

# Horizontal Sliding Windows



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## Installation Guidelines for Horizontal Sliding Windows

# Horizontal Sliding Windows

## Installation Guideline Disclaimer

This document contains general installation guidelines of the Graham Architectural products and does not address each particular condition or installation. Shop drawing installation details may vary from these Guidelines as these Guidelines do not address every possible condition so any variances should be addressed by the design professional. These Guidelines do not address the structural adequacy on any installation and such should be addressed by a design professional. Anchorage to existing or proposed wall conditions are not addressed in this document. Sealant compatibilities and application details should be reviewed by the sealant manufacturers. This document does not address the connection between the window system and the building weather barrier system and should be reviewed by the waterproofing consultant. It is generally recommended that insulation be installed in all voids of a thermally improved system, but the application of insulation in wet areas needs to be addressed by the design professional and the particular type of insulation may need to be specified.

# Horizontal Sliding Windows

Thank you for your purchase of Graham Architectural Windows. These instructions include the installation and initial adjustment instructions of the windows.

Read these instructions before starting any installation. Following the attached installation instructions step by step will assure trouble free operation of your new windows.

## HANDLING – SORTING – PROTECTING ALUMINUM WINDOWS

Aluminum windows are finished products and must be protected against damage. The following precautions are recommended to assure acceptance of your products and workmanship:

1. HANDLE CAREFULLY – DO NOT DROP. Be careful handling windows with pre-loaded sash. Make sure pre-loaded sash are locked prior to moving windows. Stack vertically with adequate separation so window parts will not rub together, including any protruding hardware such as handles. Do not use the hardware or grids for lifting or manipulating the window.
2. Do not allow the rollers on the bottom of the sash to touch the ground, or get dirt in the rollers. The sash should be stored with blocking under the sash.
3. Protect windows from moisture and dirt prior to installation. It is important that all windows that are not installed, are protected from direct contact with rain, snow, or ice so as to protect the finish and glazing of the product. If water gets into, and is retained in the glazing pocket, it will cause the edge seal of the insulating glass to fail.
4. Protect from construction debris, cement, plaster, terrazzo, and other construction materials, which include, but are not limited to, alkali based materials or caustic cleaners. This must be removed immediately to prevent damage to the finish of the aluminum or to the clarity of the glass.
5. Construction debris and dirt within the frame will affect the operation of the window.
6. Prior to applying sealants, the surfaces must be cleaned and prepared as directed by the sealant manufacturer.

*CAUTION – Windows are not to be used as ladders, scaffolds, or supports. Installed window openings are not to be used as construction entrances, unless adequate protection to the window sill and jambs is provided. Damage to any products from any construction activity will void the product warranty for the products in question.*

**Note:** Copies of these instructions can be downloaded from [www.grahamwindows.com/architectural-resources/technical-information/](http://www.grahamwindows.com/architectural-resources/technical-information/)

# Horizontal Sliding Windows

## Window Installation

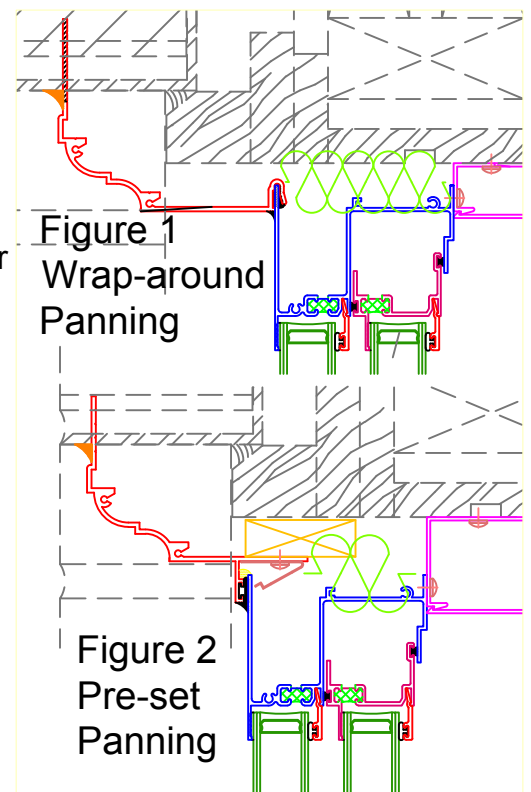
### General Instructions

- A. Upon delivery carefully check that all windows have been received undamaged. If any of the windows have been damaged, immediately notify your Graham Representative.
- B. Install the windows in accordance with the shop drawings.
- C. The sills of horizontal sliding windows cannot be penetrated or fastened through.
- D. The sill will need adequate support.  
The sill must be level in accordance with Table 1.
- E. The head will need to be blocked or shimmed with fasteners to ensure that it's straight within the tolerance outlined in Table 1 (Extrusion Straightness).
- F. Never place fasteners too close to the edge of masonry substrates. Refer to fastener manufacturers guidelines for proper edge distance, load capacity and installation techniques.
- G. Seal the exterior in accordance with the shop drawings.
- H. Insulate between the window frame and the rough opening or receptor system.
- I. If the windows are to be installed using panning, refer to the Graham Installation Guidelines for the type of panning being used. [www.grahamwindows.com/architectural-resources/technical-information/](http://www.grahamwindows.com/architectural-resources/technical-information/)

Installation Tolerances (+/- Target)			
	Inches/ Foot	Inches Maximum	Method of Measurement
Level (Horizontal Measurement)	1/32"	1/8"	Measure sill using level
Plumb (Vertical Measurement)	1/32"	1/8"	Measure jambs using level or plumb bob
True (In Plane Measurement)	1/32"	1/8"	Attach strings across corners, measure where they cross
Extrusion Straightness	1/64"	1/16"	Measure with straight edge
Square (Diagonal Measurement)	N/A	1/16" <sup>**</sup> 1/8" <sup>**</sup>	Measure diagonal corners (Difference/2)

\*Openings up to 20 sq. ft.    \*\*Openings 20 sq. ft. and over

### Table 1



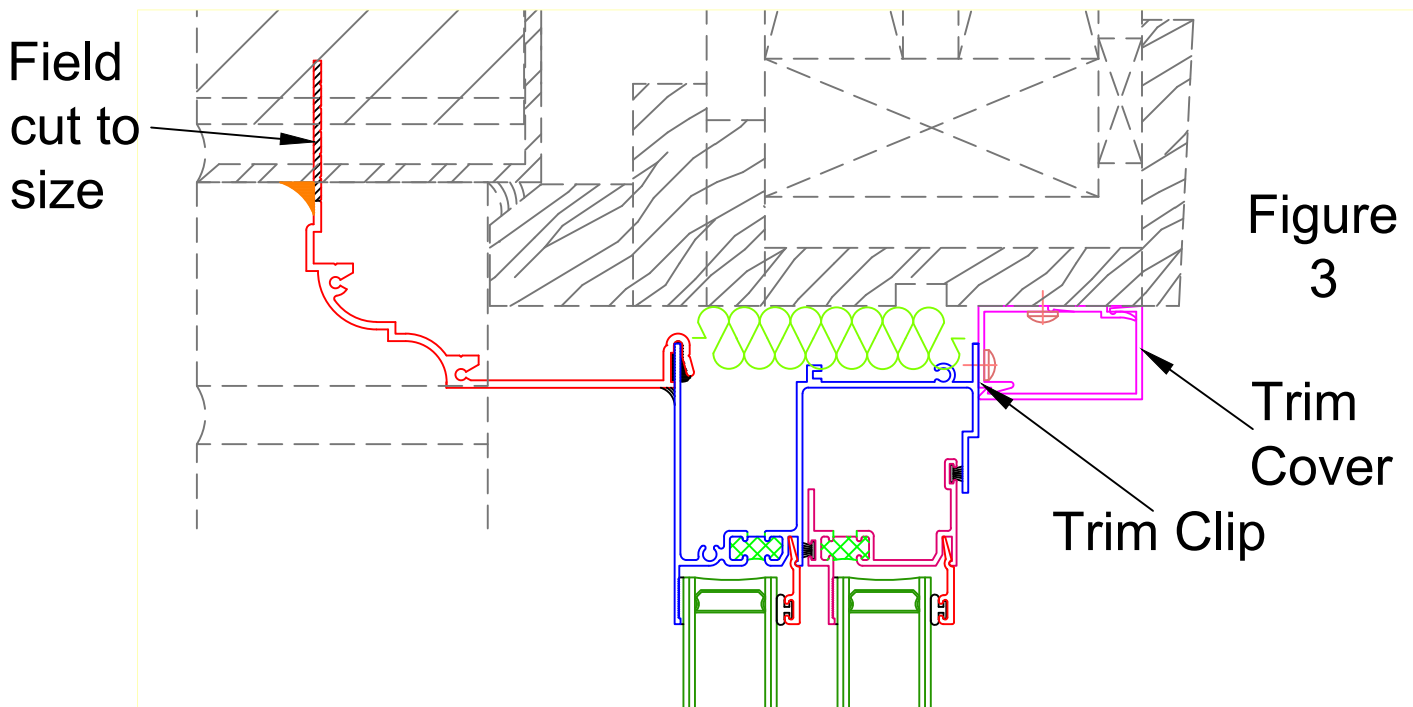
**Note:** Panning cannot support the weight of a window.

# Horizontal Sliding Windows

## Window Installation

### Trim and Clip Installation

- A. If trim and clip are used, trim clips can be full length or 3" long sections. If sections are used, they will need to be lined up in order for the trim cover to snap in place.
- B. The trim clip to window fastener must be a minimum of #8 x 1/2" screw, or heavier as required to meet project design loads. The trim clip must be attached to the rough opening before attaching it to the window. The trim clip to rough opening fastener is dictated by the substrate. Graham Architectural recommends that the fastener is greater than, or equal to, the fastener used at the clip to window (as required to meet project design loads).
- C. The fastening schedule will generally be determined by a structural engineer. If a fastening schedule has not been specified, Graham Architectural recommends applying fasteners a maximum of 9 inches from each corner, and then a maximum of 18 inches apart. (*Note: Recommended fastening does not apply to projects that have blast mitigation or hurricane requirements*)
- D. When installing trim clip fasteners, make sure not to twist the frame. Additional shims and fasteners will be needed at the mid-span of the head to prevent the head from sagging.
- E. The head and (if used) the sill trim covers are field cut to size. Snap trim covers on using a rubber mallet, or a block of wood with a hammer. Be careful not to dent or scratch the finish on the trim cover when installing it.
- F. The jamb trim covers are field cut to size. Snap trim covers on using a rubber mallet, or a block of wood with a hammer.
- G. The window must be level, plum and square in accordance with Table 1 shown on the previous page.

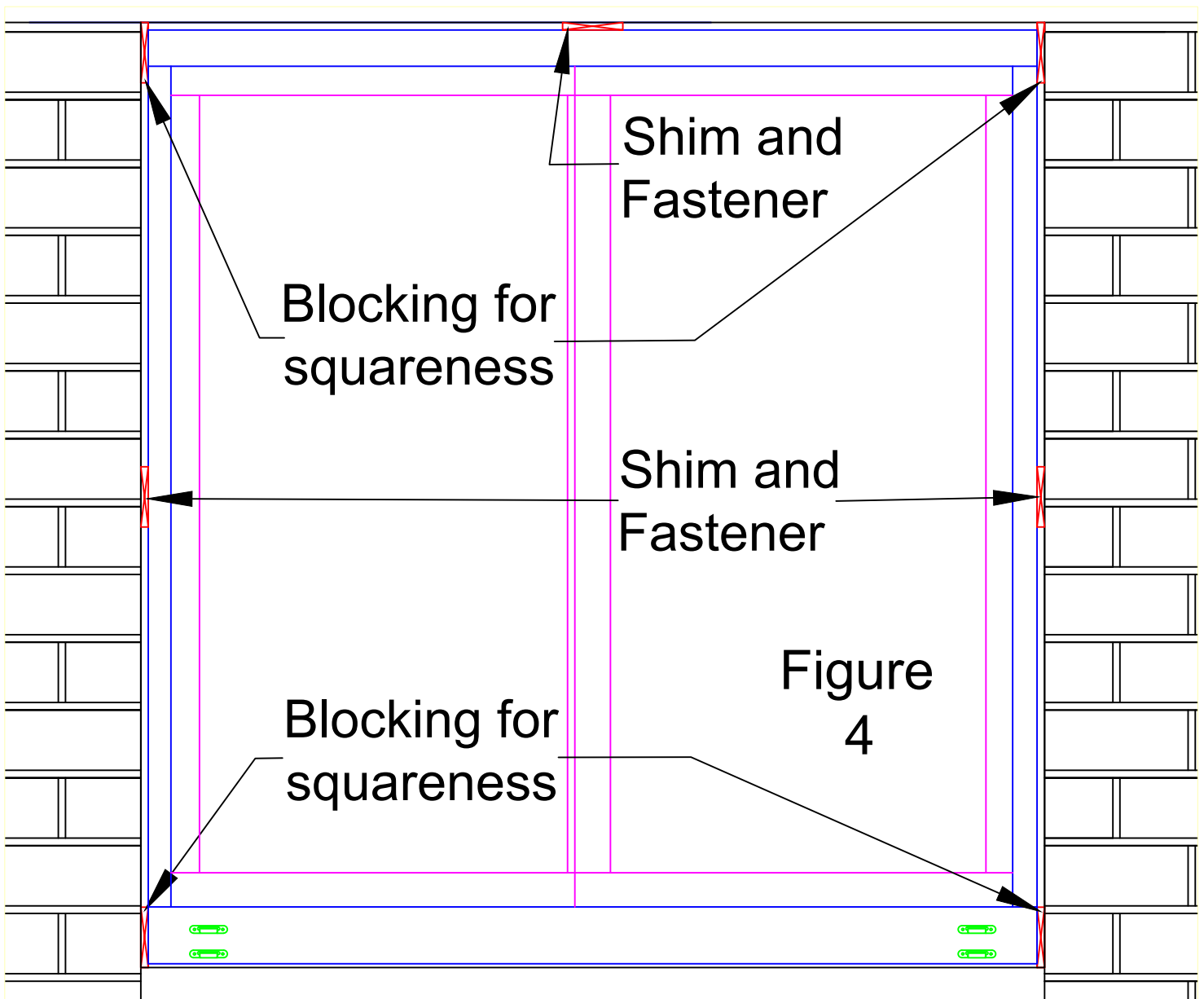


# Horizontal Sliding Windows

## Window Installation

### Receptor Installation

- A. If the windows are to be installed in a receptor system, refer to the Graham Installation Guidelines for Receptor Systems for more detailed instructions. [www.grahamwindows.com/architectural-resources/technical-information/](http://www.grahamwindows.com/architectural-resources/technical-information/)
- B. The window will need blocking in the jambs to ensure the window is square (See Figure 4). In some cases, shims and fasteners will be needed to prevent the head from sagging. Shims and fasteners will also be needed at the mid-point of the jambs to make sure the jamb stiles seat properly into the jambs. If the jamb length exceeds 48", additional blocking will be needed. The jamb blocking spacing shall not exceed 24".



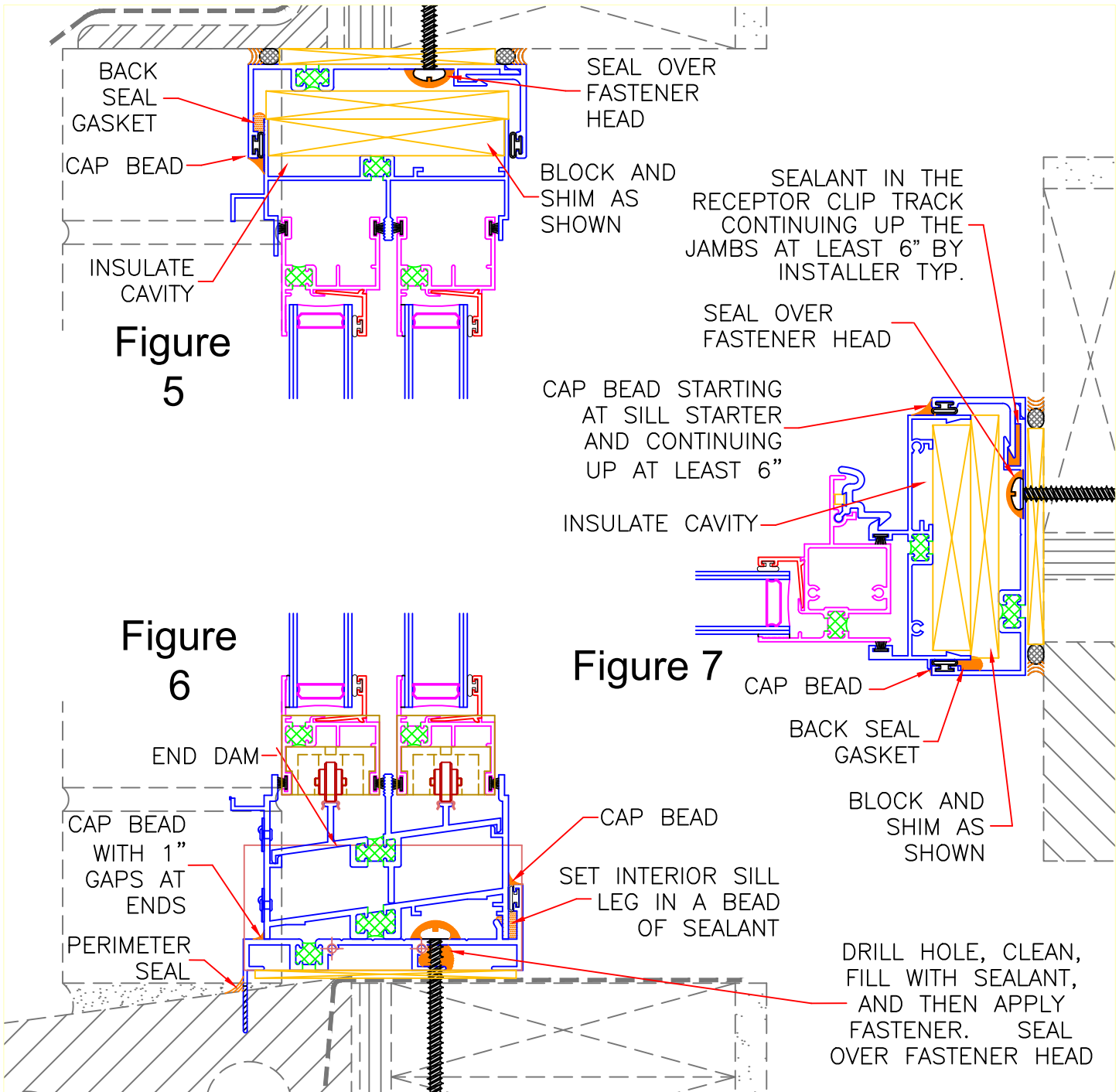
*Note: Figure is shown without the receptor for illustration purposes.*

# Horizontal Sliding Windows

## Window Installation

### Receptor Installation

- C. The window must be level, plumb and square in accordance with Table 1 on Page 3.
- D. Insulation is recommended between the receptor and the head and jambs of the window. Insulation is not recommended in the sill area.





# Horizontal Sliding Windows

## Vertical Mullions

- A. Vertical 3-piece mullions will need attached to the head and sill of the rough opening with one or more mullion clips or angles. The mullion will need back-sealed to the window frames, and cap-sealing is recommended.
- B. Mullion pressure plates (covers) should be back-sealed starting at the sill and continuing up at least 6". The pressure plates should be attached to the jambs with #10 x 1/2" screws (not supplied by Graham), a maximum of 9" from the ends and a maximum of 18" on center.

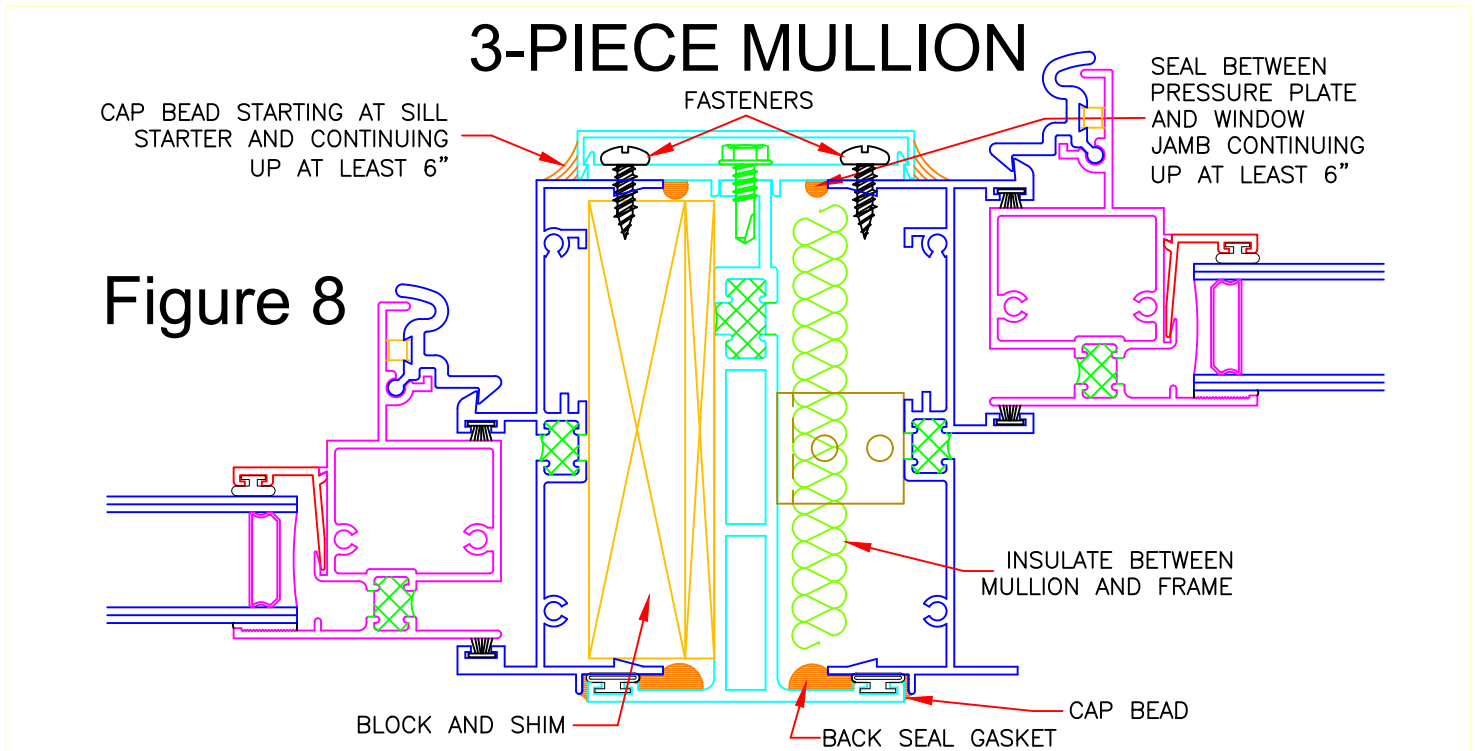


Figure 8

- C. Zero, 1/16", and Self-mullions (male/female) need sealant applied to the interior and exterior legs of the jamb prior to final assembly. Self-mullions also need cap sealed.

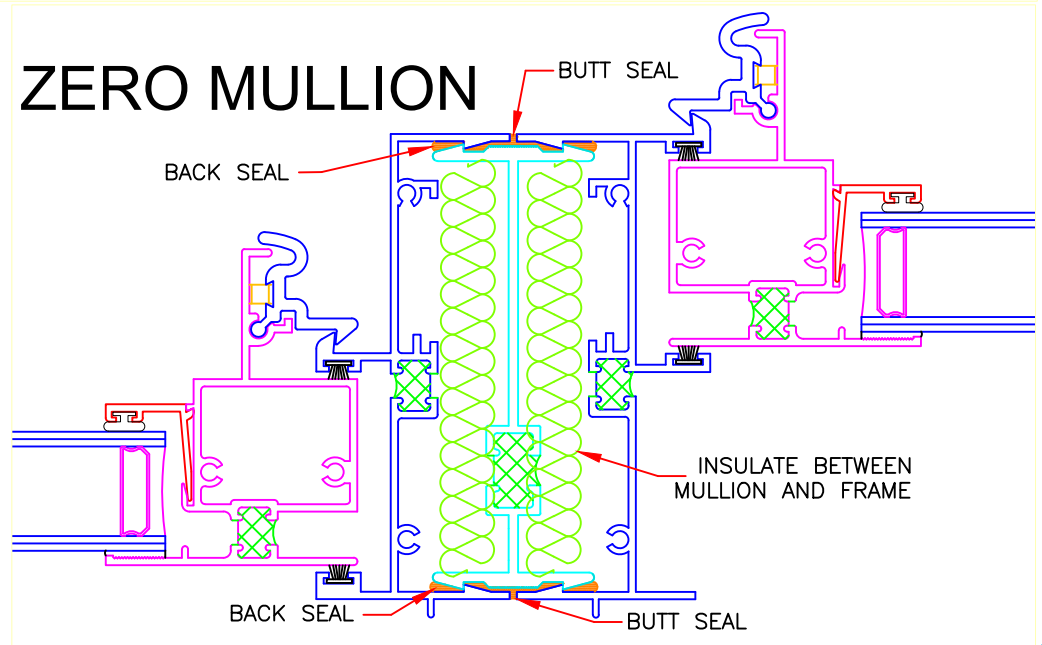


Figure 9



# Horizontal Sliding Windows

## Horizontal (Stack) Mullions

- A. Insulation is recommended between the mullion and the window frame.
- B. Horizontal (stack) mullions need sealed to the frame of the window above and below. The exterior legs must be sealed, and Graham Architectural recommends that the interior legs are sealed.
- C. Mullion anchor clips may be required depending on the size of the window, and/or the design load requirements. Reference the project shop drawings, or contact the Engineering Department of Graham Architectural to determine when mullions clips are needed for each type of stack mullion.
- D. If multiple stack mullions are used in an opening, clearance will be needed between the stack mullion and the window below to allow for movement. Contact the Engineering Department of Graham Architectural for stack mullion and clearance recommendations for each specific project.

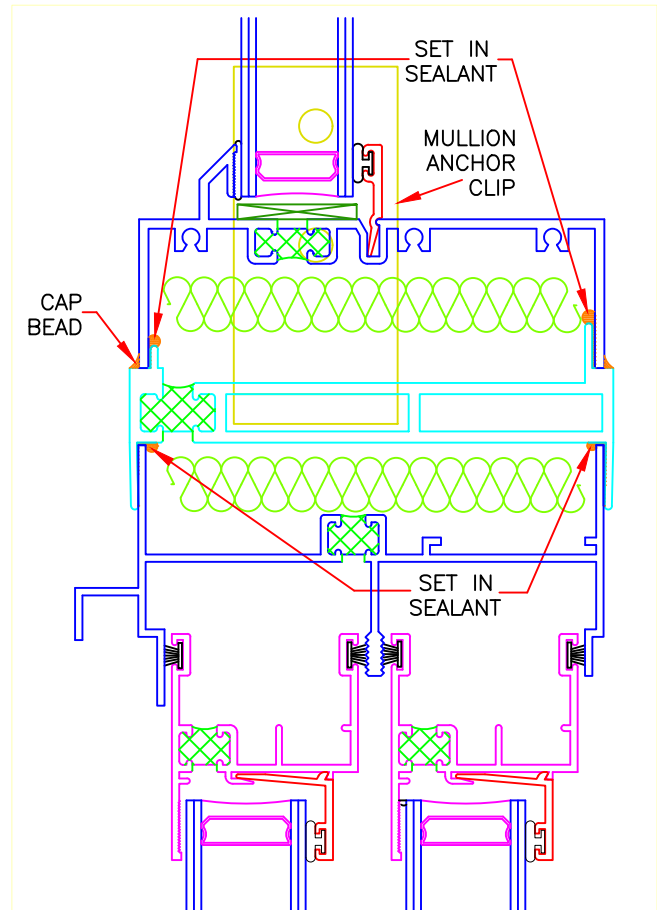


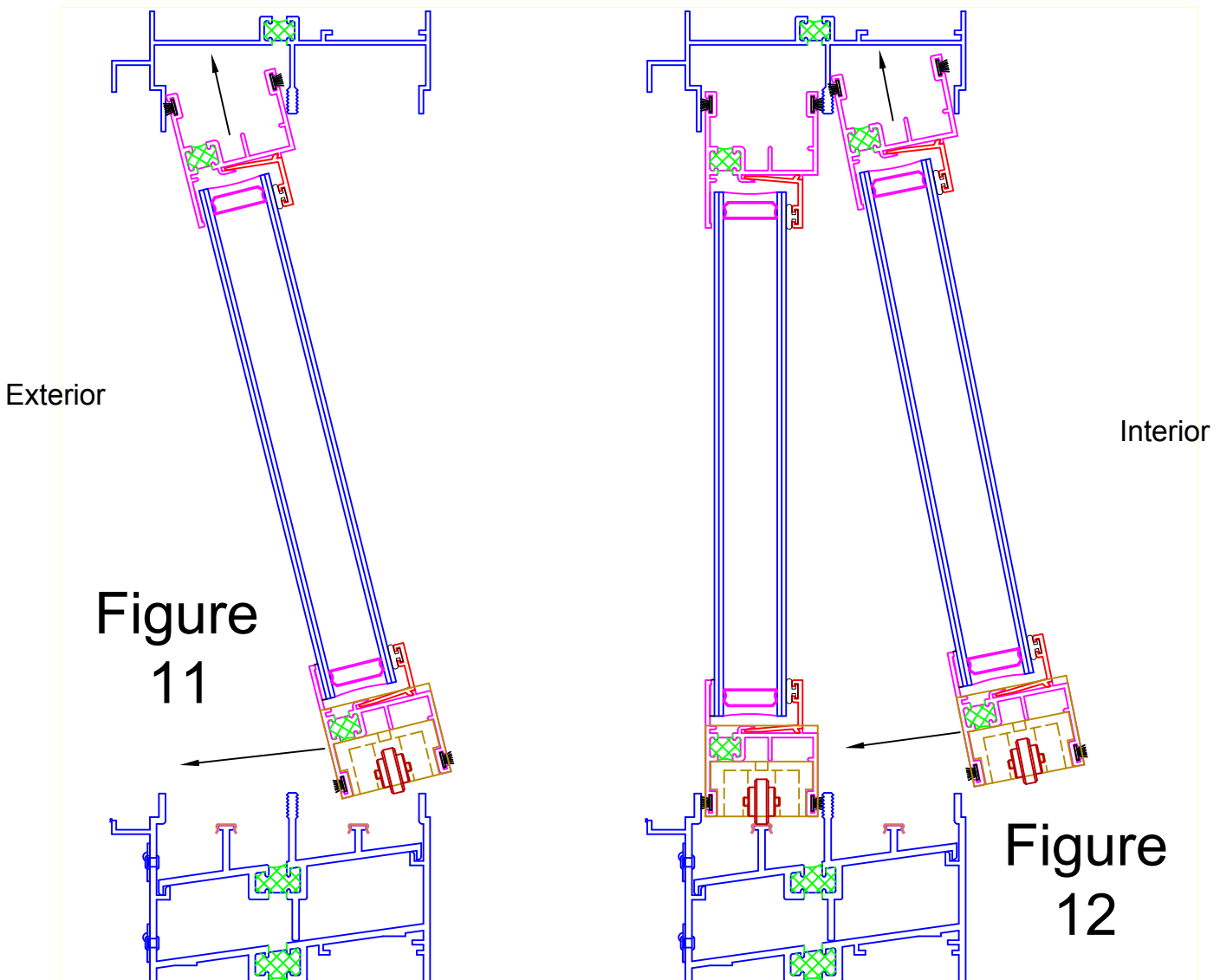
Figure 10

# Horizontal Sliding Windows

## Loading Sash

In certain cases, the sash are shipped separate from the frame. The following are the instructions for installing the sash. If anti-take out blocks are not installed, they will need installed before the sash are installed.

- A. Before loading sash, take note of the anti-take-out blocks in the head. These will have to be avoided when loading the sash. In addition, make sure the stainless steel roller track is in the interior sash track of the sill.
- B. If the window is a dual sash slider, insert the exterior sash into the exterior sash track of the head, and then rotate the sash until the bottom of the sash can slide into the exterior sash track of the sill (See Figure 11). Do not drop sash into sill. Slide the sash to it's location.
- C. Insert the interior sash into the interior sash track of the head, and then rotate the sash until the bottom of the sash can slide into the interior sash track of the sill (See Figure 12). Do not drop sash into sill. Once the sash are seated, check the sash for operation.
- D. Some windows have a bracket to fix the exterior sash, which would be installed at this time.

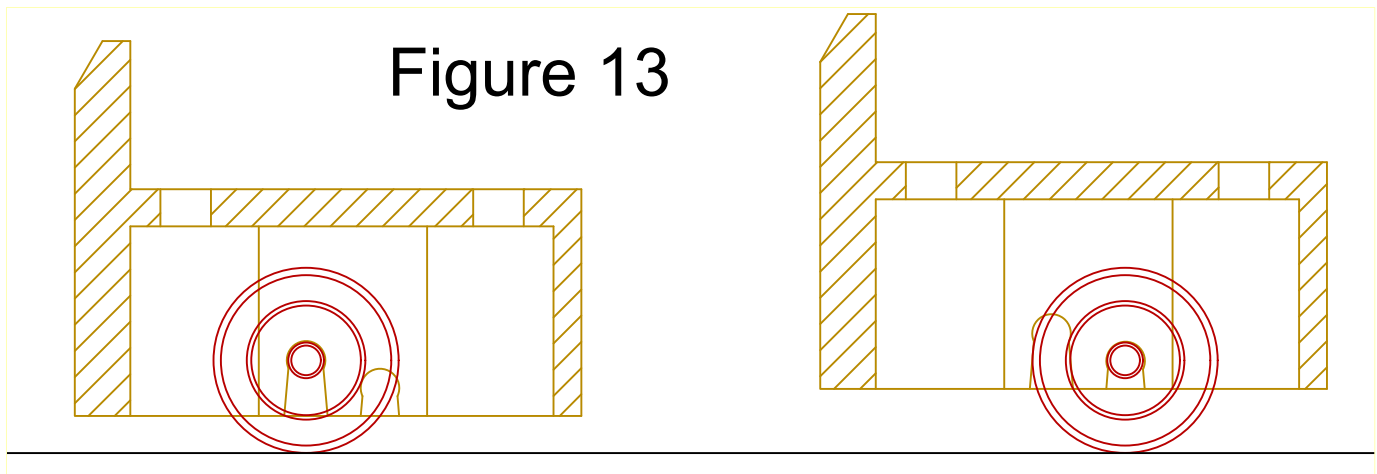


# Horizontal Sliding Windows

## Roller Adjustment

The sash position can be adjusted by moving the rollers. This can be completed as follows:

- A. Remove the sash by reversing the order of the sash installation on Page 9.
- B. Using a narrow flat blade screwdriver, insert blade under the wheel and gently pry wheel out of housing.
- C. Place wheel assembly in the other slot that is beside the slot from which wheel assembly was just removed (See Figure 13).

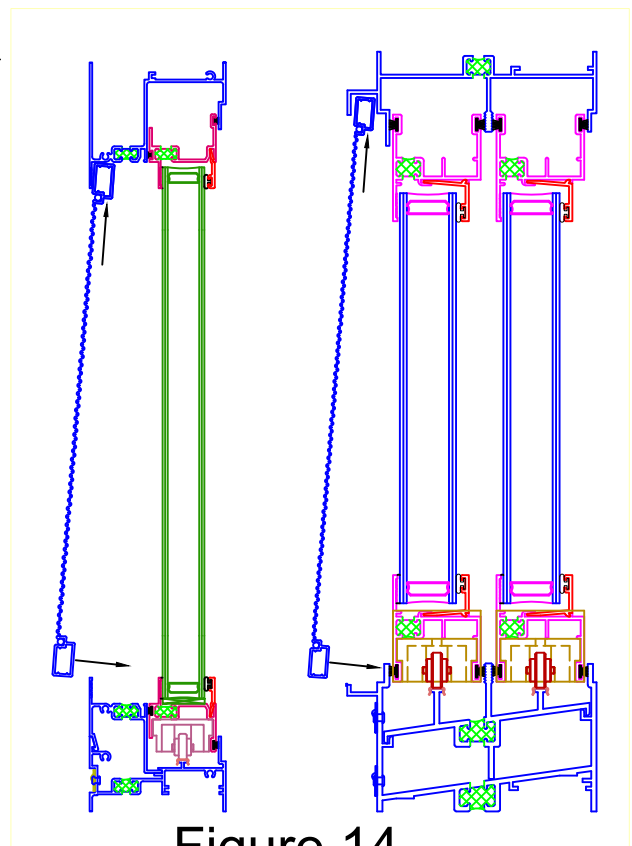


## Screen Installation

The screen may have to be installed prior to the sash(s). The screens have pull tabs on the bottom rail.

Put the top rail of the screen into the top screen track and rotate the screen until the bottom rail can slide into the bottom screen track (See Figure 14). Once installed, check sliding screens for operation.

Security screens are usually attached at the factory, therefore these instructions do not include the installation of those products.



# Horizontal Sliding Windows

## Cleaning/ Lubrication

- A. After a window has been exposed to the conditions at a construction site, the window will need inspected, cleaned, and should be lubricated.
- B. Inspect the window for damage and missing parts. Damage from the construction trades, including exposure to alkaline products (e.g. stucco and mortar), acidic cleaners, and weld splatter may require replacement of window parts or replacement of the entire window. The Graham warranty does not cover these types of damage.
- C. If there is construction dirt and debris in between the sash and the frame, a vacuum cleaner should be used to remove the larger debris. Then a mild detergent mixed with water can be used with a soft cloth or sponge to remove the dirt. The mixture will then need rinsed off with clean water. **DO NOT USE AGGRESSIVE ALKALINE, ACIDIC, OR ABRASIVE CLEANERS.**
- D. The interior and exterior can also be cleaned using a mild detergent mixed with water, or mild cleaning agents. Do not use aggressive organic solvents such as chlorine bleach, grease removers, or nail polish remover. **DO NOT USE AGGRESSIVE ALKALINE, ACIDIC, OR ABRASIVE CLEANERS.**
- E. Commercial glass cleaners can be used to clean the glass. Do not use abrasive cleaners to clean the glass. **DO NOT USE SHARP METAL OBJECTS (SUCH AS A RAZOR BLADE) TO SCRAPE THE GLASS.**
- F. Check the operation of the sash. If the operation is difficult, lubricate the head and sill with a non-petroleum based lubricant, such as spray silicone.