PELLA® IMPERVIA COMBINATION ASSEMBLY USING 1/2" MULLION REINFORCEMENT AND FINS – OPTIONAL SUBSILL INCLUDED

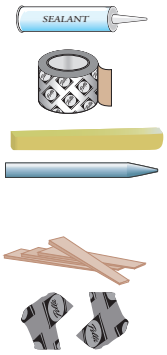
For Additional Mullion Assembly Information; Visit www.installpella.com/mullions,or Call (877) 473-5527 to find a local retailer, or Scan barcode in upper right corner.

Be sure to thoroughly read and understand all the steps before beginning the mullion assembly process.

Window combinations assembled using this instruction have limited structural performance. Consult the Pella Architectural Design Manual or your Pella representative for more information.

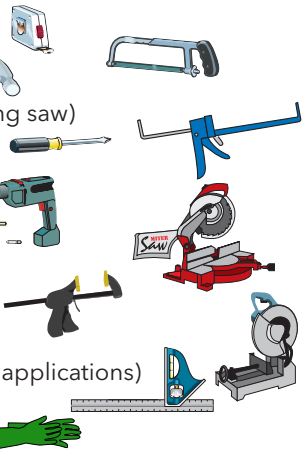
Subsill systems that weep incidental moisture to the exterior are recommended for water management in openings where the potential for water infiltration is increased and may not be adequately managed by the building weather barrier, flashings and drainage system. Sample conditions include, but are not limited to: increased level of exposure due to multi-story construction, high weather exposure, recaulking would be difficult or unlikely, non-standard installation methods, or when there are multiple units joined within the opening.

YOU WILL NEED THE FOLLOWING ITEMS:



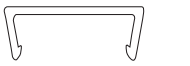
- Pella Window and Door Installation Sealant or equivalent high quality, multi-purpose sealant
- Pella® SmartFlash™ foil backed butyl window and door flashing tape or equivalent
- 1" x 3" x 12" Wood Block with rounded ends
- Pencil or Center Punch
- Clamps
- Installation Fins (4)
- Shims
- Installation Fin Corners (when vinyl installation fins are used)
- 1-1/2" masonry screws
- Steel bar - 1/4" x 2-3/4 x L (L = FH –2" vertical w/subsill or FH-4" for horizontal or w/o subsill.)

TOOLS REQUIRED:

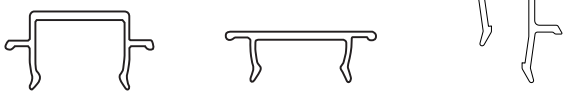


- Tape measure
- Hammer
- Hack saw (metal-cutting saw)
- Phillips screwdriver
- Sealant gun
- Drill with 1/8" 3/16", 5/32" bits
- Miter Box/Chop Saw
- Quick Grip clamps
- Metal Cutting Saw (for High Performance applications)
- Combination Square
- Green Nitrile gloves

MULLION KIT, PARTS INCLUDED:



- 1/2" Exterior Mullion cover, 109"
- Interior Structural Mullion Cover, 109"



3" frame depth windows | 3-1/4" frame depth windows | offset mullion cover

- Primer- Three (3) Surface Preparation Primer Wipes 3M 06398
- Head Drip Fin, 109"
- Installation screw package
- #8 x 2" Corrosion Resistant pan head screws (20)
- #6 x 3/4" Flat head screws (4)
- Structural Mullion End Anchor
- Structural Mullion with Foam Tape

OPTIONAL SUBSILL KIT, PARTS INCLUDED:

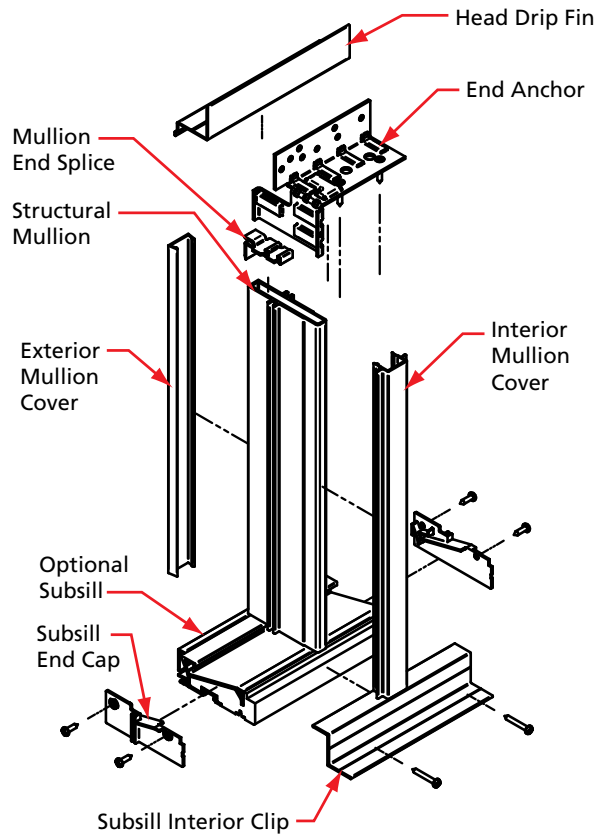
- Inner & Outer Subsill Assembly, 97"
- Subsill Interior Clip, 97"



3" frame depth windows | 3-1/4" frame depth windows

- Subsill End Cap (LH & RH)
- #6 x 5/8" Pan Head Stainless Steel screw, (6)
- #6 x 1" Pan Head Stainless Steel screw, (20)
- Installation screw package (20)

REMEMBER TO USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT

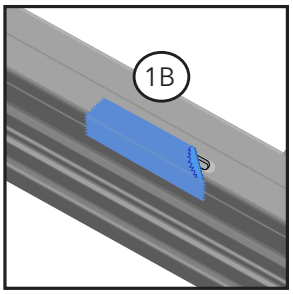


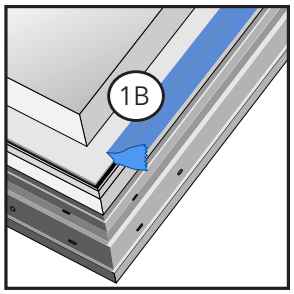
1 PREPARE THE WINDOWS AND THE STRUCTURAL MULLION:

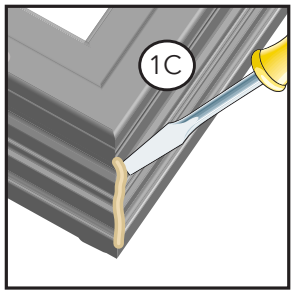
A. **Remove the windows from packaging** and confirm they are the correct size before proceeding.

B. **For windows with weep valve assemblies at the sill: Remove the protective tape covering the weep slots** on the exterior of each window. Casements – remove protective tape from bottom sash weather strip.

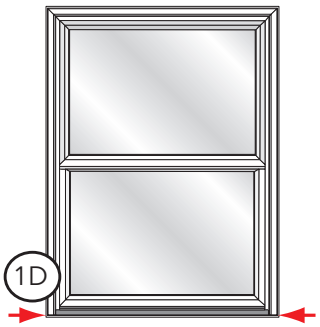
C. **Clean off any glue squeeze-out** on the outside of each frame.



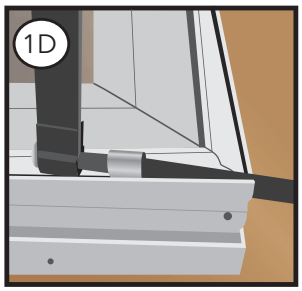


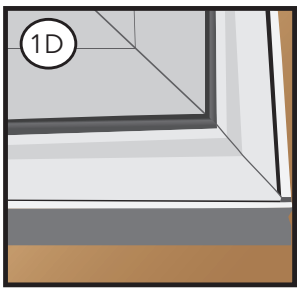


D. **Identify the bottom frame corners of the windows.** Use a hacksaw to cut a small horizontal notch in the accessory groove of each bottom frame corner on the exterior and interior. This will provide clearance to allow the subsill assembly to be installed onto the combination.



Cut Accessory grooves here





E. **Lay windows on a smooth clean flat surface with the interior side up.** If fins are installed on the windows, remove the fins.

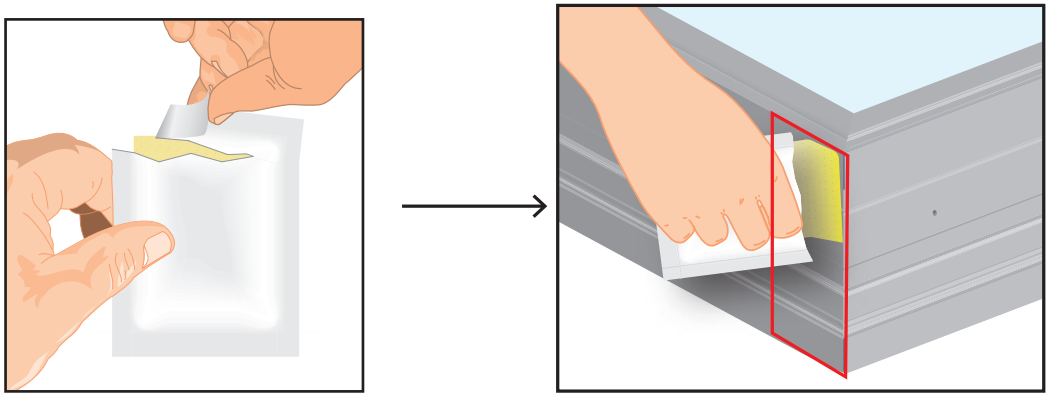
F. **Identify the sides of the frames to be joined together.** Using one of the two primer* application method options shown; use two of the primer wipes and apply primer to the top and bottom edge of the sides of the window frames to be mulled.

Note: DO NOT apply primer to the face of any window unit or in any location on the unit which will be exposed.

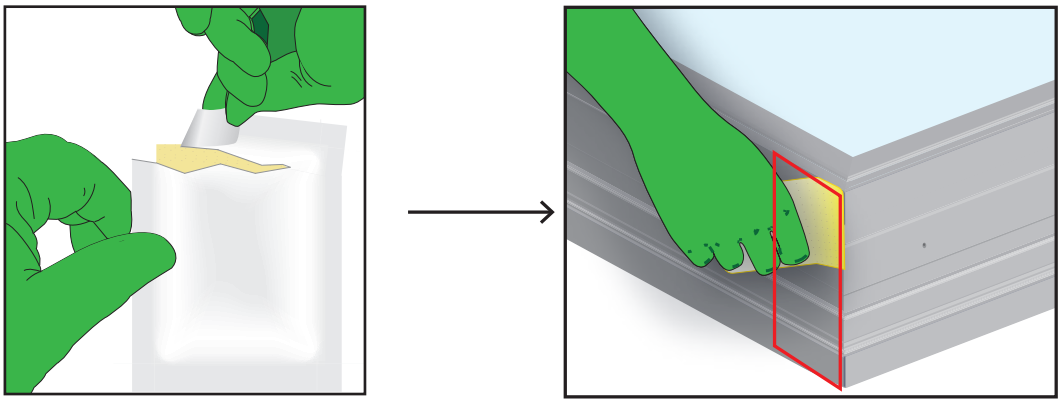
1 PREPARE THE WINDOWS AND THE STRUCTURAL MULLION (CONTINUED):

**** MSDS available @ 3M.com***

Method 1: 3M™ Adhesion Promoter 06396 is supplied in an easy-to-use sponge applicator packet. The liquid contents of the packet should be completely used as soon as possible after opening. Hold packet upright and avoid squeezing an opened packet to prevent spillage of liquid contents. The packet can be opened by tearing across the top of the packet at the notches. This will expose the sponge applicator. DO NOT remove the sponge or squeeze a freshly opened packet. Handling the bottom section of the packet should enable application of 3M adhesion promoter 06396 with no mess.



Method 2: Wear Green Nitrile gloves and tear open foil pack and remove the primer sponge applicator and apply primer.



Allow primer to dry before proceeding to the next step.

Note: DO NOT touch unit with gloves after using primer.

G. **Cut the aluminum structural mullion:**

Cut the mullion 5/8" shorter than the frame height of the windows being mulled.

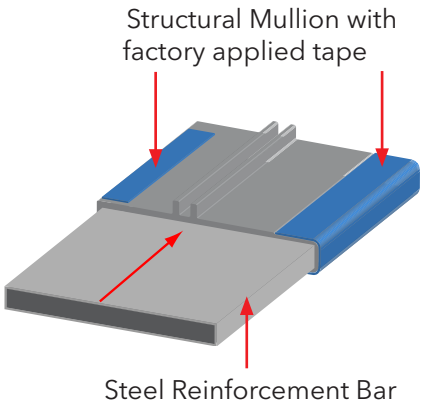
Double-Hung Only: cut the mullion 3/4" shorter than the frame height of the windows being mulled.

H. **For High Performance Applications:** cut a 1/4" x 2-3/4" stainless steel or painted steel reinforcement bar.

- For combinations with subsill, cut the bar 2" shorter than the frame height.
- For combinations without subsill AND for horizontal mullion applications, cut the steel bar 4" shorter than the frame height.

Note: Use outdoor metal protecting paint on steel reinforcement bar to prevent corrosion.

I. **For High Performance Applications:** insert the steel reinforcement bar into the aluminum structural mullion.

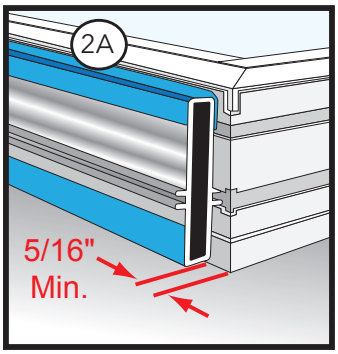


⚠ CAUTION!

DO NOT allow the steel bar to slide out during handling.

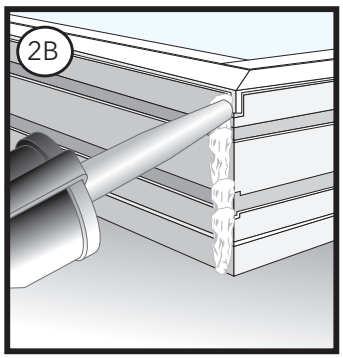
2 MULLION ASSEMBLY (INTERIOR SIDE):

A. **Dry fit the aluminum structural mullion bar between the two windows** to be mulled to make sure there is a minimum of 5/16" on each end of the bar to the end of the frame.



B. **Apply a 3/8" bead of sealant** on each end of the windows to be mulled in the location were the primer was applied in step 1F.

If there are NOT any tight/direct mulled units (mulled from the factory or field assembled) on either side of the structural mullion; Go to Step 2E.

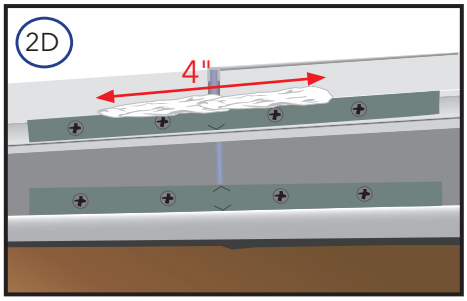


C. **For mullion assemblies with tight (direct) mulled units which will be up against the structural mullion:** On only the side of the combination to be placed against the structural mullion; remove the existing flashing tape from the mullion joint so sealant can be applied across the mullion joint and touch the structural mullion when the combination is assembled.

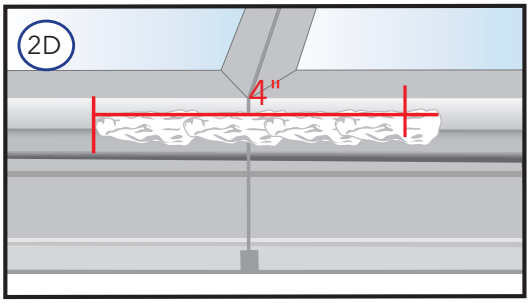
Remove tape from mullion joint which will touch structural mullion



D. **Apply a 3/8" bead of sealant** 4" long on the exterior side of the mullion plate, centered on the mullion joint.



DH/SH/FW/FF/SW to DH/SH/FW/FF/SW/CM

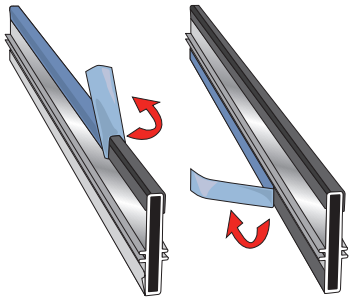


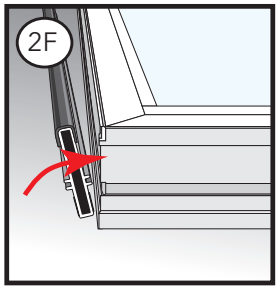
Casement to Casement

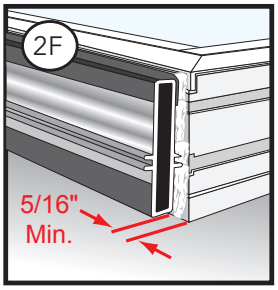
E. **Remove the release paper** from the interior side of the aluminum structural mullion bar and remove the butyl tape release paper from the exterior side of the bar.

2 MULLION ASSEMBLY (INTERIOR SIDE) (CONTINUED):

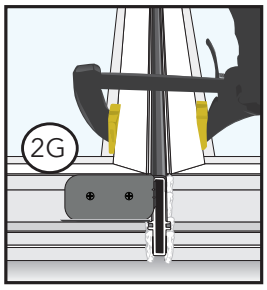
F. **Align the structural mullion** bar centered on the side of the window to be mulled; place the legs on the side of the bar into the fin groove on the side of the window frame. Make sure there is a minimum of 5/16" on either end of the bar to the end of the frame. Each end of the bar will be in the sealant.

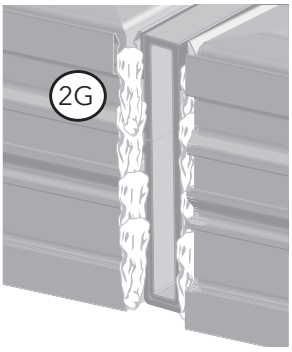






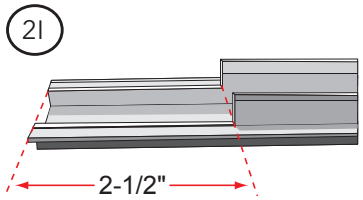
G. **Slide the second window of the assembly against the structural mullion bar,** making sure to align the head and sill of the frame with the first window. The legs on the side of the bar should align with the fin groove on the side of the window frame, insert the ribs into the fin groove. Press the windows together to ensure adhesion to the butyl and tape. Use clamps to draw the windows together and compress the mullion joint. Loosen clamp and move it across the length of the mullion joint, tightening the clamp about every 12"-18".





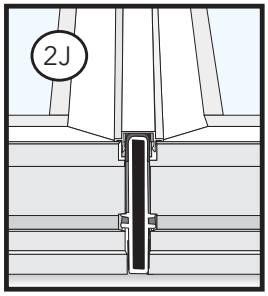
H. **Measure the outside frame dimension** at the mullion joint. Cut both the interior (flanged) and exterior (non-flanged) mullion cover 7/16" shorter than the frame dimension of the windows being mulled.

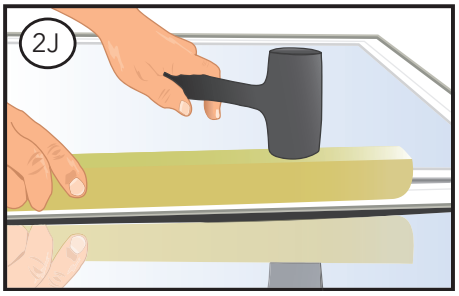
I. **Double-Hung Only:** Cut off 2-1/2" of the mullion cover legs on the end which will be installed near the sill of the windows.



J. **Insert the interior flanged mullion cover** into the accessory groove of both windows. Align one end of the mullion cover with the edge of the frame accessory grooves as shown. Tap the end of the mullion cover into the grooves with a hammer and wood block with rounded edges. Continue to drive the cover into the grooves moving slowly along the length of the cover using the hammer and wood block until it is completely seated into the grooves.

Note: Tapping the cover slowly using a wood block with rounded edges will help prevent dents in the mull cover. For best results, make sure the wood block is the same width as width mullion covers.

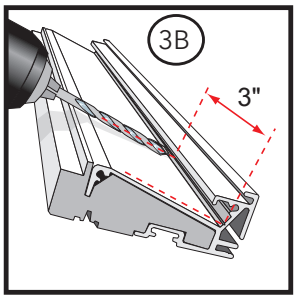




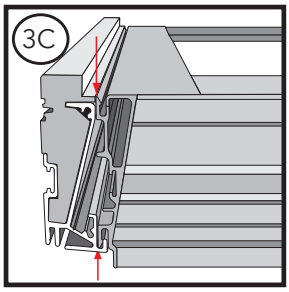
3 PREP AND INSTALL SUBSILL ASSEMBLY:

A. **Cut subsill assembly,** to the total window combination width (no more than + 1/16" more than the width).

B. **Drill a 3/16" drain/weep hole,** 3" from each end through the subsill in the location shown.

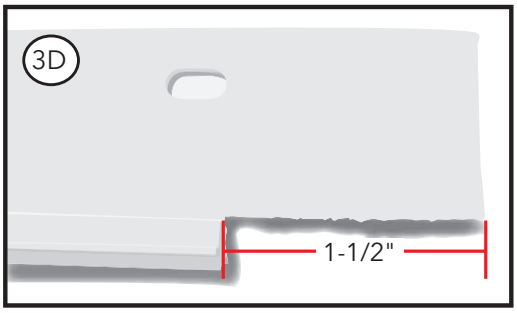


C. **Dry fit the subsill** on the sill of the combination to confirm fit and placement.

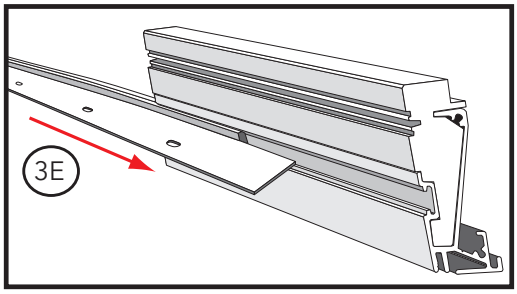


D. **Measure and cut the installation fin** for subsill. Cut the fin 2-1/2" longer than the subsill length. Trim 1-1/2" off each end to form a notch as shown.

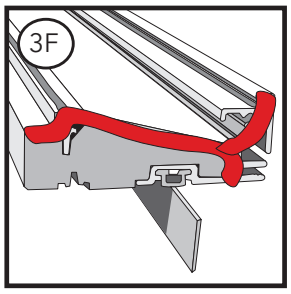
Note: The installation fins for the window head may also be cut and notched at this time, but will not be installed until later, see step 3U



E. **Insert the installation fin** into the fin groove of the subsill.

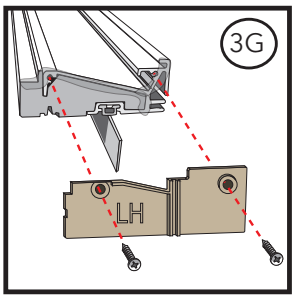


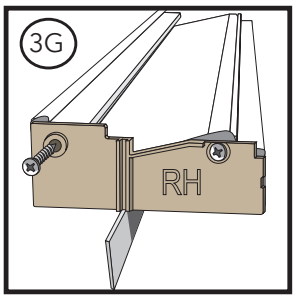
F. **Apply Sealant** to each end of the subsill assembly as shown.



G. **Insert subsill end caps into each end of the subsill assembly.** Attach end caps with two #6 x 5/8" pan head screws.

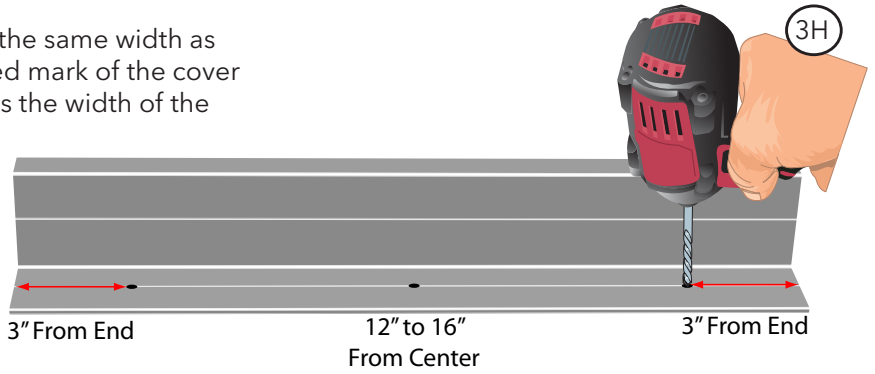
Note: The mullion end splices are handed, LH & RH.





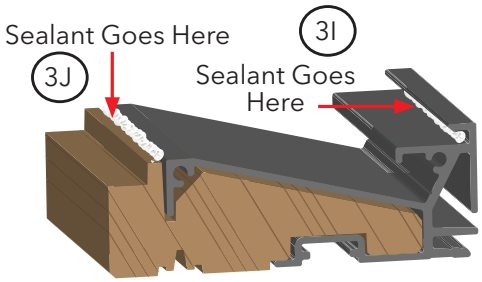
3 PREP AND INSTALL SUBSILL ASSEMBLY (CONTINUED):

H. **Prep the interior sill cover clip** by cutting it to the same width as the subsill. Drill a 5/32" pilot hole on the scored mark of the cover 3" from each end and 12"-16" on center across the width of the sill cover clip.

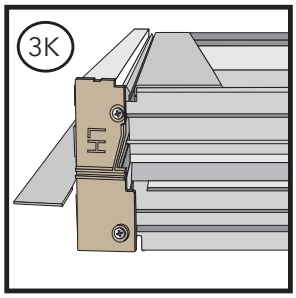


I. **Place a 1/4" bead of sealant** along the exterior lip of the subsill assembly, across the entire length of the subsill.

J. **Place a 1/4" diameter bead of sealant** on top of the inner subsill joint across the length of the subsill.



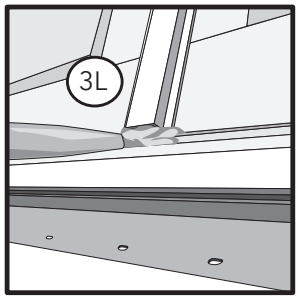
K. **Install the subsill assembly** by hooking it onto the exterior accessory groove. Position the combination so the subsill is over the edge the table. Shims under the subsill may be used to help seat it onto the accessory groove.

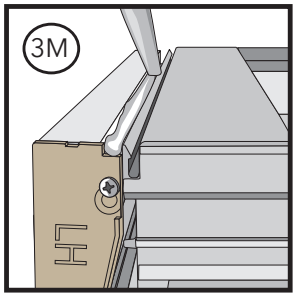


L. **Inject sealant** into the area just below the interior mullion cover.

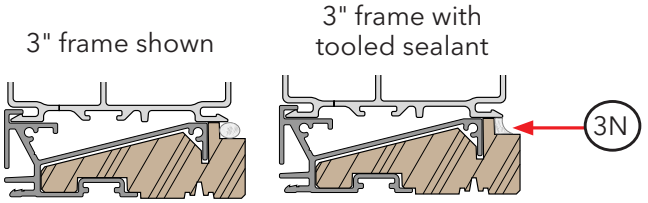
M. **Apply continuous bead of sealant across interior kerf** between subsill and combination frame. Start the bead on the end of the subsill assembly, go across the kerf the width of the combination to the other end of the subsill assembly.

Note: It is critical there are no voids in this sealant bead!



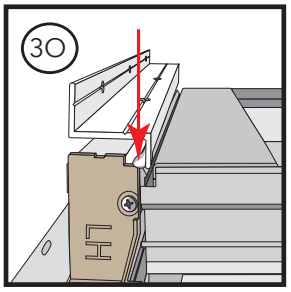


N. **Tool the applied bead of sealant** to make sure there are no sealant gaps.

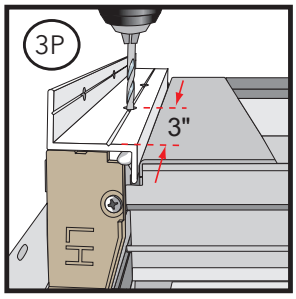


3 PREP AND INSTALL SUBSILL ASSEMBLY (CONTINUED):

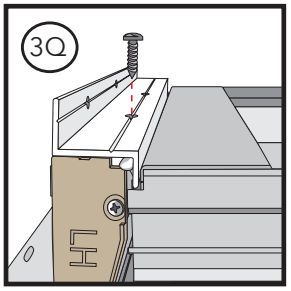
O. **Install the sill cover clip** over the subsill assembly by inserting the edge in to the accessory groove.



P. **Drill 1/8" pilot holes** 7/8" deep through the clip into the sub sill assembly 3" from each end and 12"-16" on center across the width of the sill cover clip. Drill the holes on the scored line on the clip.



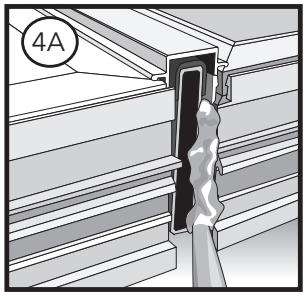
Q. **Attach the clip** by driving a #6 x 1" pan head screw into each hole location.

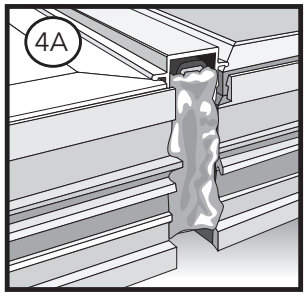


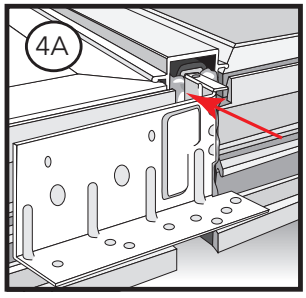
4 END ANCHOR AND NAIL FIN ATTACHMENT:

A. **At the top of the combination:** Fill spaces between structural mullion and window frame and the hollow space in the structural mullion with sealant.
Insert the mullion end anchor half way into the end of the structural mullion Inject additional sealant into the structural mullion to replace the sealant the end anchor pushed into the structural mullion.

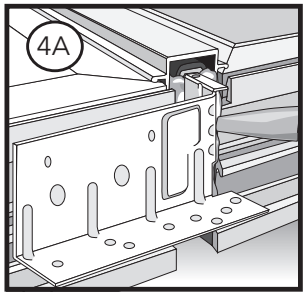
Note: Installations without subsill also require end anchors at the sill.







Inserting end anchor 1/2 way

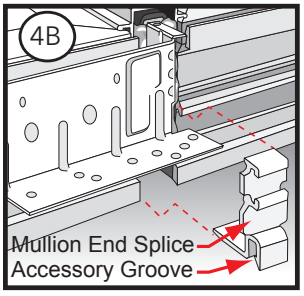


End anchor Inserted 1/2 way and adding sealant

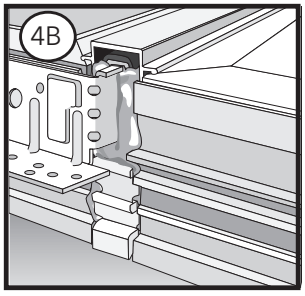
4 END ANCHOR AND NAIL FIN ATTACHMENT (CONTINUED):

B. **Position a mullion end splice** in place over the exterior side of the mullion end anchor(s) The end of the splice without the accessory groove goes between the end anchor and the structural mullion. Once the end splice is in position, push both the end splice and the end anchor until they are completely seated into the structural mullion. If voids appear in the sealant, inject more sealant into the end of the structural mullion. Be sure to clean off any excess sealant squeeze-out.

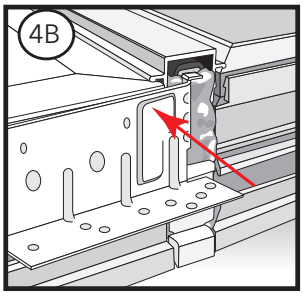
Note: Do not attach mullion end anchor with screws at this time.



End anchor inserted 1/2 way and aligning end splice

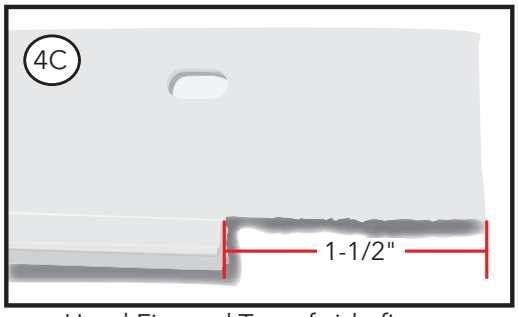


End anchor inserted 1/2 way and end splice installed

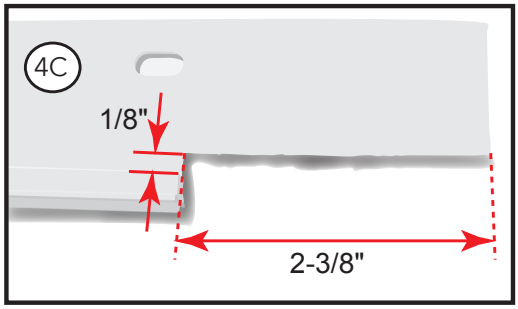


End splice installed and end anchor completely inserted

C. **Measure and cut the installation fins** for the remaining sides of the combination. Cut each fin 2-1/2" longer than the combination width and height (Including subsill) for the fins to be installed across the head and jambs of the combination. Trim 1-1/2" off each end of the head fin to form a notch as shown. Trim 1-1/2" off top end, and 2-3/8" off the bottom end of each jamb fin to form a notch as shown. The bottom end notch must be 1/8" deeper to clear the subsill assembly end caps. The 2-3/8" notched end will be oriented at the sill end of the combination when installed.



Head Fin, and Top of side fins

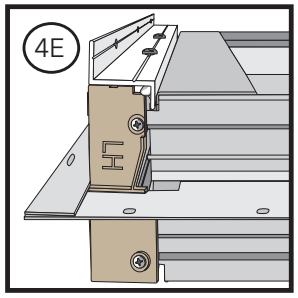


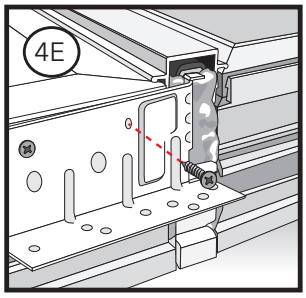
Bottom side of fin(s) that will fit along subsill end cap as shown in 3U

D. **Fins are to be installed in a watershed pattern** with the side fins overlapping the bottom fin and the top fin overlapping the side fins on the exterior of the combination.

Note: If vinyl nail fins are spliced at mullion joint, Install 10-12" long piece of installation tape over each mullion end anchor and vinyl installation fin joint.

E. **Attach the end anchor bracket** to the head of the combination using #6 x 3/4" Flat Head Self-drilling Screws through all the attachment holes.

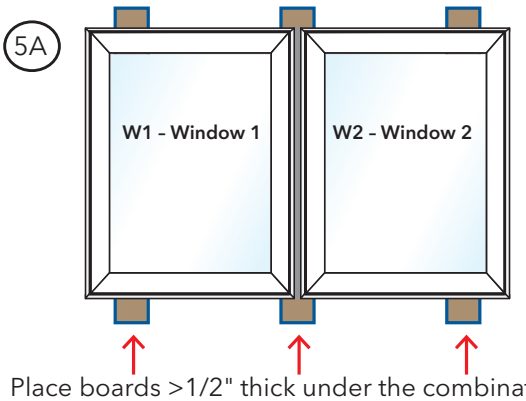




5 MULLION ASSEMBLY (EXTERIOR SIDE):

A. **Turn the combination over so the exterior side is up.** Use care to make sure the products are held together as they are being turned over.

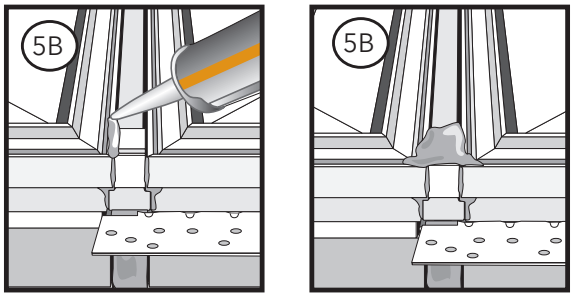
Note: CASEMENTS ONLY - When the interior side is down, use care to not damage the roto operator stud(s) when sliding the windows on the table (flat surface). Place boards under the windows to provide clearance between the operator stud(s) and the table.



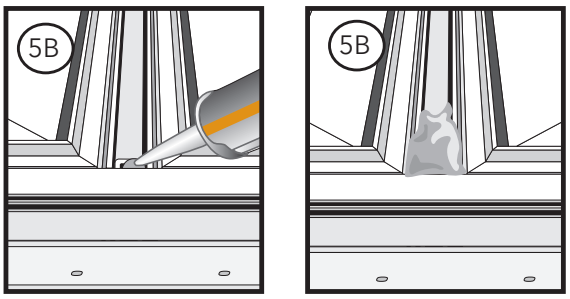
Place boards >1/2" thick under the combination to provide clearance for roto operator stud.

B. **Inject sealant** at each end of the mullion being sure to leave no voids in the sealant.

Note: It is critical to make sure sealant is injected into the ends of the accessory groove of each frame at the mullion joint.

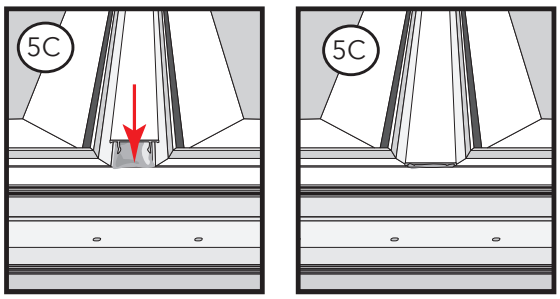


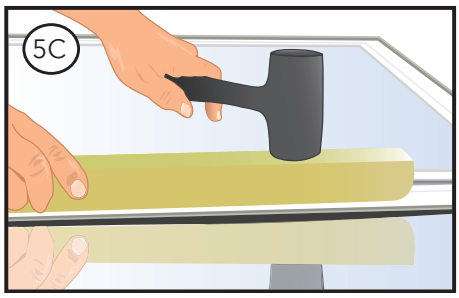
Mullion Joint at Head



Mullion Joint at Sill

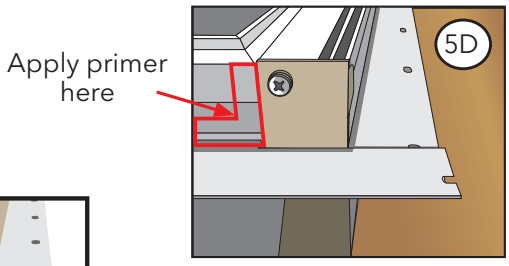
C. **Insert the exterior non-flanged mullion cover** into the accessory groove of between the windows using a hammer and block of wood in the same manner as installing the interior mullion cover in Step 2J.

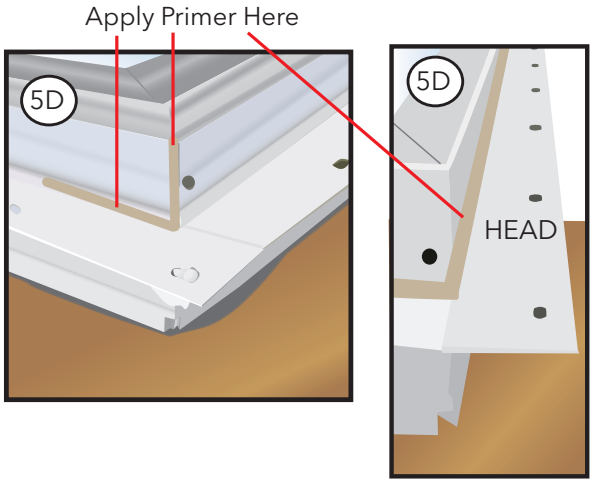




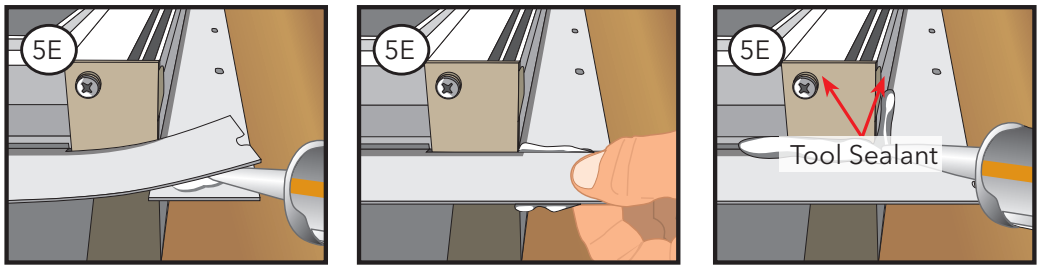
5 MULLION ASSEMBLY (EXTERIOR SIDE) (CONTINUED):

D. **Using one of the primer application methods covered in step 1F; Apply primer,** using one (1) of the primer sponge wipes on the edges of the frame above the subsill where shown and across the top of the head where the fin and frame meet and on each end as shown.



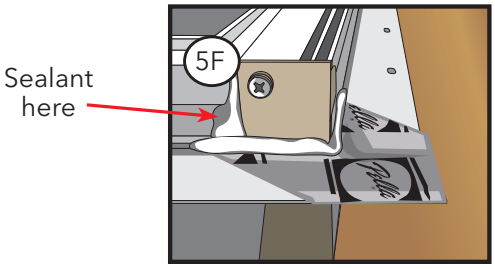


E. **At each corner where the fins overlap, apply a generous bead of sealant** between overlapped fins and squeeze to assure a good seal between the fins. Place sealant on the exterior side of the fin for approximately 2" from the corner on each side. Tool sealant applied at the corners.



Note: Make sure there are no gaps in sealant between frame and vinyl fin.

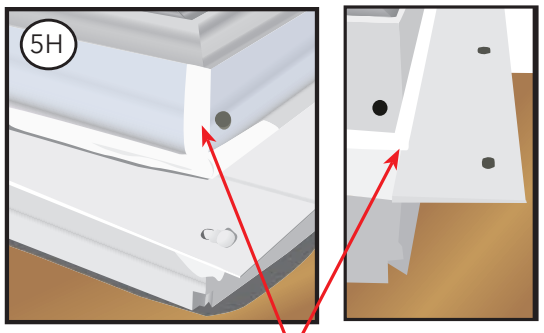
F. **At each corner, apply a fin corner over the overlapping fins.** At each corner of the sill, apply sealant on top of the fin corner along the end cap and between the window sill and subsill. At each end of the subsill, apply sealant from the top edge of the end cap to the window frame.



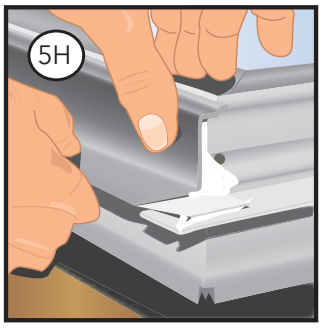
G. **Cut the head drip fin to the overall width of the window combination.** Dry fit the head drip fin to make sure the fin does not extend beyond the ends of the combination and no more than 1/16" shorter than the combo on each end. Remove the head drip fin before proceeding to 4G. At each end of the subsill, apply sealant from the top edge of the end cap to the window frame.

5 MULLION ASSEMBLY (EXTERIOR SIDE) (CONTINUED):

H. **Apply a 3/8" bead of sealant** at each end of the top of the combination and across the top of the entire combination at the joint where the fin and frame connect to prep for installation of the head drip fin. Install the drip fin immediately after applying sealant to the head either in the shop or at the job site when installing the combination unit in the opening. Apply a piece of flashing tape at each end overlapping the head drip fin and nailing fin to hold the fin in place while the sealant sets up.



Sealant at each end and across the top of the combination.



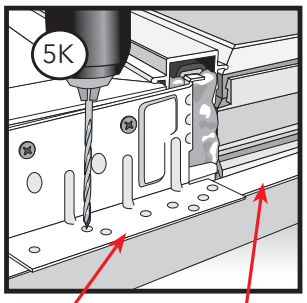


I. **Turn the combination over so the interior side is up.**

Option without turning combination over; make sure the anchor bracket hole can be accessed from below and drill holes up through anchor bracket holes.

J. **If there are no installation holes in the head drip fin,** drill 5/32" clearance holes 1/2" from the top edge, 4" from each end and 6" on center.

K. **Using the end anchor holes as a template,** drill a 5/32" pilot hole through the head drip fin by drilling through each end anchor bracket hole.

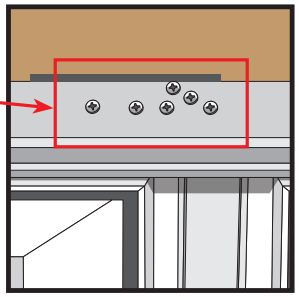


End Anchor

Head Drip Fin

COMBINATION IS NOW READY FOR INSTALLATION.

Install combination using typical Fin Installation instructions. Be sure to install six #8 x 2-1/2" Pan Head screws through the anchor bracket into the rough opening framing.

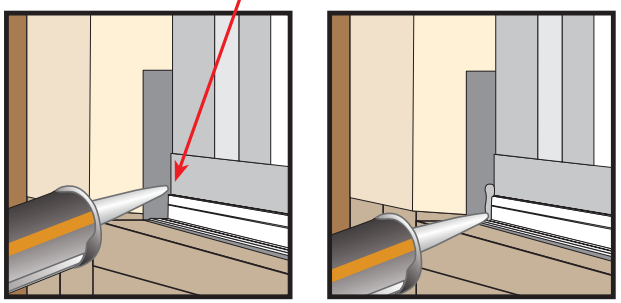


INSTALLATION SEALANT DETAIL

From the interior, Inject sealant between unit and rough opening framing where the subsill meets the bottom of the unit.

Apply a bead of sealant from the top of the sill cover clip to the sill of the rough opening.

Inject sealant between the combination and opening at the top of the subsill.



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