(D)	PU expanding foam seal (allow a minimum 15mm ventilation gap between foam and primary external seal).
(E)	2.5mm x 30mm galvanised bracket. 2 no. 5 x 30mm (10x1 1/4) wood screw into frame, min. 20mm offset. Fitted 150mm from corners and every 450mm centres.
(E1)	2 nr 5mm Tek screw for light steel frame.
(F)	Optional Titon SFXtra trickle vent.
(G)	Optional cill groove for window board.
(H)	Internal finishes by others (window board, caulking seal, plasterboard etc).
(J)	Optional intelligent membrane (EPDM), Siga Fentrim or equivalent.