

ASSEMBLY - GLAZING

Frame And Vent Glazing

With Glaze in vents, the locking gear is attached to the glazing bead, glazing can either be performed by removing the locking gear and bead prior to glazing, or by lifting the glass unit over the bead and then glazing the other three sides as normal.

Position the adjustable glazing packers into the opening using packer positions shown for fixed and opening lights. Note that packers can be broken in half where half packers are shown. A small amount of silicone sealant may be used to retain there position, however care must be taken to ensure that the sealant does not obstruct any of the drainage paths.

After the glazing packers have been positioned, the glass is now carefully offered in and the adjustable glazing packers tightened to retain the glass centrally within the opening. Care should be exercised so that the packers are not over tightened and the frame distorted. Once the glass is positioned correctly within the frame and any opening lights checked to ensure that they are square, the beads can be fitted.

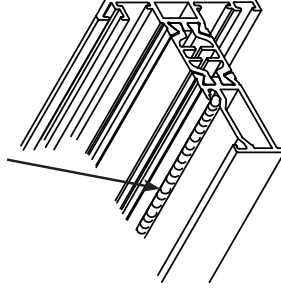
CWC055 or CWC070 retained gasket is inserted into the glazing bead (Glaze out) or vent frame (glaze in) , and is cut either square or mitred with the glazing beads/vent frame. Care should be taken to ensure the seal is not stretched during fitting and that the bottom retained gasket is notched in line with drainage preparations, see detail.

Begin by inserting the top and bottom glazing beads, and then the sides. It is very important that the joints between beads are carefully sealed with Henkel Terostat sealant to form an airtight junction. A plastic wedge should be pressed between the glass and the frame rebate on all sides to force the glass forward. This will ease the glazing process as the outer gasket will be slightly compressed.

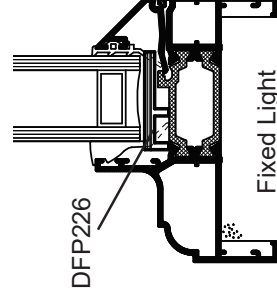
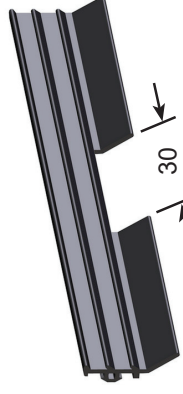
Two wedge gaskets are available DFC1509 or DFC1203, DFC1203 is the recommended gasket but in instances when glazing tolerances are oversize, eg laminated glass, DFC1509 may be used. Hydrdo recommends practical trials to determine correct wedge gasket prior to installation.

The wedge gasket is now fitted in place starting at one corner in the head, and then completely around the frame in one piece, joining back onto itself. Notch out the back of this gasket to enable the gasket to bend around the corners and mitre the last end to form a neat join. Care should be taken to ensure the seal is not stretched during fitting and Henkel Terostat sealant must be applied to the gasket corners to ensure a good airtight joint is achieved. Note that if the wedge gasket compression is too great, the tear off strip can be removed.

On glaze in vents, gun silicone sealant along the inner bead engagement area at the cill and 100mm up the sides before fitting the bead.



Notch retained gasket in line with drainage preparations in fixed and opening lights.



DFP324

Opening Light

For Fixed Lights fit CWP158 before glazing. See Si Casement manual (DFC55)

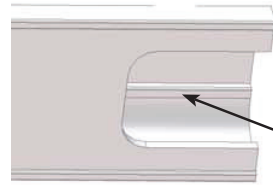
Laybar Assembly

Profile CW121

Once a Vent has been assembled, the Laybar can be fitted. Firstly, push the plate end of CWP160 Spring Clips between the gasket and glass at the position the laybar is required. Notches are required at the gasket end of the Laybar as well as a hole at cruciform positions (see preparations on page 4-39). Place a bead of sealant along the full length of the flat side of the Laybar. Push the laybar onto the glass on top of the Spring Clip. You should hear a 'click' from the Spring Clip once the Laybar has been securely fitted. Once the Laybar has been fitted, it cannot be adjusted, so ensure the position is accurate before final fitting. Clean off any visible sealant immediately.

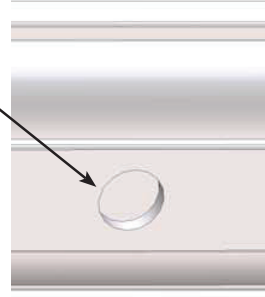
At any cruciform positions fill the hole already prepared with sealant / adhesive. Then push CWP159 Cruciform Cover into place. Clean away any excess sealant and allow to dry.

To improve aesthetics, you may wish to use a glazing unit with Georgian bars within the cavity.



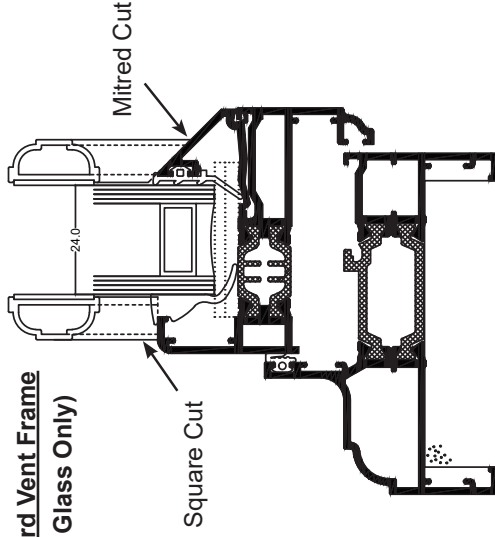
12x15mm Notch required at gasket end of Laybar

6mm Hole required at Cruciform position on the vertical Laybar only

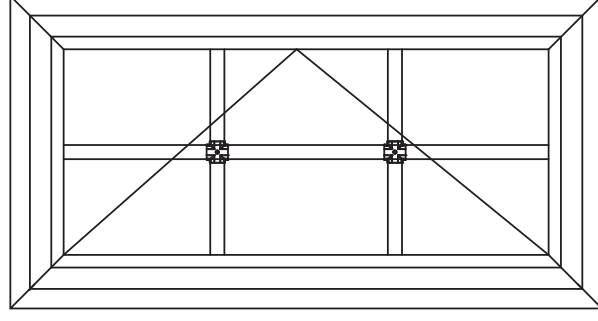
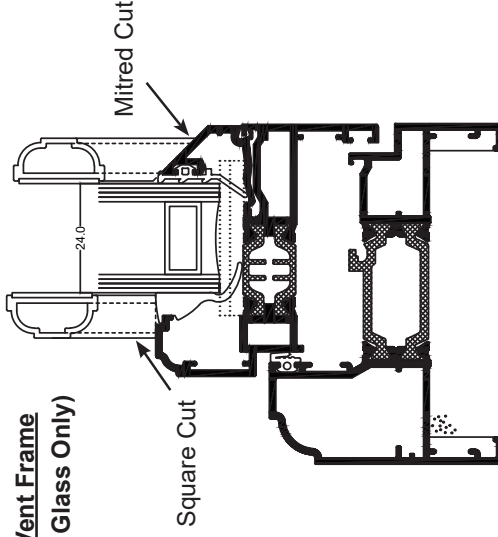


ASSEMBLY - LAYBAR

Standard Vent Frame
(24mm Glass Only)



Flush Vent Frame
(24mm Glass Only)



Vert. Laybar = Full height
Horiz. Laybar = Between Vert Laybar
and Vent Jambs

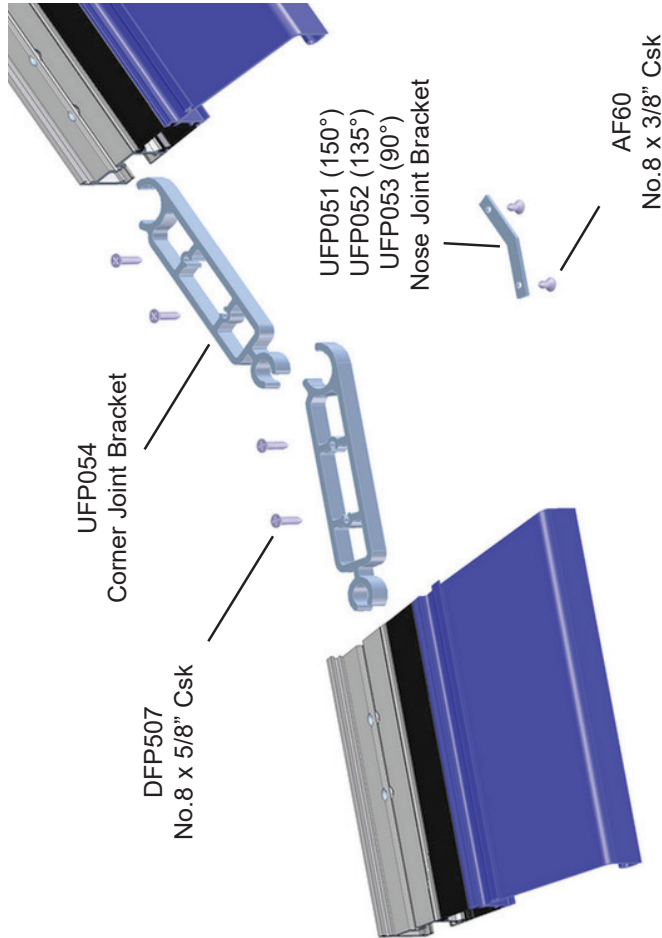
INSTALLATION - SUB CILLS

Sub Cill Corner Joint

Profile UF506, CW314

All sub cill joints must be sealed with silicone sealant. Sealing over the joint again after assembly in the area covered by the framework is recommended. Only clean sealant from surfaces that will be visible.

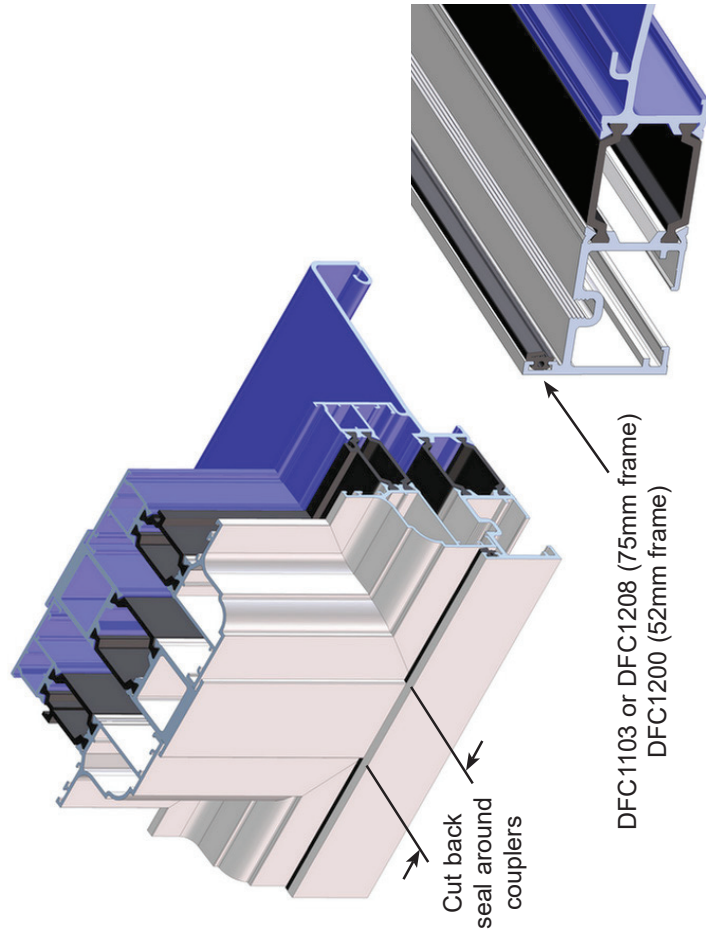
Seal along the mitred ends of the sub cill prior to assembly, then assemble the cill joint using listed brackets and screws. Before final tightening of the fixing screws apply sealant under the screw heads.



Sub Cill Seal

Profile UF506, CW314

To provide a water barrier between the sub cill and the outer frame, a seal is to be fitted into the sub cill rebate. This seal is to run full length of the sub cill, but in instances where there is a coupler between windows. The seal is cut each side of the coupler and Henkel Terostat 934 or 939 must be used to form a water tight join between the coupler and the sub cill.



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Fitting Of Sub Cill

Profile UF506, CW314

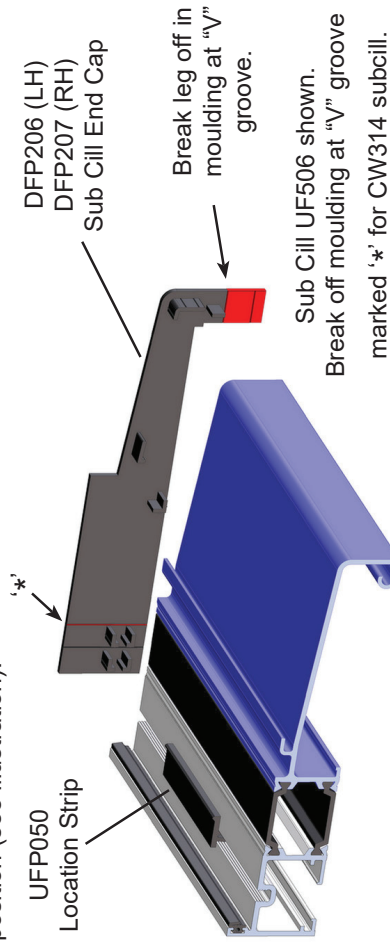
The drainage path through the sub cill can be seen on the illustration alongside, so care must be taken to ensure that it is not obstructed.

Seal under the head of any fixing screws to prevent water ingress and if used, seal DFP267 hole plugs into position.

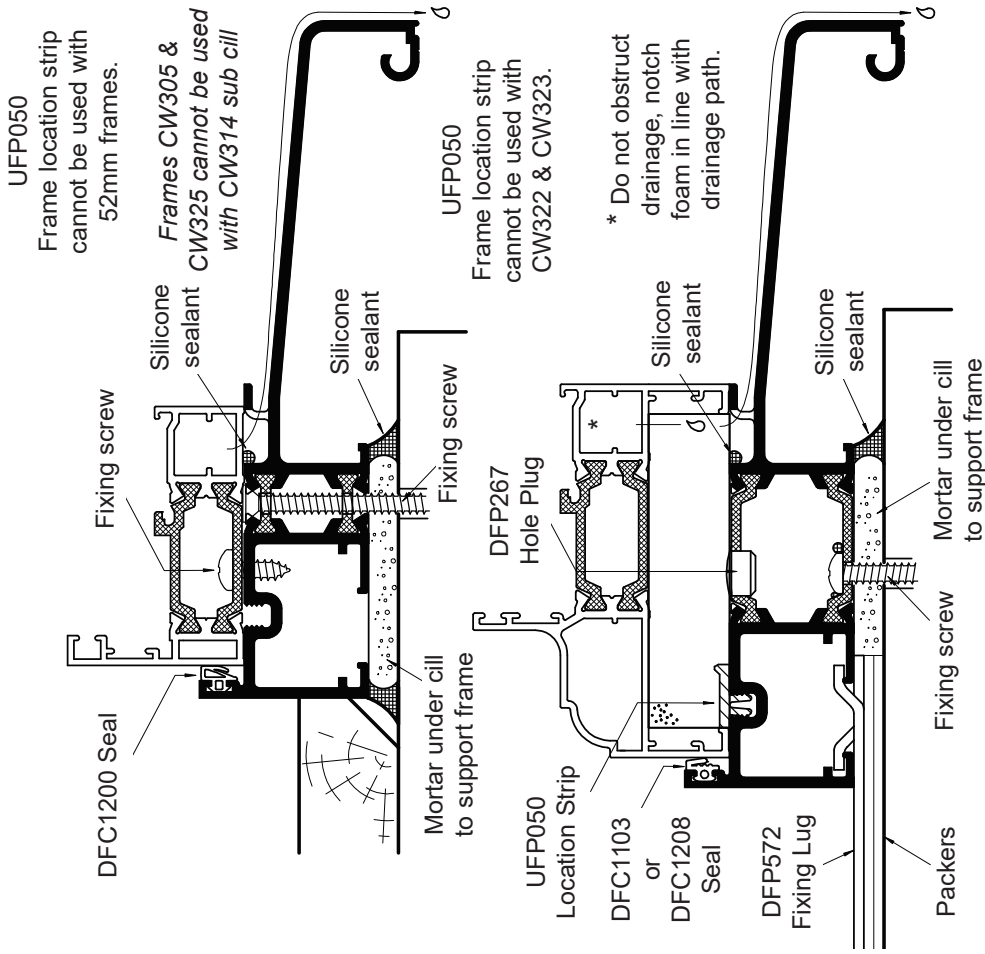
Sub Cill end caps must be fully sealed then pushed into position (see illustration below)

Before positioning the frame to the sub cill, fit the seal to the cill rebate (see previous page), and apply sealant to areas shown on detail opposite.

75mm frames are held in position on the sub cill by the use of location strips, 52mm frames are screw fixed into position. Location strips are positioned 150mm from the ends and then at 300mm centres. Apply a spot of silicone sealant into the sub cill recess before clip fitting the location strip, checking orientation before clipping into position (see illustration).



INSTALLATION - SUB CILLS



INSTALLATION - SUB CILLS

Sub Cill Expansion Joint

Profile UFP518

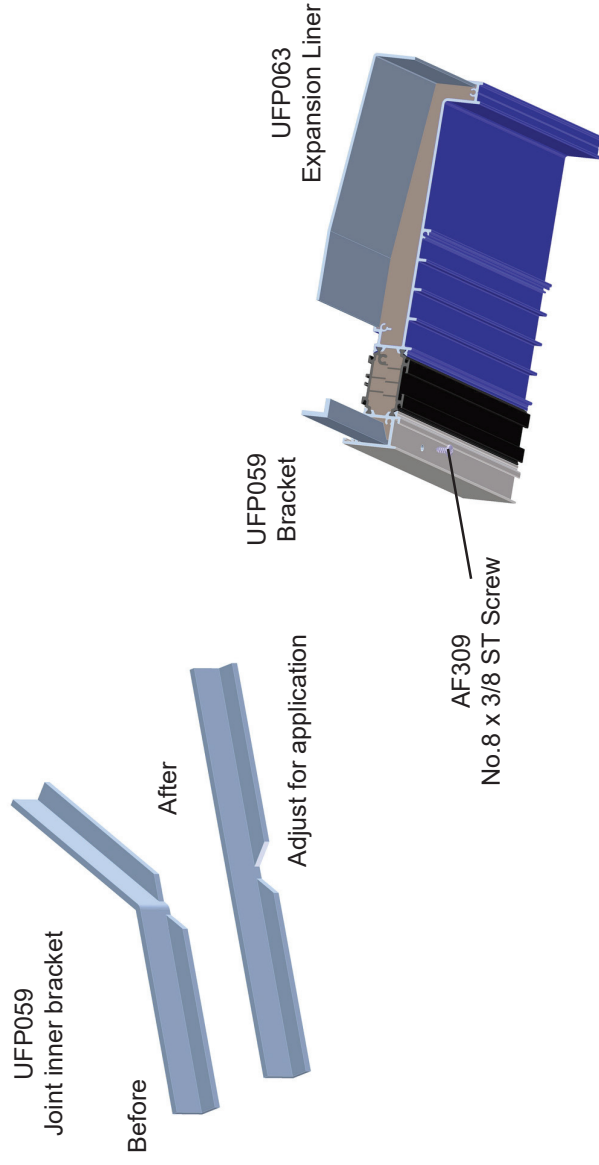
Aluminium cills expand with an increase in temperature, which must be taken care of by the installation techniques.

Wherever a cill exceeds 5m in length, an allowance must be made for thermal expansion. To achieve this, follow the details on this page, allowing an expansion gap of 10mm between sub cill ends.

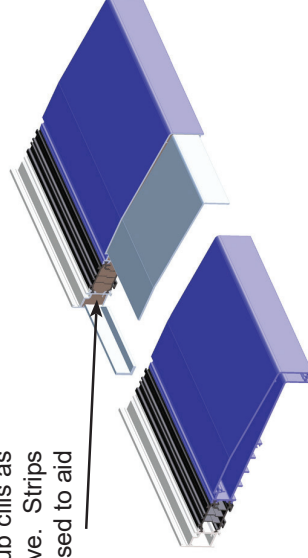
UFP059 Sub Cill joint inner bracket is used in a number of ways and is supplied preformed. This item will need to be tailored for this application, via means of a vice and appropriate tooling.

Insert the sub cill joint bracket 100mm into the cill, spot through cill fixing hole with a 3.5 dia hole and secure with one No. 8 x 3/8" pan self tap screw. This bracket is used to align both subcills when they are positioned in-situ, and is only secured to one sub cill to allow for thermal expansion. Now insert the joint liner 100mm into the cill, and seal the end of the sub cill fully with silicone sealant using a backing strip and allowing the sealant to cure. **DO NOT SEAL THE OPPOSING SUB CILL AT THIS STAGE.**

Just before the sub cills are situated into the structure opening, trim off excess sealant from the end already sealed, to create a fresh surface and using the same sealant, fully seal the unsealed sub cill. Now insert both sub cills together and while maintaining a 10mm gap between both sub cills, silicone seal the joint between both cills and tool to give a smooth appearance.



Fill the ends of the sub cills as per instructions above. Strips of DFP1516 can be used to aid with this operation.



The quality of the seal is of up-most importance and is directly linked to the performance of the joint, and as such the sealant must be used in accordance with manufactures recommendations.

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INSTALLATION - SUB CILLS

Sub Cill Corner Joint

Profile UF518

90° External up to 90° internal corner joints can be assembled in the same fashion, 90° external joint shown.

UFP059 Sub Cill joint inner bracket is used in a number of ways and is supplied preformed. In most instances this item will need to be tailored to exact requirements via means of a vice and appropriate tooling.

UFP066 Sub Cill joint outer bracket is pre cut for 90° internal and external corner joints. On internal joints the bracket is inserted opposite to that illustrated below. For non 90° joints, this bracket will need to be machined as detailed on the following page.

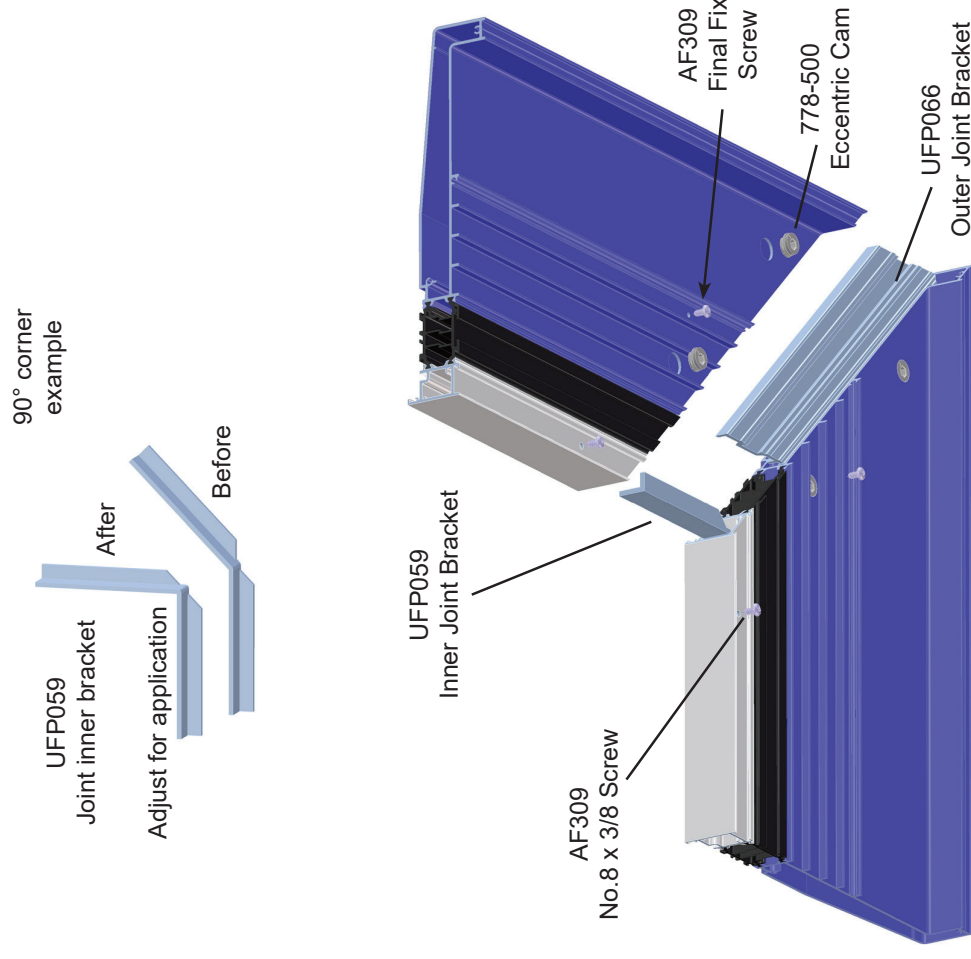
Seal along the mitred ends of the sub cill prior to assembly with Henkel Terostat 934 (clear) or 939 (grey, black or white). Insert illustrated brackets, then seal eccentric cam fixing holes prior to eccentric cam insertion to provide a water barrier.

Insert 778-500 eccentric cams with indicator line facing away from the join. Using a 6mm allen key, turn the cams to draw up the corner tightly then clean off any excess sealant immediately.

Spot through UFP059 fixing holes with a 3.5 dia hole and secure with No. 8 x 3/8" pan self tap screws. Apply sealant under screw heads before final tightening.

Drill through final fixing holes with a 3.5 dia drill into UFP066 bracket and secure with No. 8 x 3/8" pan self tap screws. Apply sealant under screw heads before final tightening.

Sealing over the joint again after assembly in the area covered by the framework is recommended, and only clean excess sealant from surfaces that will be visible..

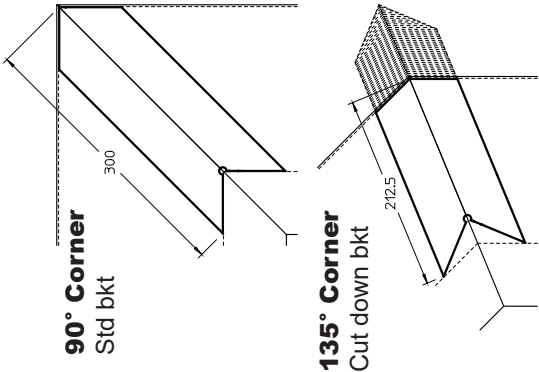
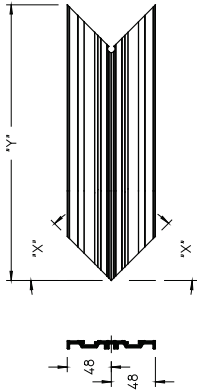


INSTALLATION - SUB CILLS

UFP066 Machining

As stated on the previous page, UFP066 Sub Cill joint outer bracket is pre cut for 90° internal and external corner joints, for non 90° joints, this bracket will need to be cut down.

Using the chart below, determine the length and angle and machine appropriately. Note this bracket is always cut down from the front as per example 135° Corner shown.



UFP066 Subcill Joint Bracket Chart															
Ext/Int Angle	90 °	91 °	92 °	93 °	94 °	95 °	96 °	97 °	98 °	99 °					
Angle 'X'	45 °	44.5 °	44 °	43.5 °	43 °	42.5 °	42 °	41.5 °	41 °	40.5 °					
Dim 'Y' (mm)	300.0	297.0	294.0	291.0	288.0	285.0	283.0	280.0	277.5	275.0					
Ext/Int Angle	100 °	101 °	102 °	103 °	104 °	105 °	106 °	107 °	108 °	109 °					
Angle 'X'	40 °	39.5 °	39 °	38.5 °	38 °	37.5 °	37 °	36.5 °	36 °	35.5 °					
Dim 'Y' (mm)	272.5	270.5	268.0	265.5	263.5	261.0	259.0	257.0	255.0	253.0					
Ext/Int Angle	110 °	111 °	112 °	113 °	114 °	115 °	116 °	117 °	118 °						
Angle 'X'	35 °	34.5 °	34 °	33.5 °	32 °	33 °	32.5 °	32 °	31.5 °	31 °					
Dim 'Y' (mm)	251.0	249.0	247.0	245.0	240.0	243.5	241.5	240.0	238.0	236.5					
Ext/Int Angle	119 °	120 °	121 °	122 °	123 °	124 °	125 °	126 °	127 °	128 °					
Angle 'X'	30.5 °	30 °	29.5 °	29 °	28.5 °	28 °	27.5 °	27 °	26.5 °	26 °					
Dim 'Y' (mm)	235.0	233.0	231.5	230.0	228.5	227.0	225.5	224.0	223.0	221.5					
Ext/Int Angle	129 °	130 °	131 °	132 °	133 °	134 °	135 °	136 °	137 °	138 °					
Angle 'X'	25.5 °	25 °	24.5 °	24 °	23.5 °	23 °	22.5 °	22 °	21.5 °	21 °					
Dim 'Y' (mm)	220.0	219.0	217.5	216.0	215.0	213.5	212.5	211.5	210.0	209.0					
Internal or external Angles															

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INSTALLATION - SUB CILLS

Fitting Of Sub Cill

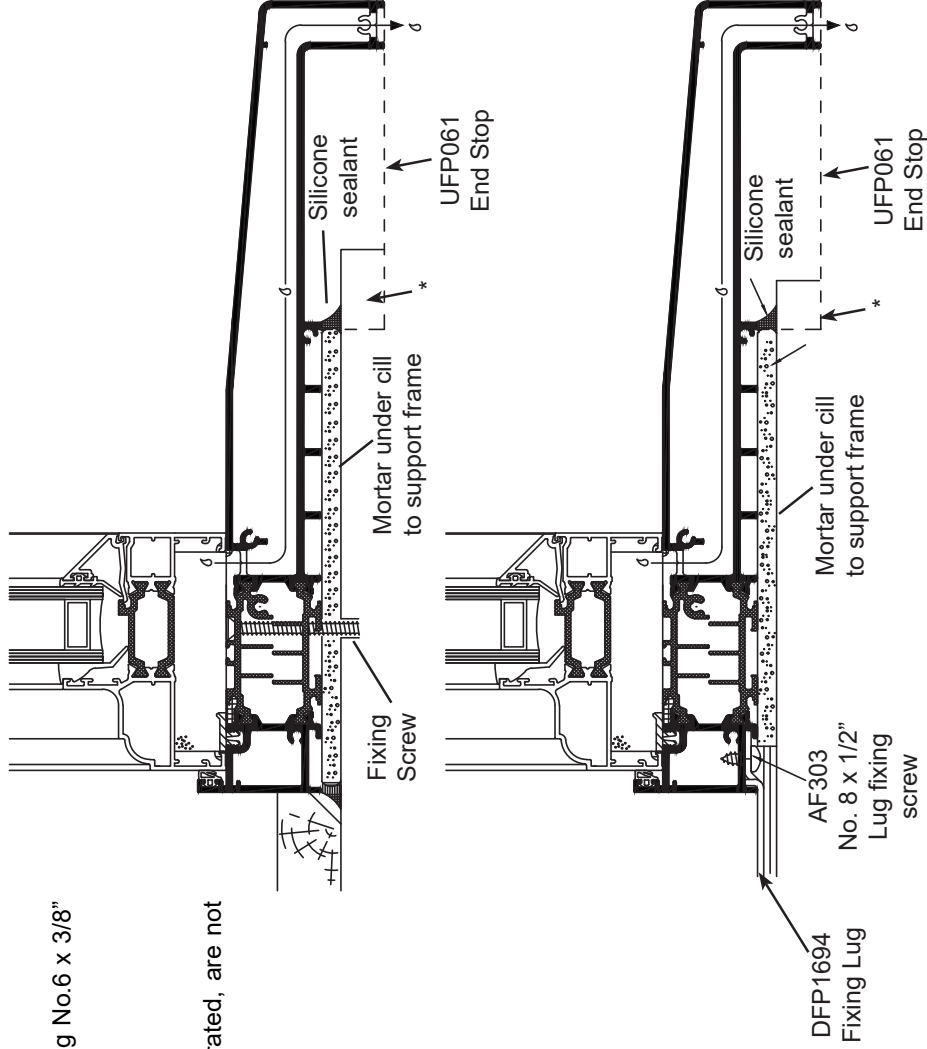
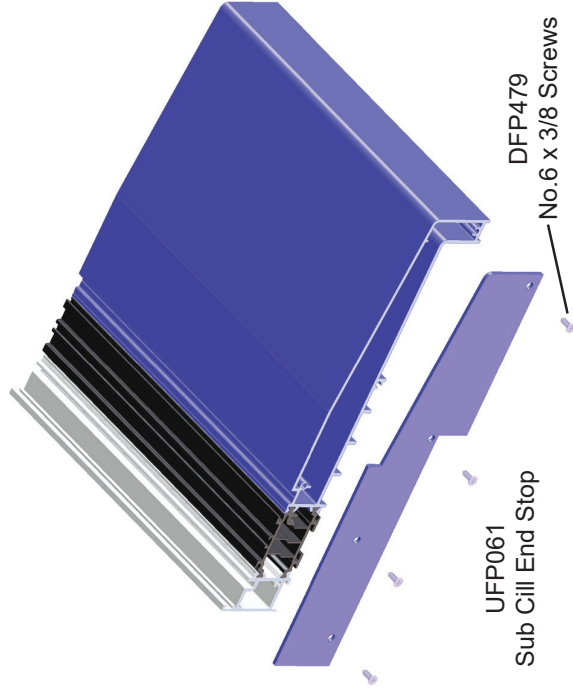
Profile UF518

Sub Cill End Stop UFP061 must be fully sealed and secured into position using No.6 x 3/8" csk self tap screws. Csk end stop fixing holes to 6.0 dia before fitting.

* Note if necessary cut end cap around structure as required.

Care must be taken to ensure that drainage paths through the sub cill, illustrated, are not obstructed and that screw fixings do not penetrate these areas.

Seal under the head of any fixing screws to prevent water ingress.



INSTALLATION - SUB CILLS

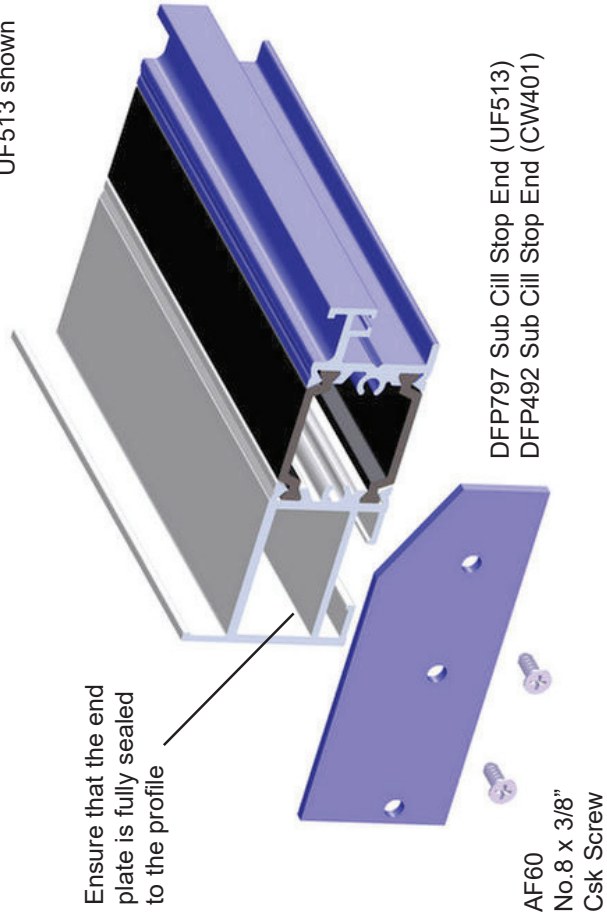
Assembling the Applied Nose Subcill

Profile CW401, UF513

The applied nose subcill must have an aluminium end plate sealed and screwed to each end of the profile, with 2 off No.8 x 3/8" Csk screws.

Care must be taken to ensure that the end of the subcill is fully sealed to the end plate to prevent any water that enters the subcill penetrating the structure.

Subcill
UF513 shown



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INSTALLATION - SUB CILLS

Fitting of Subcill with Applied Nose

Profile CW401, UF513

Drainage paths through the subcill are as shown below right, care must be taken to ensure that they do not become blocked when fitting.

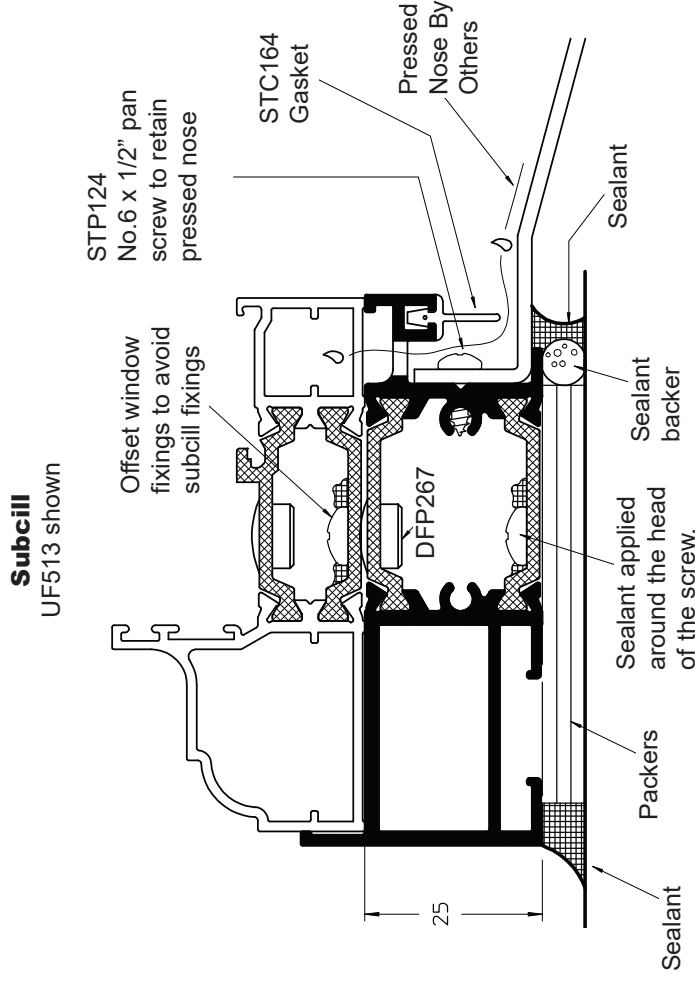
The subcill must be secured to the structure as shown, using suitable fixings, and packed as necessary to ensure it is level.

The subcill must then be silicone sealed to the structure along its length and across its ends. 9.0mm hole plugs must be sealed into the clearance holes in the top of the subcill after it has been secured to the structure.

The pressed nosing should now be offered into position with No.6 x 1/2" Pan head fixing screws at a maximum of 600mm centres. STC164 gasket is now fitted along the full length of the subcill, taking care not to stretch during fitting.

A bead of sealant should then be applied along the ends of the subcill at the point that it abuts the structure. Note that additional packing may be required if the nose pressing is particularly large to prevent sag.

When fitting the frame to the subcill silicone sealant must be gunned as shown alongside to ensure that a watertight joint is created on the inside and outside under the pressed nose.



INSTALLATION - FRAME

Fitting Of Foam Infill

Backing foam infill CWP058, CWP119, CWP184, CWP185, CWP186 or CWP187 must be inserted into the open back of outer frame profiles listed below. This will provide an additional thermal barrier, improving overall window energy ratings (WER), plus window 'U' values.

The foam join at the corners can either be mitre cut or butt jointed as desired.

Important!

Frames that are drained onto a subcill, must have appropriate drainage clearance cutouts in the foam. This will allow water access to the drainage paths in the subcill.

Frame/Backing Foam Combinations

Frame	-	Foam Part Number
CW305	-	N/A
CW320	-	CWP058 / CWP184
CW321	-	CWP058 / CWP184
CW322	-	N/A
CW323	-	N/A
CW324	-	N/A
CW325	-	N/A
CW327	-	CWP058 / CWP184
CW328	-	CWP119 / CWP185
CW329	-	CWP119 / CWP185
CW334	-	CWP058 / CWP184
CW335	-	CWP058 / CWP184
CW346	-	CWP186 / CWP187
CW347	-	CWP186 / CWP187

Fitting Frame Into Aperture

It is vitally important that the cill is laid flat and level to achieve good performance. Jambs must be vertical in both planes, and no twist or other distortion allowed in the frame.

Prior to installing the frame, the opening should be checked to ensure that it is free of debris, and that any projecting brickwork has been trimmed back.

Any damaged damp proof membranes should be replaced or additional membranes incorporated.

When the opening was originally measured a suitable gap should have been allowed around the window, this will allow the window to be packed to ensure that it is plumb and square within the opening.

Ideally the frame should be bedded on mortar.

The frame can then be positioned in the opening and held square by packing at the very corners of the frame, taking care not to damage or deform the frame profiles.

To check for squareness, measure the diagonals from corner to corner, these diagonal dimensions should not differ by more than 1 or 2mm, if they do then adjust the packing until the frame is square within the opening.

The lay of the frame in to out can be checked by using a spirit level on the jambs. On replacement applications, the correct position of the frame might not align with the original. This will require some remedial work to make good the plaster reveal around the frame on the inside as well as any render that is present on the outside.

INSTALLATION - FRAME

Fixing Of Frame

Before deciding on the frame fixing method, see example frame profile illustrations and the fixing options available.

Screw Fixing

The first fixing must always occur within 150mm of the corner of the unit and then at no more than 600mm centres (do not over-tighten fixings), the type and frequency depends on the expected applied loadings. Any fixed lights that have been glazed may need to be deglazed to allow for fixing.

Packing will be required at the fixing points to prevent distortion of the frame. Drilled holes in the frame should be sealed and DFP267 hole plugs fitted.

Lug Fixing

Lug fixings should be spaced at the same intervals as screw fixings. The fixing lugs are twist fitted to the frame and then screw fixed to the structure.

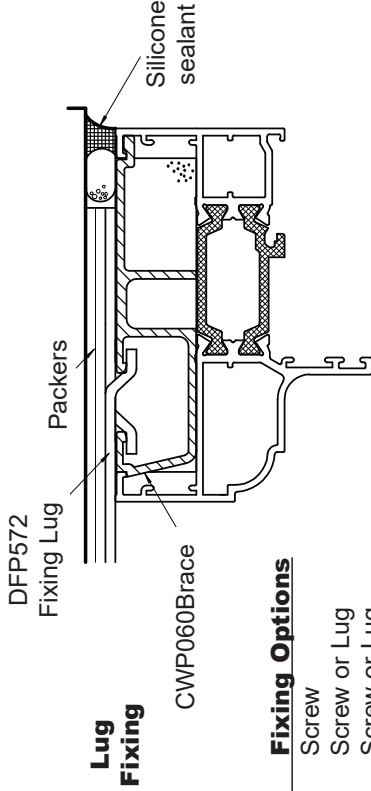
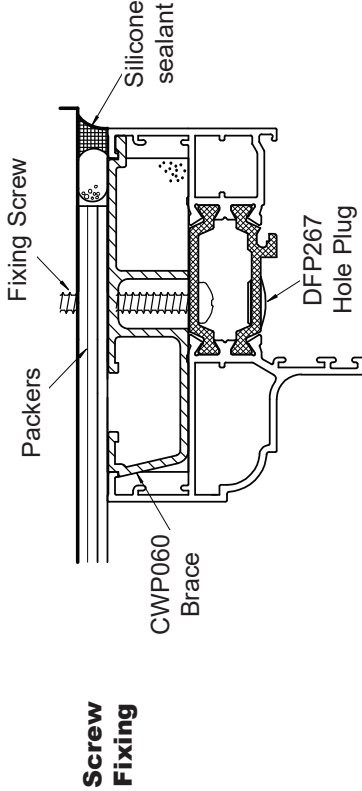
Note that fixing lugs can be twist fitted to both frame braces as well as some outer frame profiles.

Packing the frame about the lug would be advisable to stabilize the frame, and on replacement windows, plaster on the internal reveal will have to be removed in the vicinity of the lug and made good after.

Foam Fixing

Fixing foam can be used in conjunction with screw and lug fixing, but must not be used as an alternative to mechanical fixing.

Care must be taken not to allow the foam to come into contact with the painted finish, and as such the use of some form of masking tape would be advisable. Permanent staining will be caused if the foam contacts the frame.



Frame Fixing Options

Frame	Fixing Options
CW305	Screw
CW320	Screw or Lug
CW321	Screw or Lug
CW322	Screw
CW323	Screw
CW324	Screw
CW325	Screw
CW327	Screw or Lug
CW328	Screw
CW329	Screw

Cut backing foam infill around frame braces

FINISHING OFF

Sealing

The recommended sealant for the exterior is Low Modulus Neutral Cure Silicone Sealant. Backing foam should be used where the perimeter gap is over 5mm. Where the gap is within the 5mm range, a neat application of silicone is all that is required on the outside.

A final check of the internal and external perimeter seals should be undertaken. Any weak spots that are identified should be rectified and tooled to a high visual finish. Any excess sealant must be cleaned off of the finished surfaces using appropriate cleaner.

Cleaning After Installation

If excess sealant is to be cleaned off. Ensure that any solvent used will not damage any of the metal finishes, synthetic rubbers or plastics which may be present.

Warning

Take particular care if there is any cement or plaster on the aluminium. It is harmful to the metal finish and should be washed off while still wet. DO NOT RUB or particles of grit will permanently damage the metal or paint finish.

Routine Cleaning

No aluminium finish is "Maintenance Free" and hence should be cleaned at regular intervals. See surface treatment suppliers literature/website for cleaning and maintenance requirements.

Maintenance

Periodic maintenance must be carried out on the locking gear at least once a year or more frequently depending upon the hostility of the environment, i.e. coastal regions or dusty environments.

All exposed moving parts and locking points should be greased and checked to see if they are functioning correctly.

Operating And Safety Instructions

In order to preserve functionality of the window, and to guarantee security, it is imperative the directives listed below are observed.

- *The window sash must not be burdened with additional weight.*
- *Do not place any objects between the sash and frame.*
- *Where small children or mentally handicapped persons have access to the window, the sash is to be safe guarded against opening, for example restrictor friction stays should be used.*
- *Do not leave sashes open during strong winds.*
- *Caution! A slamming sash can lead to injuries while closing. Do not grasp the window between the sash and frame.*