ASSEMBLY - GLAZING

Glazing Fixed And Glaze In Vents

If not already fitted, fit retained gasket, see page 5-31.

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 these in position, however care must be taken to ensure that the sealant does not obstruct any of the drainage paths.

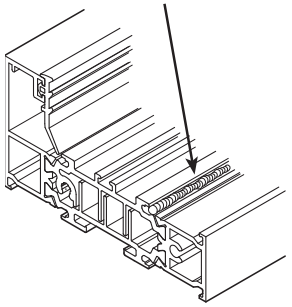
In security window applications, additional half glazing packers are to be positioned in line with all gear locking points, the number of packers and positions will vary with the size of the window.

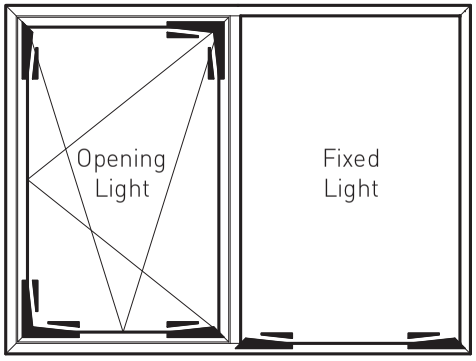
Once the glazing packers have been positioned, the glass is now carefully offered in and the adjustable glazing packers tightened to retain the glass centrally within the opening. Care should be exercised so that the packers are not over tightened and the frame distorted.

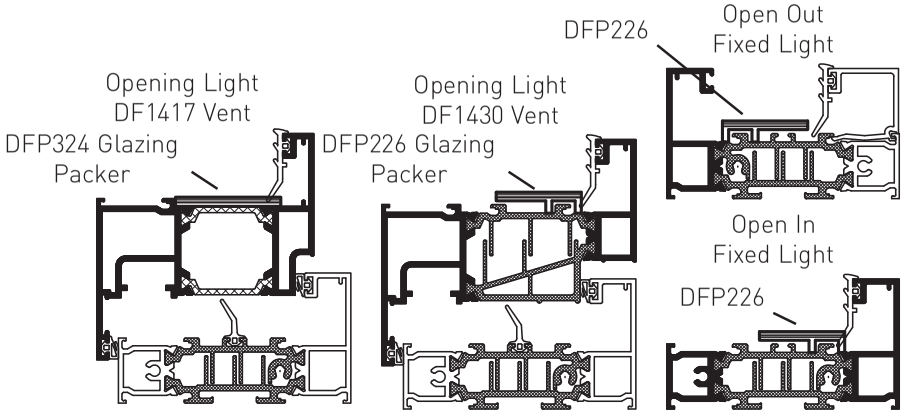
Once the glass is positioned correctly within the frame and any opening lights checked to ensure that they are square, the beads are clipped into position. It is very important that the joints between beads are carefully sealed with small joint sealant to form an airtight junction. A plastic wedge should be pressed between the glass and the glazing bead on all sides to force the glass forward. This will ease the glazing process as the outer gasket will be slightly compressed.

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 a small amount of 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 all glaze in fixed and opening lights, gun silicone sealant along the inner bead engagement area at the cill and 100mm up the sides before fitting bead.







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Glazing Concealed Glaze Out Vent

Position and insert aluminium glazing packer DFP1545 at typical positions shown. Spot through the glazing packer with a 3.0 dia drill and secure the packers in place with No.8 x 3/8" csk self tap screws (Do not obstruct the drainage holes).

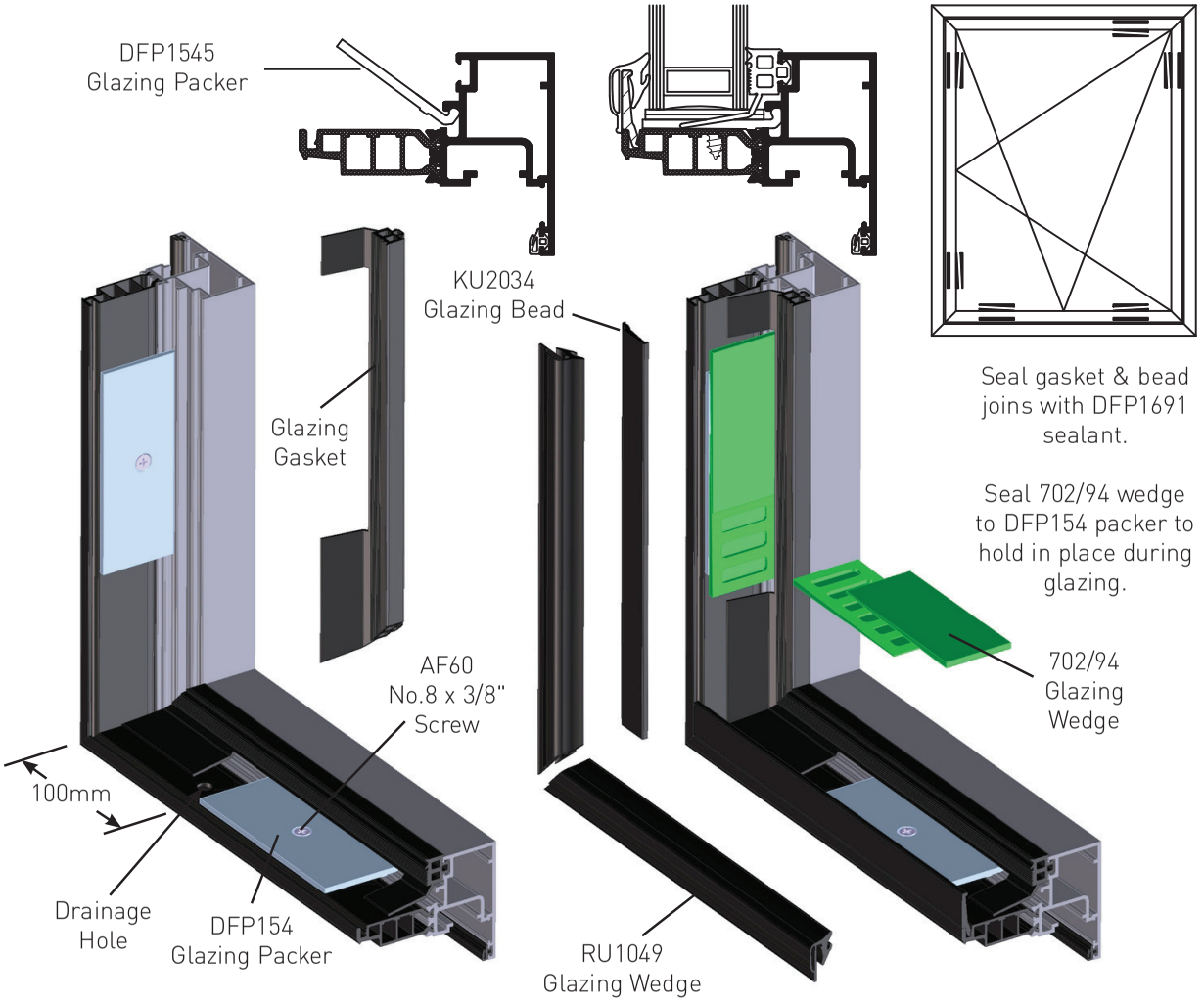
Fit retained gasket and seal gasket joins with DFP1691 sealant. Cut the gasket leg around glazing packers, drainage holes and air pressure equalisation holes as illustrated (not required in 52R323 gasket).

Position the adjustable glazing wedges on top of the aluminium glazing packers. A small amount of silicone sealant to be used to retain these in position, however care must be taken to ensure that the sealant does not obstruct any of the drainage paths.

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. After the frame has been checked for squareness, the beads are clipped into position. It is very important that the bottom bead is fully sealed along the engagement area and the joints between beads are sealed.

Finally fit the wedge gasket by mitre cutting the corners taking care not to stretch the gasket during fitting, and seal gasket joints with DFP1691 sealant.

24mm Glazing =52R323 gasket / KU2034 Bead
28mm Glazing =RU1032 gasket / KU2034 Bead
32mm Glazing =52R220 gasket / KU2034 Bead



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Subcill Expansion Joint

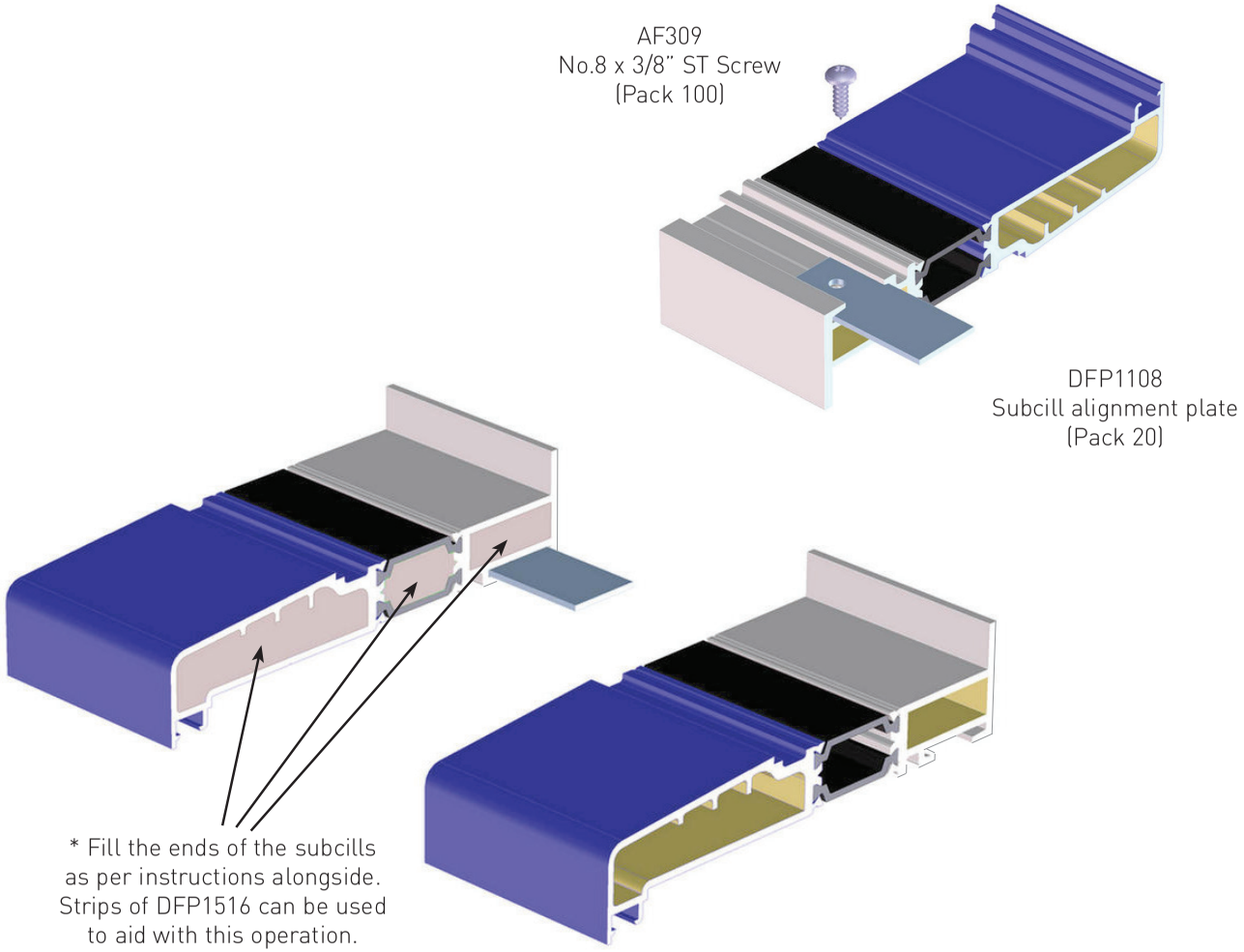
Profile DF703, DF704, DF705, DF713

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 subcill ends as shown.

First fit the subcill alignment plate with one No. 8 x 3/8" csk self tap screw, to the underside of one subcill only. This plate is used to align both subcills when they are positioned in-situ, and is only secured to one subcill to allow for thermal expansion.

* Now the ends of both subcills are to be fully filled with silicone sealant. Fill the voids in the ends of the subcills with foam backing strip, followed by silicone sealant and allow the sealant to cure. Just before the subcills are situated into the structure opening, trim back the sealant flush with the end of the subcills while maintaining a 10mm gap between both subcills. Silicone sealant can now be applied into the joint between both cills and tooled to give a smooth appearance.

The quality of the seal is of upmost 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

Subcill Expansion Joint

Profile UF518

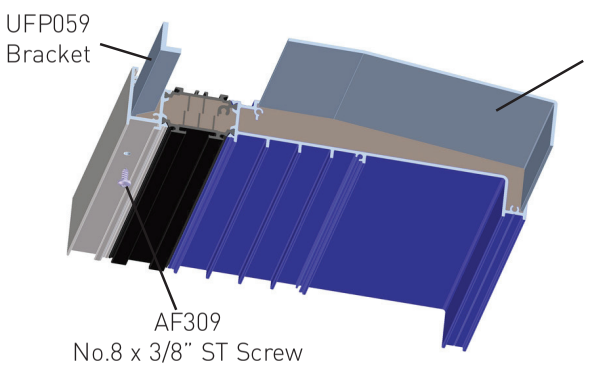
Aluminium cills expand with an increase in temperature, which must be taken care of by the installation techniques.

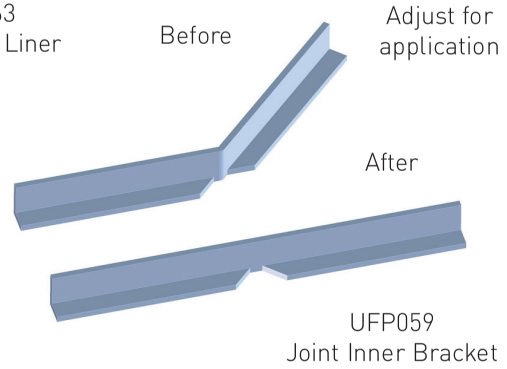
Wherever a cill exceeds 5m in length, an allowance must be made for thermal expansion. To achieve this, follow the details on this page, allowing an expansion gap of 10mm between subcill ends.

UFP059 Subcill 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.

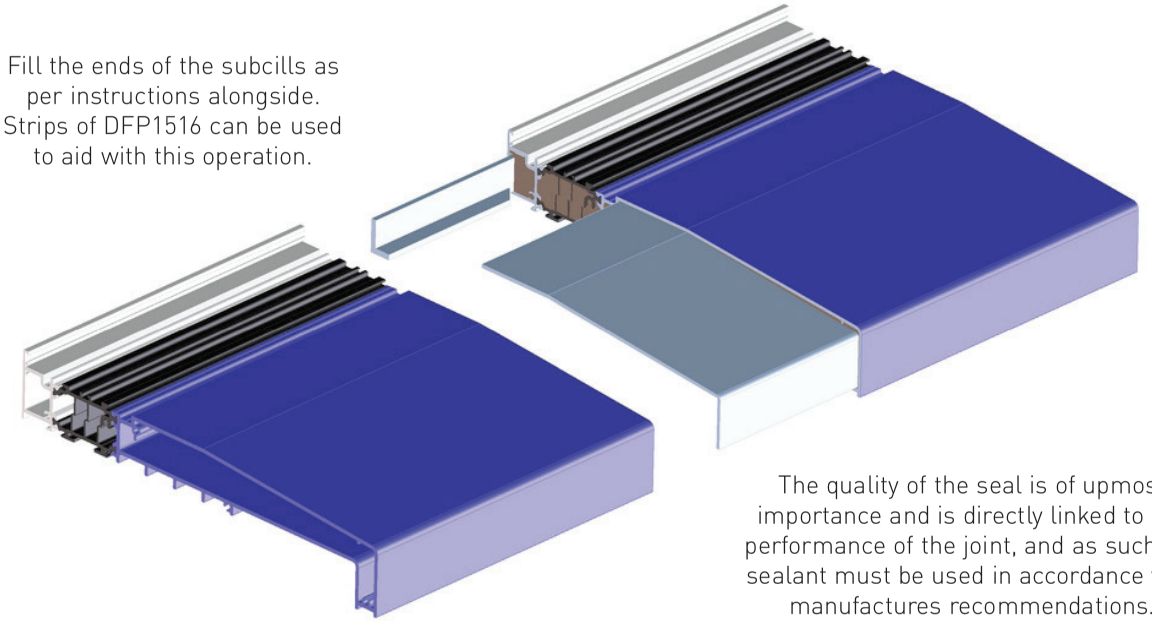
Insert the subcill joint bracket 100mm into the cill, spot through cill fixing hole with a 3.5 dia hole and secure with one No. 8 x 3/8" pan self tap screw. This bracket is used to align both subcills when they are positioned in-situ, and is only secured to one subcill to allow for thermal expansion.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

Just before the subcills 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 subcill. Now insert both subcils together and while maintaining a 10mm gap between both subcills, silicone seal the joint between both cills and tool to give a smooth appearance.





Fill the ends of the subcills as per instructions alongside. Strips of DFP1516 can be used to aid with this operation.



The quality of the seal is of upmost 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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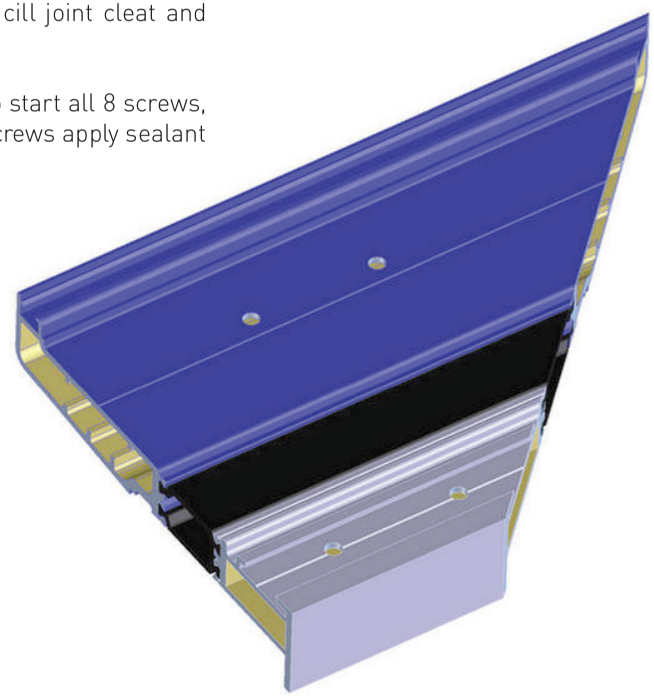
Assembling 90° Subcill Corner

Profile DF703, DF704, DF705

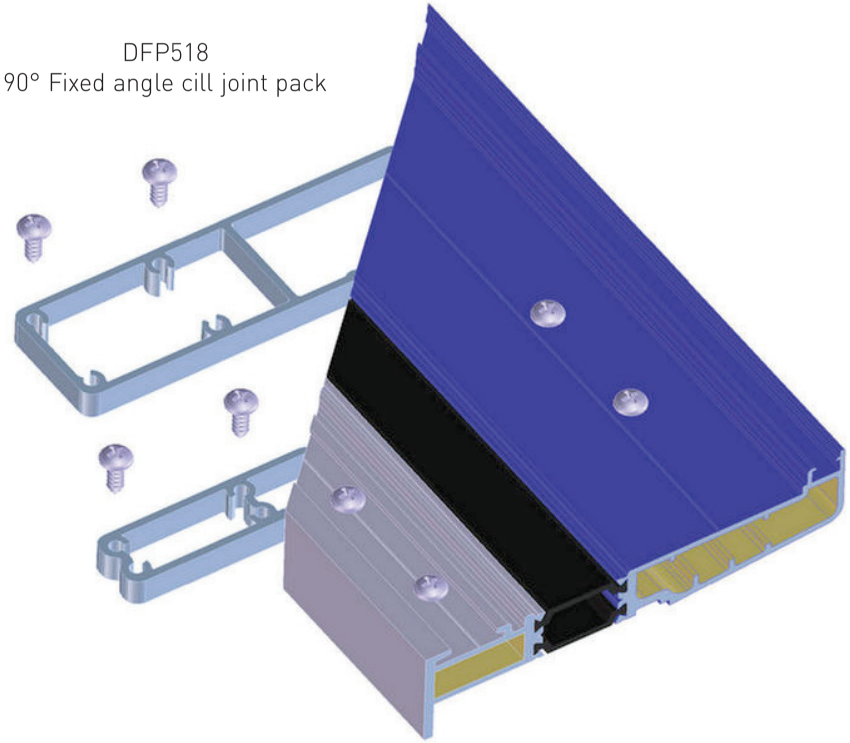
All joints must be sealed with silicone sealant. Sealing over the joint again after assembly in the area covered by the framework is recommended. Only clean sealant from surfaces that will be visible.

Seal along the mitred ends of the subcill prior to assembly, then assemble with 90° cill joint cleat and screws DFP518.

Best results for corner jointing is to start all 8 screws, then before final tightening of the screws apply sealant under the heads.



DFP518
90° Fixed angle cill joint pack



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INSTALLATION - SUB CILLS

90° Subcill Corner Joint

Profile UF518

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

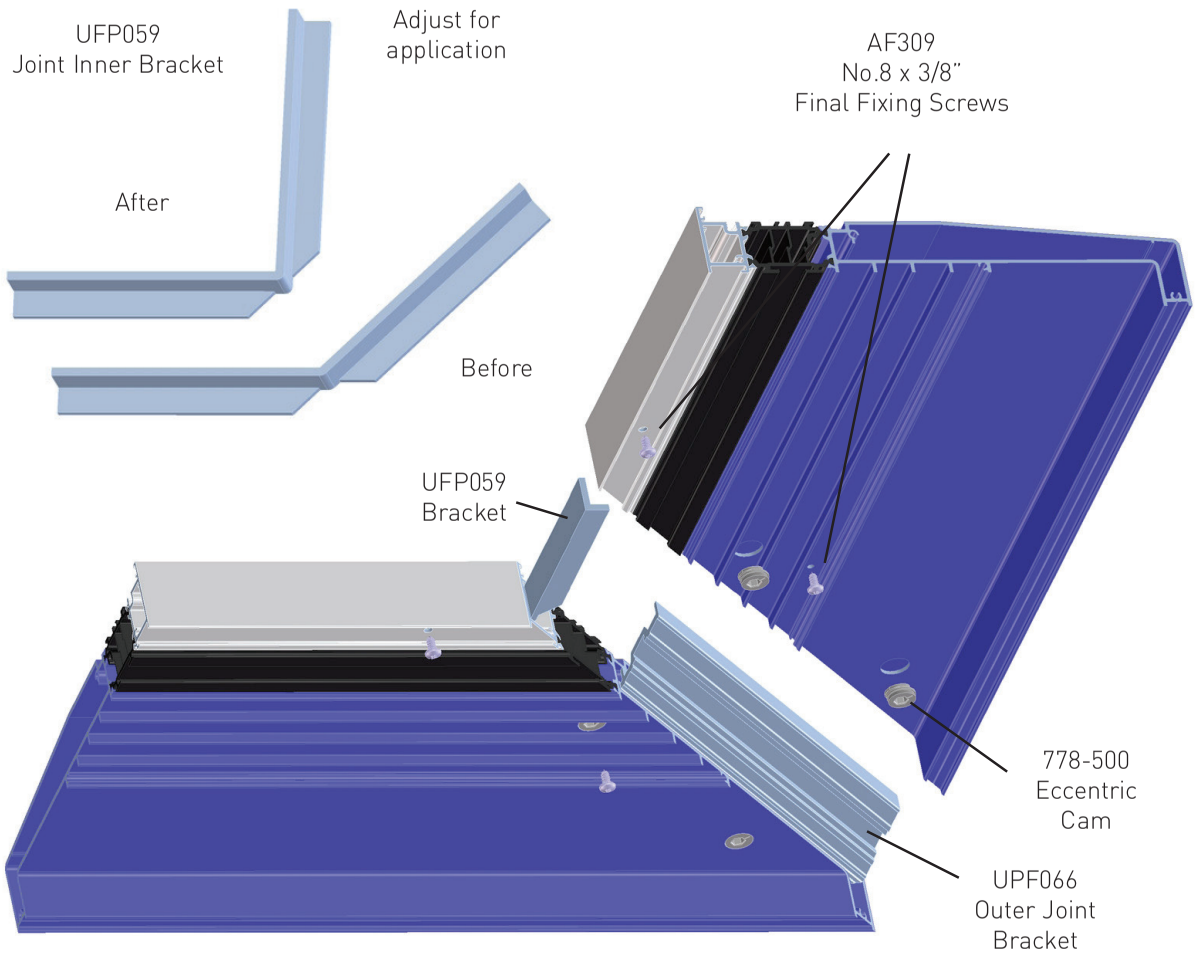
UFP059 Subcill joint inner bracket is used in a number of ways and is supplied preformed. In most instances this item will need to be tailored to exact requirements via means of a vice and appropriate tooling.

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

Seal along the mitred ends of the subcill 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. Now 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 the four final fixing holes (two into UFP066 and two into UFP059) with a 3.5 dia drill 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.



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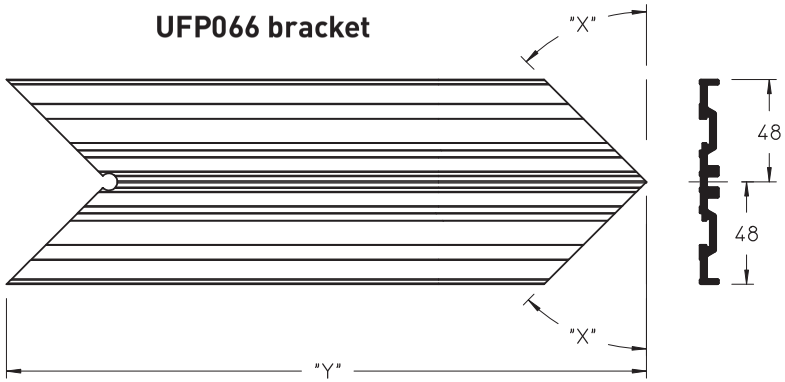
Subcill Corner Joint UFP066

Profile UF518

As stated on the previous page, UFP066 Subcill 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.

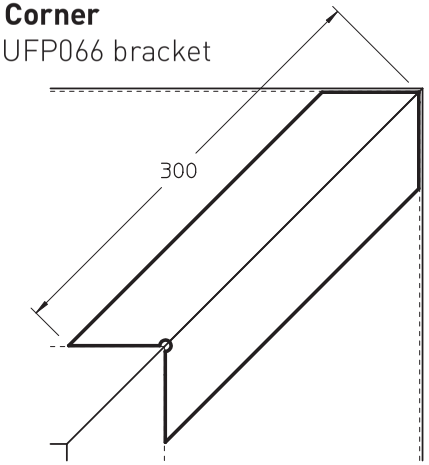
Using the chart below, determine the length and angle and machine appropriately. Note this bracket is always cut down from the front as per example 135° Corner shown.

UFP066 bracket



90° Corner

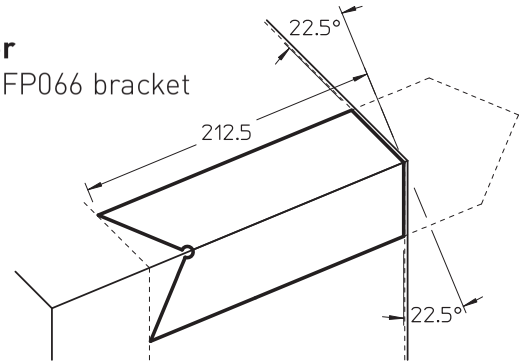
Std UFP066 bracket



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	285.5	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 °	116 °	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										

135° Corner

Cut down UFP066 bracket



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INSTALLATION - SUB CILLS

Fitting Of Subcill

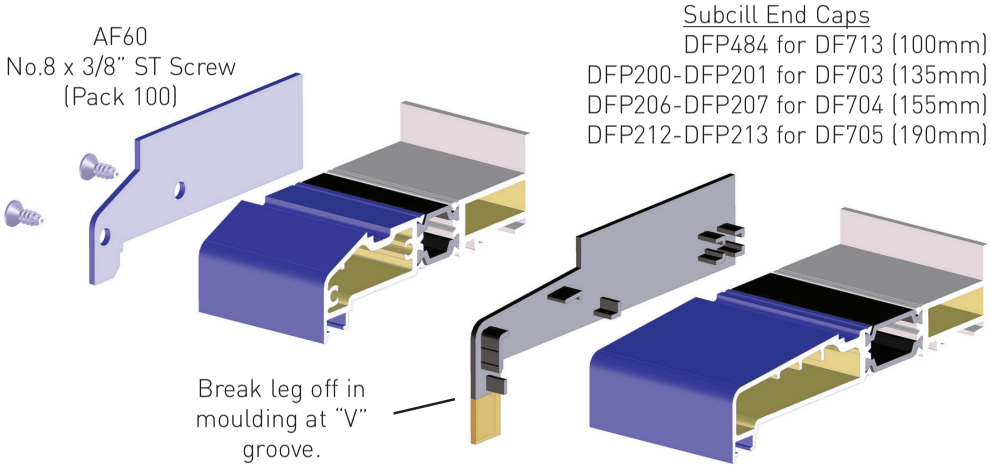
Profile DF703, DF704, DF705, DF713

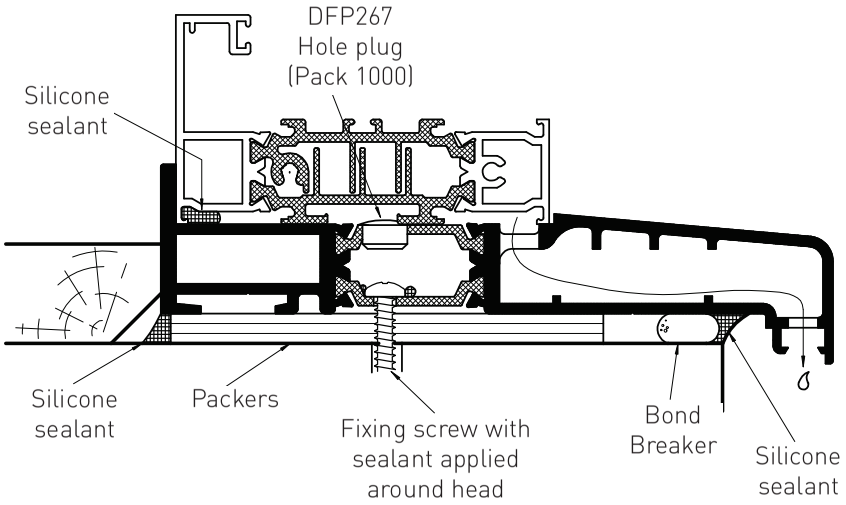
Drainage paths through the sub-cill can be seen on the illustration alongside, so care must be taken to ensure they are not obstructed and that screw fixings do not penetrate these areas.

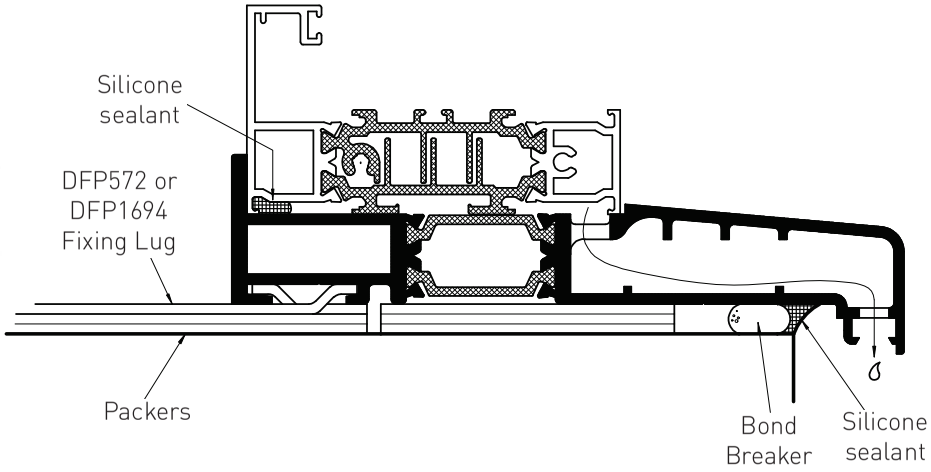
When positioning the frame to the subcill, silicone sealant must be gunned as shown to ensure that a watertight joint is created on the inside of the frame.

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

Subcill end caps must be fully sealed then pushed into position, or as for DF713, fully sealed and secured into position using No.8 x 3/8" csk screws.







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Fitting Of Subcill

Profile UF506

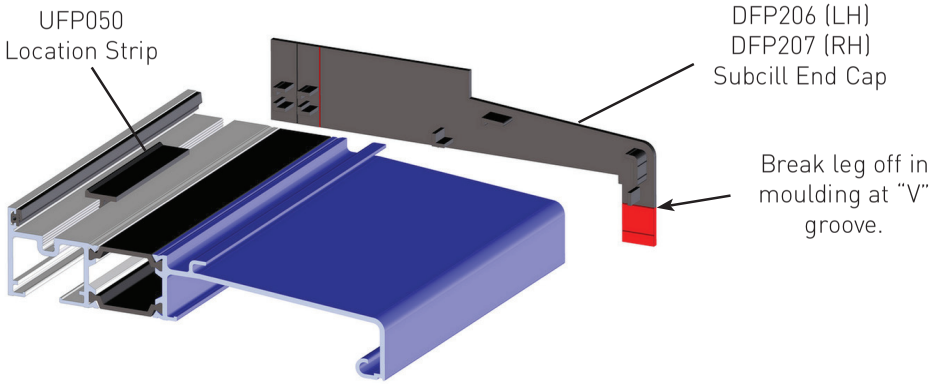
The drainage path through the sub-cill can be seen on the illustration alongside, so care must be taken to ensure that it is not obstructed.

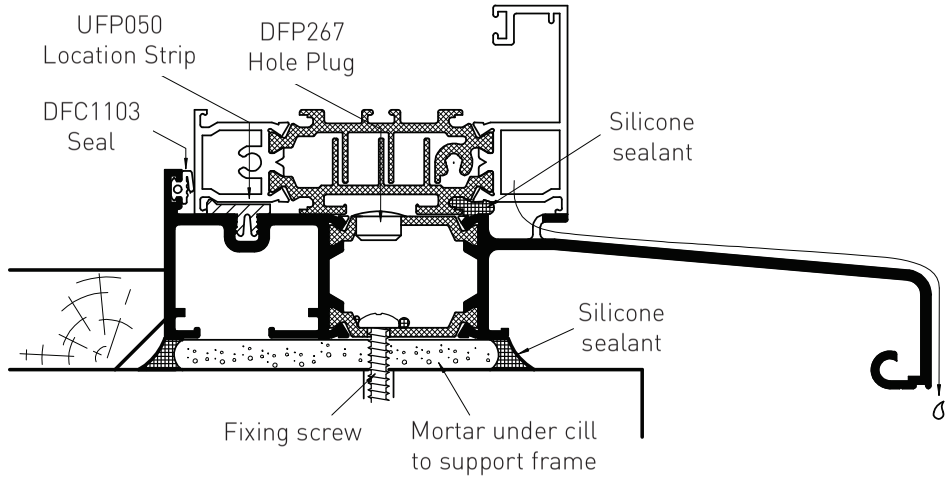
Seal under the head of any fixing screws to prevent water ingress and if used, seal DFP267 hole plugs into position.

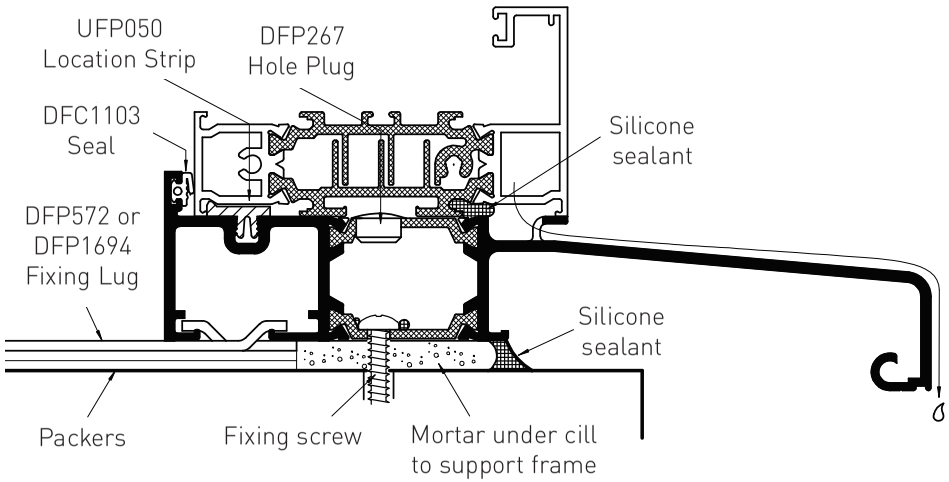
Subcill end caps must be fully sealed then pushed into position (see illustration below)

Before positioning the frame to the subcill, fit seal DFC1103 to the cill rebate. Cut seal away for any couplers and apply sealant around the coupler to subcill join.

Frames are held in position on the subcill by the use of location strips, these are positioned 150mm from the ends and then at 300mm centres. Apply a spot of silicone sealant into the subcill recess before clip fitting the location strip, checking orientation before clipping into position (see illustration).







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INSTALLATION - SUB CILLS

Fitting Of Subcill

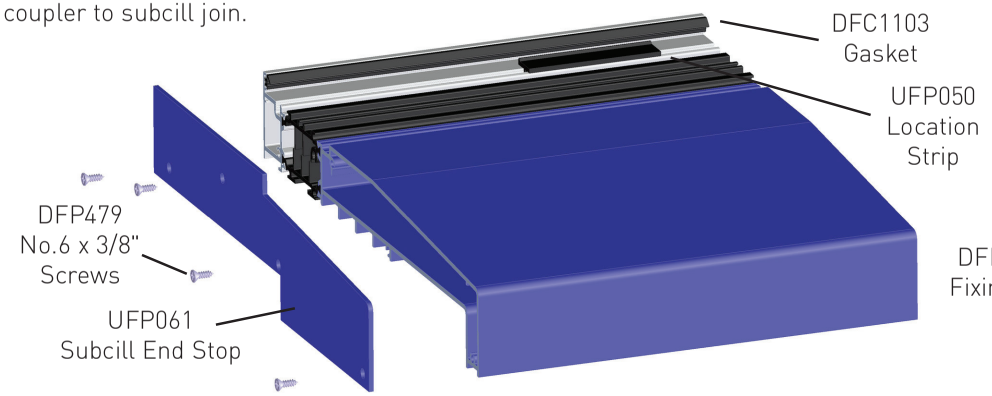
Profile UF518

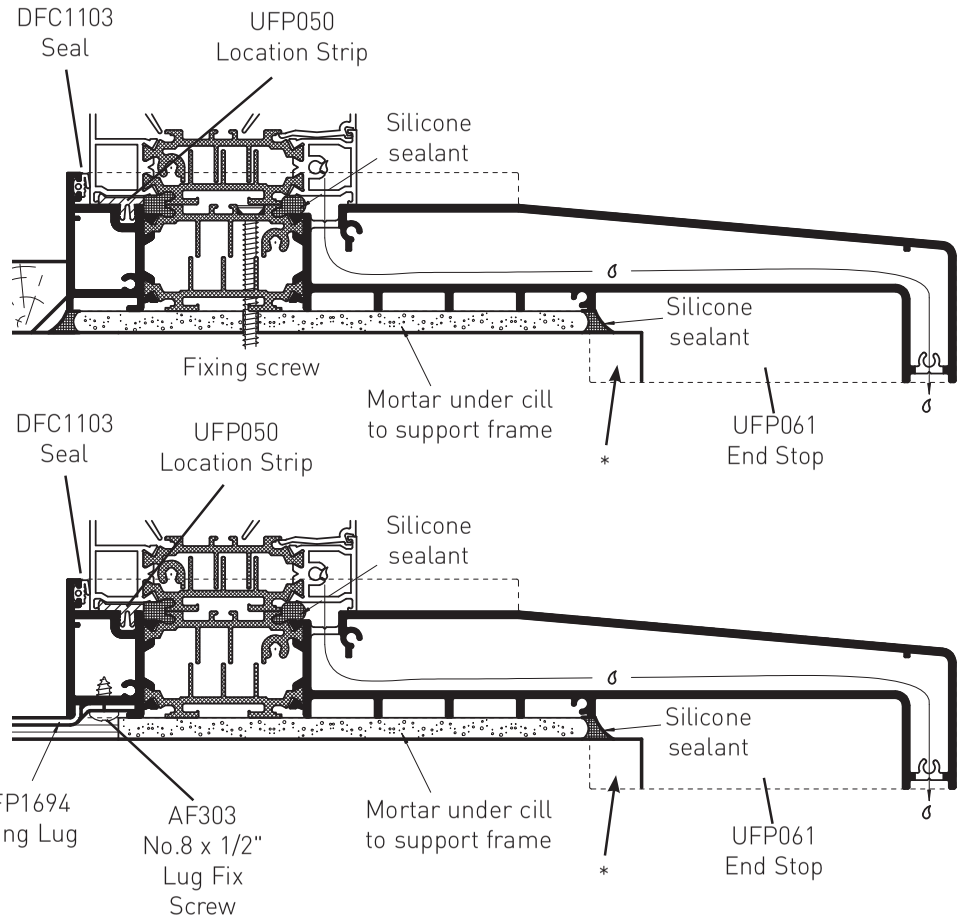
Subcill end stop UFP061 must be fully sealed and secured into position using No.6 x 3/8" csk self tap screws. Csk end stop fixing holes to 6.0 dia before fitting. * Note if necessary cut end cap around structure as required.

Care must be taken to ensure that drainage paths through the subcill, illustrated, are not obstructed and that screw fixings do not penetrate these areas. When positioning the frame to the subcill, silicone sealant must be gunned as to ensure that a watertight joint is created on the inside of the frame. Seal under the head of any fixing screws to prevent water ingress.

Outer frames are held in position on the subcill by use of frame location strips UFP050, positioned 150mm from the ends and then at 300mm centres. Apply a spot of sealant to maintain their position and check orientation of location strips before fitting.

Weathering is provided by fitting DFC1103, with a run of silicone sealant close to the drainage channel in the subcill. Before positioning the frame onto the subcill, fit the gasket to the cill rebate. Cut seal away for any couplers and apply sealant around coupler to subcill join.





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INSTALLATION - SUB CILLS

Fitting of Subcill with Applied Nose

Profile UF513

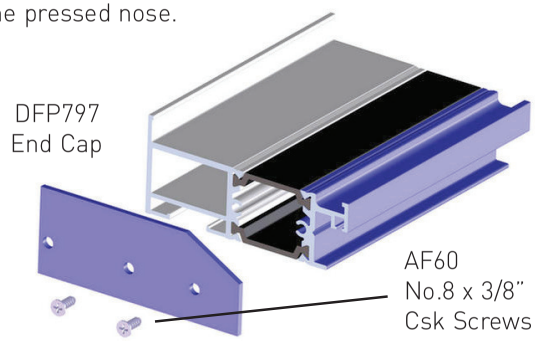
Drainage paths through the subcill are as shown right, care must be taken to ensure that they do not become blocked when fitting.

Secure the end caps as detailed below, then secure the subcill to the structure 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.

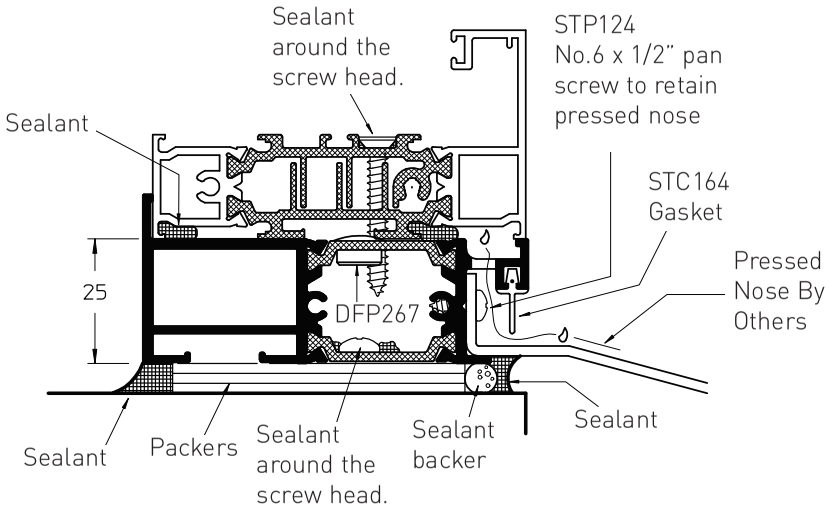
A bead of sealant should then be applied along the ends of the subcill at the point that it abuts the structure. Note that additional packing may be required if the nose pressing is particularly large to prevent sag.

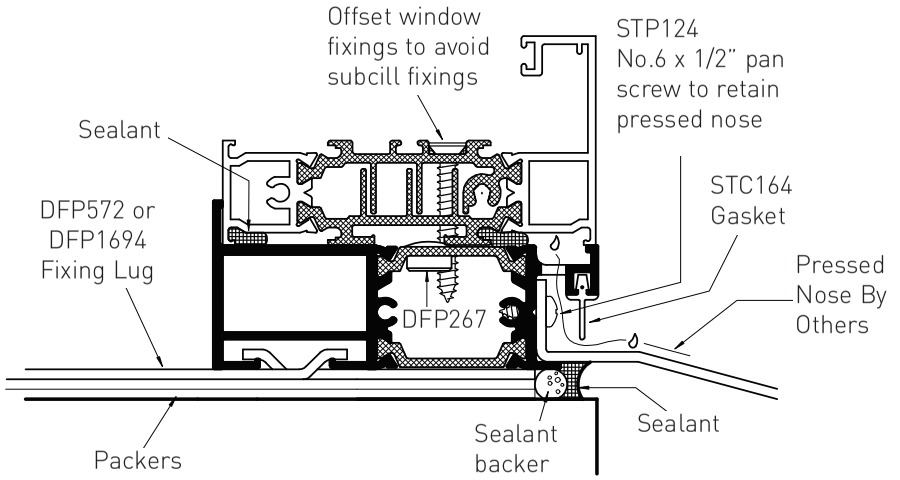
When fitting the frame to the subcill silicone sealant must be gunned as shown alongside to ensure that a watertight joint is created on the inside and outside under the pressed nose.



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

Care must be take 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.





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INSTALLATION - 25MM BOX COUPLER

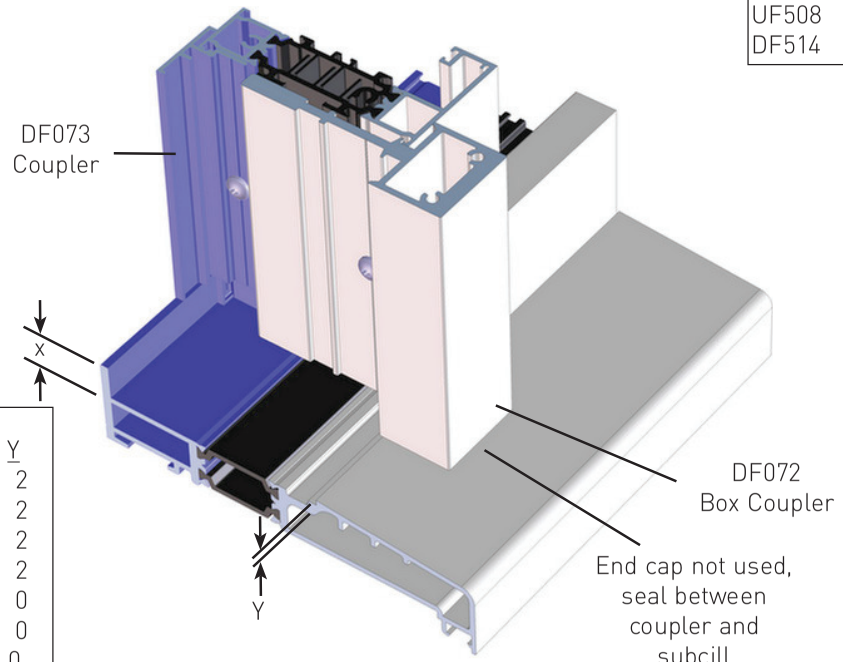
25mm Box Coupler Fitting Guide

Profile DF072 & DF073

Typical assembly details for the 25mm Box coupler can be found on this page. Note that this example shows the box on the outside of the window, make appropriate adjustments should the box be on the inside.

To reduce the amount of necessary end preparation, DF072 box coupler is positioned on top of the subcill, and the open end is sealed to the subcill.

DF073 coupler is positioned on the inside of the frame, and sits on top of the subcill upstand.



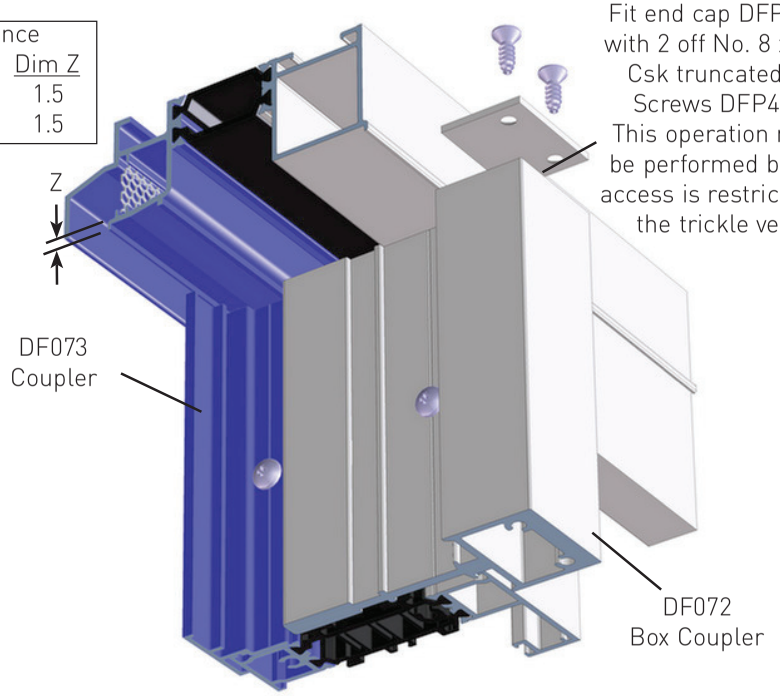
Up stand Allowance		
Profile	Dim X	Y
DF703	12	2
DF704	12	2
DF705	12	2
DF713	12	2
UF506	9	0
UF513	9	0
UF518	9	0

On this head example, DF072 box coupler would butt up to the pip on the trickle vent profile. With the open end closed off with DFP1542 end cap and secured with No. 8 x 1/2" Csk self tap screws.

DF073 coupler is also positioned so that it touches the pip.

Note on window runs of three or more, DF073 is fitted to the same outerframe (as shown) and the adjoining window is slotted in place. On the last join of a window run, DF073 is fitted as page 2-11 to allow the last window to be positioned in place.

Pip Allowance	
Profile	Dim Z
UF508	1.5
DF514	1.5



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INSTALLATION - FRAME

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.

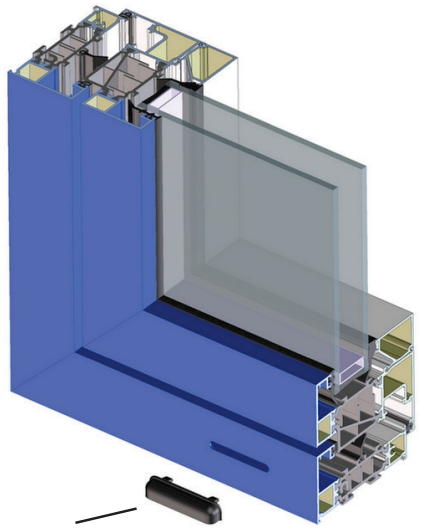
Drain Hole Cover (Open In / Glaze In Frame)

DFP327 drain hole covers are glued into position with:-

Henkel Terostat 934 (clear)
or
Henkel Terostat 939 (Grey, Black or White)

Clean off any excess sealant using :-

Terosan FL Cleaner



DFP327
Drain Hole Cover
(pack 50)

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INSTALLATION - FRAME

Fixing Of Frames - Screw Fixing

The first fixing must always occur within 150mm of the corner of the unit then at not 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 where there is a possibility of moisture penetration around the screw.

Fixing Of Frames - Lug Fixing

Lug fixings should be spaced at the same intervals as screw fixings. The fixing lugs are twist fitted (DFP572) or clip fitted (DFP1694) to the frame and then screw fixed to the structure.

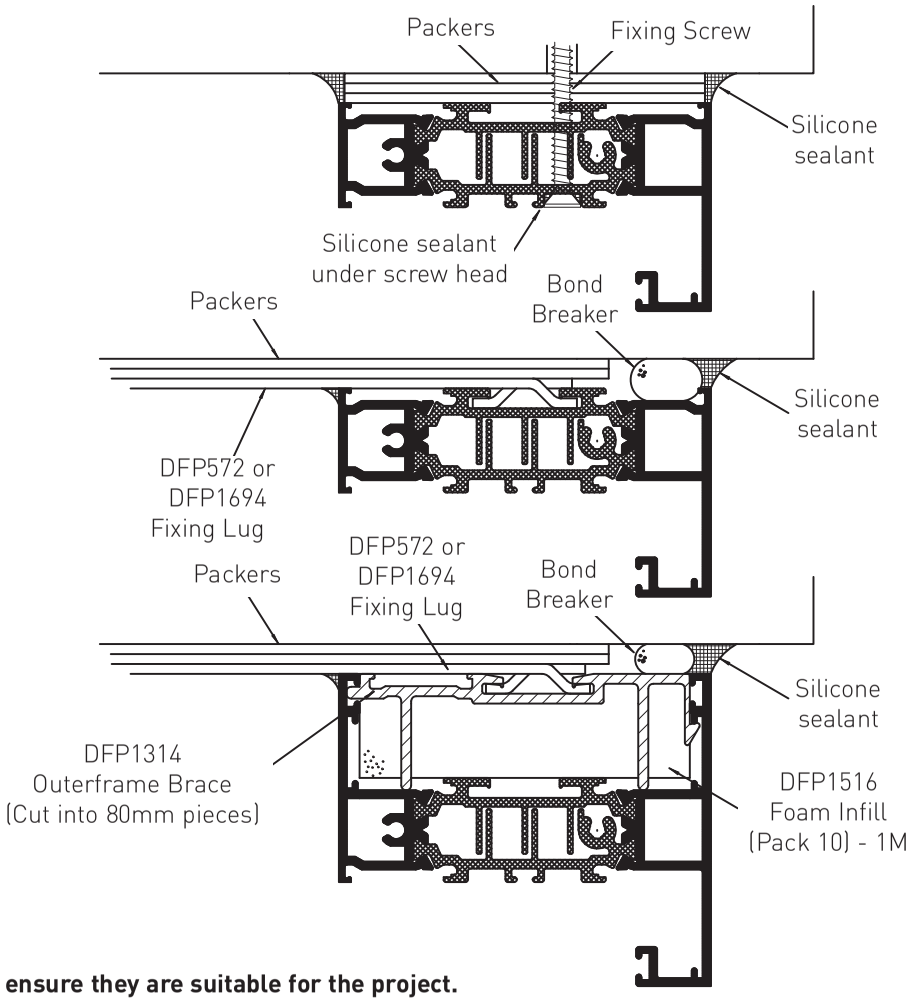
If extended frames DF1407, DF1411, DF1441, DF1442 are to be fitted with fixing lugs, first clip in the outerframe brace, then twist the fixing lug into the frame brace (DFP572), or attached fixing lug to frame brace then clip the frame brace onto the profile (DFP1694).

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

Fixing Of Frames - Foam Fixing

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

Care must be taken not to allow the foam to come in 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.



Note all fixing details should be calculated by a structural engineer to ensure they are suitable for the project.

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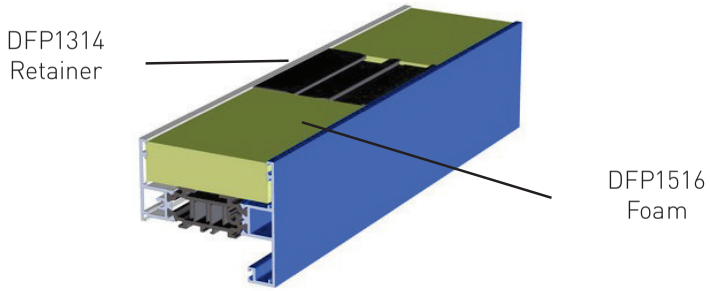
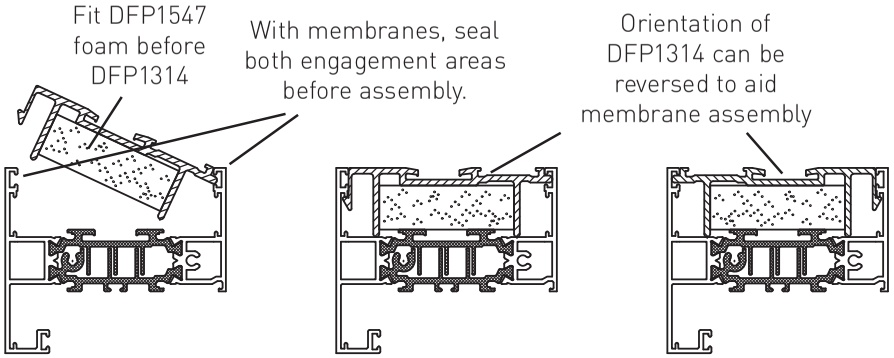
Deep Frames Foam Infill

Deep frames DF1407, DF1411, DF1441 and DF1442 with extended legs are to have foam fitted in the back of the profiles.

Normally 80mm pieces of DFP1314 frame brace are fitted for lug fixing and frame packing, with DFP1516 foam butt jointed both sides of the frame brace.



If membrane gaskets DFC1688, DFC1689 or DFC1690 are to be used with deep frame profiles, then DFP1314 frame brace would have to run the full length of the profile. This will involve the use of DFP1547 foam being used instead of DFP1516.



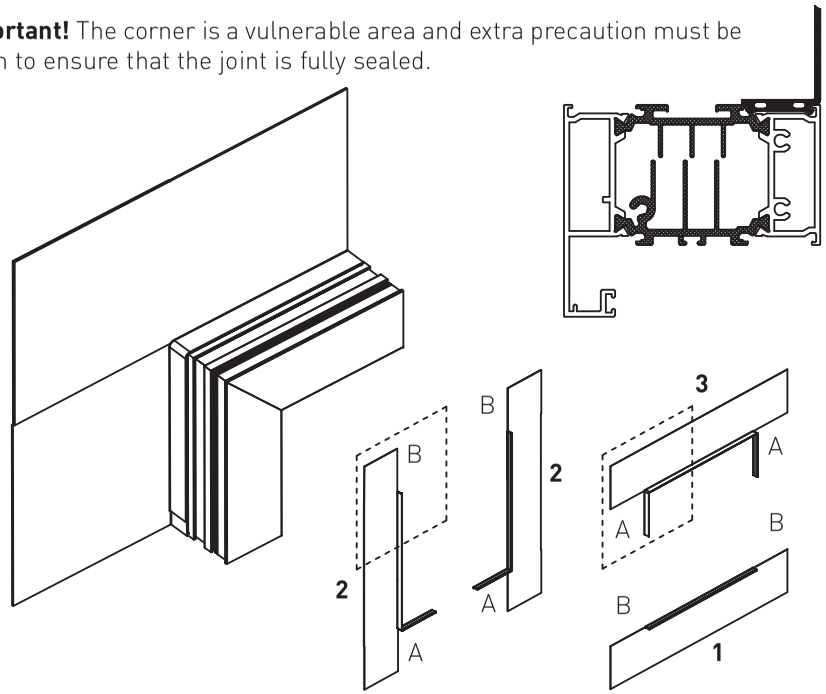
Frame Membrane

Varying options are available when using membrane gaskets with DF75 Si windows, the details below is one example for flush membrane window assembly.

Prepare the membrane gaskets by cutting away the engagement area and bending over (A) or cutting away the engagement area totally (B).

Using DFP1691 membrane adhesive, fully seal the bead groove before membrane assembly, then starting from the bottom, follow assembly sequence shown, sealing and overlapping the corners as you go.

Important! The corner is a vulnerable area and extra precaution must be taken to ensure that the joint is fully sealed.



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FINISHING OFF

Sealing

The recommended sealant for the exterior is Low Modulous 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.

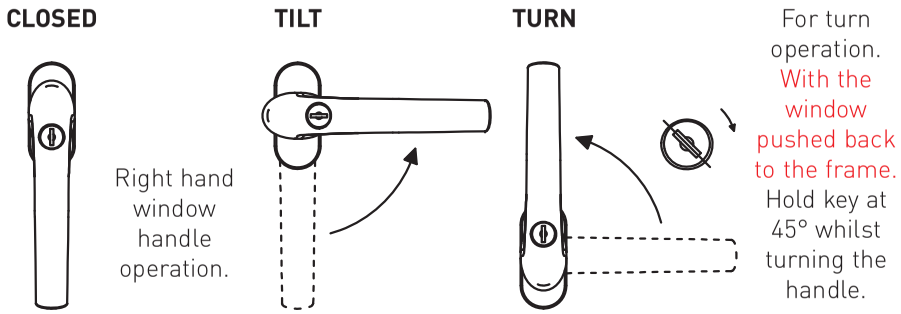
Maintenance

Periodic maintenance must be carried out on the locking gear as specified by Roto. To prevent damage to the rollers or track, periodic checks should be carried out to ensure that tracks and guides are free from dirt, grit or debris. Note that in marine & corrosive environments, the maintenance procedures must be repeated more frequently (ideally twice the frequency as specified).

Operating And Safety Instructions

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

- The Window must be closed before switching to the open (turn) mode to avoid mishandling.
- The window sash may not be burdened with additional weight.
- Do not allow the sash to hit or press up against the window reveal.
- 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 turning, for example with a child-safety lock (inhibits turn mode, permits tilt mode) or a key-lockable handle.
- Do not leave sashes open in the turn mode during strong winds.
- Caution! A slamming sash can lead to injuries while closing. Do not grasp the window between the sash and frame.



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