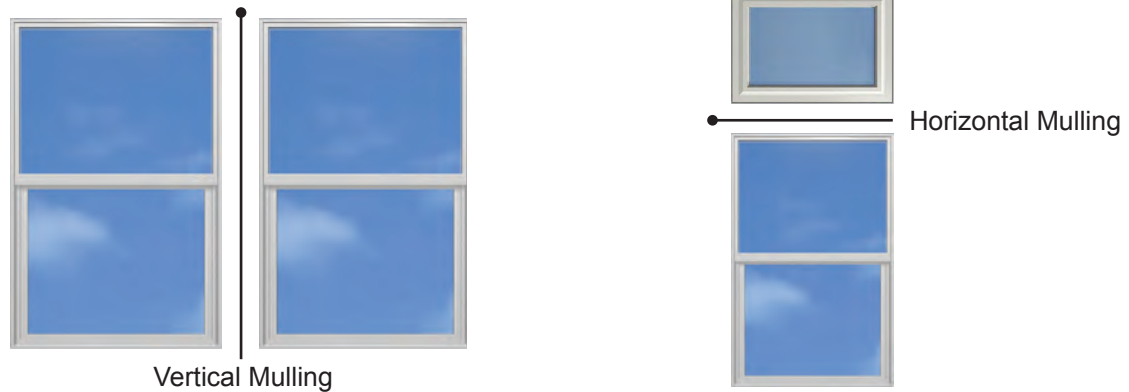




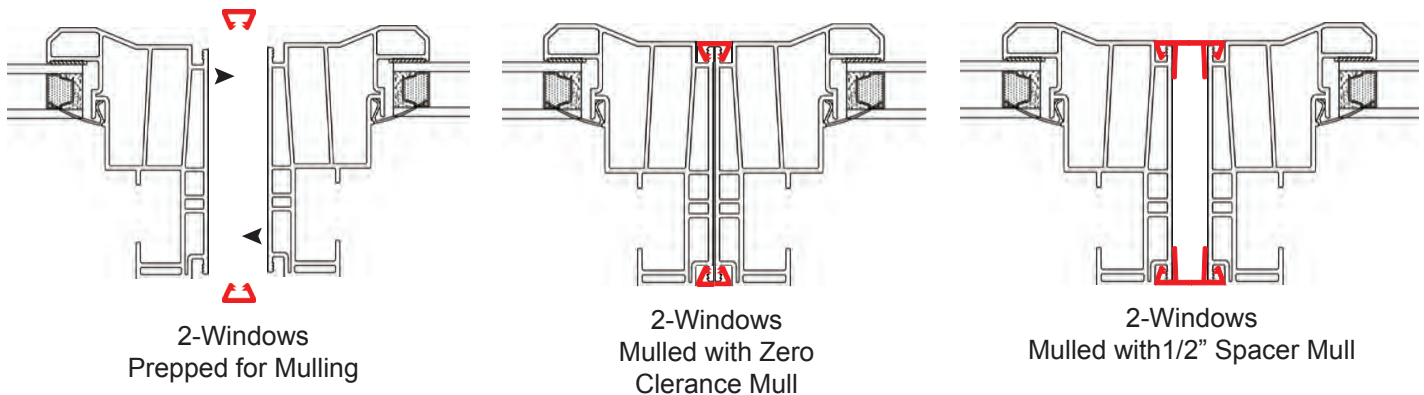
## Mulling & Stacking Guidelines for Ringer Windows Performa 3300 Series & Elite 5400 Series

**Before installing any windows, check your local and state requirements for this type of installation.**

Mull Strips are used to join 2 or more windows into a single opening, both horizontally or vertically. Ringer Windows offers two different Mull Strips, including a Zero Clearance Mull Strip and a 1/2" Mull Strip. Either Mull Strip can be used with a normal installation that does not require additional reinforcements.



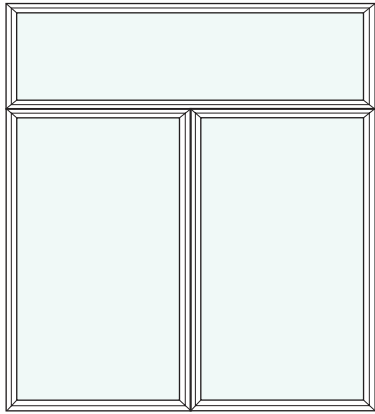
The Zero Clearance Mull Strip is used when butting windows directly together with no spacing between the windows is desired. The 1/2" Mull Strip can be used to widen the overall width of the mullied sets of windows, to accept internal reinforcements between the windows.



Note: Larger mullied sets of windows may require additional reinforcements to reduce window deflection. When mulling windows side-by-side over 60" tall, or stacking windows wider than 48" wide, Ringer Windows recommend the installation of reinforcements within these size parameters. Ringer Windows offers reinforcement parts for an additional charge, as requested. **Ringer Windows offers our Reinforcement Option if informed about mullied sets of windows during the bid process. Otherwise, it is the responsibility of the "buyer" to request or inform Ringer Windows of mullied sets of windows.**

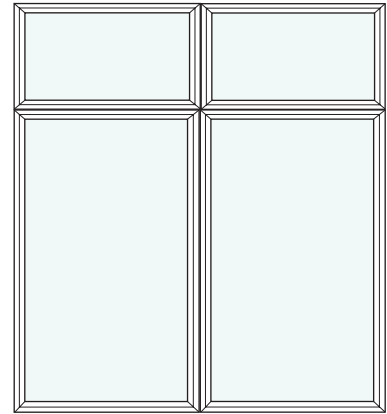


**Note: Mulling windows into 3-way & 4-way (or greater combinations) sets of windows MUST be reinforced. Specific design specifications will be individually designed and reviewed with the "buyers" before these types of combination window sets are designed and sold. It is the responsibility of the "buyer" to inform Ringer Windows about these types of design elements before installation occurs. See Diagram A.**



**3-Way Mullered Set**

ANYTHING GREATER  
THAN A 3-WAY MULL  
MUST BE REINFORCED



**4-Way Mullered Set**

**BEFORE INSTALLATION, CHECK YOUR LOCAL AND STATE BUILDING REQUIREMENTS FOR THIS TYPE OF INSTALLATION.**

**Mulling Parts options/product list**

1. Zero Clearance Mull Strip
2. 1/2" Spaced Mull Strip
3. Aluminum Reinforcing Bars
4. "L" Brackets & Fasteners
5. Closed-Cell Double Sided Tape



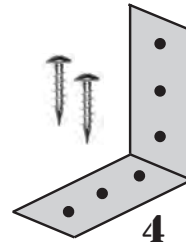
**1**



**2**



**3**




**4**

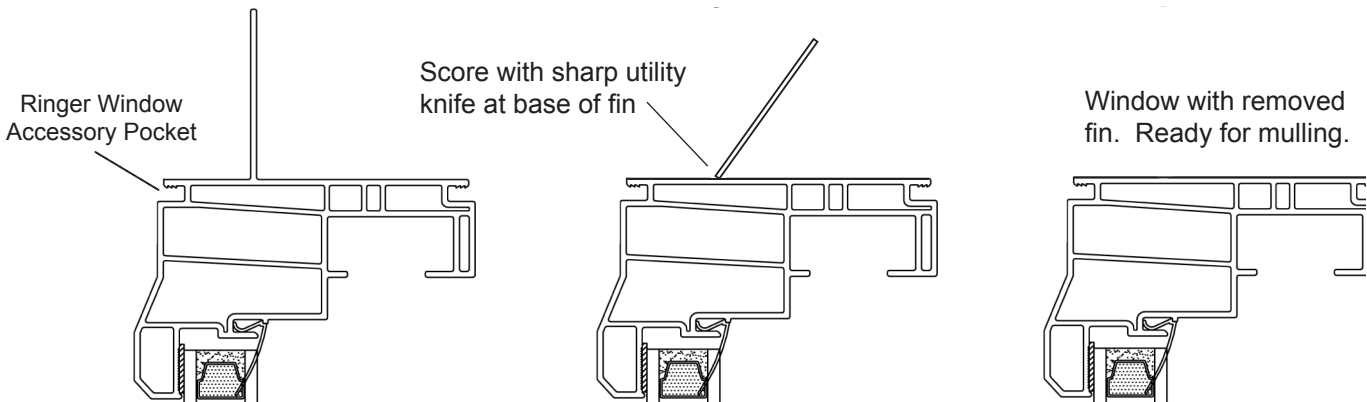


**5**

**STANDARD MULLING FOR WINDOWS THAT DO NOT REQUIRE REINFORCING.**

**1. Nail Fin Removal**

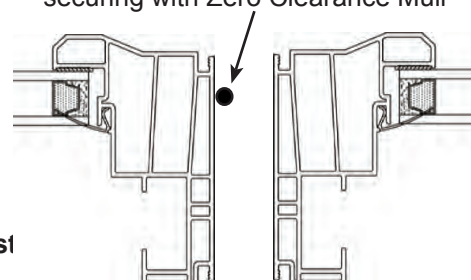
Remove the nailing fin on the sides of the windows that will be connected to the mull. Score the nail fin with a sharp utility knife several times. Bend the the nail fin back and forth until it breaks loose, then properly dispose.  Note: Once the Nail Fin is removed, it cannot be reinstalled. If the nail fin is accidentally removed, there are alternative methods of installation which may be used in lieu of the nail fin. Contact Ringer Windows




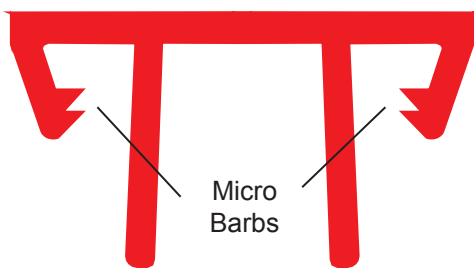
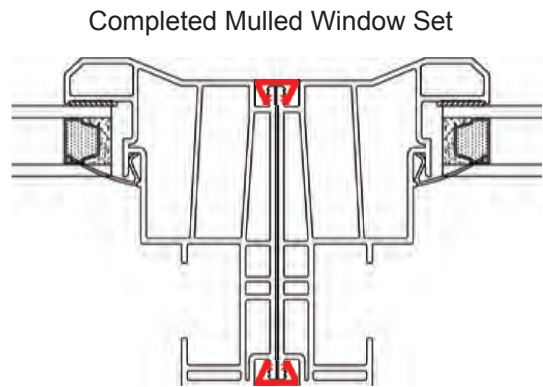
2. On the exterior side of the windows (in the middle between the 2 windows, apply small bead of silicone caulking between the 2 windows. The caulk will flatten-out and seal once the windows are mulled together with the Zero Clearance Mulls.

Alternative Method for Caulk: Apply a small bead of caulk down the entire length of the windows in the Accessory Pocket. This method will require slight clean-up as the caulk squeezes our of the pockets when once the Mulls are installed. **This method must be used with 1/2" mull.**

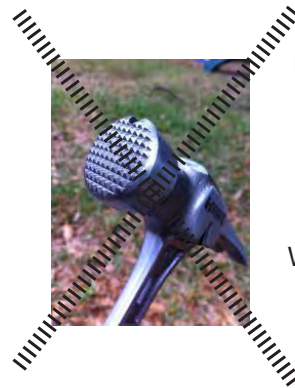
Apply Silicone Caulk to the middle between the 2 Windows before securing with Zero Clearance Mull



3. Position one mull between the two windows, aligning the mull lock legs with the grooved accessory pocket on the window frames. See Figure C. Apply inward pressure against the mull until it snaps into the grooves. The Ringer Window accessory pockets and accessory trims, such as the mull strips, are made with micro-barbs to create a secure hold. When installing accessory trims into the accessory pockets, the parts should “click” into place if properly seeded. Mulls should fit flush and tight, possibly requiring a slight tap with a small block of wood.  Note: If required, use a small block of wood to secure Ringer Window Accessory Parts into the accessory pocket. NEVER use a hammer or any other object directly on the window, or accessory trims, that could mar the surface of the vinyl. If a small tap is not sufficient to secure an accessory trim, stop and contact Ringer Windows directly. Never force any trims during the installation process.



All Ringer Window Accessorys and Accessory Pockets use our patented Micro Barb System



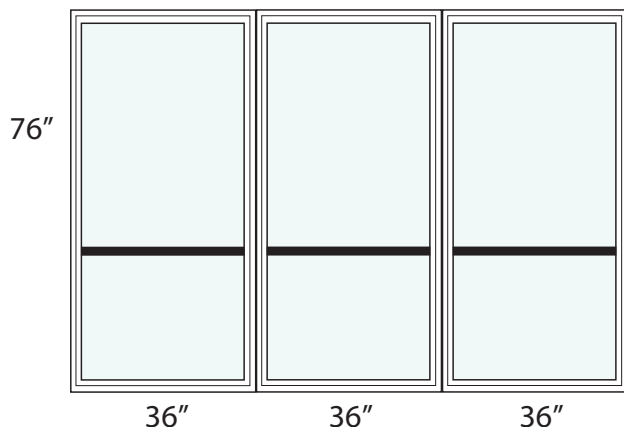
NEVER use a mill faced hammer directly on a vinyl window. This type of hammer will mar the surface of the window. If necessary, Ringer Window Accessory Trims can be tapped into final position using a wood block.

After the windows are mullled and placed into the opening, check to see that the windows are properly installed **AND** functioning properly, including any Ringer Window Accessory Trims. If there are any questions or concerns with mulling Ringer Windows, stop the process and call Ringer Windows immediately for technical support.

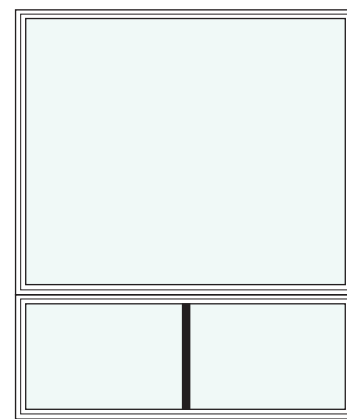
### INSTALLING MULLS USING REINFORCEMENT PARTS WITH A 1/2" MULL STRIP

Note: Larger mullled sets of windows may require additional reinforcements to reduce window deflection. When mulling windows side-by-side over 60" tall, or stacking windows wider than 48" wide, Ringer Windows recommend the installation of reinforcements within these parameters. Ringer Windows offers reinforcement parts for an additional charge, if requested.

 This application requires the use of a 1/2" Mull Strip. The zero clearance mull will NOT work with this application.



**Vertical Mull Scenario  
Mullled Set over 60" Tall**



**Horizontal Mull Scenario  
Mullled Set over 48" Wide**

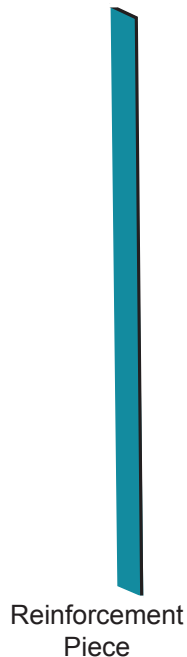
Remove Nail Fins on the sides where mulls are installed. Remove the nailing fin on the sides of the windows that will be connected (mulled together). Score the nail fin with a sharp utility knife several times. Bend the the nail fin back and forth until it breaks loose, then properly dispose. See same instructions as previously stated.

## VERTICAL MULL REINFORCEMENT APPLICATIONS - SIDE BY SIDE INSTALLATION

Note: When ordering windows that require mull reinforcement(s), the parts will be appropriately sized for the order AND it will be included with the window package. It's the responsibility of the "buyer" AND "installer" to ensure that they are used and properly installed. If there are questions or concerns, stop the job and contact Ringer Windows immediately.

1. Aluminum Mull Reinforcements should be cut to length, not to exceed the height or width of the window.
2. 2 rows of double sided tape will be applied to the aluminum reinforcement part when the order ships. Remove the protective layer covering to exposed sticky side and prepare to attach it directly to the side of the vinyl window. Note: only one window per mulled connection receives the aluminum reinforcement. The reinforcement metal should be attached at the middle of the window, both horizontally and vertically.
3. Set the window into the rough opening and secure it safely into place. Do not set for final until all windows are installed and adjusted.
4. Place one "L" bracket in the middle of the Mull Reinforcement, at the bottom sill, so that it's touching or setting adjacent to the framing lumber. Secure it to the framing member with the provided screw. Secure the final screw through the "L" bracket, directly into the Aluminum Reinforcement. We recommend to predrill a pilot hole into the Aluminum on the side of the window, making it easier to drive the screw. Recommend using 3/32" drill bit for the Pilot Hole.
5. Attach the opposing "L" bracket at the top of the window using the same procedures. Note: Only one window per mull connection receives the Reinforcement Aluminum. The opposing window is attached using the 1/2" Mull Strip.

Step 1 - Cut Length of Aluminum Reinforcement Piece. Optimal Length and/or Width should be no longer than edge of the windows frame.



Step 2 - Prepare Reinforcement by removing the double-sided tape cover on both the left and right side.

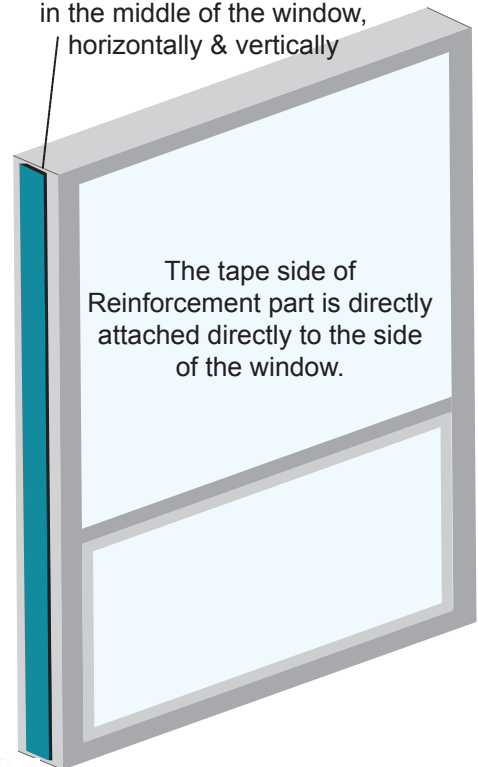
2 Strips of Double Sided Tape. Remove the protective peelback layer to prepare for attaching to the side of the window

Reinforcements are pretaped before shipment when ordered with windows.




Center the Reinforcement in the middle of the window, horizontally & vertically

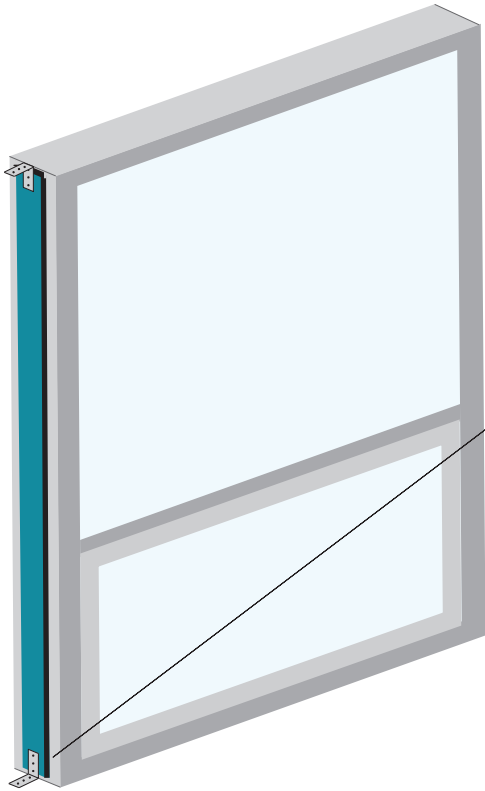
The tape side of Reinforcement part is directly attached directly to the side of the window.



Step 3 - Center the Aluminum Reinforcement part directly in the middle of the mulled side of the window, both horizontally and vertically, so that it's in the middle of the window. Press firmly to secure. Note: This process requires the nail fin to be removed.

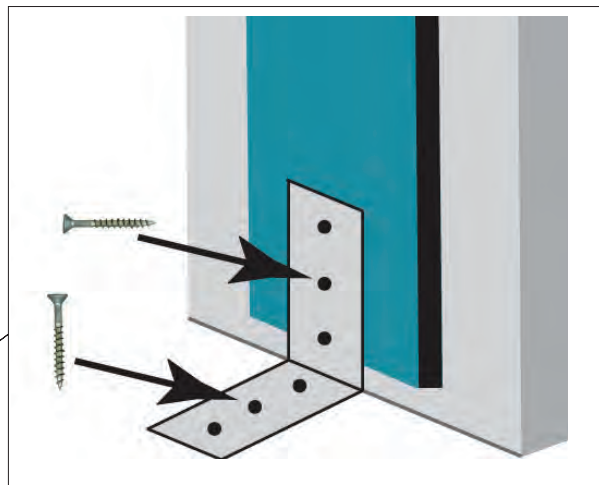
 The (2) strips of double sided tape is very sticky. Once the protective peel is removed, take care to align & secure the tape on the first attempts.

Step 4 - Position "L" brackets at the top and bottom of the window, centering horizontally in the middle of the Reinforcement Part. There should be an "L" Brackets at both ends of the window, attached to the window frame and the framing.



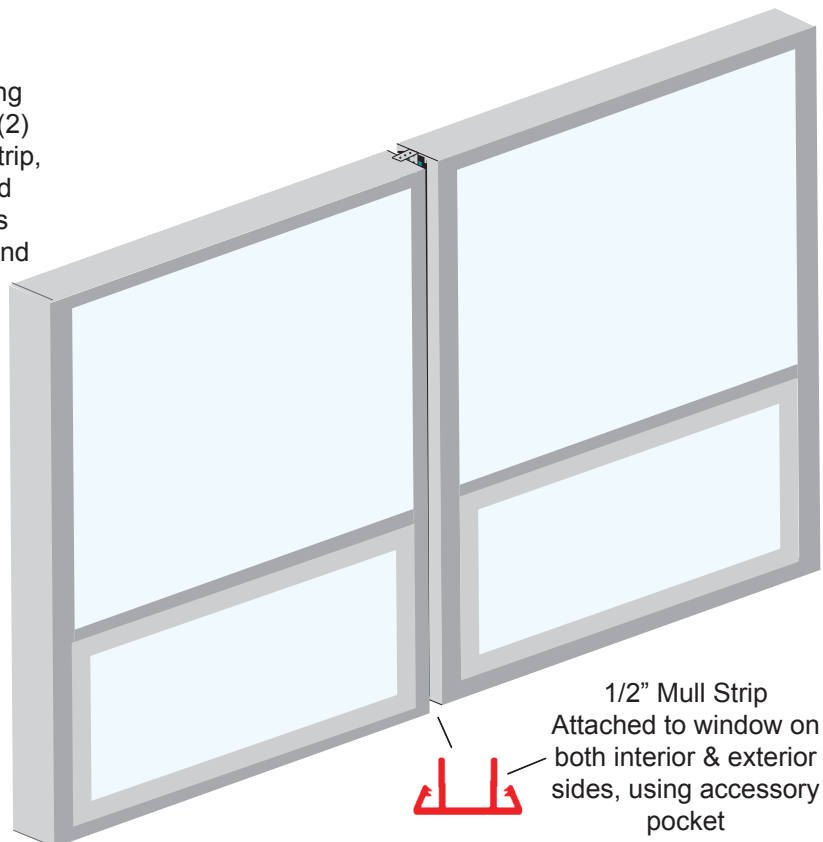
Ringer Windows Provides Fasteners & "L" Brackets when windows are ordered with Reinforcement Parts


Close-Up "L" Bracket Details



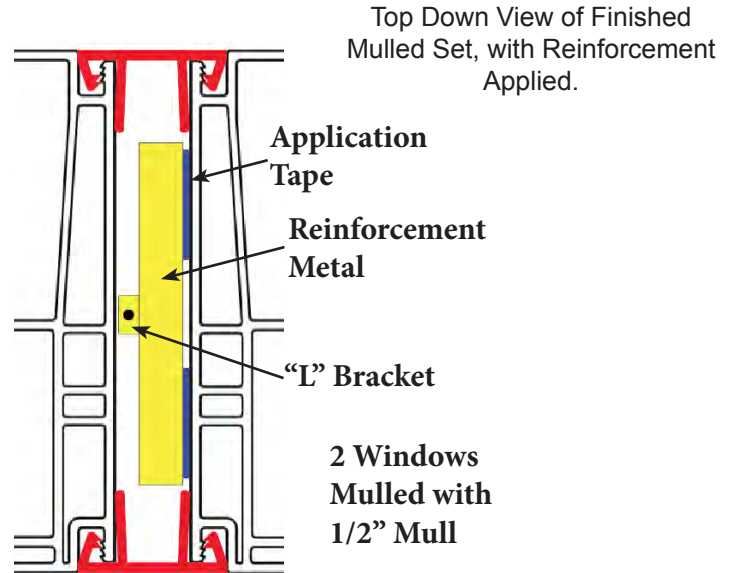
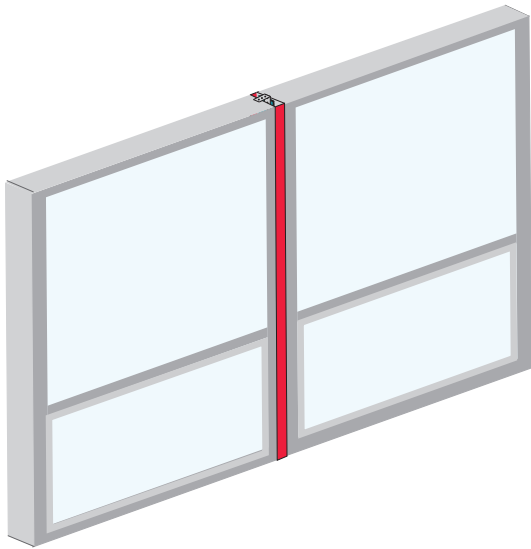
Step 5 - **ATTACHING THE "L" BRACKET TO THE WINDOW AND SECURE IT TO THE FRAMING.** Predrill a hole through the side of the "L" Bracket that attaches to the Reinforcement Part. Note: Aluminum requires predrilling with 3/32" bit. Secure side of "L" Bracket, with provided screw, directly to the window. Be careful to not penetrate the side of the window more than 1/2". Install the provided screw through the "L" Bracket leg that attaches to the Sill. Repeat same at top side of window.

Step 6 - Position and set the opposing window into rough opening. Secure (2) windows together using 1/2" mullion strip, using Ringer Window recommended procedures. Finish setting windows normally. Check for proper reveals and installation.



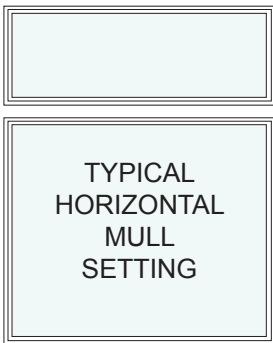
 Only one side of one window will be physically attached to the framing and the Reinforcement Part. The opposing window will be secured to the other window with a 1/2" Mull Strip.

# Finished Window Illustration

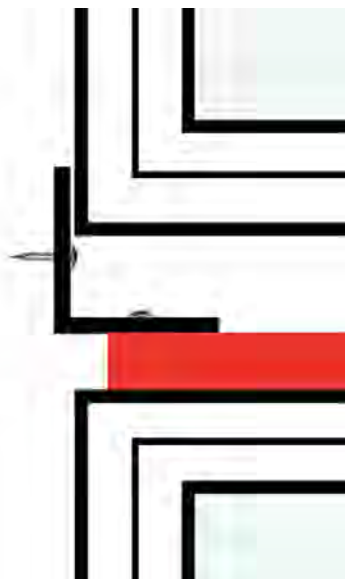


## HORIZONTAL MULL REINFORCEMENT APPLICATIONS - STACKING INSTALLATION

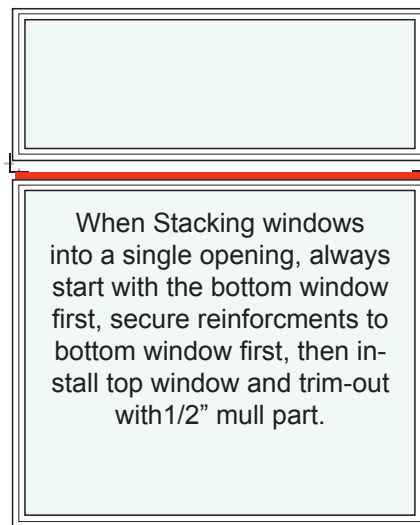
When stacking windows and installing horizontal Mull Strips, the same basic set set of procedures apply as with the vertical mulling, except we recommend that the mull be attached to the bottom window first.



1. Remove the nail fin as needed to install the Reinforcement and Mull parts. Use the same procedure as described earlier.
2. Set the bottom window(s) into the rough opening and secure it enough to hold-in-place. Do not "final set" the window(s) until all mulls and reinforcement parts are installed.
3. Install the Reinforcement Parts on top of the bottom window, securing it to the framing on the sides.
4. After the bottom window(s) are placed and secured to the Reinforcement parts, attach the top window with the 1/2" mull and finish out the window. Check for proper installation before trimming the window.



Close-up detail on attaching the the aluminum reinforcement bar. with windows.



With horizontal reinforcement mulls, secure the aluminum reinforcement bar directly to the bottom window first.



If there are questions or concerns, stop the job and contact Ringer Windows immediately.