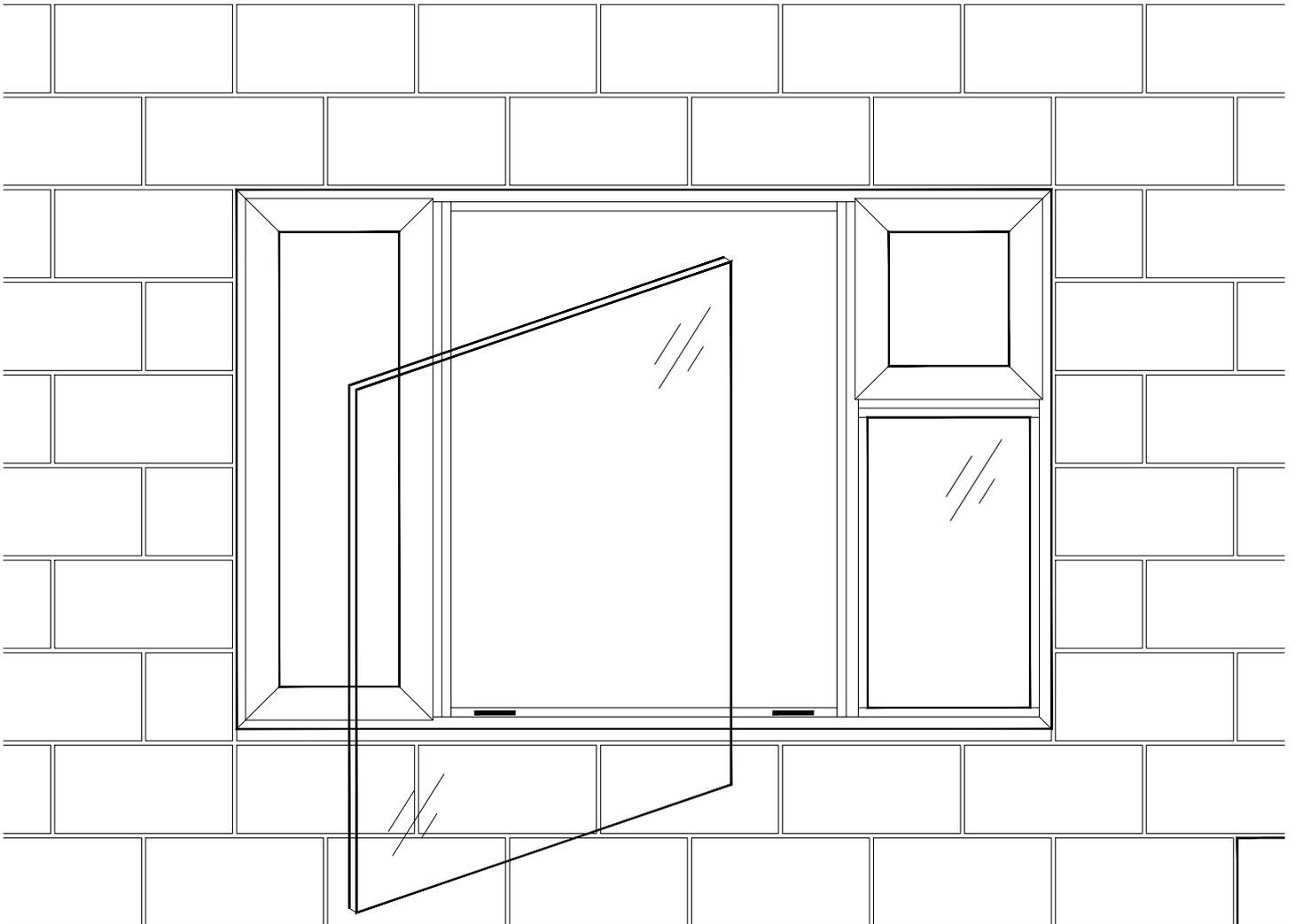


# APA ST - WINDOW SUITE INSTALLATION SITE MANUAL





# ST WINDOW SUITE INSTALLATION SITE MANUAL

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# Drawing Register Issue No.1



ISSUE	0	0	1			Description
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REVISION						
7S A 00	0	0				FIRST ISSUE
7S A 01	0	0				FIRST ISSUE
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7S A 04	0	0				FIRST ISSUE
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7S B 02	0	0				FIRST ISSUE
7S B 03	0	0	1			UPLOADED
7S B 04	0	0	1			UPLOADED
7S B 05	0	0				FIRST ISSUE
7S C 01	0	0				FIRST ISSUE
7S C 02	0	0				FIRST ISSUE
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7S D 01	0	0				FIRST ISSUE
7S D 02	0	0				FIRST ISSUE
7S D 03	0	0				FIRST ISSUE
7S E 01	0	0				FIRST ISSUE
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7S E 03	0	0				FIRST ISSUE
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# FITTING INSTRUCTIONS

## WINDOWS & DOORS

Care should be used when placing or storing frames on site. Do not lean products on concrete or other sharp objects onsite – this may cause scratches or damage to any part work or the aluminium profiles.

Ensure protective tape is kept on until frames are fitted, or until site is completed.

Note tape should not be exposed to UV light for more the 6 months.

Care should be taken to ensure all frames are fitted square.

When the products are fitted, please note that a minor adjustment is built into the hinges and lock/espags, and can be used to increase or decrease sealing compression on gaskets.

Do not prop open sashes.

Where necessary cover and protect window cill & door thresholds.

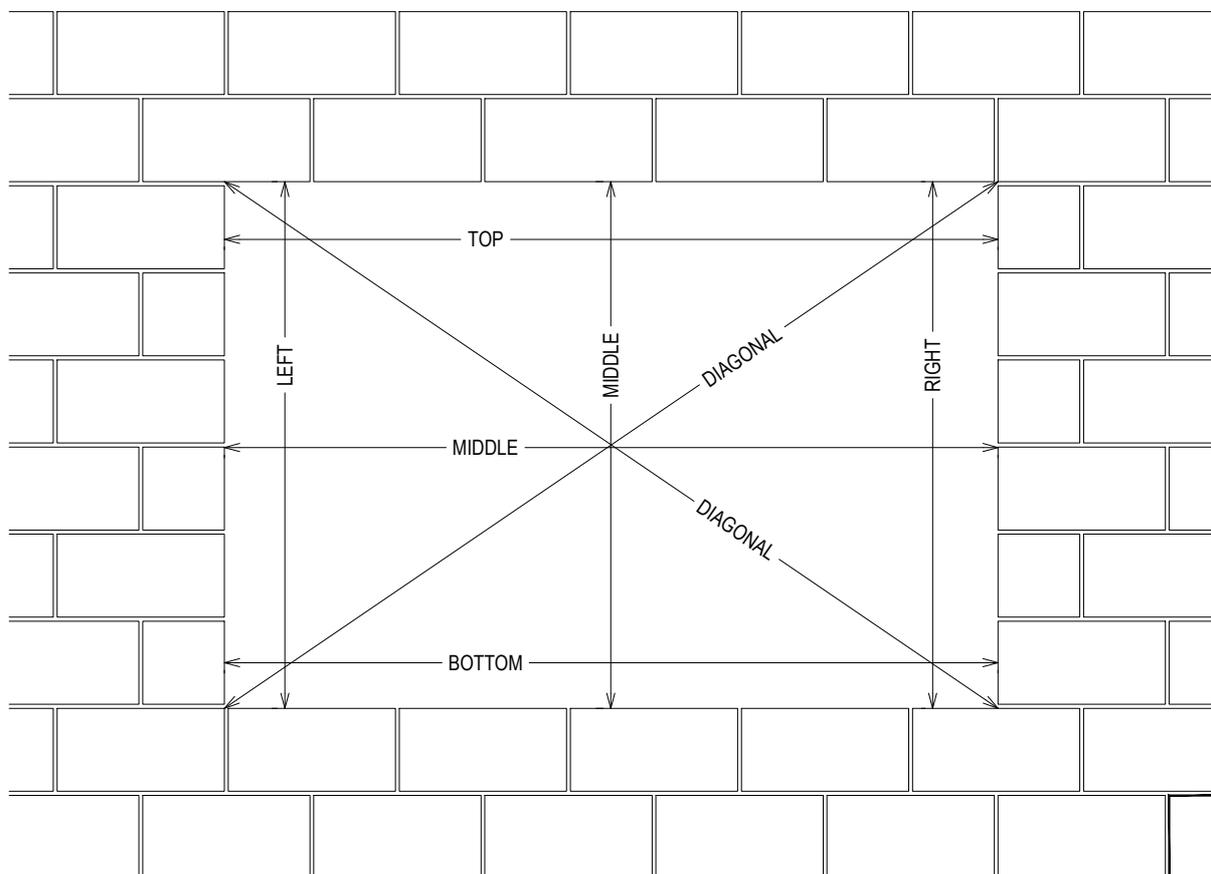
Avoid blocking or obstructing drainage slots on product

## SURVEY

### THE APERTURE.

Check 3 points for height and width, the smallest will determine the ope size.

Check for square by measuring the diagonals.



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## SURVEY

### THE FRAME.

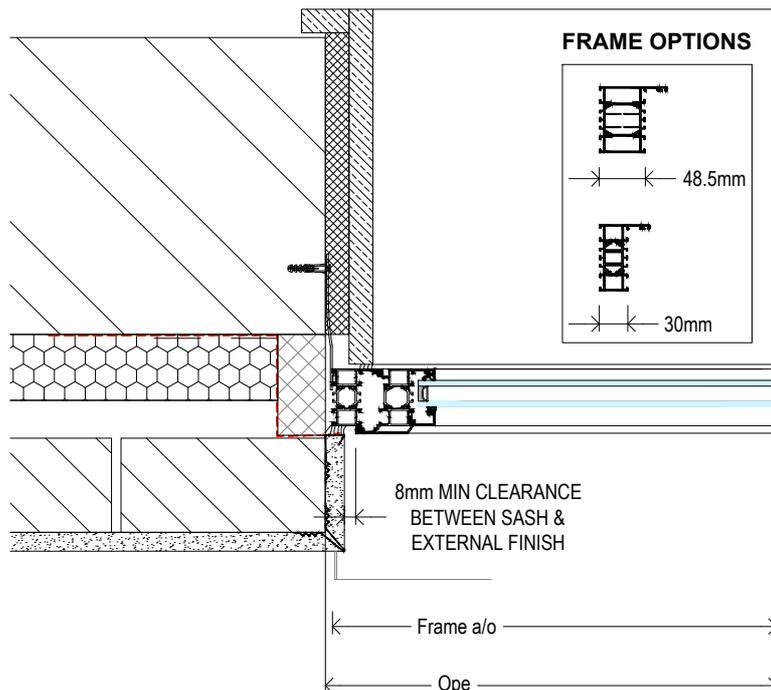
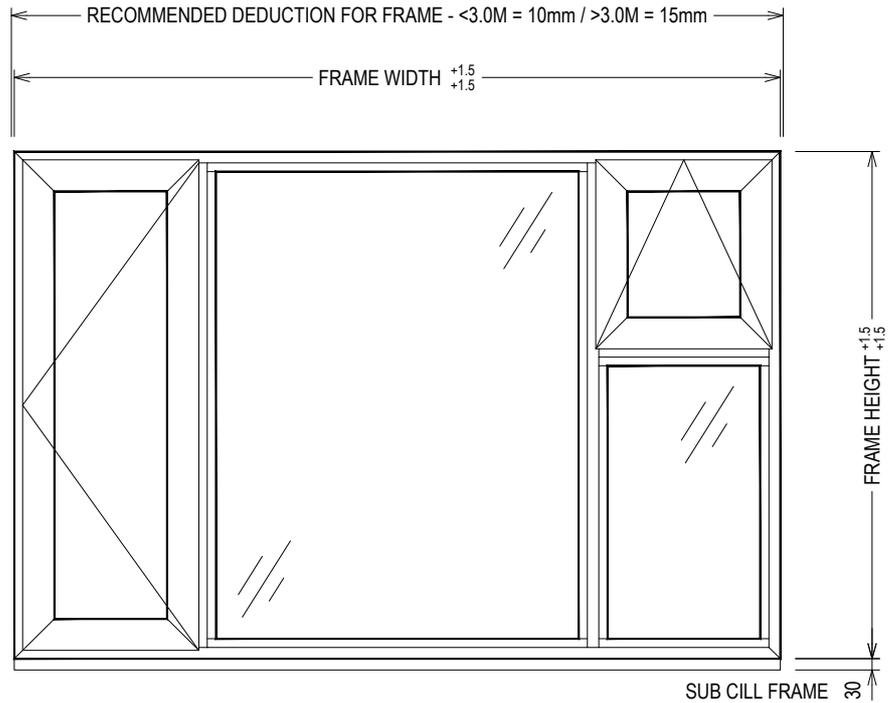
The over all frame width & height .

Deduct 10mm for ope < 3.0m

Deduct 15mm for ope > 3.0m

When using the APA subsill profile for metal sills deduct an additional 30mm from the height.

Consider external finish build up. a minimum of 8mm clearance between opening vents and external finish is required. use large other frame where applicable



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## FIXING / INSTALLATION

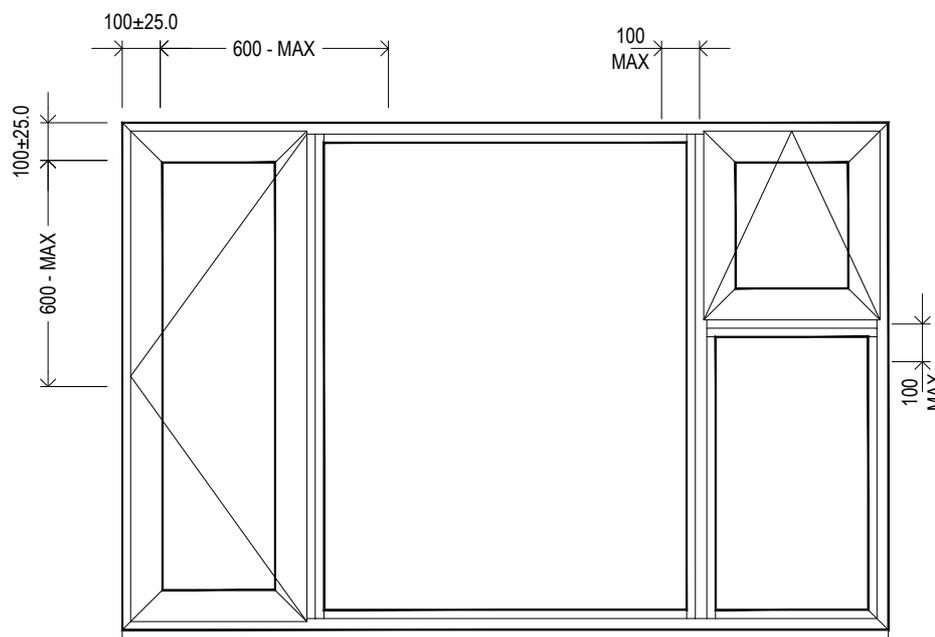
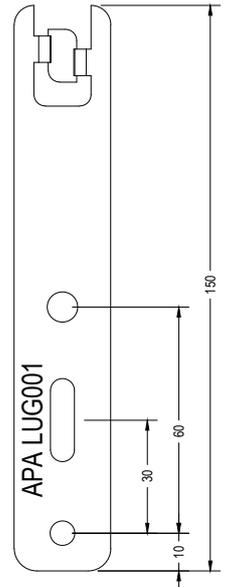
Prior to the commencement of work the sizes, type and condition of all windows should be checked both against the survey sizes and types and against the actual aperture sizes.

### FIXING.

General rules regarding positioning of fixing points.

- Minimum 2 fixing points per jamb.
- Max distance from the corner 250mm
- Minimum distance from the corner 100mm
- Maximum distance between fixing points 600mm
- Maximum distance from mullion or transom 100mm

Galvanized steel  
lug. 2.5mm tick.  
Twist fit for speed  
of installation.



## POSITION.

Frames should be installed plumb and square. Ensure that the frame has not endured any distortions, twist or racking in the process.

Position frame back into the reveal as much as possible, dimension should be agreed prior to installation.

Frame should bridge the EPDM all round.

Where packers are used they should be compatible with sealants and resistant to compression, rot & corrosion.

When direct fixing over tightening can lead to distortion of the frame, and damage to joints. avoid over tightening and observe the minimum distance for fixing points relevant to the mullion / transom & corner joints.

Fixing points to the structure should be of adequate size and strength to deal with any imposed loads (wind loads, impact & operating)

All fixings that are outside the vapour barrier are to be stainless steel.

Always refer to approved project details for position of frame and fixing arrangements.

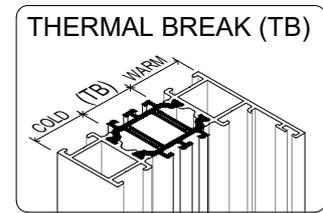
DATE: 09/03/2015	REVISION: 0	TITLE: INSTALLATION	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS	<b>A4</b>	7S.A.03
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# COLD BRIDGING

A cold bridge is a weak spot in the insulation. Cold bridges (also known as thermal bridges) occur whenever there is a break in the continuity, or a penetration of, the insulation.

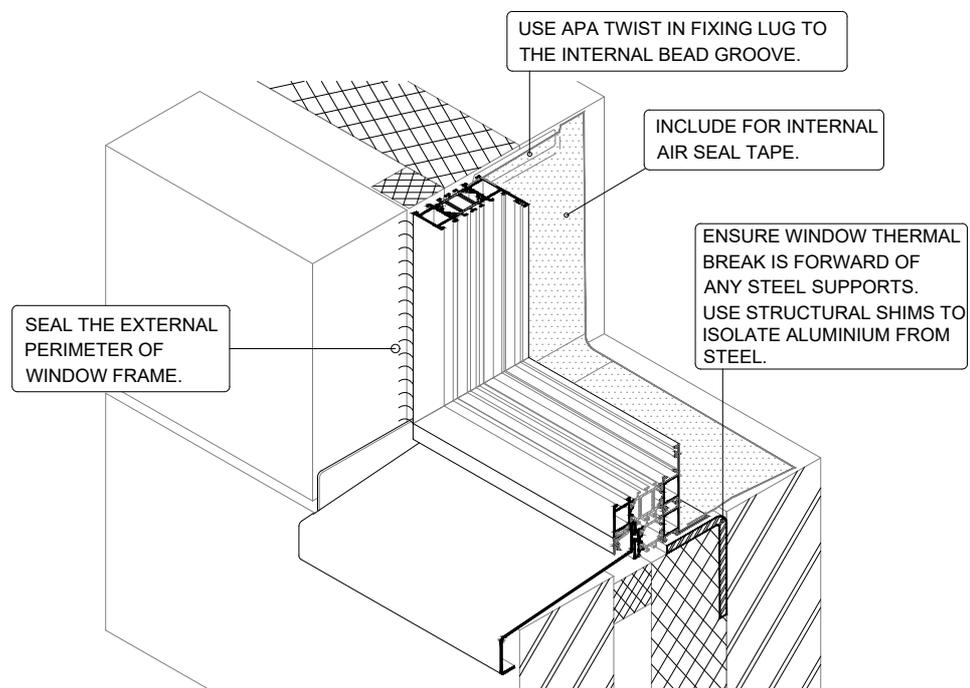
The most effective way of countering cold bridges is to eliminate them at design stage.

Refer to your shop drawings for details.



Some common causes for cold bridges are

- Metal straps crossing the window thermal break.
- Window frame sitting directly on concrete cill.
- Steel support for window frame bridging the thermal break in the window frame.
- Aluminium cill fixed directly under window frame bridging the window thermal break.
- Open voids around window frames not insulated.
- Air leakage around window frames.



# SEALING

The purpose of perimeter sealants is to repel water and prevent air leakage in the face of differential movement between the aperture and the window. Suitable sealants exhibit and retain flexibility. Sealants should be compatible with the frame, substrate and other materials with which it may come into contact. Perimeter joints should be sealed on both the outside and the inside, with a sealant appropriate to:

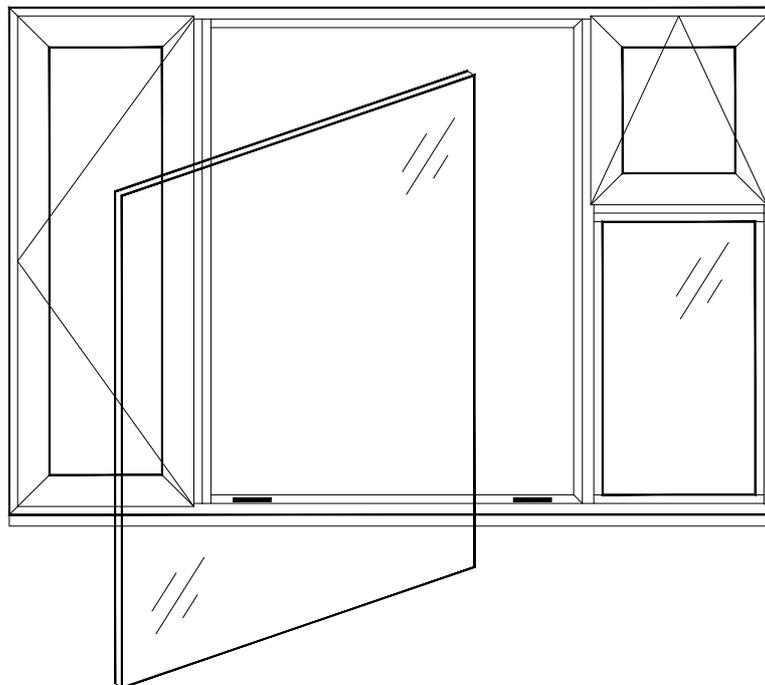
- The frame surface
- The substrate material
- Joint size and configuration
- Anticipated joint movement
- Anticipated exposure to weather.

In situations where sealants rely upon atmospheric moisture to initiate curing, deep filling i.e. over 6mm, should be avoided. The sealant should be applied against a firm backing e.g. foamed per rod, so that it is forced against the sides of the joint during application. To avoid failure in service, the sealant should not adhere to the backing because this would restrict the lateral movement of the joint. This can be achieved through the use of a closed-cell foam strip such as a polyethylene foam tube.

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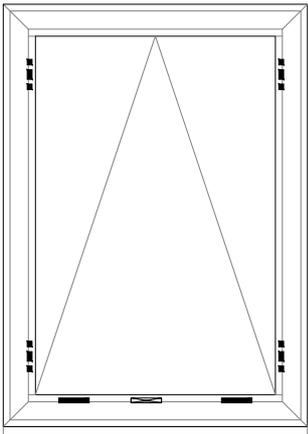
## GLASS INSTALLATION

- All glazing should conform to the recommendations given in the relevant part of bs 6262 and in bs 8000-7. in addition, any glass or insulating glass unit manufacturer's instructions should be followed.
- All insulating glass units should be examined for damage prior to installation and defective units should not be used.
- Insulating glass units incorporating safety glass should be oriented with the safety glass on the appropriate side.
- It is a legal requirement that the marking on the safety glass remains visible after installation.
- Insulating glass units with low emissivity coatings should be oriented in accordance with the manufacturer's instructions. failure to do so can render the coating less effective.
- Use PVC packers where necessary (see pg: 7S.B.02)
- When glazing doors & side hung vents, glass must be toe and heeled correctly
- Glazing bead should be taken off carefully when fitting glass unit, and when refitting,
- Ensure the bead is fitted exactly as before to ensure tight joints, (see pg: 7S.B.03 & 04)
- When installing beads externally use clear silicone on the bead butt joint prior to final fitting of the bead.
- Care should be taken especially in warm weather when refitting glazing bead. take care not to damage the paint on adjoining bead.

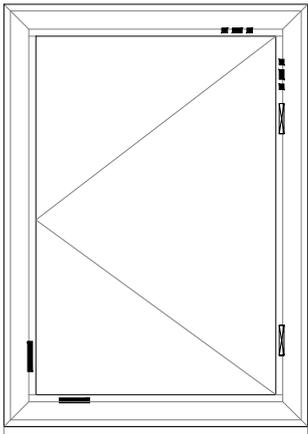


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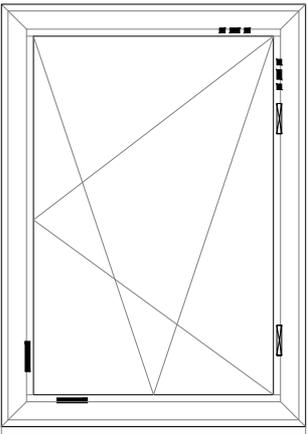
# GLAZING BLOCKS



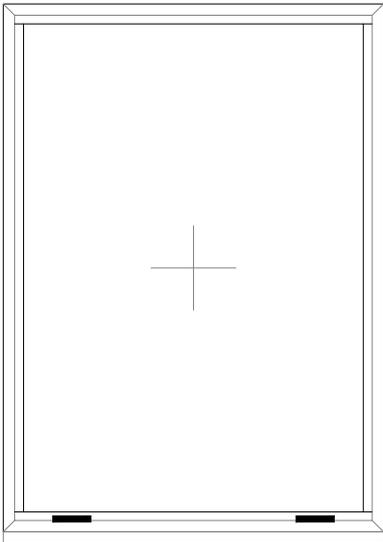
TOP HUNG OUTWARD OPENING VENT



SIDE HUNG OUTWARD OPENING VENT



TILT AND TURN OPENING VENT



FIXED GLAZING

**Note:**

- The optimal glazing cover is 15mm ±2mm
- Glazing blocks should be a minimum of 100mm from the corner of the unit.
- Glazing blocks should be supporting each pane of glass from a DGU or TGU.
- Glazing blocks should not obstruct the bead track.

8mm Packer

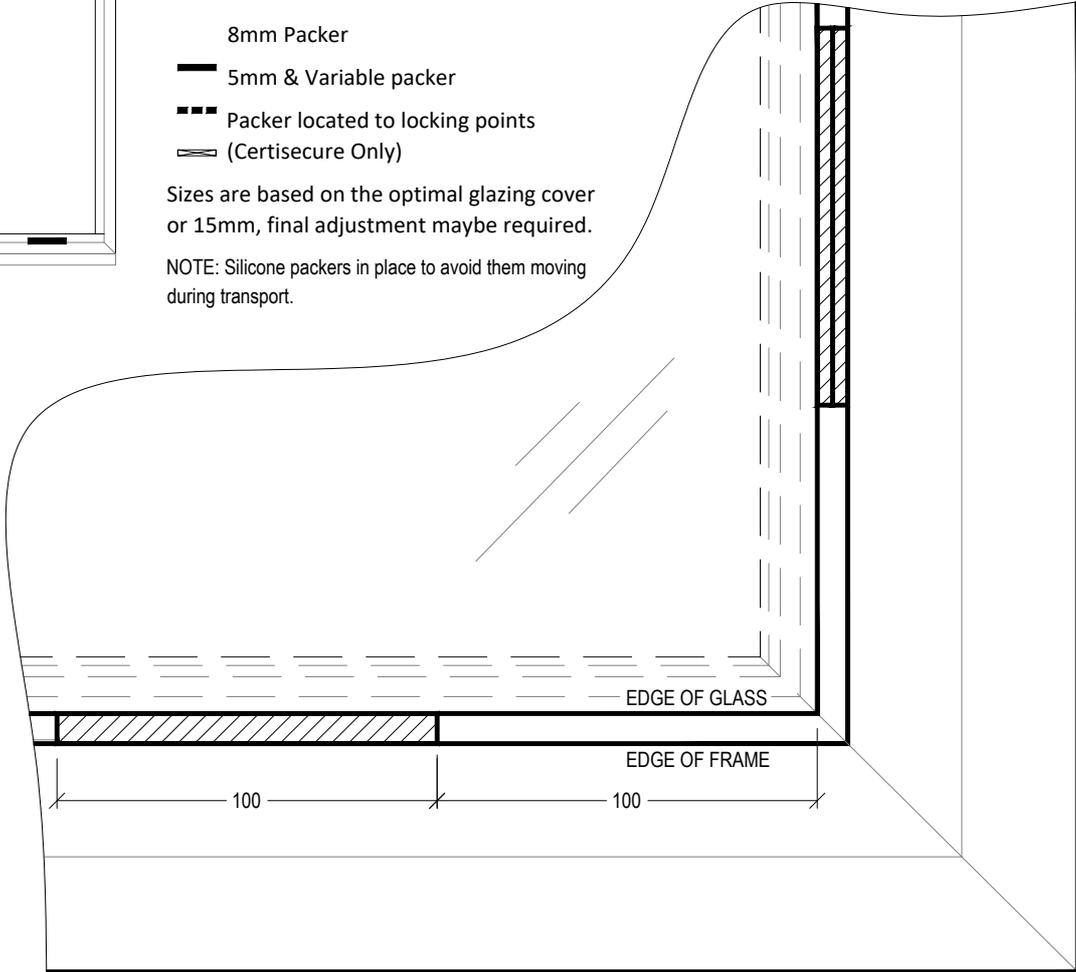
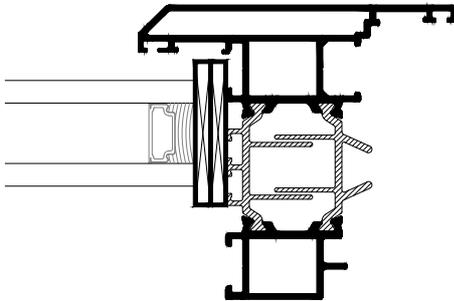
█ 5mm & Variable packer

▬ Packer located to locking points

▬ (Certisecure Only)

Sizes are based on the optimal glazing cover or 15mm, final adjustment maybe required.

NOTE: Silicone packers in place to avoid them moving during transport.



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# INTERNAL GLAZING - SBD

fig.01 - Push fit glazing gasket (70APWG008) into the external gasket channel. cut gasket and corners and glue over lap joints.

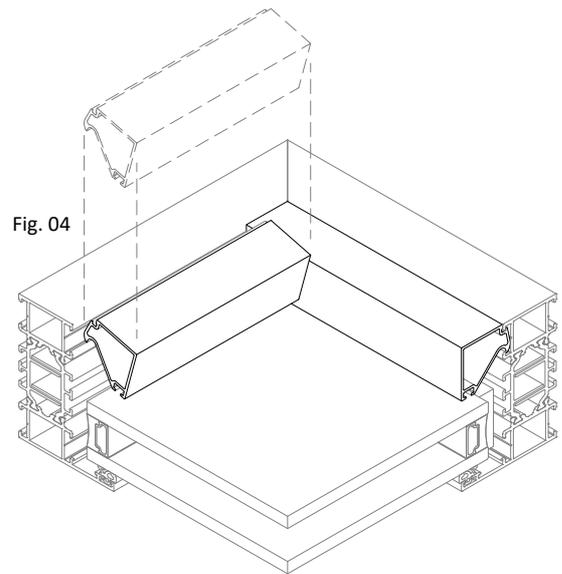
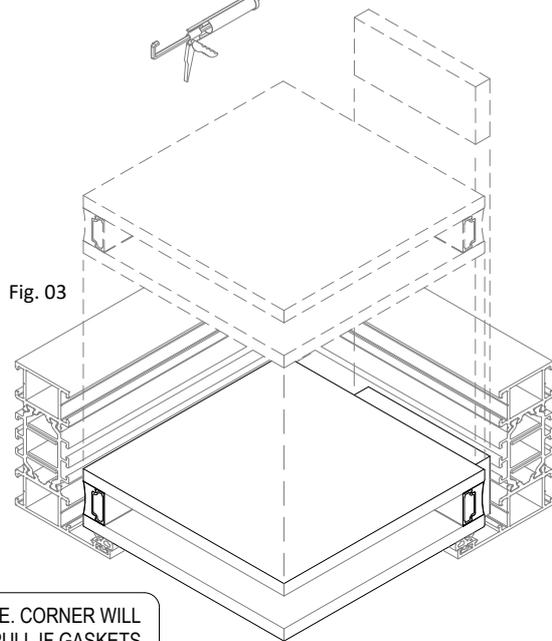
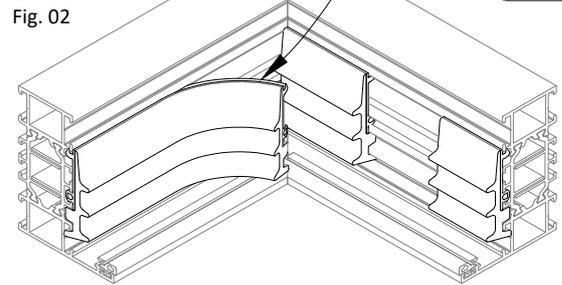
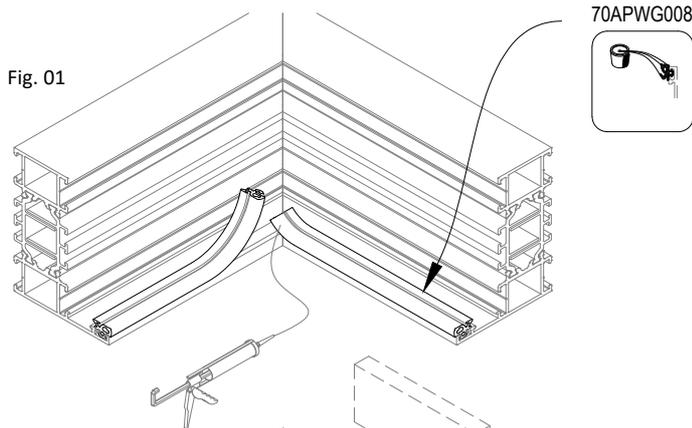
fig.02 - ST70 HI & ST80 only. Push fit the insulation gasket into the polyamide. Cut at corners and leave 100mm gaps for glazing packers.

fig.03 - Drop glazing unit into position and pack unit as per page 7S.D.02.

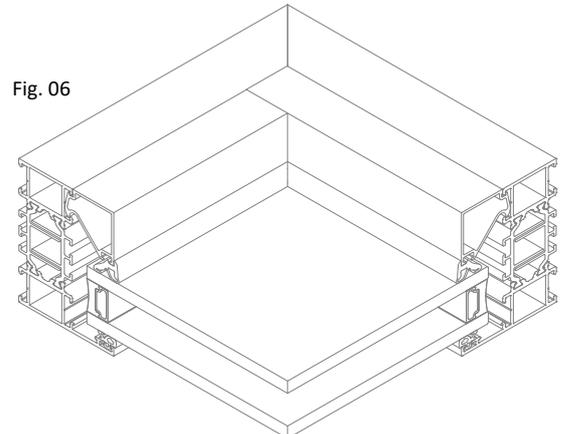
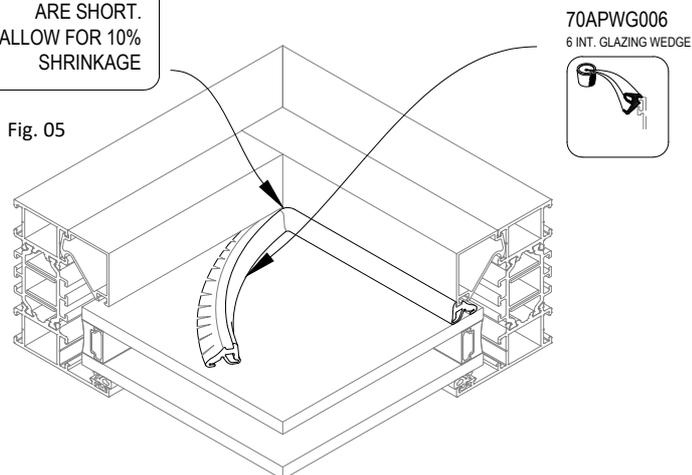
fig.04 - Install glazing beads. Horizontal beads first. Beads to be notched 25mm to suit drainage, see 8F.04.D.03

fig.05 - Push fit glazing wedge (67APWG006) between glass & bead. Apply as one continuous strip with one joint located at the top corner.

**Note: allow additional 10% on gaskets for shrinkage.**



NOTE. CORNER WILL PULL IF GASKETS ARE SHORT. ALLOW FOR 10% SHRINKAGE



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# EXTERNAL GLAZING - NON SBD

fig.01 - *ST70 HI & ST80 only.* Push fit the insulation gasket into the polyamide. Cut at corners and leave 100mm gaps for glazing packers.

fig.02 - Drop glazing unit into position and pack unit as per page 7S.D.02.

fig.03 - push fit glazing gasket (70APWG008) into the gasket channel on the glazing bead. Horizontal beads first. Beads to be notched 25mm to suit drainage, see 8F.04.D.03

fig.04 - (If glazing on bench, flip frame over in such away that the beads and glass do not fall out). Push fit glazing wedge (67APWG006) between glass & frame. Apply as one continuous strip with one joint located at the top corner.

Note: allow additional 10% on gaskets for shrinkage.

Fig. 01

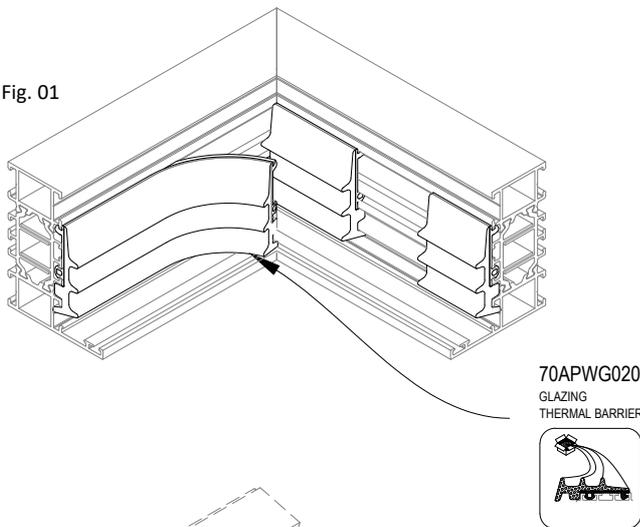
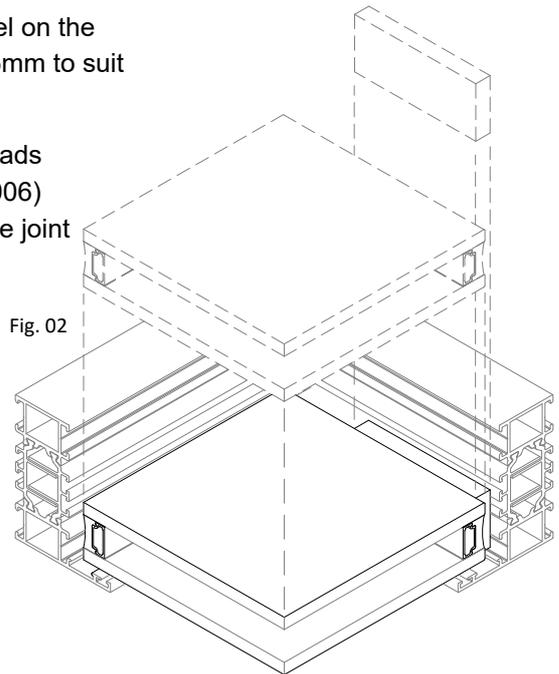


Fig. 02



NOTE. CORNER WILL PULL IF GASKETS ARE SHORT. ALLOW FOR 10% SHRINKAGE

Fig. 04

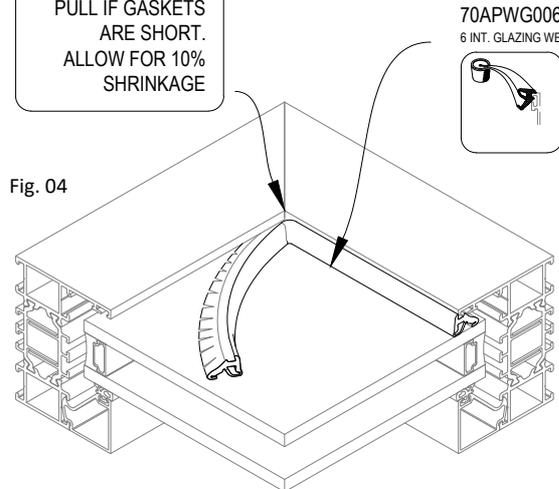


Fig. 03

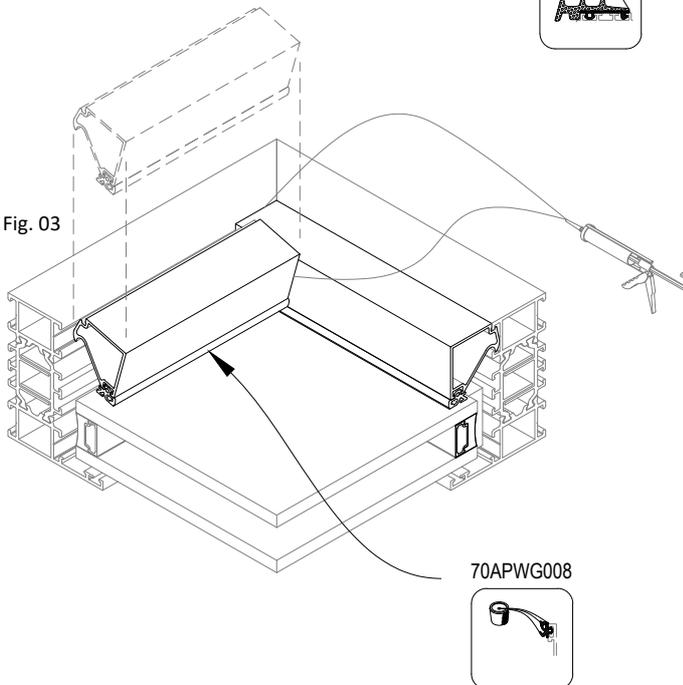
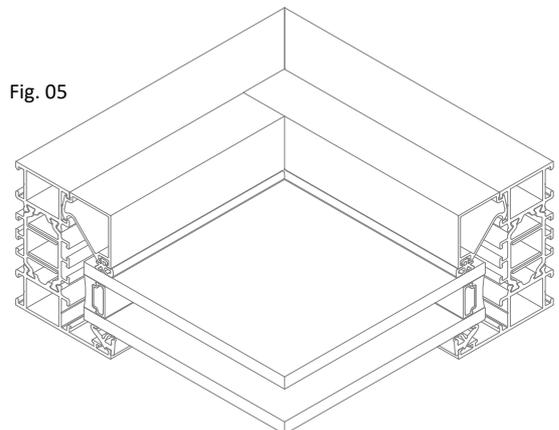


Fig. 05



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# INTERNAL GLAZED CORNER

fig.01 - Push fit glazing gasket (70APWG008) into the external gasket channel. cut gasket and corners and glue over lap joints.

*ST70 HI & ST80 only.* Push fit the insulation gasket into the polyamide. mitre cut at corners and leave 100mm gaps for glazing packers.

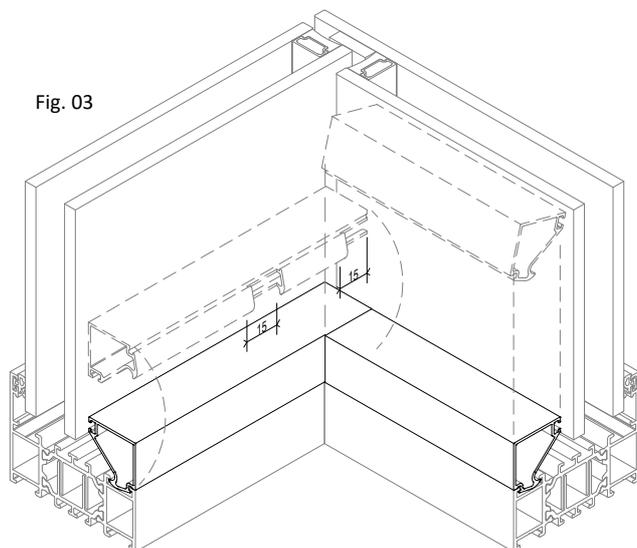
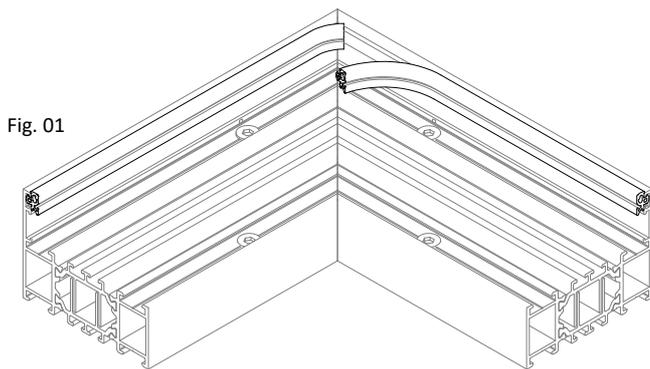
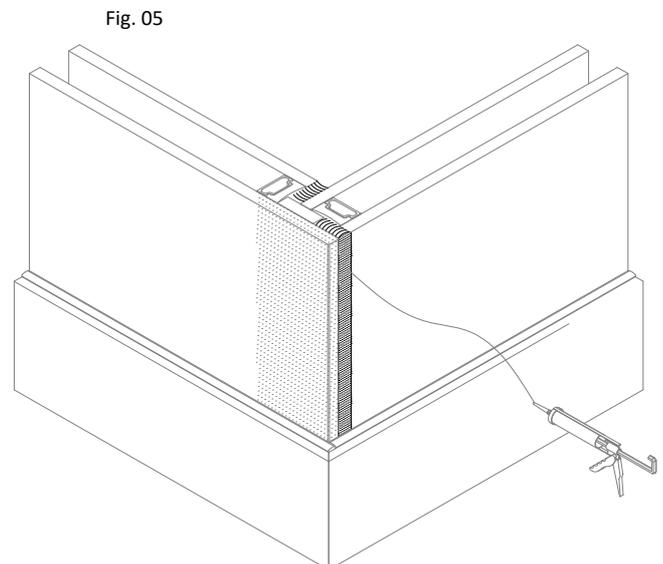
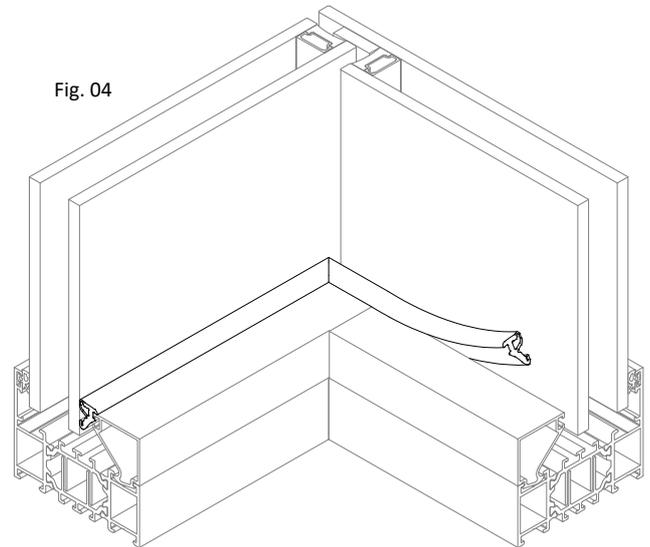
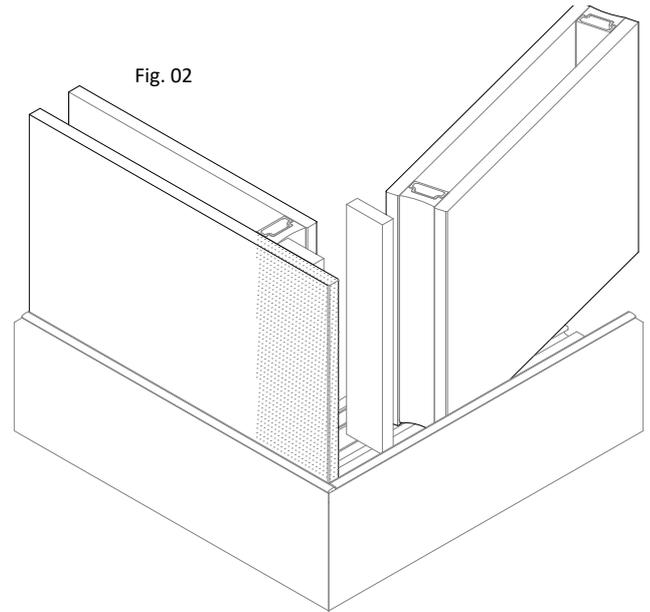
fig.02 - Place glazing unit into position and pack unit as per page 7S.D.02. Note - glass to glass joint sealants and accessories by fabricator to spec by glass supplier

fig.03 - Install glazing beads. longest beads first. Note notch the bead leg on the longest bead at the end by 15mm and at the screw head location.

fig.04 - Push fit glazing wedge (67APWG006) between glass & bead. Apply as one continuous strip with one joint located at the top corner.

fig.05 - Apply the glass to glass corner weather sealant as per spec.

Note: allow additional 10% on gaskets for shrinkage.



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## COUPLING WINDOW FRAMES

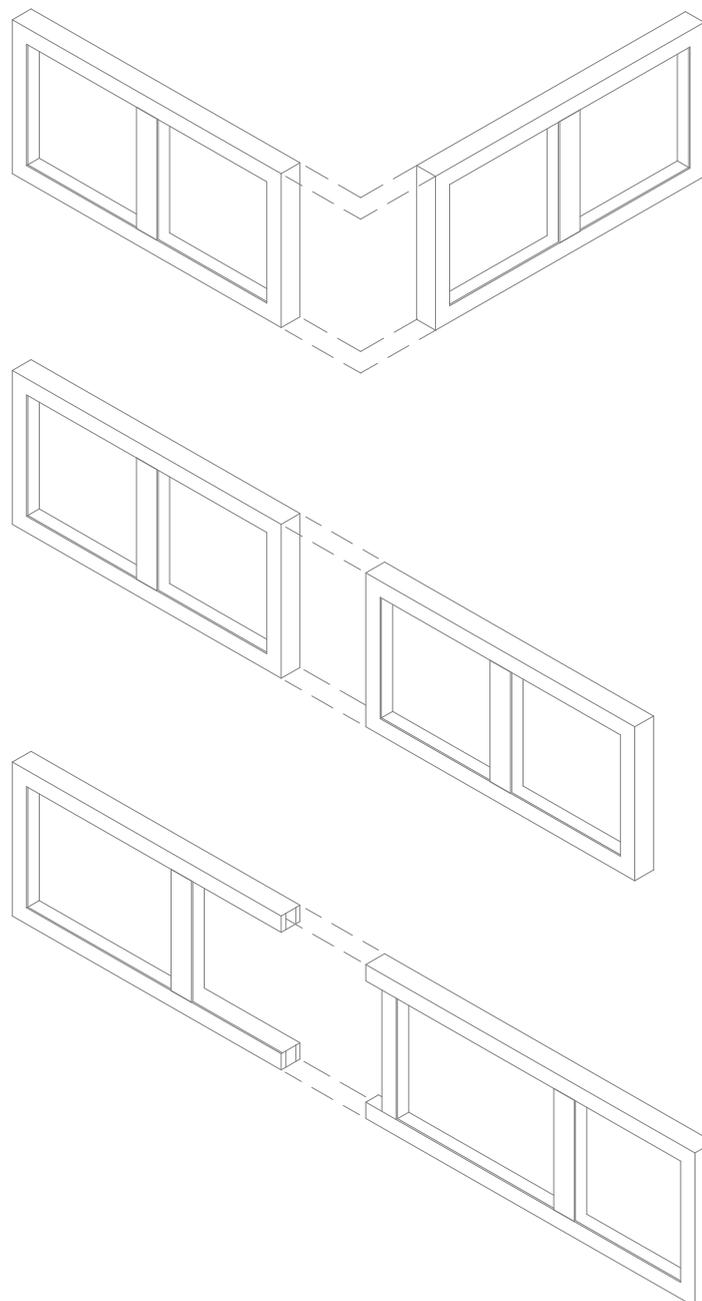
When coupling frames together on site take the following into account.

Frames should be predrilled in works at the appropriate centres.

Correct fixing screws should be delivered with the window frames. Only use stainless steel screws when fixing into aluminium. Ensure length is adequate to achieve a minimum protrusion of twice the diameter. Take care not to burst or bruise any unintended walls.

Any coupling joint should be of adequate to deal with any imposed loads (wind loads, impact & operating)

Use the APA coupling joint gasket (67APWG010) to form a air & water tight joint.



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70A134  
RETAINING CLIP

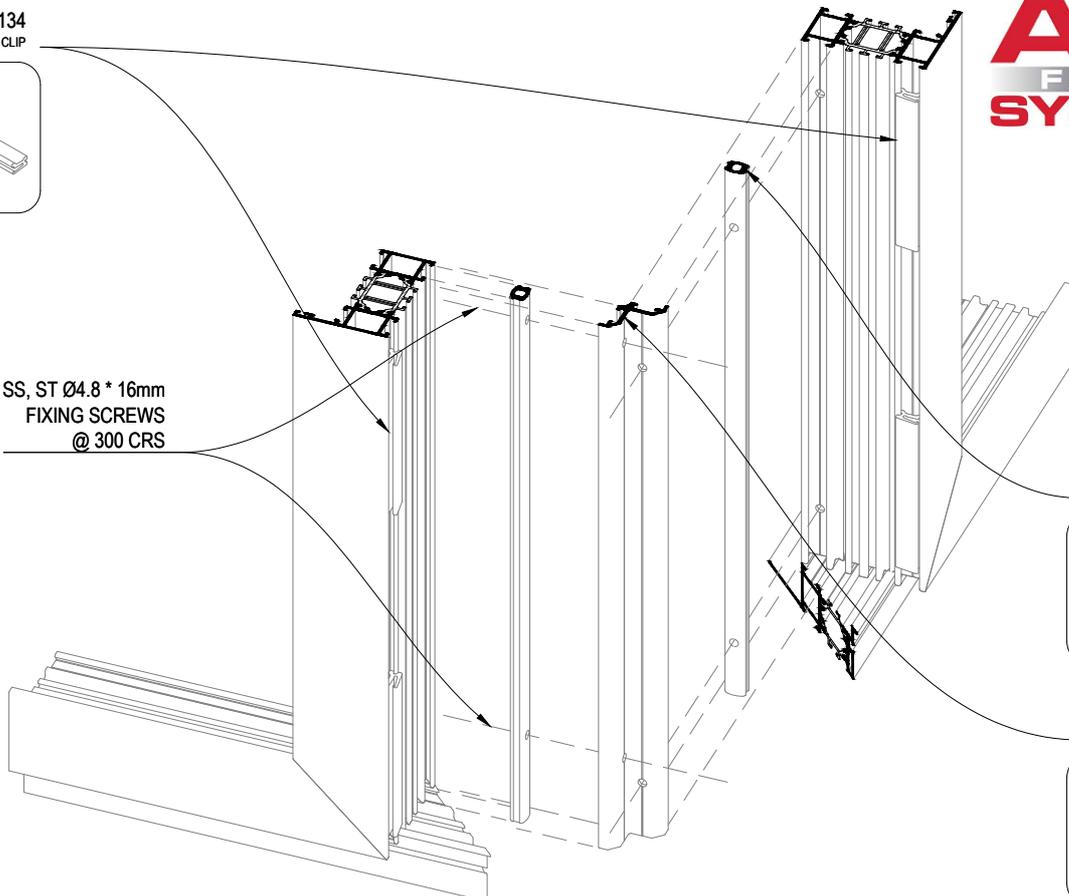


SS, ST Ø4.8 \* 16mm  
FIXING SCREWS  
@ 300 CRS

67APWG010  
COUPLING GASKET

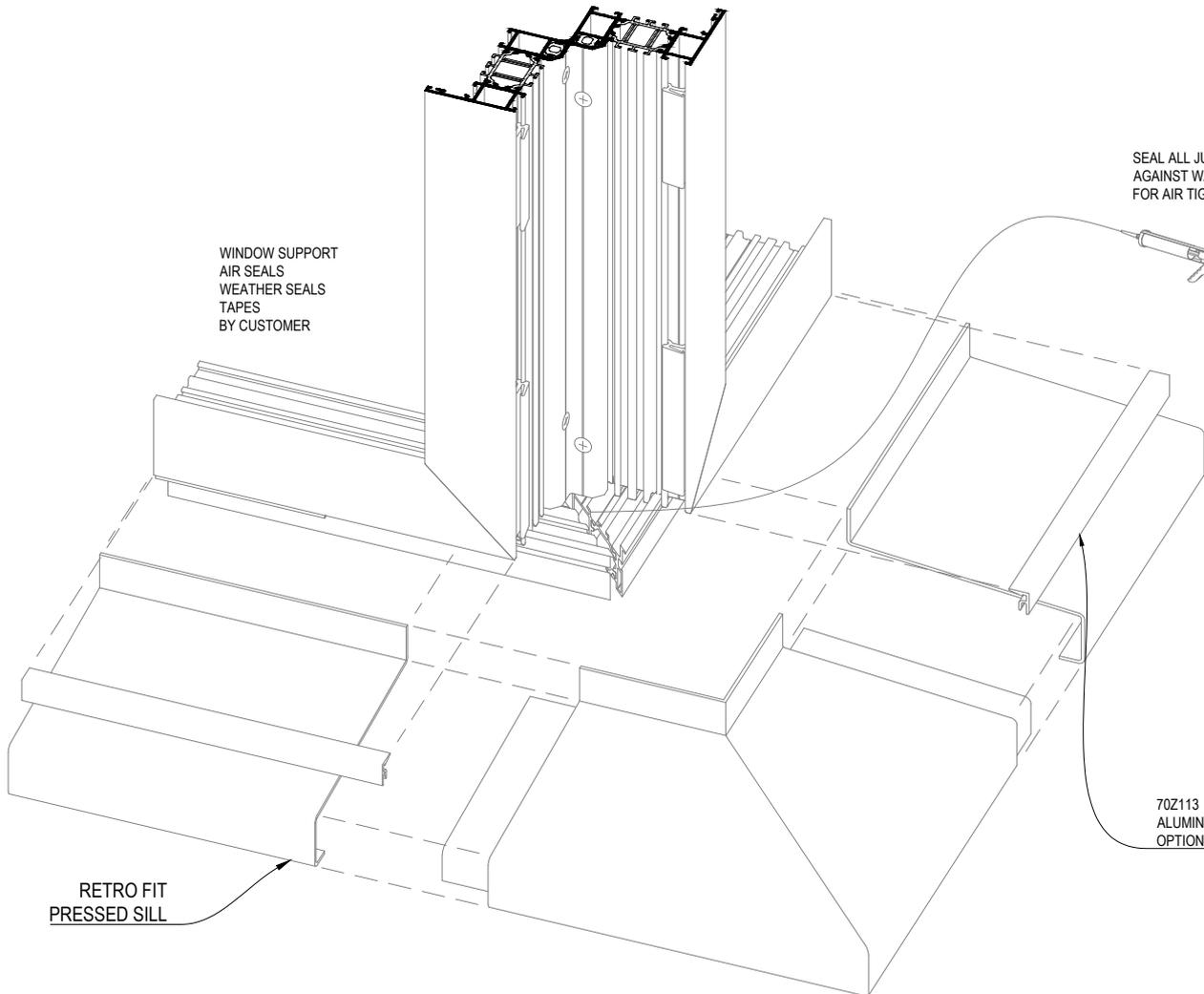


70Z137  
90° COUPLING



WINDOW SUPPORT  
AIR SEALS  
WEATHER SEALS  
TAPES  
BY CUSTOMER

SEAL ALL JUNCTIONS  
AGAINST WATER EGRESS AND  
FOR AIR TIGHTNESS

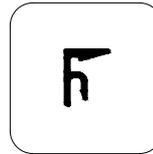


70Z113  
ALUMINIUM COVER DRIP  
OPTIONAL

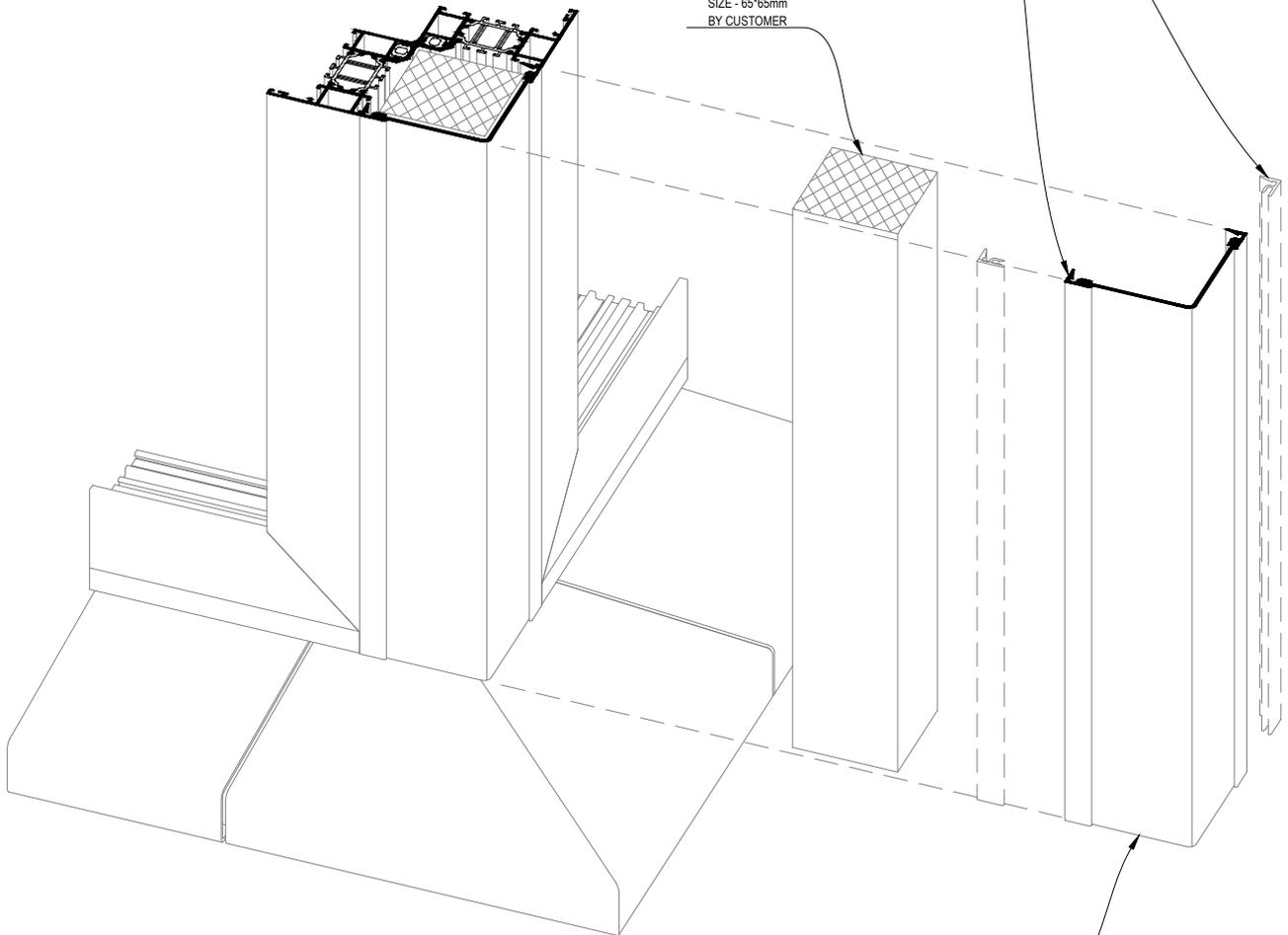
RETRO FIT  
PRESSED SILL

DATE: 09/03/2015	REVISION: 0	TITLE: 90° Corner Post	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.C.02
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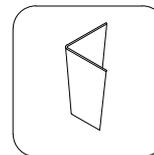
70Z133  
ALUMINIUM DRIP



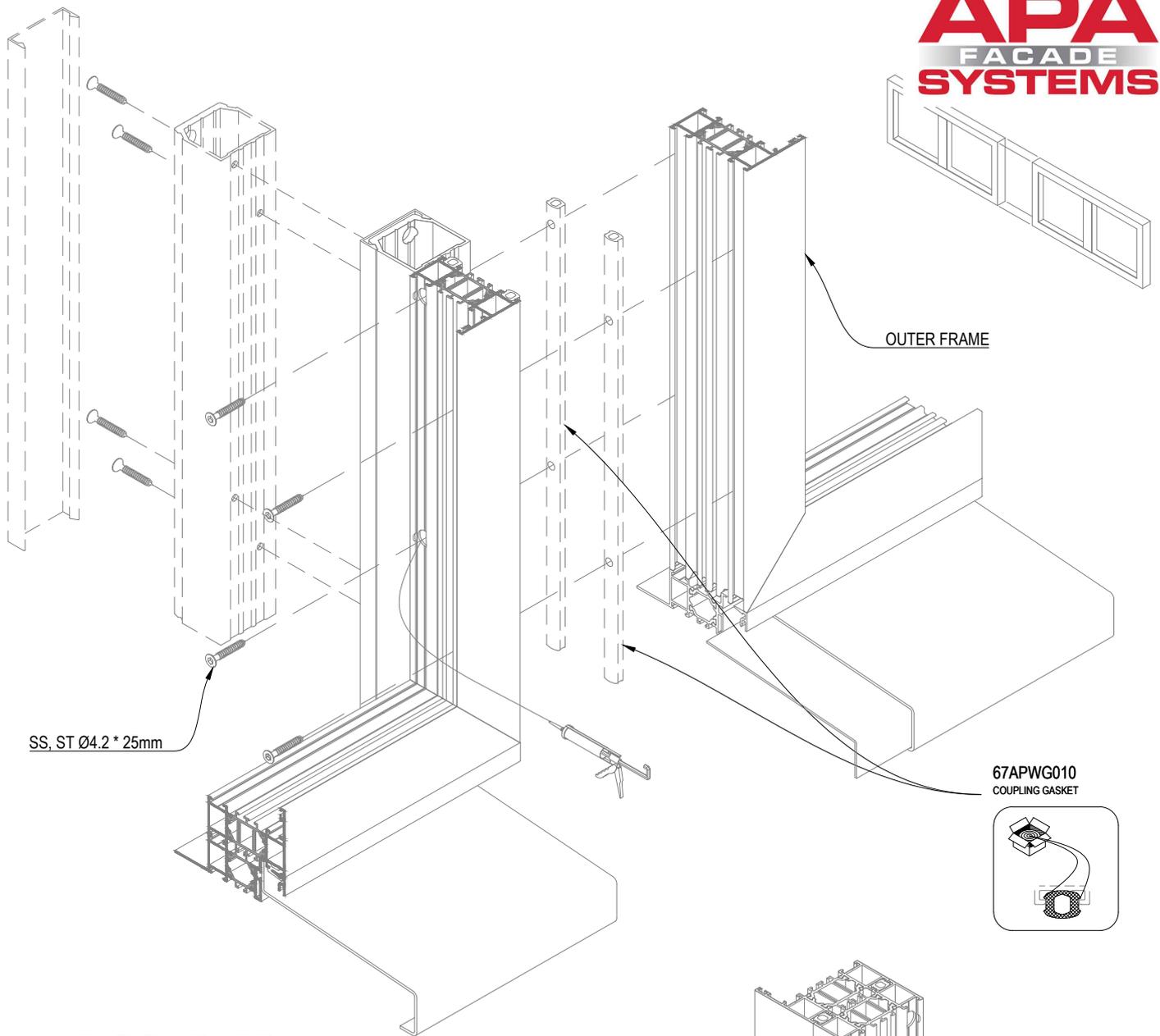
INSULATION  
RIGID INSULATION  
SIZE - 65\*65mm  
BY CUSTOMER



65\*65 Angle  
2mm PPC ALUMINIUM  
BY CUSTOMER



DATE: 09/03/2015	REVISION: 0	TITLE: 90° Corner Post	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.C.03
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## INLINE COUPLER

Drill out  $\varnothing 5$  clearance holes through both walls in one of the frames.

Open out the  $\varnothing 5$  holes in the glazing chamber to  $\varnothing 12$  for clearance for screw head.

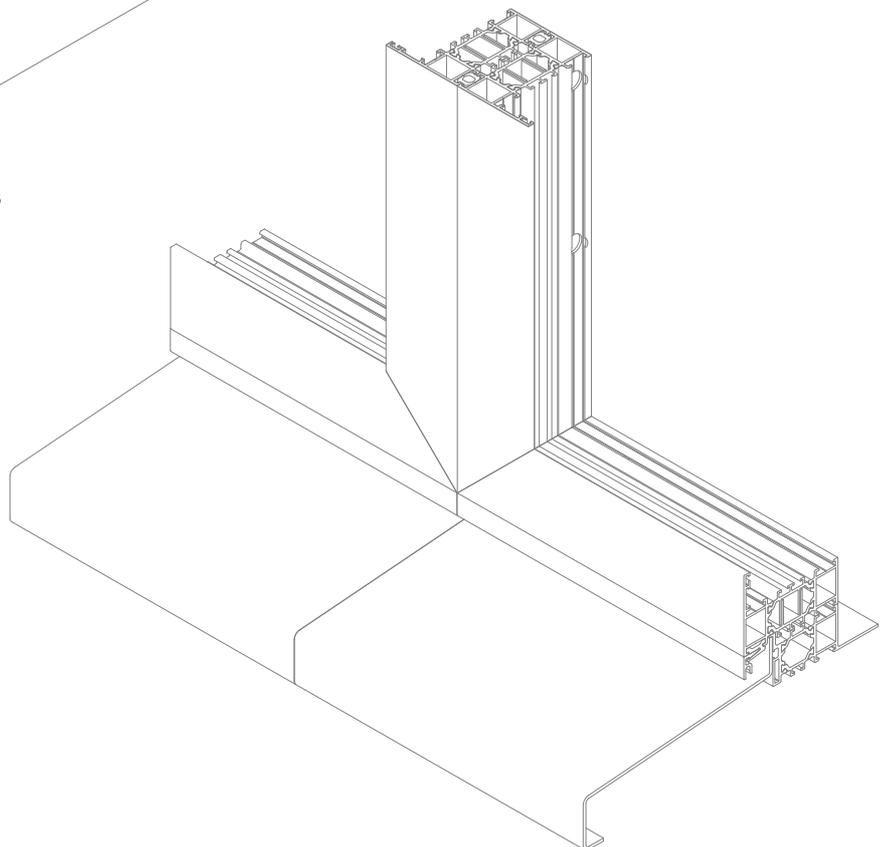
Offset holes and max distance between holes to be no more than 300mm.

Insert two lines coupling gasket into the bead grooves on the coupling face.

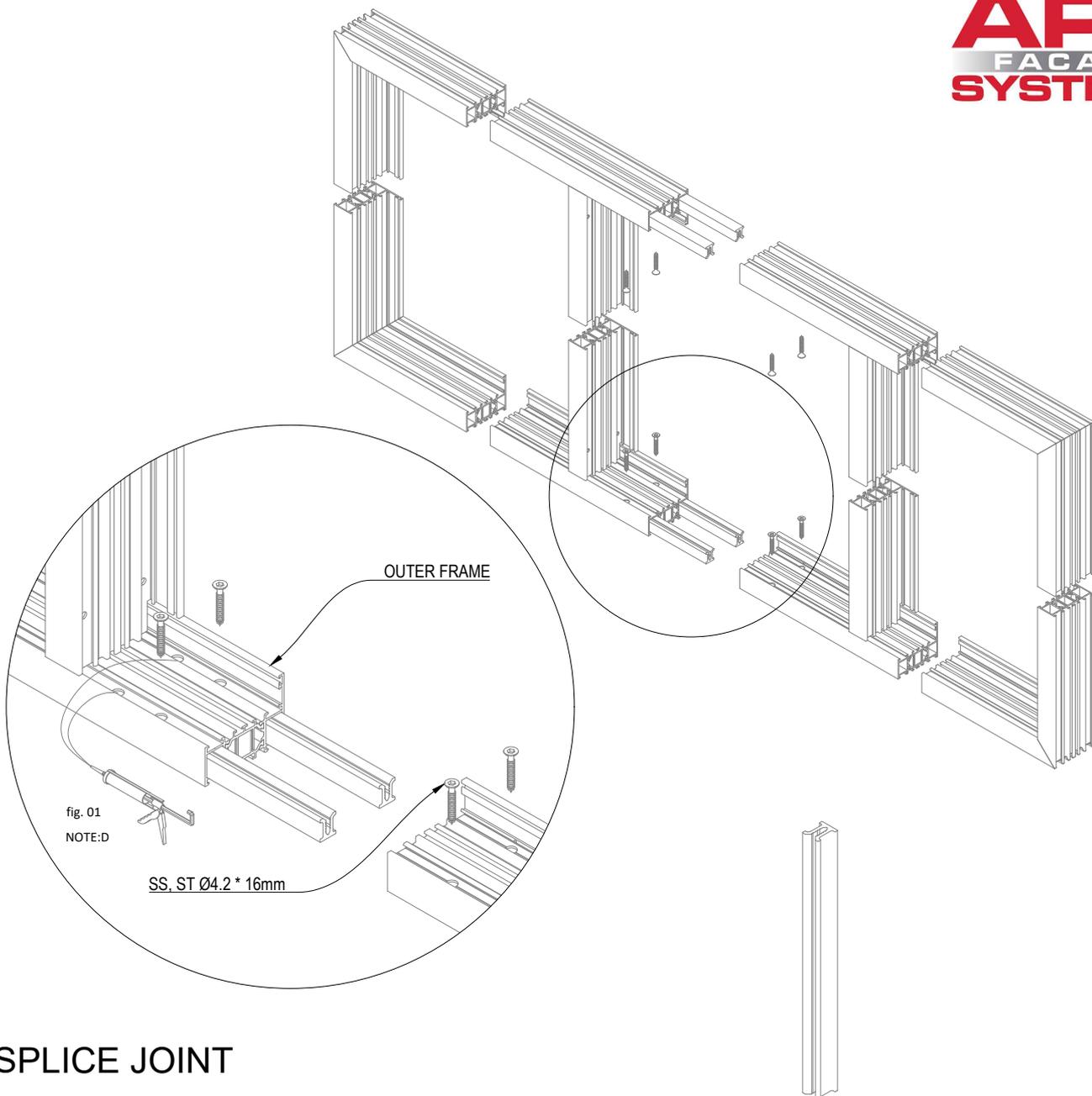
Align frames and clamp together.

Using the pre drilled holes as a guide drill out  $\varnothing 3.8$  holes in the opposing frame (one wall only) and then stitch the frames together with ss, st  $\varnothing 4.2 * 25$ mm.

Seal the clearance holes with silicone.



DATE: 09/03/2015	REVISION: 0	TITLE: Inline gasket coupler - 67APWG010	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.C.04
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## SPLICE JOINT

- Refer to pages 7A.04.A.11 (Fabrication manual) for profile drilling
- Cleat chamber 14\*18mm use cleat bar - 70m150
- Screw - stainless steel, self taper, counter sunk - Ø4.8 x 16mm, (2 per cleat)

A. Cut cleat bar 70m150 @ 200mm (qty 4)

B. Drill Ø8mm holes as per page 7A.04.A.12 (Fabrication manual)

C. Deburr and then clean all cut surfaces on frame with cleaner

D. Fill cleat chamber with silicone before inserting cleat bar 100mm into the frame.

Alternatively drill additional holes in cleat chamber behind cleat and fill with silicone. (fig.01)

E. Fix the cleat bar in position with ss. st Ø4.8 x 16 CKS head

F. On the opposing frame, fill cleat chamber with silicone

G. Align frames, apply silicone sealant to one side and clamp together.

H. Fix with 1 screw per cleat, apply some additional sealant to the joint .

I. Seal the heads of all 4 screws with silicone sealant.

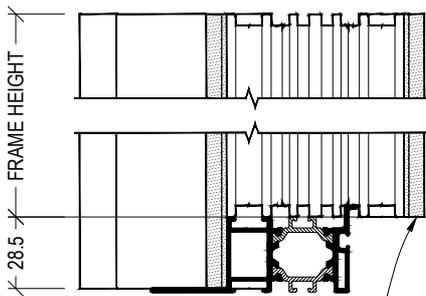
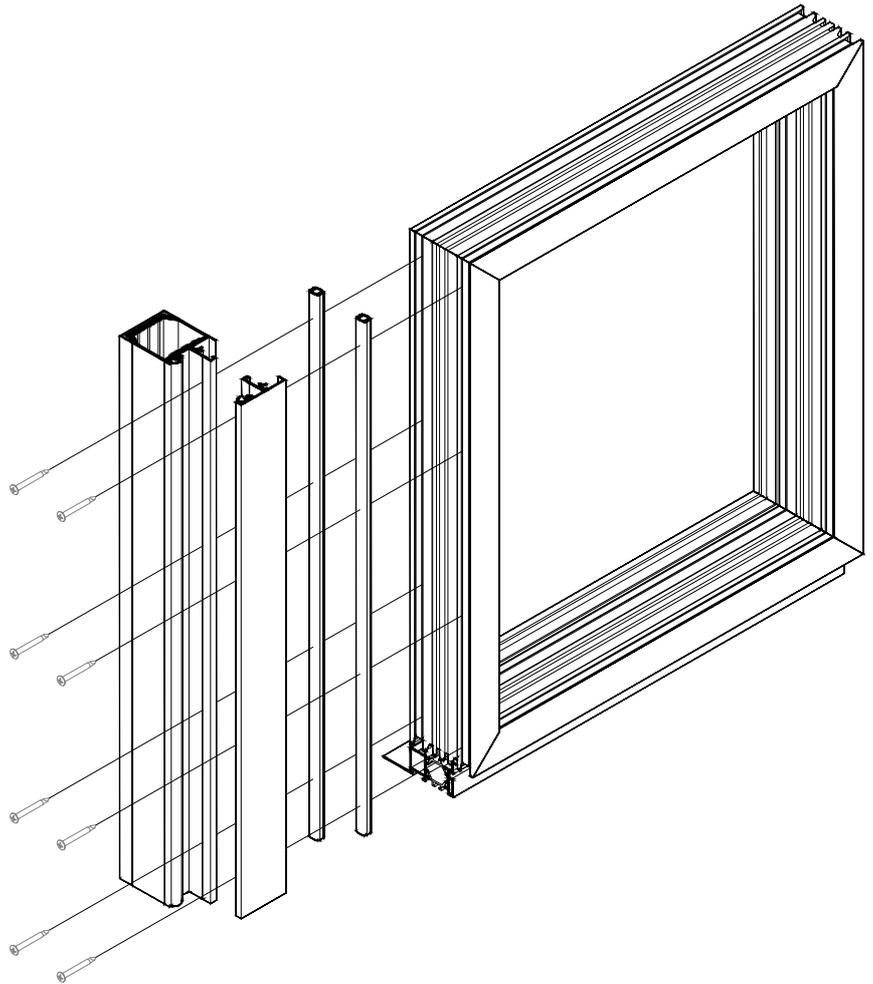
J. Clean of finished joint with cleaner.

K. Glazing bead will require notching at the screw head position.

DATE: 09/03/2015	REVISION: 0	TITLE: Splice Joint bracket	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.C.05
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## EXPANSION COUPLER ASSEMBLY

- A. CUT SIZE = FRAME.  
CUT SIZE INTERNAL = FRAME HEIGHT + 28mm  
(WHEN USING SUB CILL).
- B. ATTACH REINFORCING MULLION TO BACK OF  
COUPLER PROFILE IF REQUIRED (FIG.01).
- C. ATTACH EDGE SEAL GASKET AND COUPLING  
GASKET TO BOTH OF THE EXPANSION COUPLER  
PROFILES.
- D. SCREW FIX EACH COUPLER TO THE WINDOW  
USING SS ST Ø4.8x32mm SD SCREWS AT 300mm  
CENTRES.
- E. PLACE THE SECOND WINDOW IN BETWEEN THE  
EXPANSION COUPLERS.
- F. SILICONE SEAL THE GAP BETWEEN BOTH THE  
CILL ADAPTERS AND WINDOWS AT THE BOTTOM  
(Fig.02).



EXTERNAL EXPANSION  
COUPLER STOPS FLUSH  
WITH BOTTOM OF WINDOW

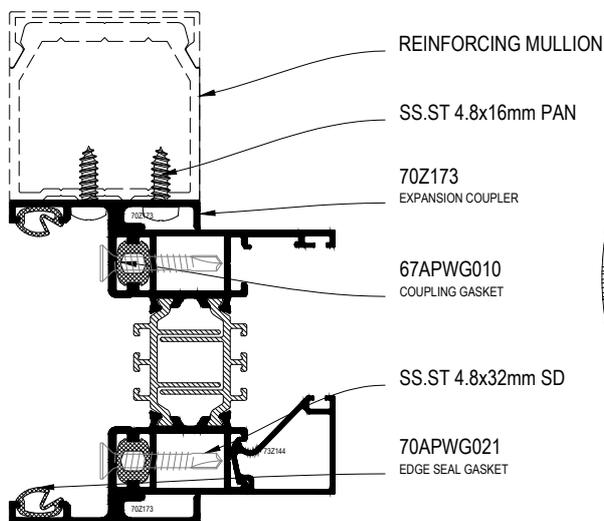
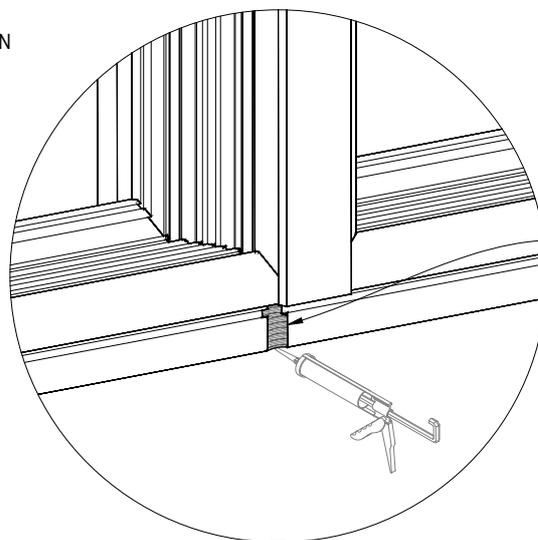


Fig. 01



SILICONE SEAL THE GAP  
BETWEEN SUB CILL AT  
THE BOTTOM OF THE  
WINDOW BEFORE  
INSTALLING EPDM  
AND FLASHING

Fig. 02

DATE: 26/06/2015	REVISION: 0	TITLE: Expansion Coupler	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS	A4	7S.C.06
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HINGE SHOULD BE  
TIGHT UP AGAINST THE  
TOP OF THE FRAME.

Hinge arm should be between  
0.5 & 1mm outside of the  
frame and even.  
ensure hinge is fully supported  
by the hinge packer in the  
bead groove.

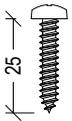
## SCREWS



All screws should be  
stainless steel.

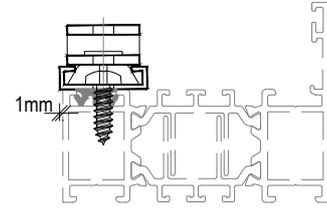


Minimum  $\varnothing$  is 4.8mm (no  
10). any less will result in  
the hinge slipping.



Screw length:  
hinge to frame is 16mm  
hinge to vent is 25mm

Pan head screw are the  
preferred option. except  
for the end fixing position  
on the 17astorm26 26  
inch. countersunk screw  
head must be used to  
ensure it is flush with the  
face.

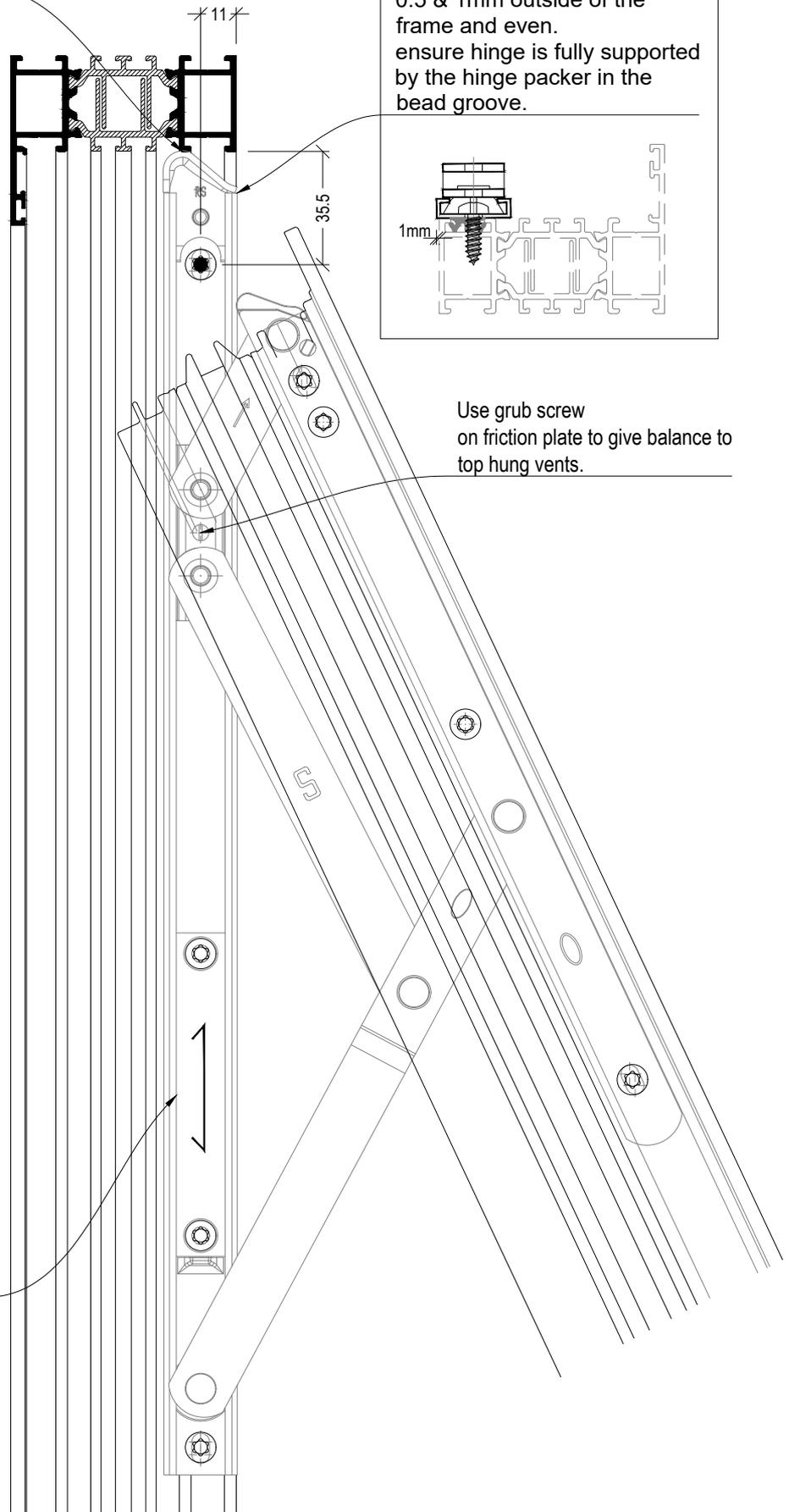


Use grub screw  
on friction plate to give balance to  
top hung vents.

For full opening restricting plate  
is set to the bottom, use all  
visible holes for fixing.

When restriction is required only  
fix the slot holes plus the  
bottom.

Open the vent to the desired  
angle, slide the plate up until it  
touches the under side of the  
slider. Use the plate as a  
template and drill holes in the  
track. insert all fixing screws.



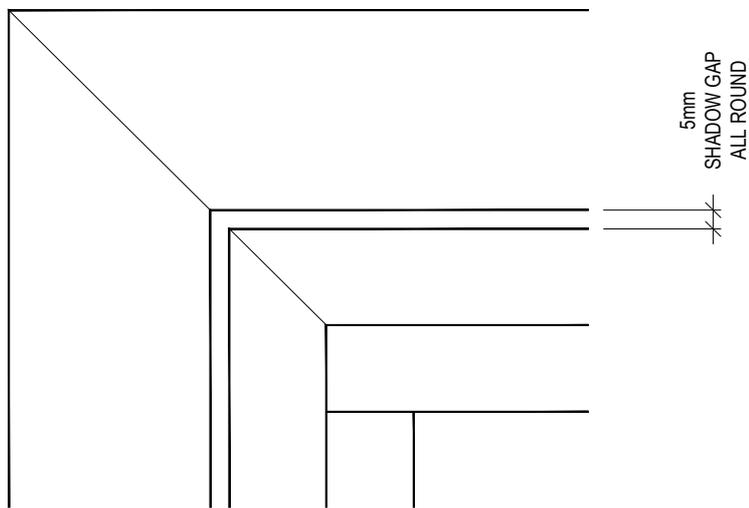
## VENT POSITION / ALIGNMENT

For optimal performance the vent must be positioned equal and square in the frame.

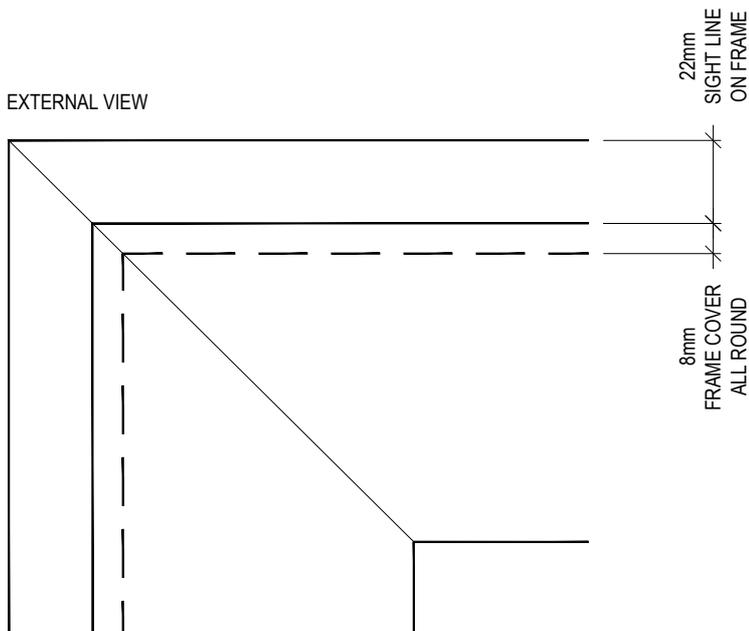
the following points are vital in this alignment.

- Hinge position.
- Cut tolerance on profiles.
- Position tolerance on mullions & transom.
- Toe and heel of side hung vents (correct packing of glass).
- Distorting frames by direct fixing.

INTERNAL VIEW



EXTERNAL VIEW



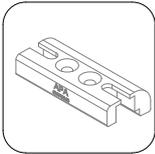
DATE: 02/03/2015	REVISION: 0	TITLE: Hinge Assembly	SYSTEM: ST60, 70 & 80 WINDOW SUITE	1:2	<b>A4</b>	7S.D.02
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ST60 = M5 \* 60mm  
 ST70 = M5 \* 70mm  
 ST80 = M5 \* 80mm

HANDLE

ADJUST COMPRESSION WHERE NECESSARY BY ±1mm. USE 8mm SPANNER

70A001  
 ESPAG RECEIVER



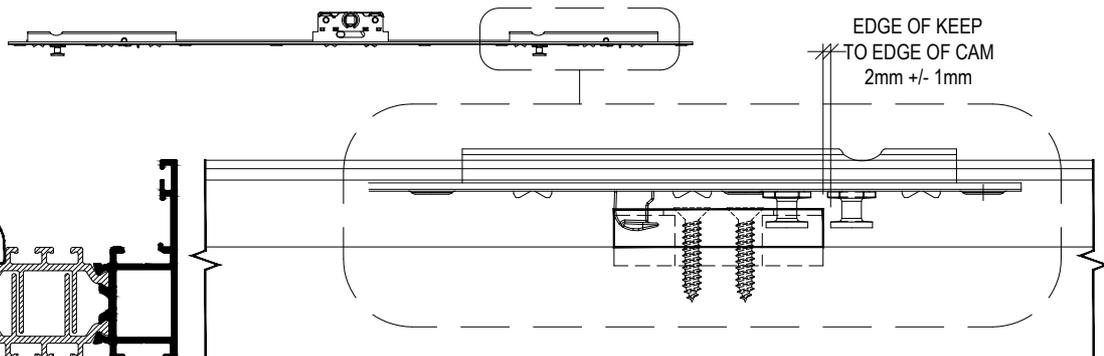
SCREWS:  
 ALL SCREWS SHOULD BE STAINLESS STEEL.

MINIMUM Ø IS 4.8mm (No 10).

SCREW LENGTH:  
 KEEP TO FRAME IS 25mm

COUNTERSUNK HEAD SCREW ARE REQUIRED.

2nr PER KEEP.



DATE: 05/03/2015	REVISION: 0	TITLE: ESPAG LOCK	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.D.03
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# MAINTENANCE - HARDWARE

The precondition for the function and smooth operation of the hardware is the compliance with the following regulations concerning sash size and sash weight, as well as our product liability guidelines.

Function and condition of the hardware is to be checked in accordance with the following criteria:

- Smooth operation
- Hardware fixing
- Hardware wear and tear
- Damage to the hardware

## Smooth operation

The hardware's smooth operation can be checked by means of moving the window handle. In accordance with DIN 18055, the locking and unlocking moment of the window handle is determined to max. 10 Nm. It can be checked using a torque wrench. The smooth operation can be improved by greasing/oiling or adjusting the hardware. Incorrect and/or inappropriate retro-adjustments to the hardware can result in the windows not fulfilling their function anymore.

## Hardware fixing

The window's function and its operational safety depend on the solid fixing of the hardware. Stability and location of the individual screws in the profiles are to be checked. Should it be revealed, that for example screws have loosened or that screw heads have broken off, these are to be tightened or replaced immediately.

## Hardware wear and tear

To protect them against wear and tear, all function-relevant hardware components are to be greased respectively oiled. Damaged hardware components are to be replaced, especially if they are load-bearing hardware components. The hardware may only be cleaned with a soft cloth and mild, pH-neutral cleaning agent in diluted form. Never use aggressive, acidiferous cleaners or abrasive cleaning agents. This can lead to hardware damage.

By means of regular greasing and oiling at least once a year all operation-relevant components in the sash and frame, you maintain the smooth operation of your hardware and you protect against premature wear and tear. Security strikers made of steel require continuous greasing in order to avoid unnecessary abrasion. In addition, the positions of the screws are to be checked. Possible loose screws or broken off screwheads are to be replaced immediately by a specialised company.

DATE: 09/03/2015	REVISION: 0	TITLE: MAINTENANCE	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS	<b>A4</b>	7S.E.01
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# MAINTENANCE - STORM HINGE

## ENVIRONMENTAL CONSTRAINTS

Normal operating conditions for all hinges are:

- operating temperature range -20°C to +60°C
- operating humidity range 10% relative humidity to 95% relative humidity

The materials used will not degrade due to ultra violet light, or when using neutral acidity non solvent cleaning chemicals, at a rate faster than other parts of the window assembly. however, the practice of cleaning brickwork with acidic based products will have serious effects if allowed to come into contact with hardware. corrosion or failure of hardware as a result of this practice will not be covered by the warranty issued on such products.

## MAINTENANCE AND LUBRICATION

As with most mechanical devices, restrictor hinges require periodic maintenance and lubrication. The hinge in general and particularly the pivots, sliding shoe and track must be kept free from dirt, debris and any obstructions at all times.

At time of installation - lubricate all pivot points with light machine oil and wipe away excess, one drop per pivot is sufficient. we suggest one of the following lubricants or equivalent:

- General light engineering oil with corrosion inhibitors such as castrol
- Everyman or 3 in 1 oil (available in aerosol can for convenience).

Note: Solvent based aerosol sprays e.g. wd40 are not suitable for this application.

Every five years - carry out the following checks every five years:

- Clean any dirt or debris from the hinge and clear any obstructions from the pivots, sliding shoe and track.
- Apply lubrication as detailed in above.
- Check the tightness and security of all fixing screws and rivets.

## OPERATING LIFE

To attain optimum operating life all criteria listed above under; environmental constraints, and maintenance and lubrication must be adhered to. all friction hinges will function normally for up to 30,000 cycles under normal conditions of use. this performance is subject to compliance with APA systems ltd installation and maintenance instructions.

DATE: 09/03/2015	REVISION: 0	TITLE: MAINTENANCE	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS	<b>A4</b>	7S.E.02
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# MAINTENANCE - POWDER COATED ALUMINIUM



Polyester powder coated aluminium is a product which requires regular cleaning and maintenance to ensure the decorative and protective properties of the coated element are retained throughout its service life.

The frequency of this maintenance will depend on several factors known to effect organic coatings:

- Geographical location of the building
- The surrounding environment (i.e. marine, industrial, acid, alkaline, etc)
- Levels of atmospheric pollution
- Prevailing wind
- Protection of the building by other buildings
- Possibility of airborne debris (e.g. sand or grit) which may erode the coating
- Changes to the environment during the building's lifetime (e.g. rural land becomes industrial)

The best method of cleaning powder coated aluminium is by the regular washing down of the coating using a solution of warm water and mild detergent. A soft cloth or sponge should be used for the cleaning and certainly nothing harsher than natural bristle brushes should be used.

The frequency of cleaning depends in part on the standard of appearance that is required together with any requirement to remove deposits which if left for long periods of time, could prove harmful to the coating.

In industrial environments, the normal frequency of cleaning should be at not more than three monthly intervals.

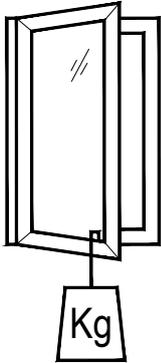
Where the building is situated in an area of high atmospheric pollution or hazardous atmosphere, the periods between maintenance and cleaning should be reduced accordingly.

Where the building is situated in non-hazardous urban or rural environments, the period between cleaning can be extended up to twelve months. Within this period, if heavy soiling has occurred, the material should be cleaned immediately and a more frequent cleaning regime put in place for the future.

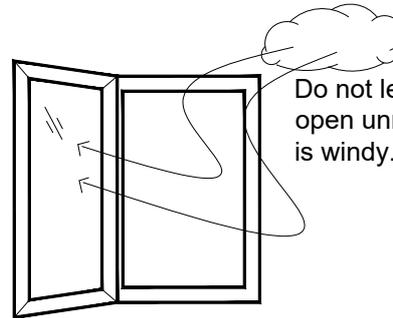
The above guidelines will help in maintaining the powder coated aluminium product.

DATE: 09/03/2015	REVISION: 0	TITLE: MAINTENANCE	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS	<b>A4</b>	7S.E.03
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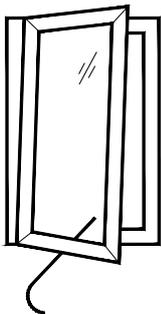
# SAFETY INSTRUCTIONS



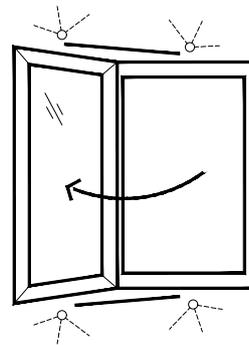
Do not apply any additional weight to the sash.



Do not leave the sash open unrestricted when it is windy.



Do not wedge any objects between frame and sash.



Do not force the sash past the max opening on the hinge or restrictor.



**RISK OF INJURY**  
There is a risk of injury by catching one's fingers or other body-parts in the opening gap between the sash and frame. while closing, do not grasp between the sash and frame.



**RISK OF INJURY**  
Restrict the opening of large sashes where children or other vulnerable people have access to the window.



DATE: 09/03/2015	REVISION: 0	TITLE: SAFETY INSTRUCTIONS	SYSTEM: ST60, 70 & 80 WINDOW SUITE	NTS <b>A4</b>	7S.F.01
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