



# Qualital Guide Windows and Doors Installation

## Aluminium-Timber Windows and Doors Aluminium Windows and Doors



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**Qualital's** guide to the correct installation of windows and doors sets out to provide the basic handling and installation instructions for windows and doors in residential and commercial buildings. Qualital is a participating member of the AWA Accreditation Program and supply windows and doors according AS2047 and AS1288 including human impact requirements as specified in the order.

**The builder or installer, who uses this installation guide, must certify that the windows and doors have been installed correctly in accordance with the requirements of the National Construction Code and the human impact glass located in the correct opening.**

This guide makes use of The Building Code of Australia (BCA) and Australian Standards:

- ✓ AS2047 Windows in buildings: Selection and Installation
- ✓ AS1288 Glass in buildings: Selection and Installation

# Section One

## Installation

- **Pre-Installation Care**
- **Installation**
- **Installation Tools**
- **Correct Window Installation**
- **Window and Door Installation Detail**
  - Brick Veneer (with Timber Reveal)
  - Cavity Brick (with Metal Brackets)
  - Timber Frame and Weatherboard (with Timber Reveal)
  - Concrete Insulation Foam or Blocks (direct fixing)
- **Sliding Door Installation Detail**
  - Brick Veneer (with Timber Reveal)
  - Cavity Brick (with Metal Brackets)
  - Timber Frame and Weatherboard (with Timber Reveal)
  - Concrete Insulation Foam or Blocks (direct fixing)
- **Window & Door Handle Installation**
- **Entry Door Hardware Installation**



# Pre-Installation Care

## Pre-Installation Care for Windows

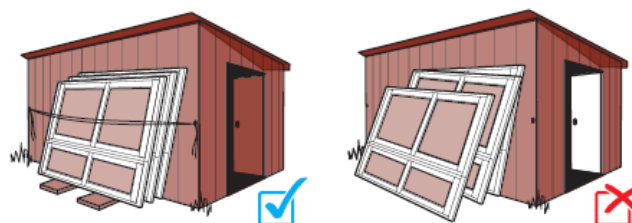
Windows should be stored in a clean, dry area away from cement, lime, paint, acid etc. and must be protected from building materials and loose debris such as wet plaster, mortar, paint and welding splatter.

- Store in a dry location, under cover where possible to protect against damage
  - Carry windows in the vertical position with sashes locked
  - Do not rack frames out of square
  - Prevent exposure to moisture particularly pooling and ponding
  - Do not stand on the windows or doors, or use them as a support for scaffolding, or slide material through the frame. It is important to prevent any damage to windows and doors during construction.
  - Do not permit weight of eaves or arch bars to bear on any window or door frame.
- Windows and doors are not load bearing.**
- Remove cement mortar and plaster droppings from windows immediately, taking care to avoid scratching glass and, or frames, as permanent damage can result. Immediate attention must be given by washing off with water before material sets.

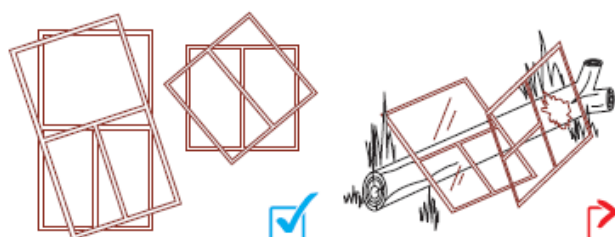
## Factors that Contribute to Installation problems

Installation problems such as incorrect fitting or the omission of flashings, smothered or missing weep holes, or the loss of continuity in the water barrier are the prime cause of leaks in window assemblies.

Handle and stack frames carefully on site. Stand them upright on their sills (bottom of the window as installed), raised off the ground on pieces of timber or bricks. Stand them against a flat, vertical surface such as a shed and tie firmly in position.



Do not lean windows against a tree or post as they can be subject to permanent damage until installed into the building envelope. If the site is bare, lay frames flat on top of each other with weight evenly distributed to avoid buckling and distortion.





# Installation

## Delivery

Windows and doors are delivered to the construction site pre-packaged and sealed in plastic. They are marked according to the window or door schedule. Depending on the weight and size of the windows or doors, there could be two or more packages for a single position.

- ✓ All windows and doors are completely finished (painted, stained and glazed) from the factory.
- ✓ Any package contains: frame, sash, double glazing, full hardware and locking system.
- ✓ No further finishing work on these windows is required. *Unless fixed sashes are too big and should be glazed on site. If this is the case double glazing units will be packed separately in timber boxes. For glass installations please follow our glazing instructions (page 25).*



## Installation

1. Transfer the correct window or door packages to their allocated positions according to the schedule and your construction plan.
2. Unpack the packages. Make sure you only open the packs which are specific to the window or door you are going to install at the very moment.

**Example:** If for W1 (French doors) according to your schedule, there are three packages marked as *Frame, Sash 1, Sash 2*, you must open **ONLY** these three packages before installing.  
**DO NOT OPEN OTHER PACKAGES.**



# Installation

3. Fit flashing to window surround as required.

## General

It is the builder's responsibility to ensure that windows and doors are installed in such a way that water does not penetrate from the outer skin to the inner skin of the building envelope. The extent of the flashing required will depend on local weather conditions. In some instances only sill flashings may be required. In others jamb and head flashing may be required.

## Jamb Flashing

- Required in high wind locations to ensure that water which enters between the window jamb and the outer skin is drained to the sill flashing.
- Where jamb flashing overlaps sill flashing, the overlap should extend the full depth of the sill flashing.

## Head Flashing

- Provided to stop water wetting the inner skin by bridging across the window or door head.
- Provided above any wall penetrations not specifically designed to stop water reaching the inner skin, ie; exhaust fans and ventilation ducts.
- Must project horizontally a minimum of 150mm both sides past the opening.
- Must be of approved materials to AS2904.
- Must be provided with weep holes to let the water out.

## Sill Flashing

- Is provided to stop water entering across underside of the window and wetting the inner skin.
- The window generates run off in down pours and sill flashing stops this water being blown across the cavity under the window.
- Some windows have drain holes which also direct water downwards into the cavity. The sill flashing also collects water which runs down the jamb flashing.
- Must project a minimum of 150mm both sides past the opening.
- Must be of approved materials to AS2904.
- The brickwork must be provided with weep holes to let the water out.

## Special Care

- Special care is required on windows with undersill drainage used in a non-cavity situation such as single skin block work.
- Where a subsill is used stop ends must be fitted and sealed

**Please refer to the following page for a detailed illustration on Window Flashing.**

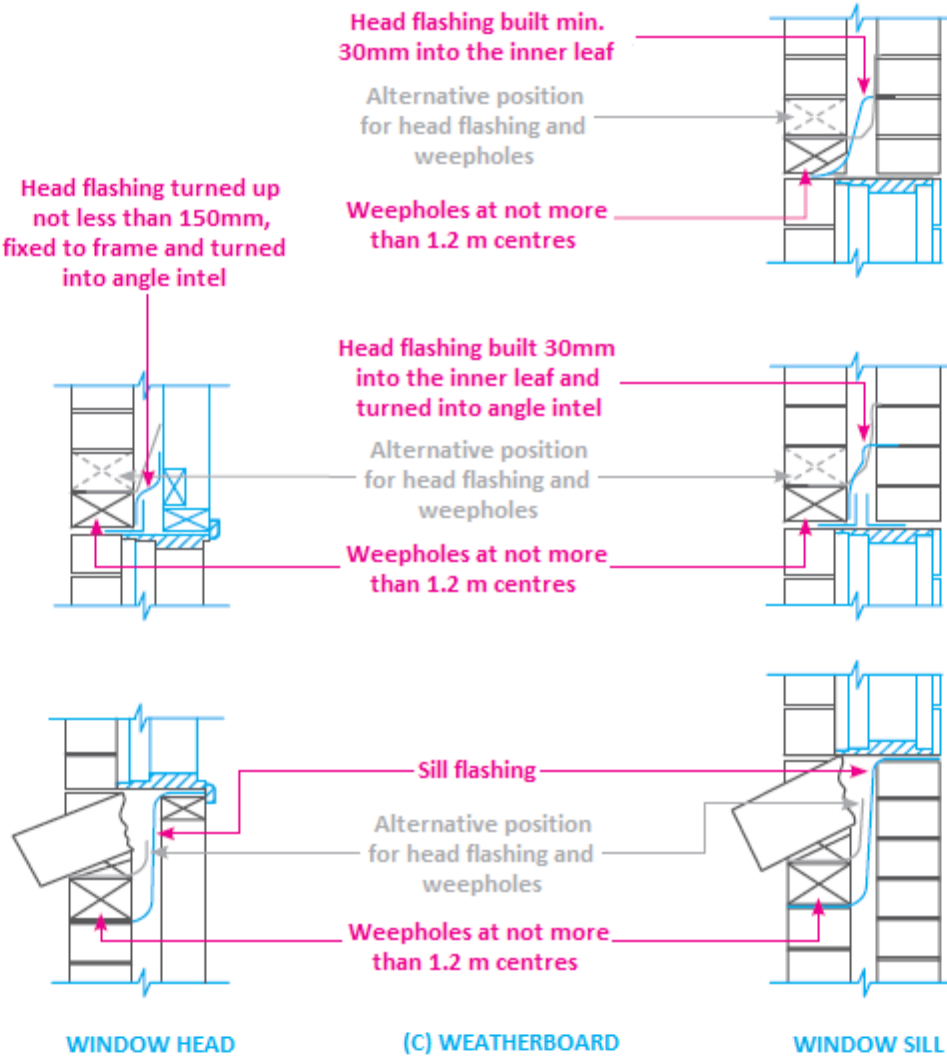




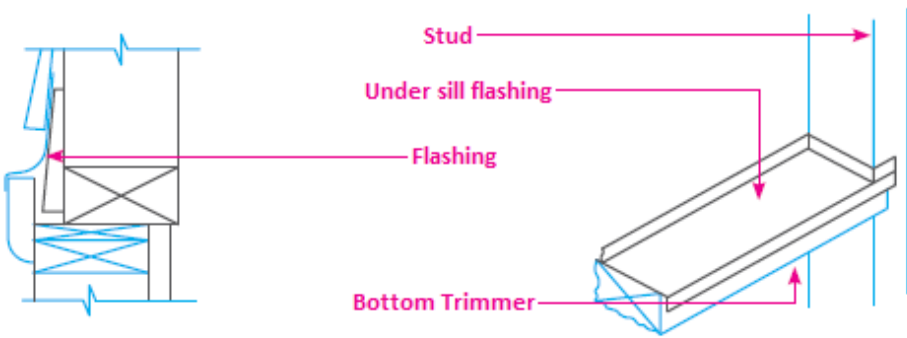
# Installation

(A) MASONRY VENEER

(B) CAVITY MASONRY



(C) WEATHERBOARD





# Installation

4. Measure the frame opening to ensure that there is sufficient room for the window or door and additional packing.
5. Secure windows by nailing through reveal (if one is used) or metal brackets (recommended) in brick veneer, double brick or other frame applications. Windows should be secured by back nailing through stud, not face of window frame. Alternatively, on cavity brick construction use galvanized building lugs located at 450mm maximum centres.
6. Frame must be packed plumb, square and not twisted between the openings. Ensure the sill is fully supported. Sills on all windows and doors must be straight and level and should be packed and secured.
7. If it is not possible to back nail, wedges should be installed between the window and the building frame to prevent opening of the frame joints when nailing is carried out.
8. Sill bricks should be at least 10mm clear of window frame to allow settlement in brick veneer construction.

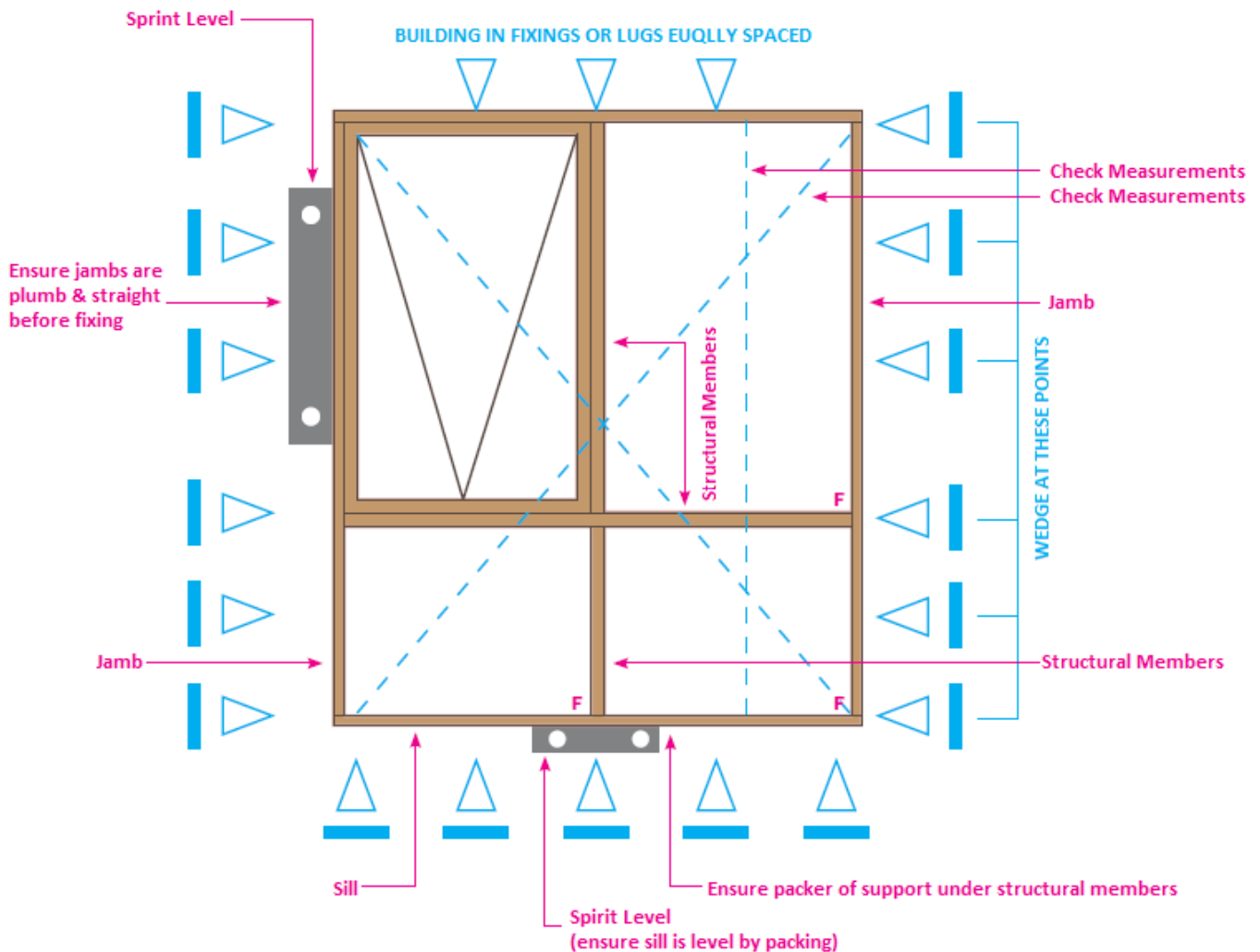


**Please refer to the next page for a detailed illustration on Correct Frame Installation.**





# Installation



*\*All drawings are viewed from inside. Dimentions specified are External Frame Size. Stud opening is 50mm greated for height and width if reveals being supplied.*

## Stud Opening:

Height: External frame size (or by reveal if used) + adequate clearance

Width: External frame size (or by reveal if used) + adequate clearance



# Installation Tools

Hardware installation tools are provided. Before adjusting any window or door, you should first get a general understanding of the adjustment tools that are provided.

## MACO Tools



Spare "Hinge Pin Puller" can be found inside the tool.



Use the tool as a temporary handle to operate the window during installation and construction.



Use the other end of the tool to help pull down hinge pins when removing the sash.

## MACO Allen Key



This tool is used to adjust various settings of the window and door hardware. Use it to adjust hinges.



This tool is "U" shaped is to adjust hinges that are in tight areas.

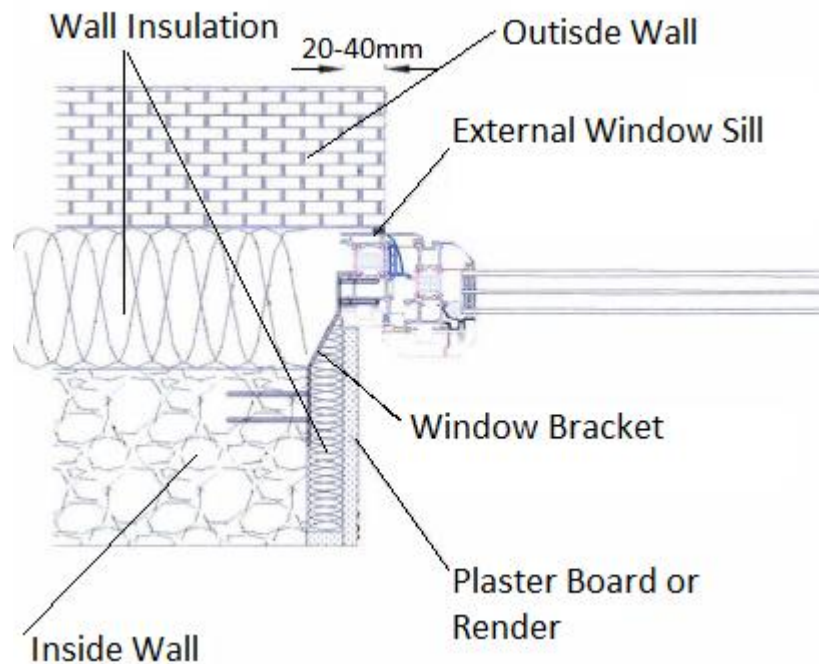


The Allen Key can also adjust hinges from the side.

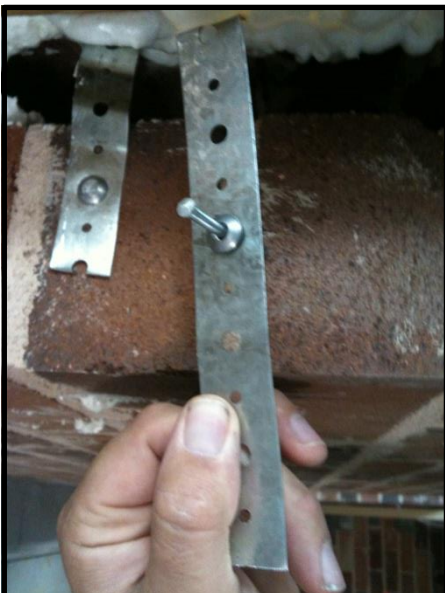


# Correct Window Installation

RECOMMENDED



- ✓ Window Brackets are used to secure the window frame to the building framing.
- ✓ Window and door flashing are properly placed on and around the rough opening.
- ✓ Foam Insulating Sealant is applied to the interior seam or silicon is used on the exterior.
- ✓ Appropriate screws are used to fasten the Window Brackets to the window and building frame or wall structure.





# Correct Window Installation



## Brick Veneer Installation Solution (current view from outside)

This includes flashing around the windows. The external walls can be further finished by brick. A similar installation solution can be used if you are using a Weatherboard for external walls.



## Concrete Insulated Foam Walls Installation Solution (current view from inside)

This includes metal brackets fixed to the concrete (FOAM CRAFT WALL) and is insulated by HILTI Expanding Foam. The internal walls can be further finished by plaster board or render on the mesh.



## Double Brick Installation Solution (current view from inside)

This includes metal brackets fixed to the internal brick wall and insulated by HILTI Expanding Foam. The internal walls can be further finished by plaster board or render.





# Window and Door

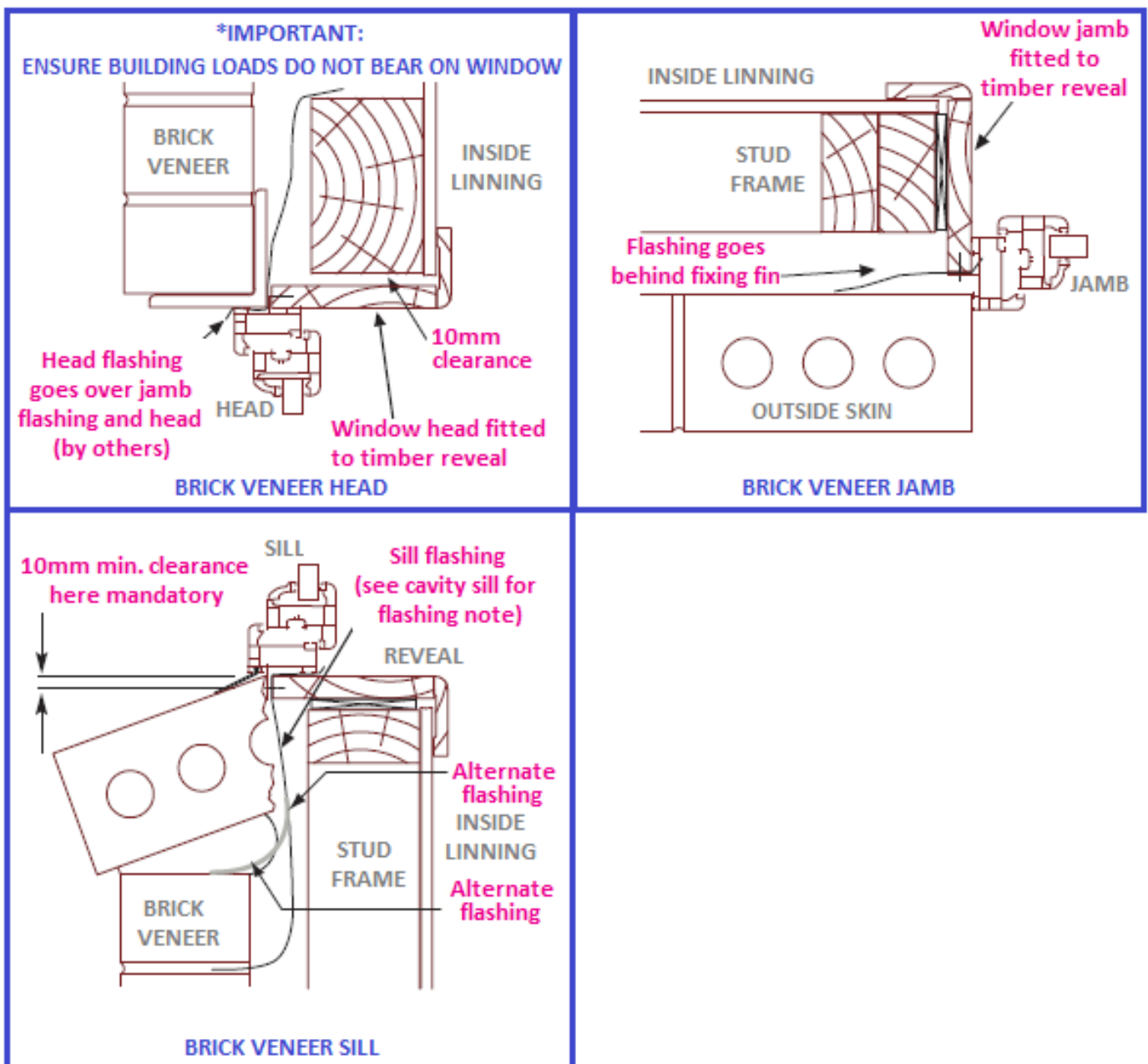
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Brick Veneer Applications (when Timber Reveal is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.







# Window and Door

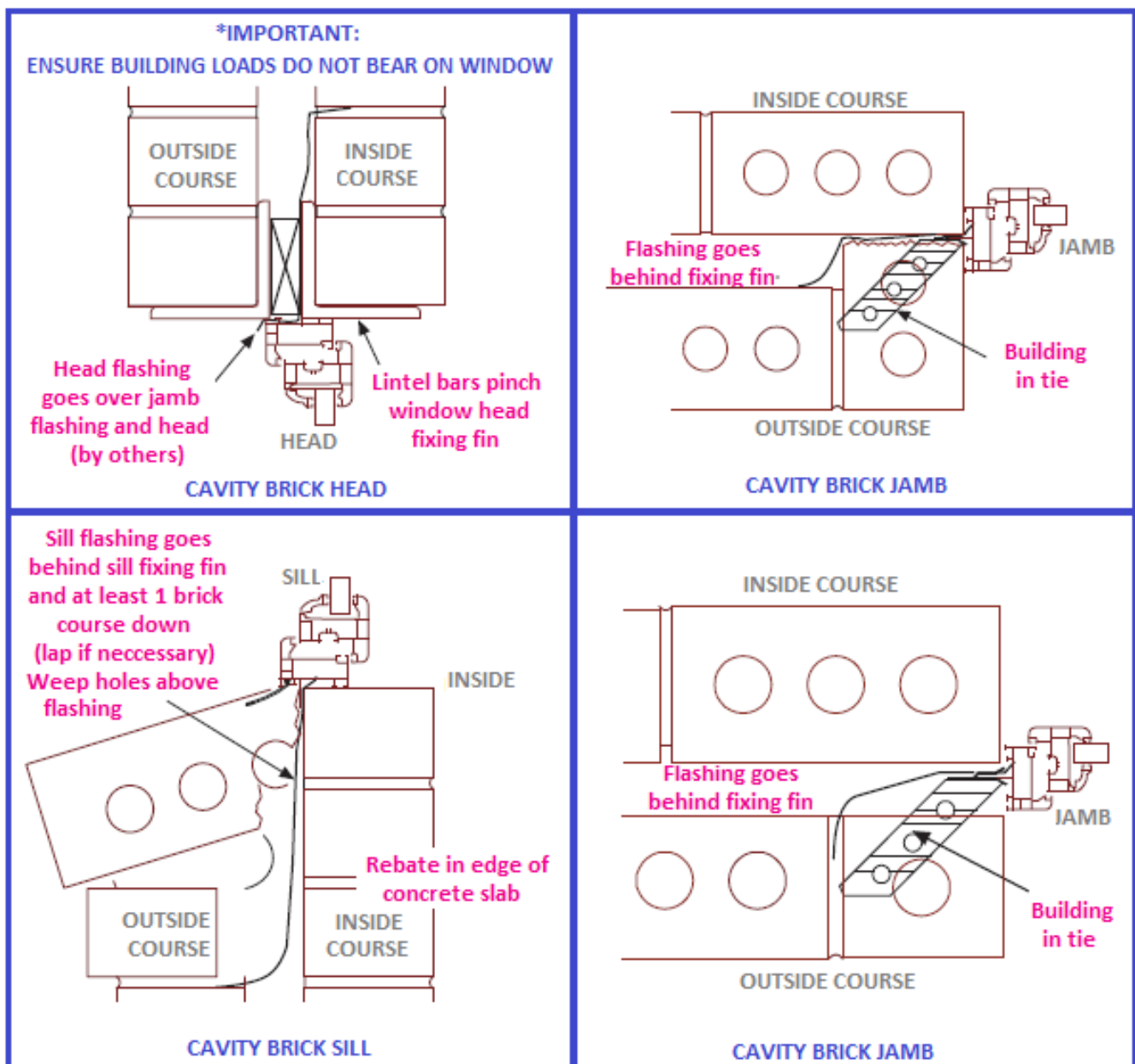
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Cavity Brick Applications (when Metal Brackets are used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





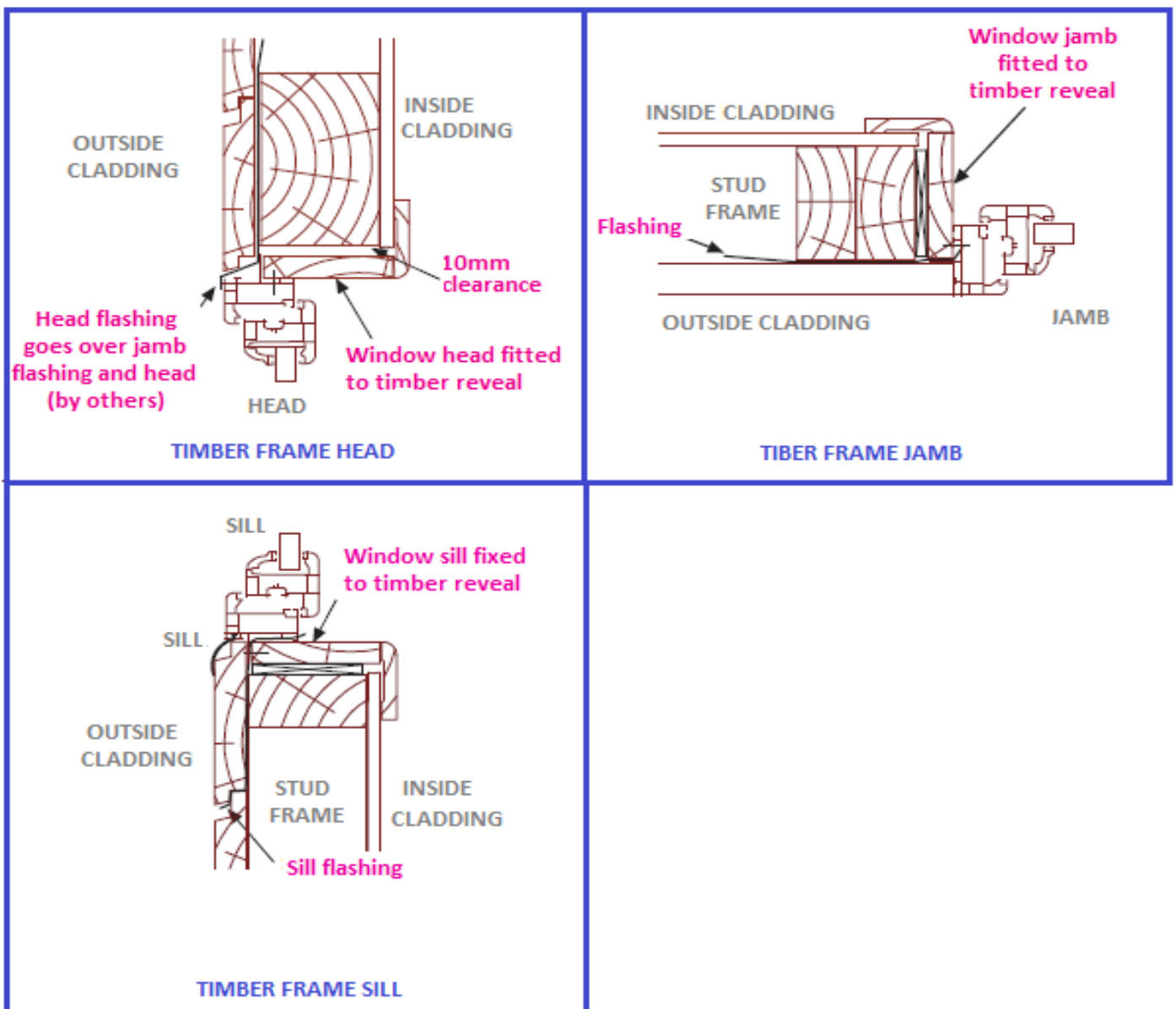
# Window and Door Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

## Timber Frame Applications with Weatherboard (when Timber Reveal is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





# Window and Door

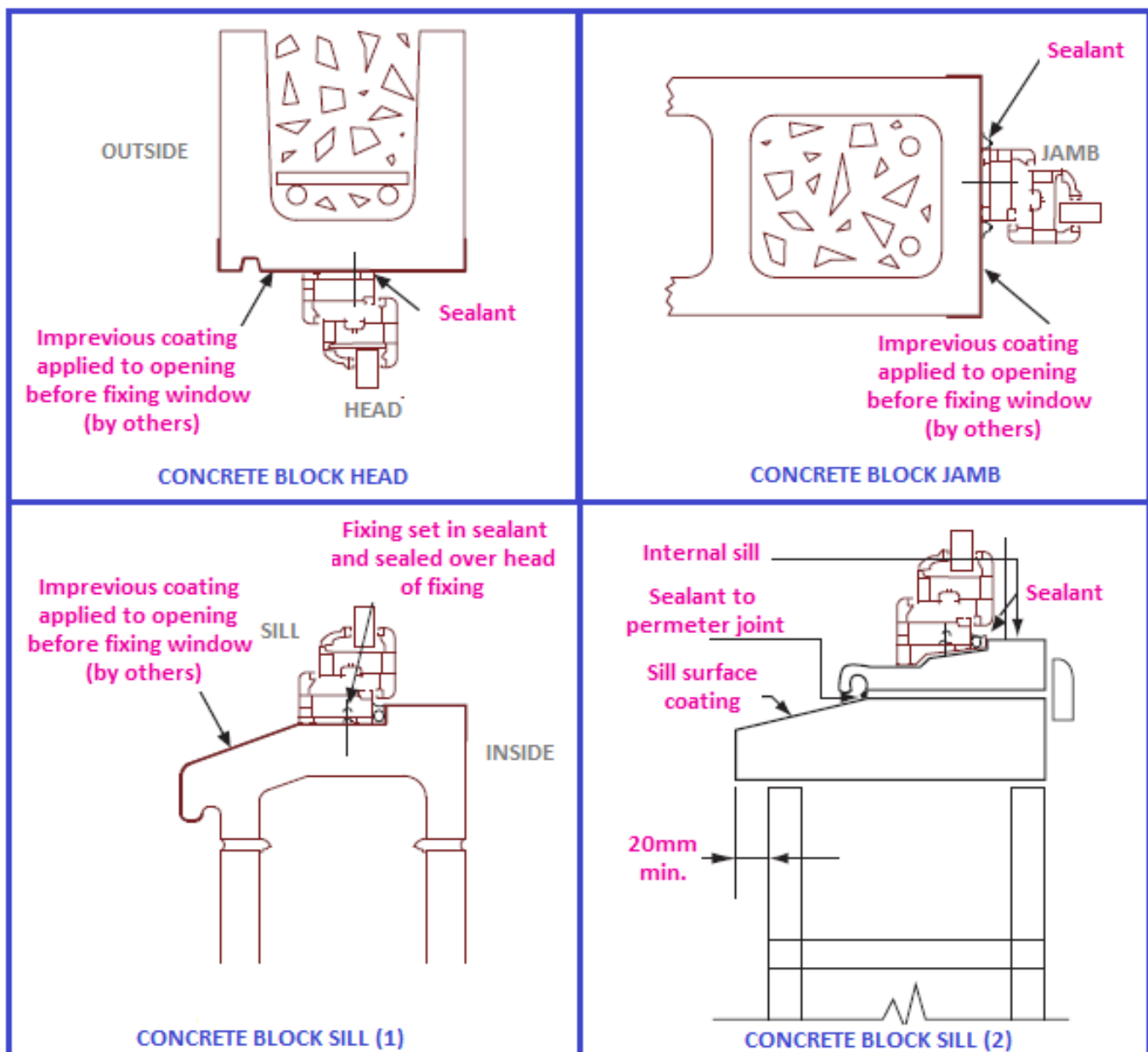
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Concrete Insulation Foam / Block Applications (when direct fixing through the frame is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





# Sliding Door

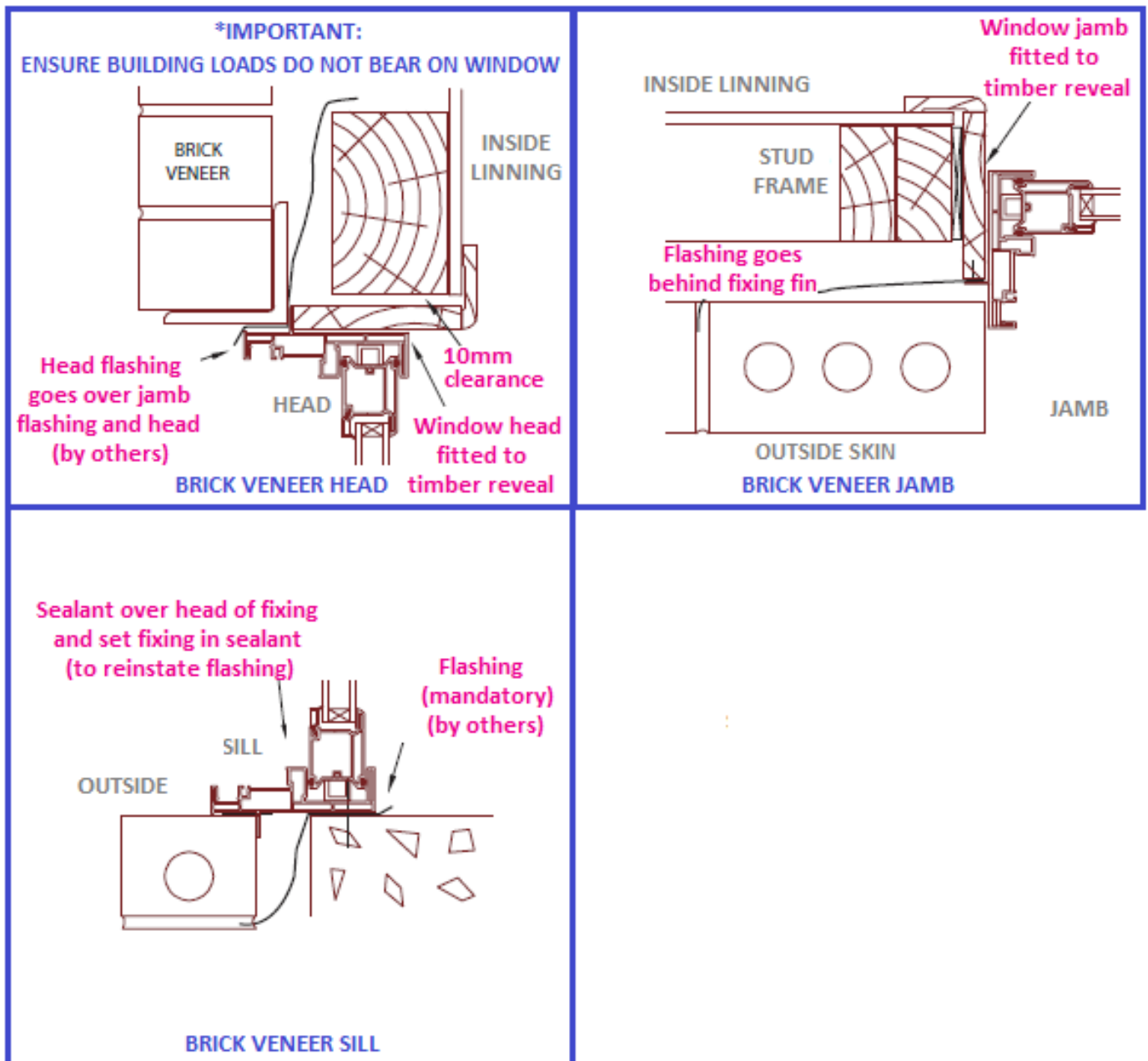
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Brick Veneer Applications (when Timber Reveal is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





# Sliding Door

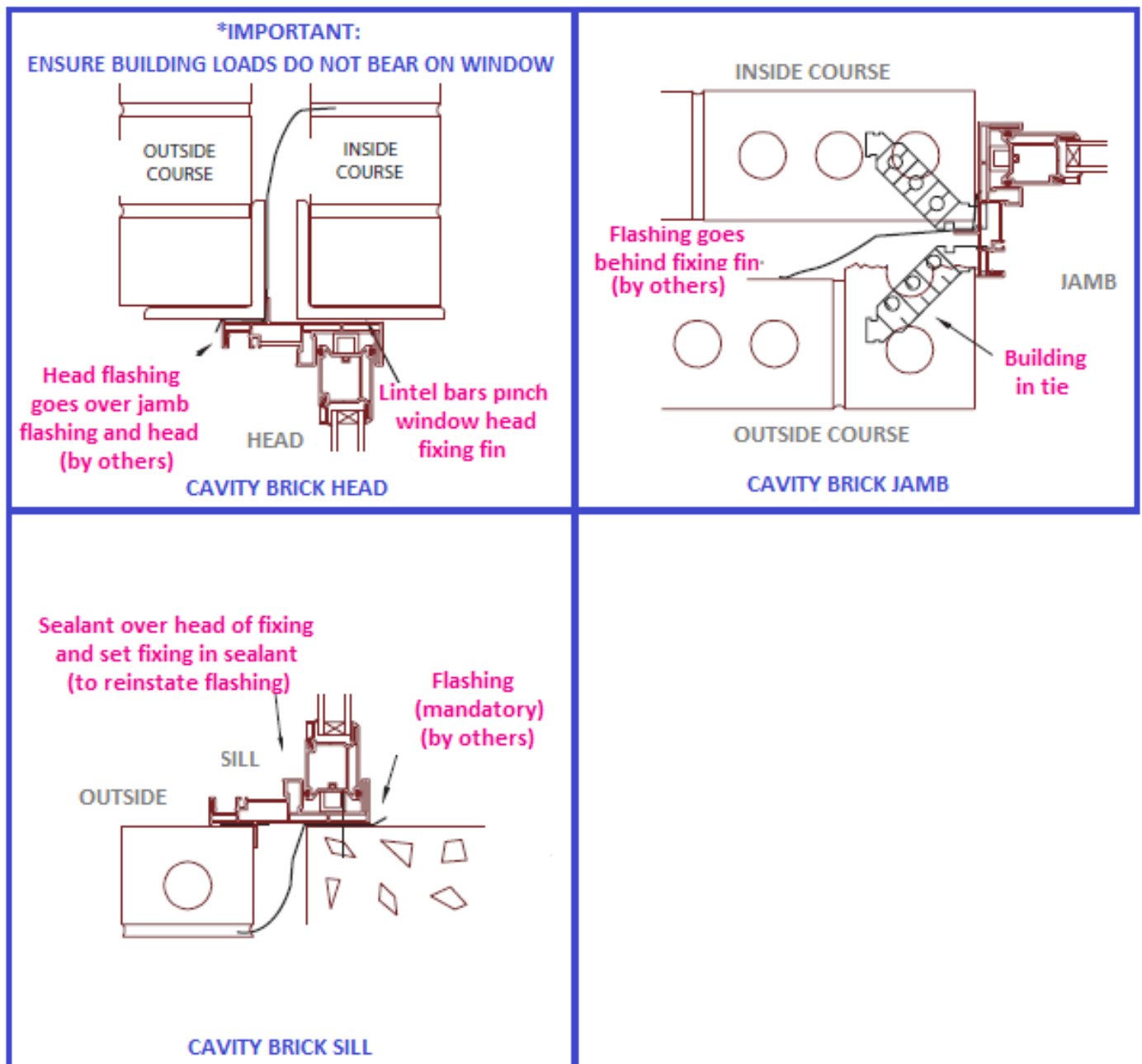
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Cavity Brick Applications (when Metal Brackets are used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.







# Sliding Door

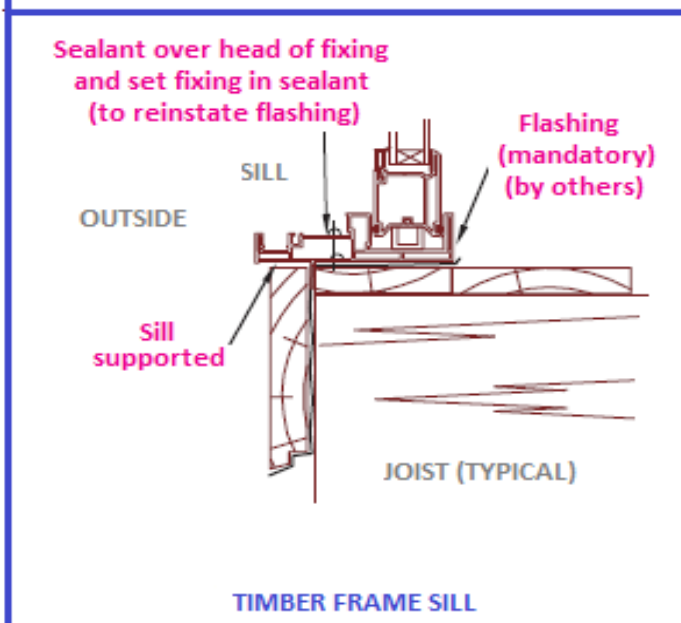
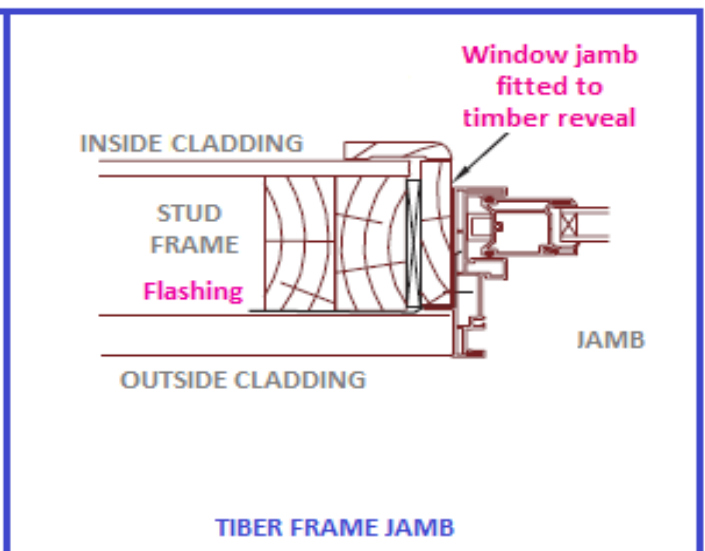
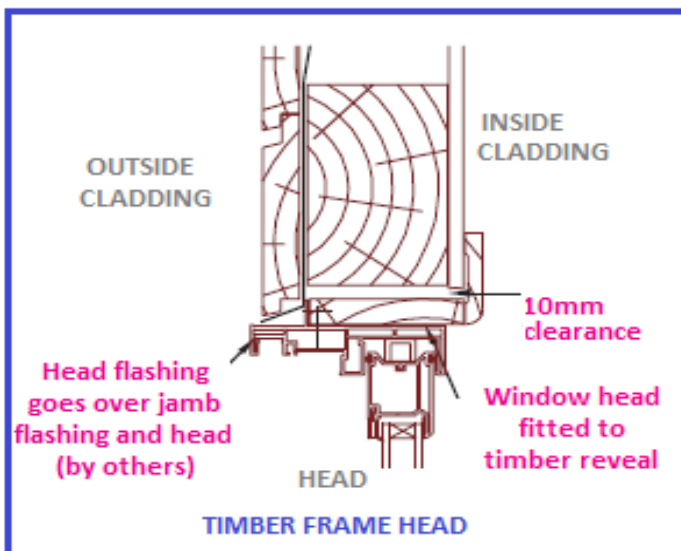
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Timber Frame Applications with Weatherboard (when Timber Reveal is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





# Sliding Door

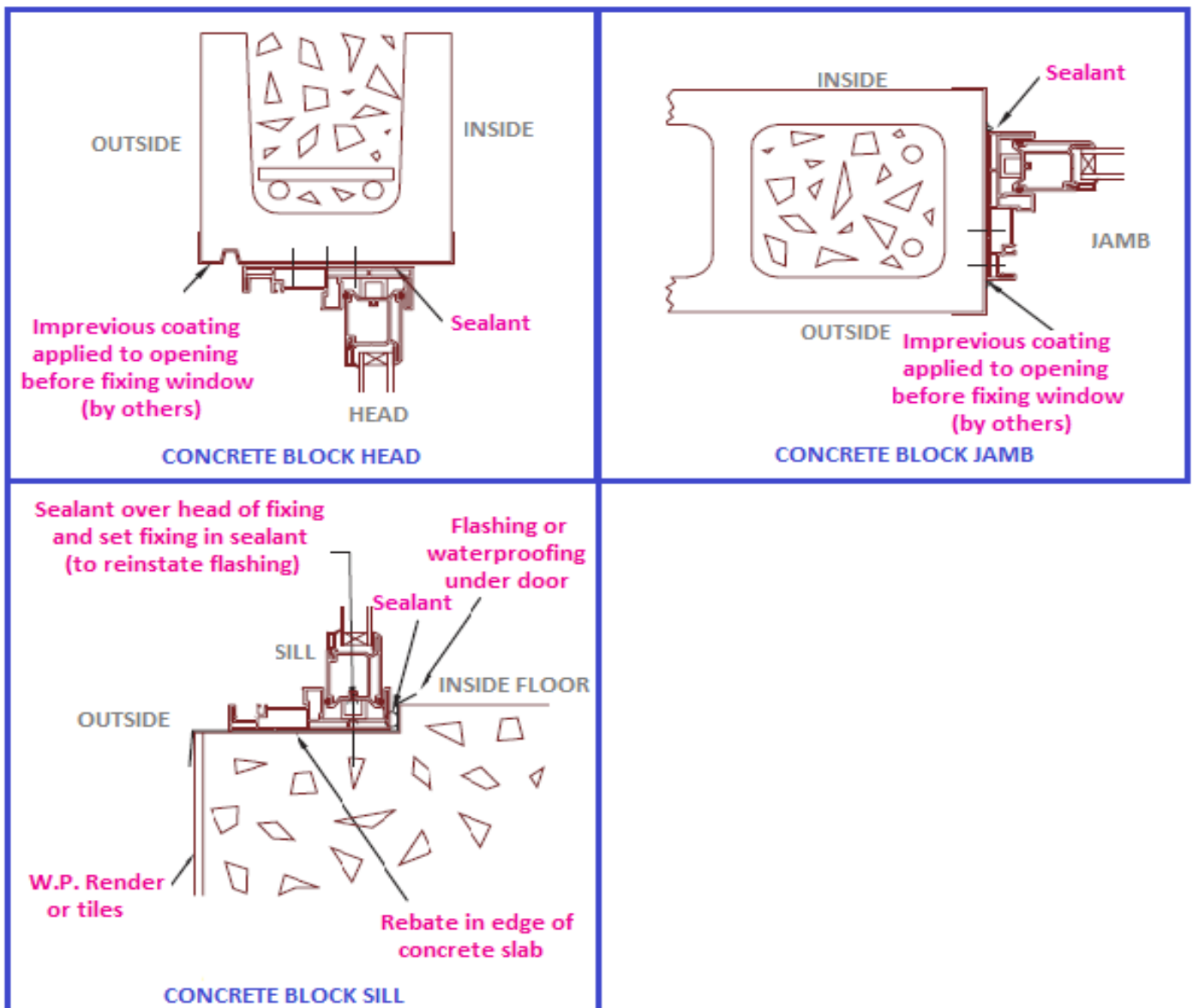
## Installation Details

\*According to the AS2047 Windows in buildings: Selection and Installation

### Concrete Insulation Foam or Block Applications (when direct fixing through the frame is used)

\*\*Profile shown on diagrams below is only an example for installation.

\*\*The profile supplied is varied depending on the order.





# Window and Door Handle Installation



1. With the unit fully closed and locked, loosely set the handle into place.



4. Tighten screws with a Phillips screwdriver. Then rotate the cover to hide the screws.



2. Turn the handle horizontally to open the unit.



5. Close the sash and turn the handle down into the Closed-Position.



3. Once the unit is opened and handle is horizontal, pull and rotate the handle cover to expose the screws.



6. Verify Window or Door Handle is in the vertical (down) position when "Closed".

## Important!

Install the window handles as late in the construction process as possible. The MACO Tool can be used to open the window instead of the finish hardware to:

- ✓ Protect the finish hardware during construction.
- ✓ Reduces construction debris between weather stripping and gaskets.
- ✓ Ensure all windows and doors are closed when site is unattended.



# Entry Door Hardware Installation

## Please note:

Installation may vary if you have selected different hardware.



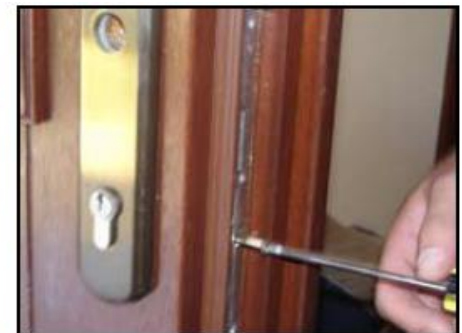
1. Slide exterior escutcheon plate into predrilled holes.



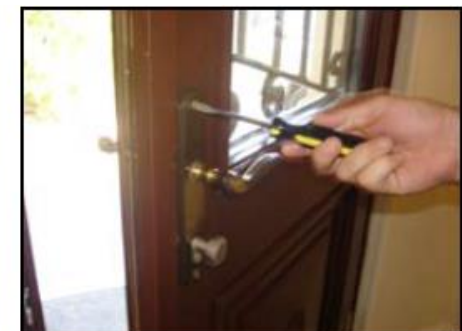
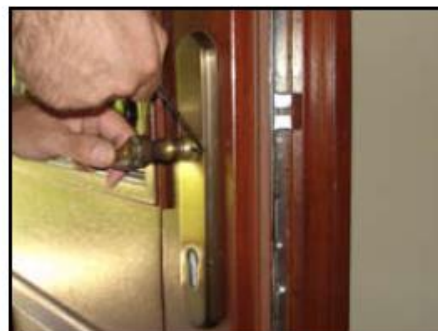
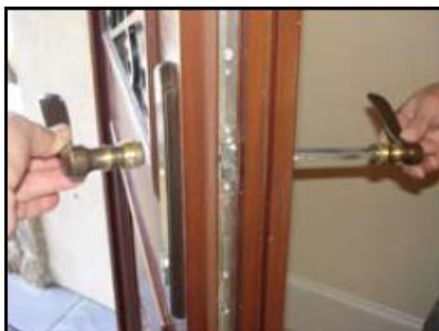
2. Slide the screws into the predrilled holes until the screws make contact with the exterior plate. Gently screw by hand, and then loosely tighten with screw driver.



3. Rotate locking strike until it is flush with the cylinder so you can slide it into the pre-mortised hole and interior hardware when the door is opened.



4. Gently fix the cylinder by the screwdriver provided from the side.



5. Slide the interior handle stem through the predrilled holes into the exterior handle. Once the two handles are firmly connected, gently tighten the nut located on the exterior with an Allen Key. Lastly, tighten all of the screws.

# Section Two

## Post Installation Care

- **Post Installation Care**
- **Glazing Instructions**
- **Cleaning and Maintenance**





# Post Installation Care

## Soiling

If removal of debris is delayed and scraping becomes necessary the finish may be damaged. Remove cement, mortar and other droppings immediately, using ample clean water and a sponge or rag to avoid permanent staining of finished surfaces.

## Door Tracks and Sills

Door tracks and window sills should be protected from planks, scaffolding and barrows.

## Acid Spills

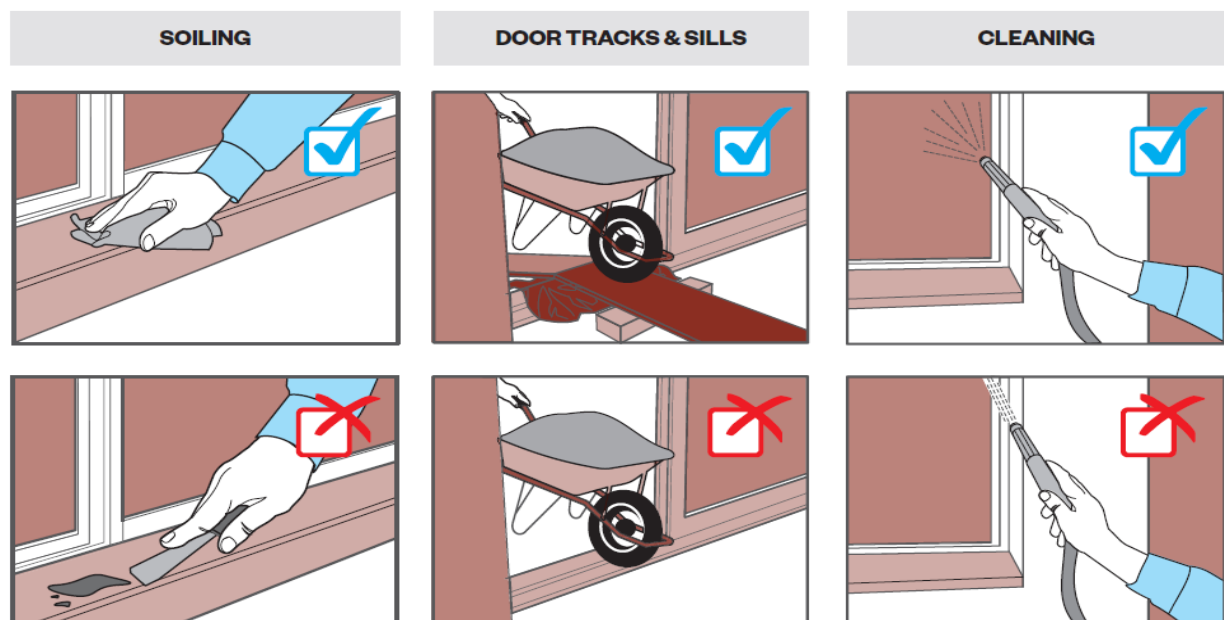
Acid used for cleaning brickwork **MUST** be prevented from making contact with UPVC window frames and sashes. If any acid or similar corrosive material does come into contact with window or door surfaces those areas must be washed immediately with large quantities of clean water.

## Use of Hose

If using a hose or similar apparatus to clean windows and/or doors ensure the hose nozzle/jet fitting is set to a fine spray as shown in the diagram. At NO time should a window or door be hit with a full force of a hose, nozzle/jet setting.

## Glass Care

- To clean, simply wipe over the surface with a few drops of methylated spirits on a damp cloth, and then polish the surface dry with a lint free cloth.
- Ensure that all cleaning cloths are free from any abrasive materials.
- Never remove abrasive materials such as mortar from the glass with a scraper (To clean, flood with water and dab with a sponge. Don't scrub with sponge or scratching will occur).



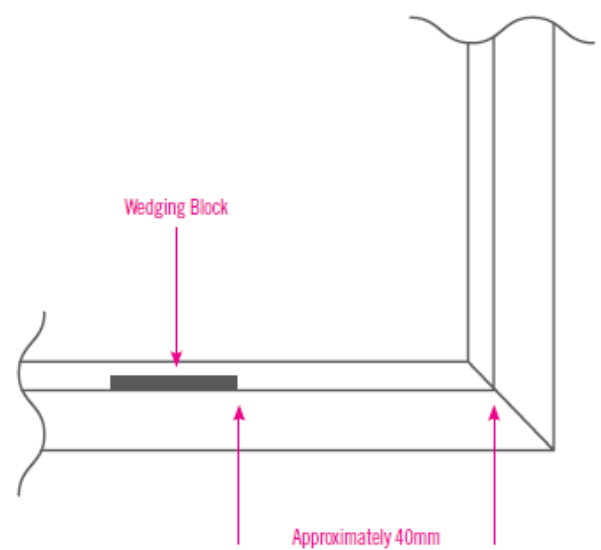


# Glazing Instructions

## Blocking of the Glass Pane

- Required accessories such as clip-on blocking-bridges and wedging material will be supplied.
- Wooden wedges are not tolerable as wedging material.
- Both panes of the insulation glass unit must be evenly supported.
- The distance of the support block from the corner is approximately 40mm (see fig.1).
- All wedges must be secured against slipping.
- Drainage and ventilation of the window must not be affected in its function by the wedging material.
- The different types of openings are to be wedged according to fig.2.

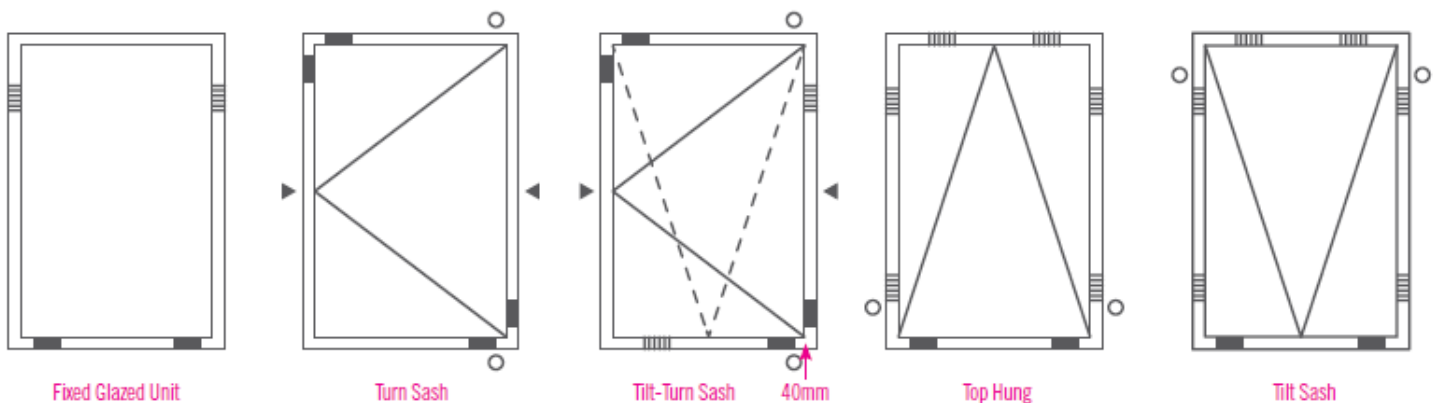
FIG.1



### Attention:

In case of a glazing pane length above 1300mm one additional spacer block is to be inserted in the middle of the length.

FIG.2





# Cleaning and Maintenance

Aluminium-Timber windows can last longer if they are maintained properly. Windows and doors need periodic care in order to ensure a long durability and proper function. Naturally your windows and doors are subject to mixture of weather conditions and because of the various types of architectural and installation solutions, there is no rule which specifies how often these maintenance activities should be made. A good habit would be to inspect, clean and adjust as necessary every six months. It is very important to understand that preventive treatments are essential to avoid severe damage in the future.

## Cleaning

The build-up of dirt and soot and other harmful contaminants on the exterior of any window or door is very common and extremely damaging if not cleaned periodically. This dirt and soot is typically acidic and will deteriorate any finish overtime. You'll find that dirt and soot usually builds up on surfaces that are not flat (panels, trim pieces, carvings).

## Cleaning the Wood

To preserve a healthy finish, periodically wipe down the exterior of your window or door with a damp dust free soft cloth. If you find that the soot and dirt build-up is excessive, use a very-light-soapy warm water solution with a dust free soft cloth. Repeat cleaning process with a clean damp cloth (just water solution) if any surface soapy residue remains. (Do not use any cleaning products that contain petroleum, waxes or vegetable oil soaps. The best cleaners have a neutral pH and have no wax build-up).

## Cleaning the Glass

You can usually remove dust, dirt, smoke, film, soot and salt spray by using a mild detergent and water solution and a soft cloth. To remove heavy dirt or grime from glass, first wipe loose debris from the glass surface with a soft, dry cloth. Then apply a cleaning solution, such as mild soapy water, vinegar or a window cleaner. Remove cleaning solution with a squeegee or a clean, lint-free cloth. Never clean glass in direct sunlight. To avoid damage to the glass, never use razor blades or anything abrasive on glass surface.

## Cleaning Fly Screens

You can usually remove dust, dirt, smoke, film, soot and salt spray from grilles using a mild detergent and water solution and a soft cloth or brush. To remove grease, oil or industrial solids, you may need to use stronger solutions cleaning solutions or rubbing alcohol. Insect screens are best cleaned with a garden hose and soapy water. If they have been neglected, wash them with a detergent and water, using a soft-fibre brush.

# Section Three

## Operation and Adjustments

- **Tilt and Turn Window Operation**
- **Window and Door Sash Adjustments**
  - Step 1
  - Step 2
  - Adjustment A
  - Adjustment B
  - Adjustment C
- **Removal of Window or Door Sash**



# Tilt and Turn Window Operation

## Turning



The window is closed when the handle is in the vertical (down) position. To turn-open the window, turn the handle horizontally and pull inwards.

## Tilting



Tilt position is for room ventilation. Before tilting, the handle should be in the closed position. Closing the sash first will ensure proper hardware engagement. Rotate the handle up 180 degrees, and then gently pull to tilt-open the sash.

## Micro-Venting



Micro-venting is for minimal room ventilation. Before micro-venting, the handle should be in the closed position. Closing the unit first will ensure proper hardware engagement. Rotate the handle approximately 135 degrees, and then gently pull to micro-tilt open the sash.

### Note:

Always close the window completely before attempting to rotate handle to tilt, turn or micro-vent!





# Window and Door Sash Adjustments

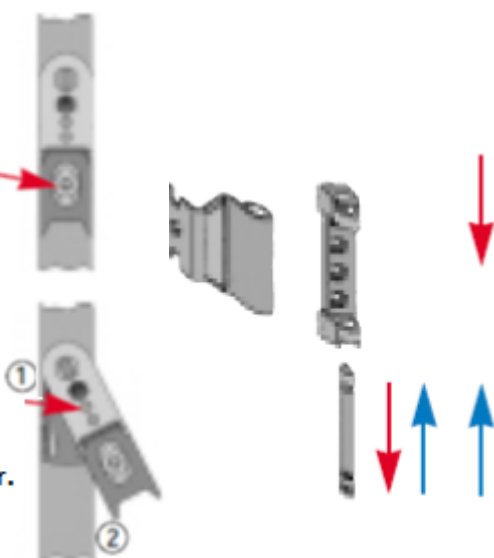
Over time the effects of settlement and everyday use might require your windows or doors to be adjusted. MACO hardware system enables the window or door sash to be adjusted in many different ways with the help of the MACO Allen Key and a Flat-Head screw driver.

## Adjusting the sash lifter:

1. Slacken screw.
2. Adjust and re-tighten.

## Re-setting the sash lifter:

1. Press the spring with MACO Allen Key.
2. Re-centre the sash lifter.



## Removal and Installation of the Sash:

### Removal:

Close the window, remove the scissor stay hinge pin and lift out the sash.

### Installation:

Locate the sash onto the bottom hinge and close the sash. Push the scissor stay hinge pin fully in.

### Raising or Lowering the Sash:

**MACO Allen Key 4mm.**



### Scissor Stay Compression:

**MACO Allen Key 4mm.**

### Bottom Corner Hinge:

Vertical and horizontal,  
**MACO Allen Key 4mm.**



### Bottom Compression:

**Screwdriver or T20 Key.**

## Please Note:

MACO hardware hinges are mostly the same for all tilt and turn window and French door products. This means that both the windows and doors require the same adjustment procedures. If you have different hinges installed, please follow their manufacturer instructions.

MACO hardware for tilt and slide, lift and slide and parallel sliding doors are have been installed and adjusted in the factory. Any further adjustments for rollers and hinges should only be carried out by qualified personnel.



# Window and Door Sash Adjustments

## Step One – Adjustment Points

There are three different points A, B and C where your window sash can be adjusted. Use the MACO Allen Key Tool provided for these 3 adjustments.

### A: Sash Height (Bottom Hinge)

Moves the window sash UP or DOWN.

### B: Top Hinge

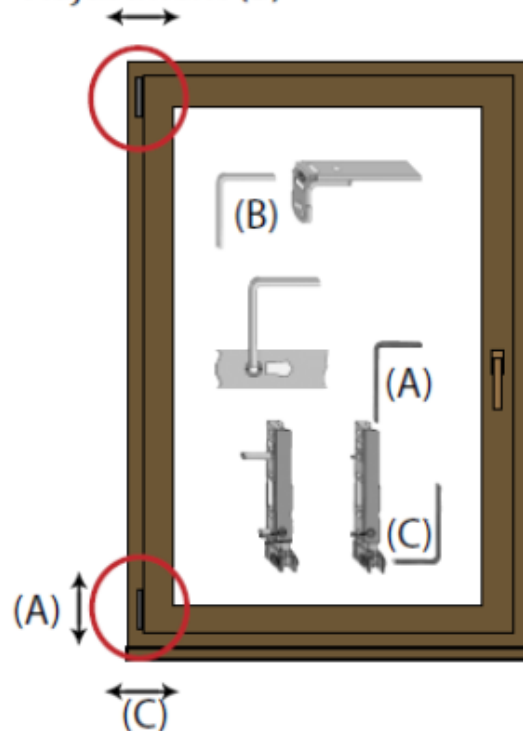
This adjustment moves the top of the sash towards the upper hinge or away from it.

*To access the Adjustment point B you will need to remove the top hinge cover.*

### C: Sash Width (Bottom Hinge)

This adjustment moves the bottom of the sash towards the lower hinge or away from it.

Adjustment (B)



### Please Note:

**Adjust Slowly.** With every adjustment, turn the Allen Key 1/4 turn, then operate the window or door to see if you have corrected the problem. Repeat if necessary: turn the screw approximately 1/4 turn each time, until the issue is resolved. As you correct the problem with one adjustment, you may cause the sash to bind or hit in another place. This means you may have to make more than one adjustment to correct all of the binding problems.

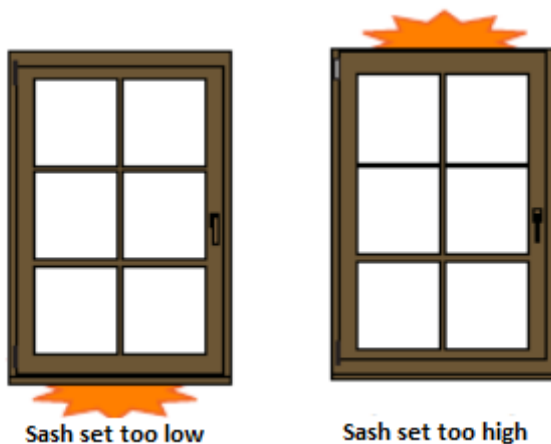




# Window and Door

## Sash Adjustments

### Step Two – Identify the Problem



#### Problem #1

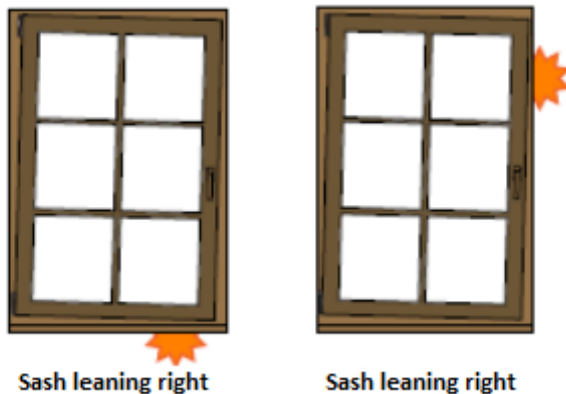
**Description:** Sash rubs in the upper or lower side.

**Cause:** Sash is straight, but is set too high or low.

**Solution:**

*Adjustment A* - move Sash up or down.

**\*refer to diagram on page 30**



#### Problem #2

**Description:** Sash rubs in the lower corner or the upper side.

**Cause:** Sash is leaning towards the lower hinge.

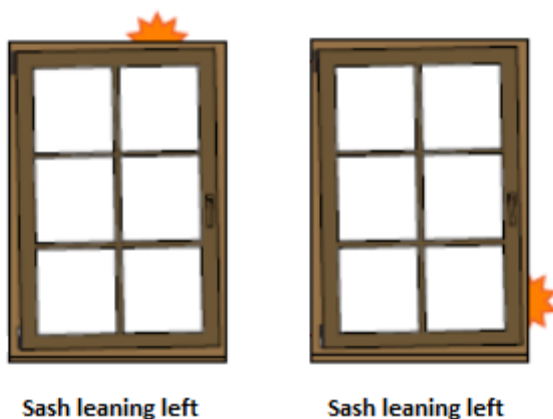
**Solution:**

*Adjustment A* - move Sash down if necessary.

*Adjustment B* - move Sash towards top hinge.

*Adjustment C* - move Sash away from bottom hinge.

**\*refer to diagram on page 30**



#### Problem #3

**Description:** Sash rubs in the upper corner or the lower side.

**Cause:** Sash is leaning towards the upper hinge.

**Solution:**

*Adjustment A* - move Sash down if necessary.

*Adjustment B* - move Sash away from top hinge.

*Adjustment C* - move Sash towards bottom hinge.

**\*refer to diagram on page 30**



# Window and Door

## Sash Adjustments

### Adjustment A – Sash Height

**This adjustment raises or lowers the sash.**

1. You can open the sash or make adjustment when it is closed.
2. Remove the plastic cover from the bottom hinge.
3. Insert the MACO Allen key into the top of the bottom hinge.
4. Rotate the screw that is inside the Bottom Hinge:

**-To RAISE the sash, rotate the screw in a clockwise direction.**

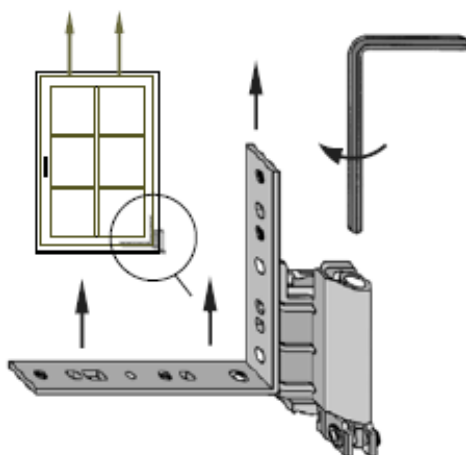
**-To LOWER the sash, rotate the screw in a counter-clockwise direction.**



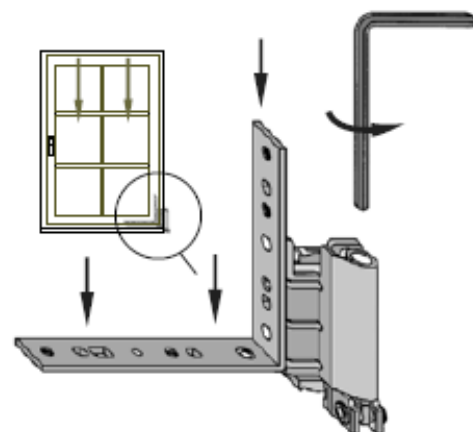
5. Adjust Slowly. With every adjustment, turn the Allen Key 1/4 turn, then operate the window or door to see if you have corrected the problem. Repeat if necessary: turn the screw approximately 1/4 turn each time, until the issue is resolved. When or as you correct the problem with one adjustment, you may cause the sash to bind or hit in another place. This means you may have to make more than one adjustment to correct all of the binding problems.

6. After adjusting, check that the tilt and turn function operates correctly.

Clockwise to Raise the Sash



Counter-Clockwise to Lower the Sash





# Window and Door Sash Adjustments

## Adjustment B – Top Hinge

**This adjustment moves the top of the sash towards the upper hinge or away from it. Essentially this adjustment will rock the sash to the left or to the right.**

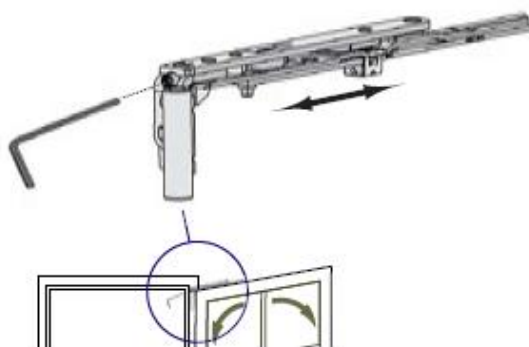
1. Open the sash as far as it will open.
2. Insert the MACO Allen Key into the head of the screw at the end of the shear arm.
3. Turn the Allen Key 1/4 turn in a counter-clockwise or clockwise direction:

***Counter-clockwise: To tilt the sash towards the upper hinge, rotate this screw in a counter-clockwise direction. This raises the bottom corner of the sash on the handle side.***

***Clockwise: To tilt the sash away from the upper hinge, rotate the screw in a clockwise direction. This lowers the bottom corner of the sash on the handle side.***

4. Adjust Slowly. With every adjustment, turn the Allen Key 1/4 turn, then operate the window or door to see if you have corrected the problem. Repeat if necessary: turn the screw approximately 1/4 turn each time, until the issue is resolved. When or as you correct the problem with one adjustment, you may cause the sash to bind or hit in another place. This means you may have to make more than one adjustment to correct all of the binding problems.

5. After adjusting, check that the tilt and turn function operates correctly.







# Window and Door Sash Adjustments

## Adjustment C – Bottom Hinge

**This adjustment moves the bottom of the sash towards the upper hinge or away from it. Essentially this adjustment will rock the sash to the left or the right.**

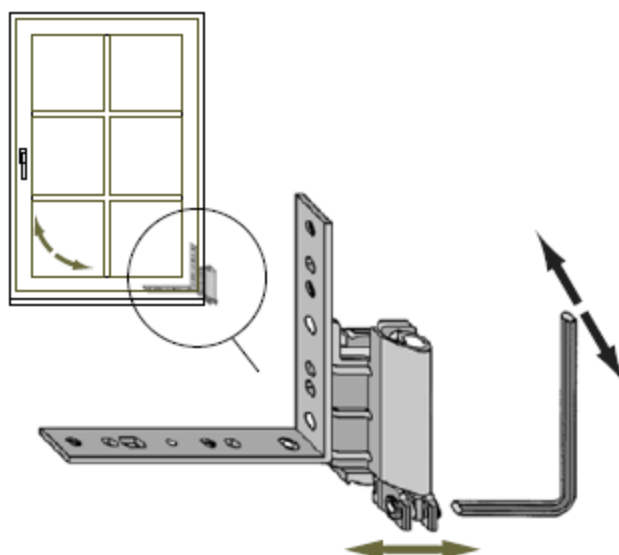
1. You can open the sash or make adjustment when it is closed.
2. Remove the plastic cover from the bottom hinge.
3. Insert the MACO Allen key into the top of the bottom hinge.
4. Rotate the nut that is at the bottom of the Hinge:

***-To Pull the Sash closer to the hinge turn the nut to the right.***

***-To Push the Sash away from the hinge, turn the nut to the left.***

5. Adjust Slowly. With every adjustment, turn the Allen Key 1/4 turn, then operate the window or door to see if you have corrected the problem. Repeat if necessary: turn the screw approximately 1/4 turn each time, until the issue is resolved. When or as you correct the problem with one adjustment, you may cause the sash to bind or hit in another place. This means you may have to make more than one adjustment to correct all of the binding problems.

6. After adjusting, check that the tilt and turn function operates correctly.





# Removal of Window or Door Sash

## 1. Remove Hinge Covers:

Pull off the top and middle hinge covers.

## 2. Open the Sash:

Partially open the sash.

## 3. Remove Hinge Pin:

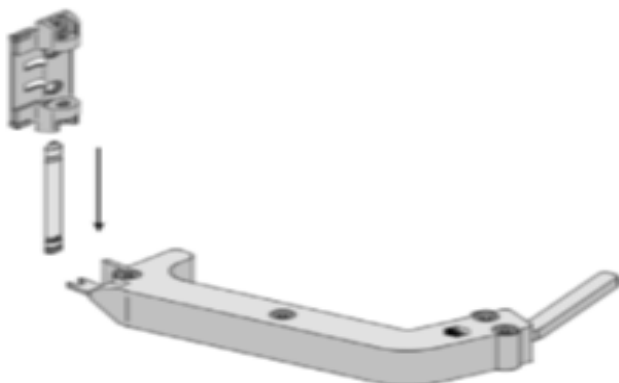
Have one person support the weight of the sash with two hands. Have the other person pull the hinge pin down for top and middle hinges by using the MACO Tool. Pull the hinge pin down until you hear a "Click". The clicking of the hinge pin indicates that the pin is at the lowest point of the hinge.

### Warning!

The sash is heavy. Two or more people are needed to remove the sash. Do not try to remove alone.

## 4. Lift Sash Up-and-Off of Bottom Hinge Pin:

The top of the sash is now free from the frame, only the bottom hinge pin is attached and supporting the sash. To release the sash from the bottom hinge pin, slightly tilt the sash towards you. Next lift the sash up and off of the bottom hinge pin.





# Contact Qualital

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