

## **Ringer Windows, Inc. – Installation Guidelines Replacement Window Application**

### **IMPORTANT INFORMATION**

There can be a wide variance of installation techniques required and/or used with “replacement window” applications. Unlike a new construction setting where the window opening is unfinished and pre-sized, replacement applications present many different scenarios that require adjustments and alterations during the removal of the old windows (demo) and installation of the new replacement window. Therefore, the GUIDELINES contained herein are only recommendations.

The applicable product warranty sets forth the entire extent, if any, of Ringer Windows potential liability with regard to this product. Complete copies of the Ringer Window Product Warranties may be found at the Ringer Window Website ([ringerwindows.com](http://ringerwindows.com)). Ringer Windows assumes no responsibility for the consequences of inadequate or improper installation or lack of care of the installed product. Ringer Windows reserves the right to modify, make obsolete, delete or add product lines, and to make changes to these recommendations at any time without notice.

**IMPORTANT INFORMATION:** These installation recommendations are guidelines only. No representation or warranty is made, or can be implied, from these recommendations. ***Given the variety of field conditions, all responsibility for product installation rest with the Installer.*** Consult with the contractor, engineer, and/or architect for proper installation, according to local building codes, site condition, and/or ordinances. Do not proceed unless you have addressed the factors necessary to achieve appropriate integration for a weather-tight installation and a properly functioning product. Ringer Windows assumes no liability for any personal injury or property damage incurred in installation.

Installations of Ringer Windows over 35 feet high (measured at the sill level) or any installation or architectural feature impacting the installation of Ringer Windows not addressed in these recommendations must be specified and detailed by and architect or engineer.

### **Before you Start**

It is the responsibility of the owner, architect, and/or builder to select products and installation methods in compliance with applicable laws, site requirements, and building codes. Ensure the correct window is to be installed in the opening **before** starting the job.

Make sure that windows contain the correct type of glass, features, and options **before** starting the job. Some laws and building codes require safety features (e.g. tempered glass and/or egress requirements). It is the sole responsibility of the purchaser, architect, builder and/or contractor to determine the need for safety features to conform to local codes, REGARDLESS IF A SET OF BUILDING PLANS WAS PROVIDED TO RINGER WINDOWS OR NOT. Ringer Windows are manufactured with double strength annealed glass unless otherwise specified.

Caution must always be exercised, as broken glass can cause personal injury.

Appropriate selection of materials and tools will impact the installation and performance of your Ringer Window products. Care should be taken when selecting installation tooling and sealant materials. Regular upkeep of installation components is required. Continuing maintenance obligations are not addressed here, and each owner is directed to their installer for information regarding the materials used in their window installation.

### **Safety, Handling, Misc.**

- Read and fully understand ALL guidelines before beginning.
- Use caution when handling windows and/or glass. Never work alone when installing windows.
- Wear appropriate protective gear at all times when working with and around windows.
- Never drag windows, or parts of windows, across the floor or ground.
- Always store windows in dry, well-ventilated areas, in a vertical position. Do not stack windows horizontally.
- Protect windows from exposure to direct sunlight before installation.
- Install windows only when conditions and sheathing are dry.
- Check with all relevant governmental entities before installation to verify necessary permits, if any.

### **Installation Recommendations**

**IMPORTANT INFORMATION:** These installation recommendations are provided for information only. No representation or warranty is made, or can be implied, from these recommendations. ***Given the variety of field conditions, all responsibility for product installation rest with the installer.*** Consult with the contractor, engineer, and/or architect for proper installation, according to local building codes, site condition, and/or ordinances. Do not proceed unless you have addressed the factors necessary to achieve appropriate integration for a weather-tight installation and a properly functioning product. Ringer Windows assumes no liability for any personal injury or property damage incurred in installation. The applicable warranty sets forth the entire extent, if any, of Ringer Windows potential liability with regard to this product. Please contact Ringer Windows for a copy of the applicable warranty.

**These recommendations are based upon the criteria set out in AAMA 2400 and/or ASTM2112 standards for window installation guidelines. Consult these standards for additional information regarding appropriate window installation procedures.**

### **Preparation**

- Always consider framing loads, weight restrictions, and carpentry issues before installing windows. Vinyl windows could be heavier than the windows they are replacing. Framing around the window should be sufficient to support the weight of the new window(s). Always repair damaged, rotted, or insufficient framing prior to installing the new windows. Consult with an Architect or Engineer if there are any questions about load requirements.
- Check state and local code restrictions for additional compliance on installation and/or fastening. Vinyl window accessory trims are provided for aesthetic purposes only, and not designed to be watertight or structural. Installation into masonry or replacement openings must be sealed to the openings using an approved, proper method.
- Hinged and pivoting windows may require additional fasteners located near the hinge or pivot points. Check with an Architect or Engineer if unsure about any fastening issues.


- Field-applied protective coatings can damage window sealants and gaskets, and are not recommended.
- Stucco, concrete, paint, harsh cleaning products, acid, or masonry products left to cure on frames and glass may damage these surfaces. Remove and clean all such materials from surfaces before any curing action takes place. Rinse all surfaces exposed to leaching water from new concrete or stucco with clean water to prevent damage.
- EFIS installation relies on sealants and appropriate integration of the EFIS material with building penetration. Any product that penetrates the envelope of an EIFS or Stucco Structure must be installed and sealed properly. Installation of Ringer Windows into an EFIS building envelope that is not properly applied and maintained will void the applicable warranty. Consult your EIFS or Stucco manufacturer/contractor AND sealant manufacturer for their recommended practices.
- When removing sash beads or any trims that are caulked, it is always a good idea to score the caulk-line with a razor knife. Use special care when removing caulk because it may have adhered to sheetrock tape or another finished surface to which it is attached. Removing it too quickly, without cutting a line, may result in damaging or accidental removal of finished surfaces.

### Installation Guidelines

- Each window installation is different. Ringer Windows recommends that windows be installed with sashes installed, in a closed and locked position.
- Ringer Windows recommends installation of one window at a time to ensure that only one opening is exposed at all times.
- Removal of the existing window must be performed in a manner that is appropriate for the frame type and installation of the unit. Failure to accommodate the existing frames and any damage caused by improper removal of the existing window unit can compromise the performance of the Ringer Windows replacement unit to be installed.
- Clean and prepare the opening to accept the new window. Replace rotted or unsound framing as required.
- Check each window size and window opening to be replaced. Always make sure that the new windows will fit into the designated openings **BEFORE** the old window is removed. Test fit the window into the rough opening to ensure that it will fit before securing into the framing. If this test fit reveals a need for adjustments, make-ready with shims and approved fastening screws. If the window(s) do not fit properly, or to the satisfaction of the Installer, stop the job, reseal the opening, and re-evaluate the best way to complete the job properly.
- Install shims around the perimeter of the window, as needed, leveling and supporting the window into a square and level position. Installer should use great care to adequately support the base of a window flat on the sill. Secure all shims before the window is set and secured into final position.
- After the old window is removed, apply appropriate flashing and integrate it into existing drainage planes in order to accept new window. See ASTM 2112 for guidelines.
- Check operation of window several times during the installation process. Check to see that an even sash reveal around all operable sashes exists. Windows should operate smoothly and freely, with minimal effort. Screws or fasteners should NEVER be installed inside the sash track that will impede the smooth and efficient operation of the window. Caulks and sealants must never impede the window operation.

- **Check the rough opening to determine for Plumb, Level, & Square prior to installing the new window.** If any part of rough opening is not plumb, level, or square, it may be necessary to install all-weather shims to ensure that your Ringer Window is plumb, level and/or square. If shimming places undue stress on the new window or otherwise compromises the water-tight nature of the installation, please consult with the contractor, architect or other responsible design professional.

- Set the window into the opening and attach with appropriate fasteners. Ringer Windows provides Vinyl-L-Hold Fastener Screws® that are specifically designed to work with our windows. Vinyl-L-Hold screws are available through Ringer Windows for a very nominal charge. Fasteners and shims should be used to secure the window to the building framing to adequately support and secure the window, without compromising the water-tight nature of the unit. After the window is set into final position, it should be checked again for plumb, level, and square. Windows should always be installed as plumb, level, and square as the opening will allow. Failure to install a window plumb, level, or square can cause operational issues. **NEVER OVERTIGHTEN fasteners**, no matter the type used.

**NOTE:** Each window opening is different. Ringer Window frames are not predrilled for fastening screws. The installer is responsible for selecting appropriate location and number of fasteners necessary for any particular installation.  Fasteners should NEVER be installed into the sash track that impede the operation of the window. Ringer Windows recommends no less than four (4) fasteners are used to secure the window to the structure. The exposed heads of the screws/fasteners should be sealed with silicone before they are used to fasten the unit to the framing.

**PENETRATIONS IN THE SILL OF THE WINDOW UNIT SHOULD BE AVOIDED IF AT ALL POSSIBLE.**




Penetration(s) running through the sill for fasteners and/or alarms might cause or contribute to leaks or water intrusion. Sills are designed for, and promote, water drainage & relief with Ringer Window Systems. **While it may be necessary or desired to attach the window through the Sill, Ringer Windows does NOT warrant against any direct or indirect damage that may result from water intrusion through or at the Sill, at these penetrations.** If the Sill is penetrated for any reason, it must be properly sealed with silicone before the window installation is finalized. ***Given the many different possible field conditions with replacement window installations, all responsibility for product installation rest with the Installer, including penetrations into the Sill.*** Consult with the contractor, engineer, and/or architect for proper installation, according to local building codes, site condition, and/or ordinances.

- When the window is properly secured to the structure, install any dust plugs provided with your Ringer Window. Ringer Windows recommends that a very small amount of clear silicone be placed on the underneath side of the plug before it is set into final position.

- After window is completely installed and adjusted for best possible fit and function, batt style insulation should be packed around perimeter of window as best possible, making sure to keep loose. **Lose-fitting insulation does not place undue expansionary pressure on the window. NEVER USE EXPANDING FOAM INSULATION AROUND THE WINDOW, AS IT CAN DISTORT OR COMPROMISE THE FRAME.**

- If applying exterior window trims, leave a 1/8" space between the frame and trim for expansion, if at all possible. After all trims are installed, they should be sealed with the appropriate silicone or caulk.

- Windows may be trimmed-out with wood trims on the exterior and interior. Ringer Windows are designed and equipped to be trimmed-out with proprietary Ringer Window Vinyl Accessory Trims. These trims are color matched with each of the Ringer Window colors and they integrate into each window through our Accessory Pockets. All Ringer Window Accessory Trims are available for purchase for a nominal charge. Please see the Ringer Window Website for a list of trims that are available.

-  Check to see that all weep holes are free of debris and clean. Clogged weep holes, or any malfunction with the weep hole doors, may cause water damage. No matter what trim or sealant is being used, care should be exercised to ensure appropriate drainage with the weep holes is never compromised. Never cover or block a weep hole.
- Perform a final check for proper window operation, adjust if needed. Ensure that all locks and latches easily engage at this time.
- Clean the unit and install screens, if any. Care should be taken when cleaning to avoid the use of any solvents or other harmful materials. See the "Care and Use Recommendations" applicable to Ringer Window products for recommendations regarding cleaning. This form is available at the Ringer Window Website.



# INSTALLATION GUIDELINES FOR APPLICATION OF VINYL WINDOWS WITH NAILING FINS

**READ THESE GUIDELINES COMPLETELY BEFORE BEGINNING.** Inspect the rough opening and product thoroughly. Do not install if there is any observable damage, condition or other irregularity that could impact installation or unit performance. Ensure compliance with local building costs, project requirements, and good building practice, as these requirements supersede these guidelines. The product warranty includes important information regarding Ringer Window's products. Complete product warranty and other pertinent information is available by calling Ringer Windows or online at [www.ringerwindows.com](http://www.ringerwindows.com).

## **FAILURE TO FOLLOW THESE GUIDELINES AND BUILDING CODE REQUIREMENTS MAY AFFECT THE REMEDIES AVAILABLE UNDER THE WARRANTY.**

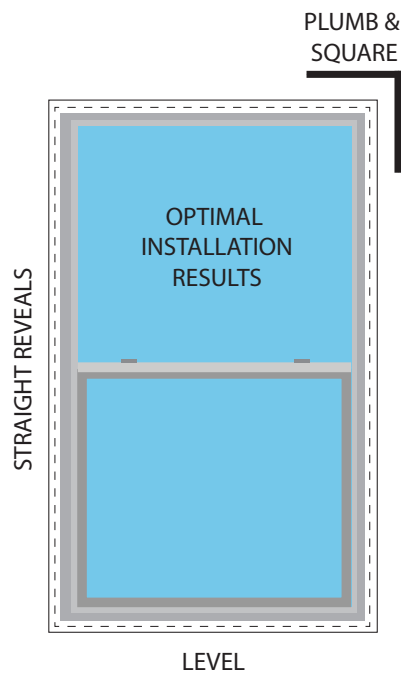
1. Make sure the rough opening is plumb, square and the sill plate is level. Rough openings should be no wider than 1/2" larger than window frame in width and height.
2. If the building has weather resistant barrier (e.g., house wrap) prepare the opening according to the manufacturer's instructions. Use of appropriate flashing material is recommended. Sill flashing should be installed before setting the unit. Jamb flashing will be installed over the nail fin after the window is affixed, overlapping the sill flashing and extending up past the top nail fin approximately 2". Head flashing should also be applied over the nail fin and jamb flashing, extending no less than 1 inch beyond the outer edges of the jamb flashing. Integrate any barrier system, ensuring adequate seals between materials and at transitions. Flashing must be rated to meet ASTM D-779 - 24-hour water resistance.
3. Keep sash closed and locked throughout installation. Keep jambs plumb and square with head and sill. Be careful not to "crown up" or "bow down" the sill or head. Constantly check width at the meeting rails of single and double-hung units (center point on casements) to avoid a "bowed out" installation.
4. Apply a continuous 3/8" bead of premium grade, compatible exterior sealant to the interior (backside) of the nail fin near the outside edge, in line with the pre-punched holes **on all sides, before** setting the window into the rough opening.
5. Vinyl windows can be more flexible than non-vinyl windows and as such, require attention to properly set the window into final position before it's permanently attached. The window, or mulled sets of windows, should be placed flat on the sill plate so that the weight of the window(s) is equally distributed and supported directly on the sill. If necessary, place flat setting shims on the rough opening sill plate under the bottom corners of the window to ensure equal spacing within the opening. For Single or Double Hung units, remove shims or blocks under the sill except at the frame corners after installation. For units with intermediate jambs and for all slider units, continuous shim or horizontal shims are recommended under each intermediate jamb and meeting rail to ensure sill remains level. Apply additional shims as necessary to maintain a level sill throughout installation.
6. Place a temporary fastener in the slot provided in the nail fin at each top corner, check level and square of the window by measuring the diagonals. Open bottom sash to check "reveal" (space) between the bottom of the sash and the window sill. Close and relock the sash, adjusting if necessary. Place fasteners in the bottom corners and check again for level, plumb and square.
7. Secure the window with fasteners that penetrate the framing by a minimum of 1". Install fasteners straight, not angled. Keep the sash locked until all sides are secure. Prior to fastening ensure all frame members are plumb, straight, and level. Fasteners should be applied securely into every other slot on all sides. Do not distort the nail fin with the fasteners.
8. Apply sealant over exposed fastener heads, any unused slots, and the outside edge of the nail fin where it comes in contact with the barrier or sheathing. Continue flashing installation as appropriate.
9. Vinyl windows can be more flexible than non-vinyl windows and as such, require attention to properly set the window into final position before it's permanently attached. Place and secure shims along the perimeter and at the meeting rail/check rail, as needed, to prevent the frame from bowing. These shims should remain after installation. Caution should be taken to not deflect the frame and hinder sash operation. Unlock and operate the sash(es). Visually inspect all sight lines. Check to see that all reveals between the frame and sash elements are straight and even AND not bowed or concave. Adjust or shim as required to ensure consistent sash reveal.
10. Insulate between the window frame and rough opening with fiberglass batt insulation or equal. Expansion foam can impair operation or distort frame. Ringer Windows does not recommend using expansive foams and it could affect the user's rights under the warranty.
11. Allow a 1/4" gap between the exterior cladding, siding, brick, stucco or stone and the window frame on all sides (except vinyl j-channel). The gap (expansion joint) should be filled with correct size backer rod, then sealed with a high grade exterior sealant and will need to be maintained.

### **CAUTION**

- The use of solvents or acids can damage components of this product and will limit rights under the warranty.
- Vinyl windows have pre-punched slots for new construction installation – fastening in any other portion may permanently damage unit and limit rights under the warranty.
- It is the responsibility of the owner, architect, and/or builder to select products that comply with applicable laws, site requirements, building codes and to ensure that installation complies with those same requirements.
- Do not store Ringer Window units in the sun or lay flat before or during installation or transportation.
- ANY PENETRATIONS (e.g. ALARM SENSORS) MADE THROUGH ANY PORTION OF ANY RINGER WINDOWS, INC. PRODUCT MAY AFFECT RIGHTS UNDER THE MANUFACTURER'S WARRANTY.
- Some laws and building codes require safety glass or other life safety considerations. Ordering party is responsible to specify appropriate features and ensure compliance with local laws and building codes. Installer should have knowledge of general requirements and not set or affix non-compliant units.

These guidelines are recommendations only. Check state and local codes for applicable requirements, restrictions, and/or fastening demands. If unit has exterior trim (brick mold/j channel, et.) trim is provided for aesthetic purposes only and not designed to be watertight. Installation into masonry or replacement openings must be sealed to the openings using an approved, proper method. For any questions regarding installation contact Ringer Window and/or refer to AAMA 2400 and/or ASTM 2112.

These installation guidelines are provided for information only; no representation or warranty is made or can be inferred that these guidelines set forth all information necessary for proper installation. Given the variety of field conditions, responsibility for product installation rests with the installer. Do not proceed unless you have addressed the factors necessary to achieve weather-tight installation of a properly functioning product. Ringer Windows, Inc. assumes no liability for any personal injury or property damage incurred in installation. These guidelines, together with the product specifications and warranty set forth the entire scope of liability of Ringer Windows, Inc. with regard to the product.

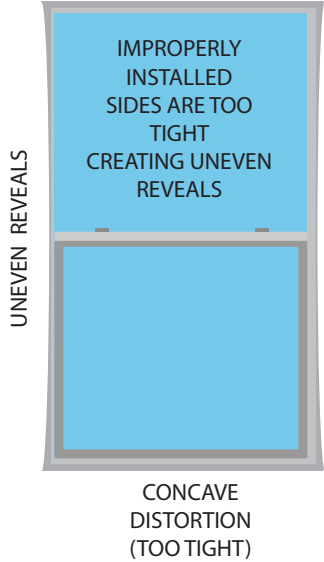
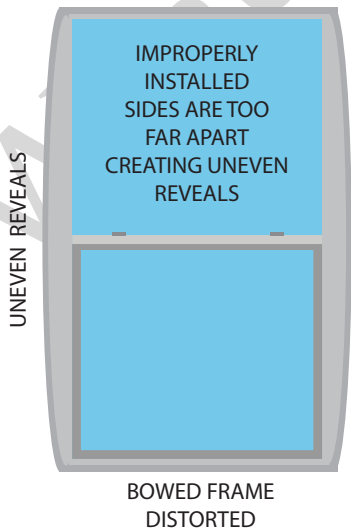
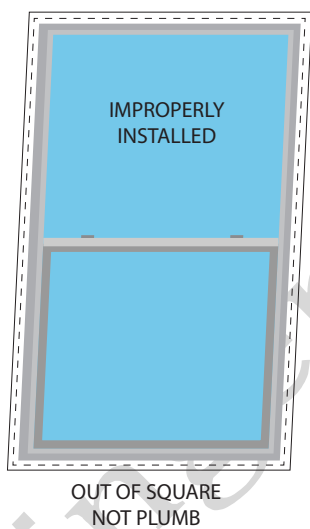


## Fastener Guidelines

<b>Nailfin Holes to Use for Fasteners</b>	<b>Standard: Every 6 Inches Impact: Every 4 Inches</b>
<b>Distance From Window Corners</b>	<b>2" From Corner</b>
<b>Building Framing Penetration</b>	<b>1" min or as local codes dictate</b>
<b>Min. Corrosion-Resistant Nail Size</b>	<b>3/8" Minimum Head Diameter</b>
<b>Min. Corrosion-Resistant Screw Size</b>	<b>#8 or Larger Pan Head</b>

Note: Milled units may require additional supports

## OPTIMAL INSTALLATION



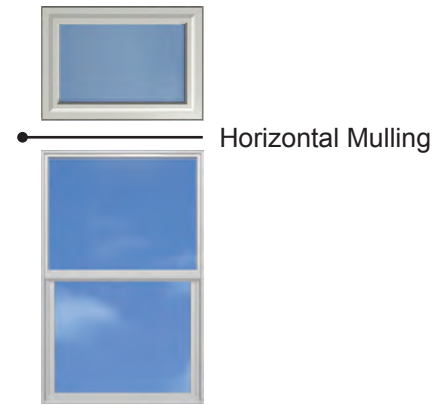
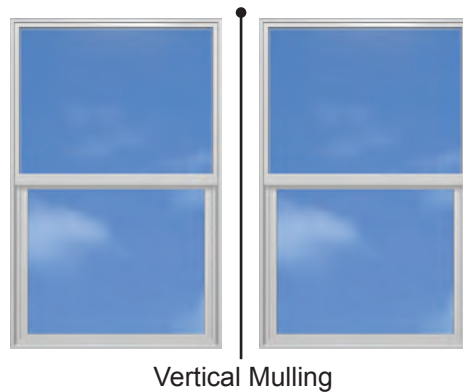
## Improper Installation



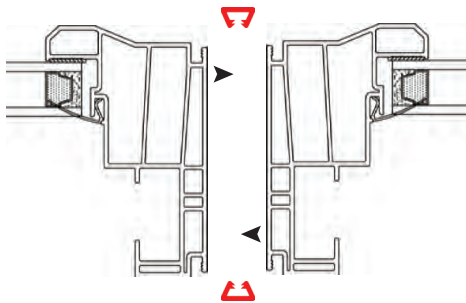
## Mulling & Stacking Guidelines for Ringer Windows Performa 3300 Series & Elite 5400 Series

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

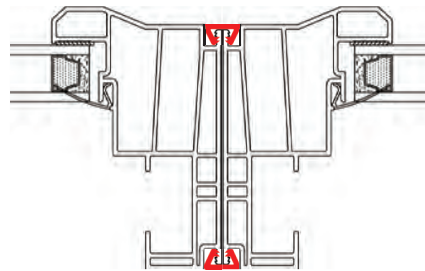
Mull Strips are used to join 2 or more windows into a single opening, both horizontally or vertically. Ringer Windows offers two different Mull Strips, including a Zero Clearance Mull Strip and a 1/2" Mull Strip. Either Mull Strip can be used with a normal installation that does not require additional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



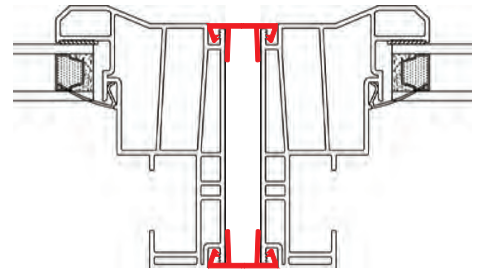
The Zero Clearance Mull Strip is used when butting windows directly together with no spacing between the windows is desired. The 1/2" Mull Strip can be used to widen the overall width of the mulled sets of windows, to accept internal reinforcements between the windows.



2-Windows  
Prepped for Mulling



2-Windows  
Mulled with Zero  
Clearance Mull



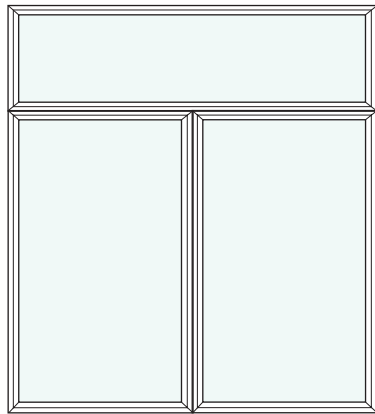
2-Windows  
Mulled with 1/2" Spacer Mull

Note: Larger mulled 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 mulled sets of windows during the bid process. Otherwise, it is the responsibility of the "buyer" to request or inform Ringer Windows of mulled sets of windows.**



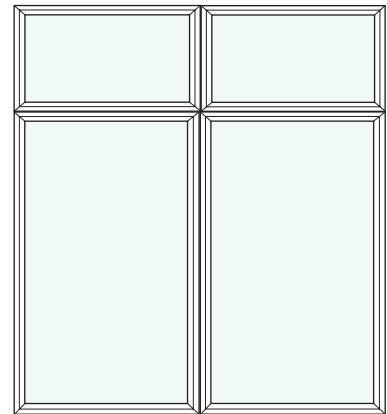
**Note: Mulling windows into 3-way & 4-way (or greater combinations) sets of windows MUST be reinforced. Specific design specifications will be individually designed and reviewed with the "buyers" before these types of combination window sets are designed and sold. It is the responsibility of the "buyer"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



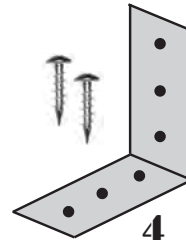
**1**



**2**



**3**



**4**

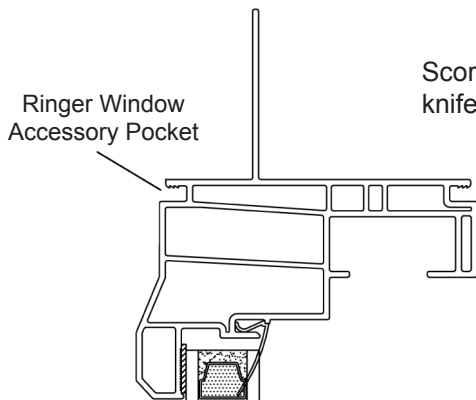


**5**

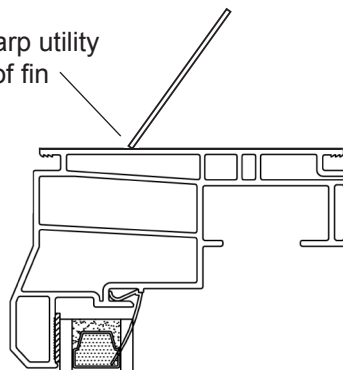
#### STANDARD MULLING FOR WINDOWS THAT DO NOT REQUIRE REINFORCING.

##### 1. Nail Fin Removal

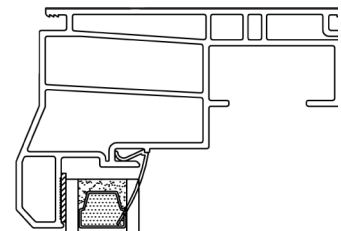
Remove the nailing fin on the sides of the windows that will be connected to the mull. Score the nail fin with a sharp utility knife several times. Bend the the nail fin back and forth until it breaks loose, then properly dispose. **⚠ Note:** Once the Nail Fin is removed, it cannot be reinstalled. If 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



Score with sharp utility  
knife at base of fin



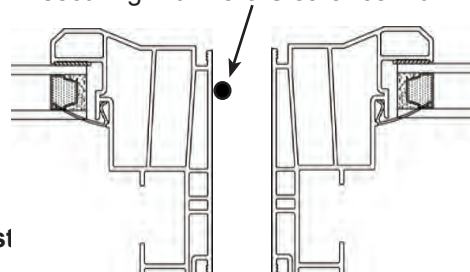
Window with removed  
fin. Ready for mulling.




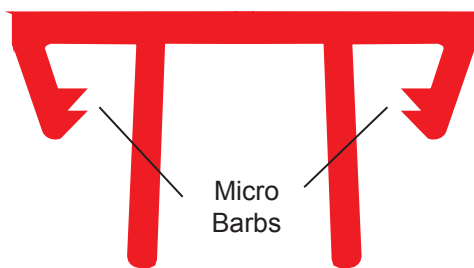
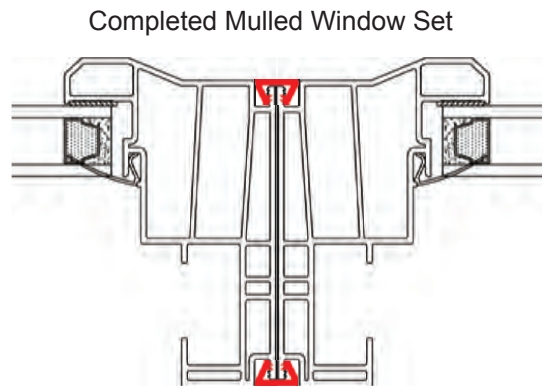
2. On the exterior side of the windows (in the middle between the 2 windows, apply small bead of silicone caulking between the 2 windows. The caulk will flatten-out and seal once the windows are mulled together with the Zero Clearance Mulls.

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 out 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



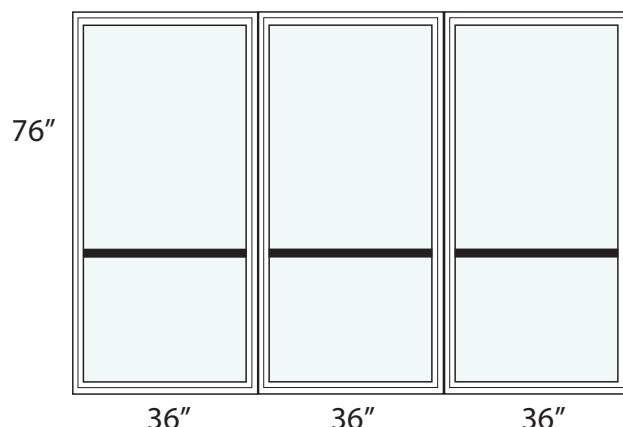
NEVER use a mill faced hammer directly on a vinyl window. This type of hammer will mar the surface of the window. If necessary, Ringer Window Accessory Trims can be tapped into final position using a wood block.

After the windows are mulled 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.

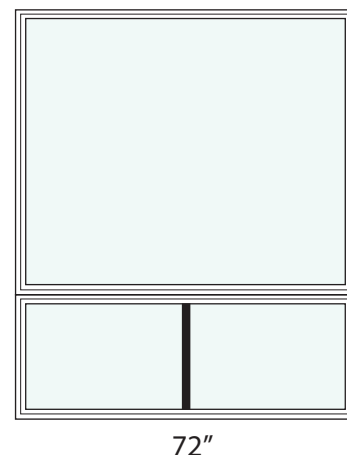
## INSTALLING MULLS USING REINFORCEMENT PARTS WITH A 1/2" MULL STRIP

Note: \Larger mulled 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**  
Mulled Set over 60" Tall



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

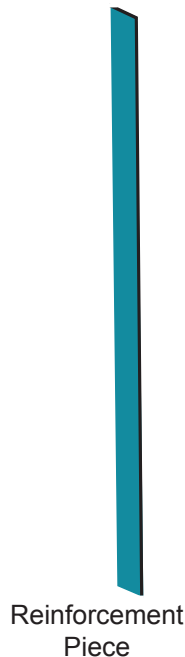
Remove Nail Fins on the sides where mulls are installed. Remove the nailing fin on the sides of the windows that will be connected (mulled together). Score the nail fin with a sharp utility knife several times. Bend the the nail fin back and forth until it breaks loose, then properly dispose. See same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

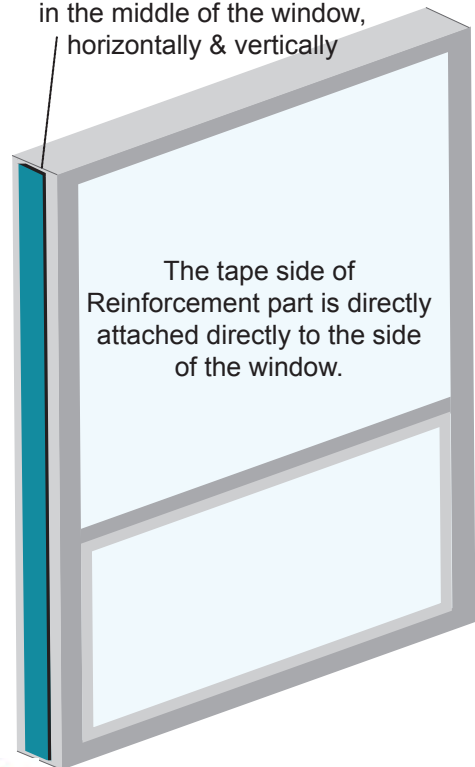
Reinforcements are pretaped before shipment when ordered with windows.



 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.

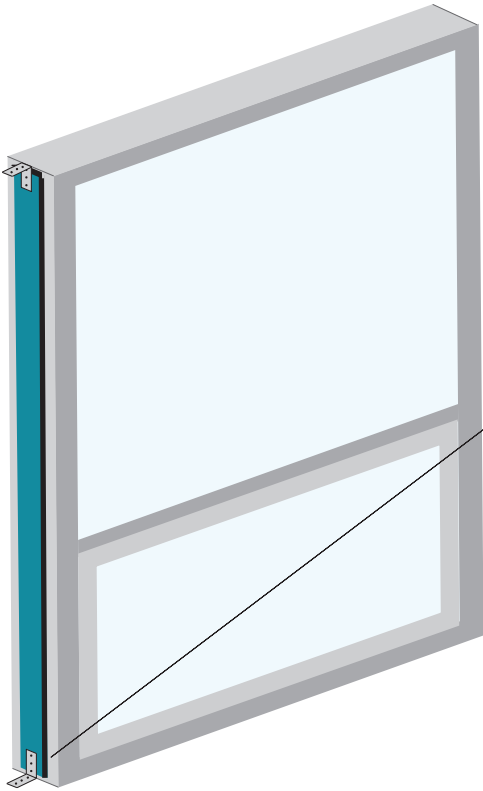
Center the Reinforcement in the middle of the window, horizontally & vertically

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



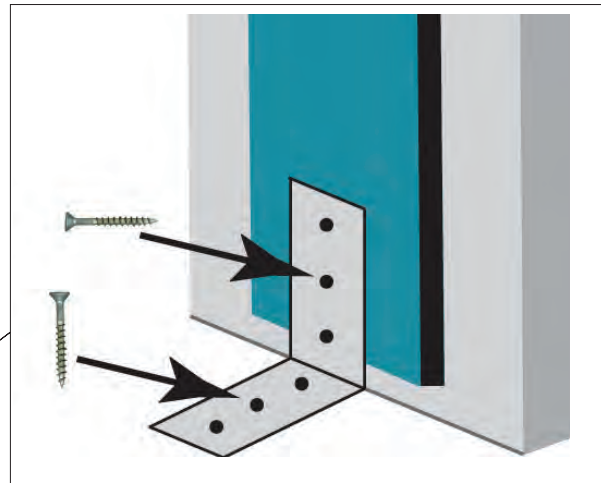
Step 3 - Center the Aluminum Reinforcement part directly in the middle of the mulled side of the window, both horizontally and vertically, so that it's in the middle of the window. Press firmly to secure. Note: This process requires the nail fin to be removed.

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 fram and the framing.



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

Close-Up "L" Bracket Details

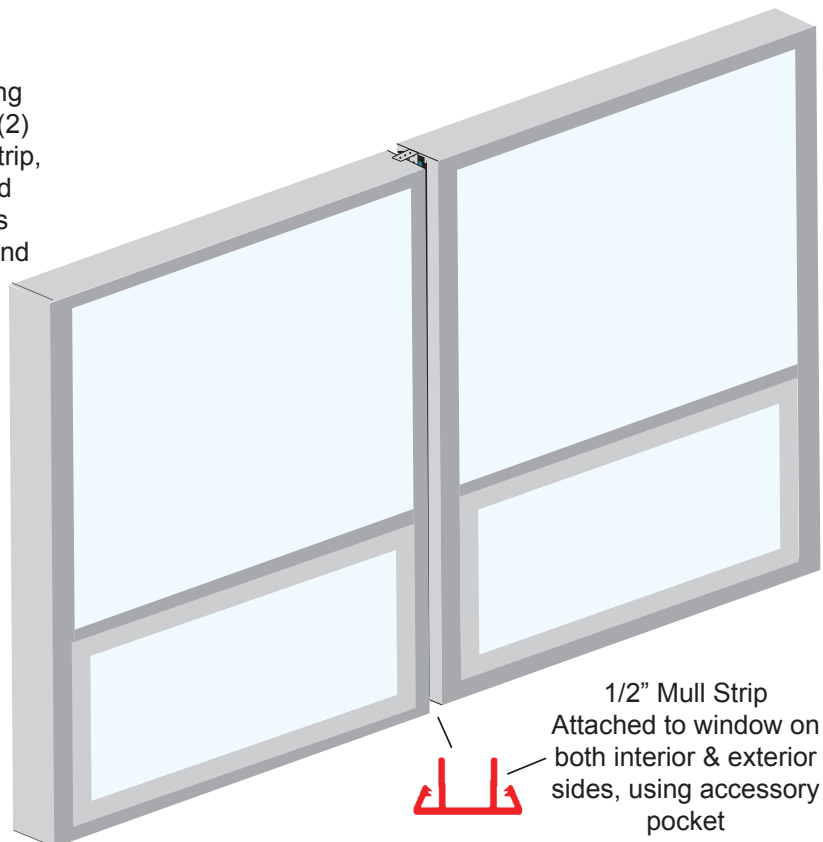


Step 5 - **ATTACHING THE "L" BRACKET TO THE WINDOW AND SECURE IT TO THE FRAMING.** Predrill a hole through the side of the "L" Bracket that attaches to the Reinforcement Part. Note: Aluminum requires predrilling with 3/32" bit. Secure side of "L" Bracket, with provided screw, directly to the window.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

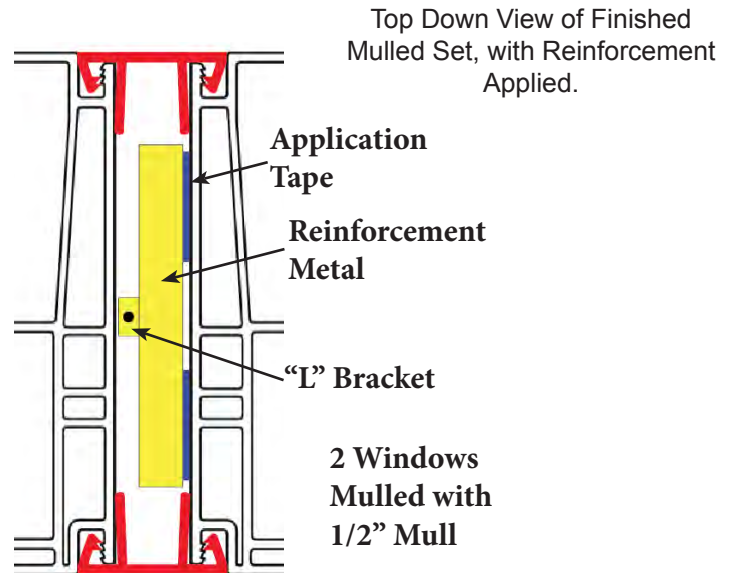
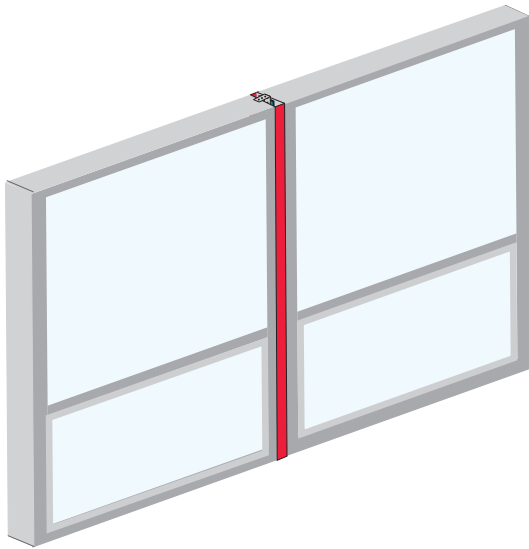
Step 6 - Position and set the opposing window into rough opening. Secure (2) windows together using 1/2" mullion strip, using Ringer Window recommended procedures. Finish setting windows normally. Check for proper reveals and installation.



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.

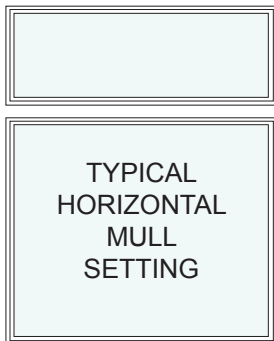


## Finished Window Illustration

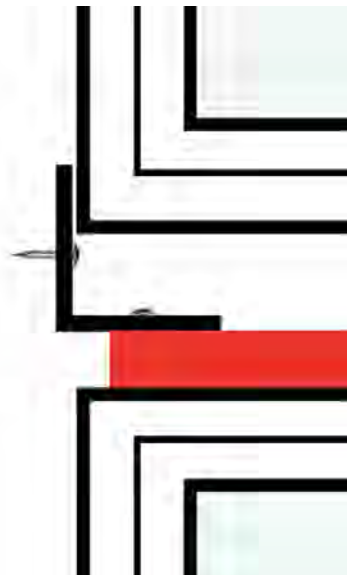


### HORIZONTAL MULL REINFORCEMENT APPLICATIONS - STACKING INSTALLATION

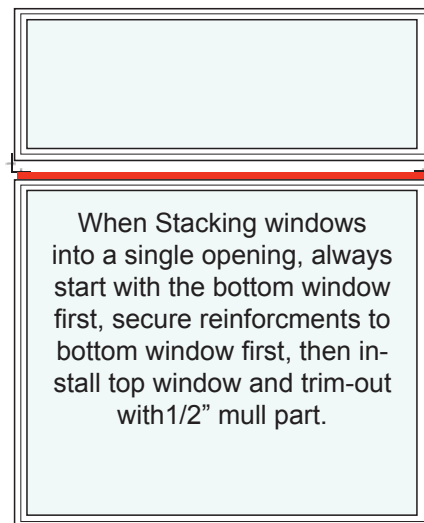
When stacking windows and installing horizontal Mull Strips, the same basic set of procedures apply as with the vertical mulling, except we recommend that the mull be attached to the bottom window first.



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 aluminum reinforcement bar with windows.



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



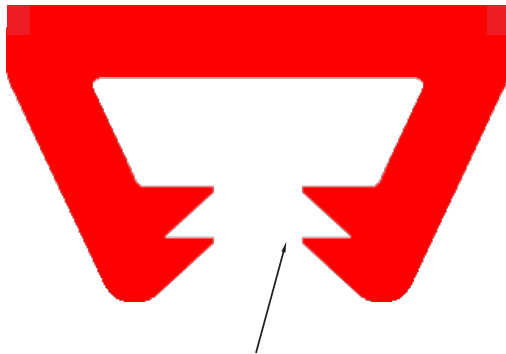
If there are questions or concerns, stop the job and contact Ringer Windows immediately.



# Expanded View Ringer Window Mull Trim

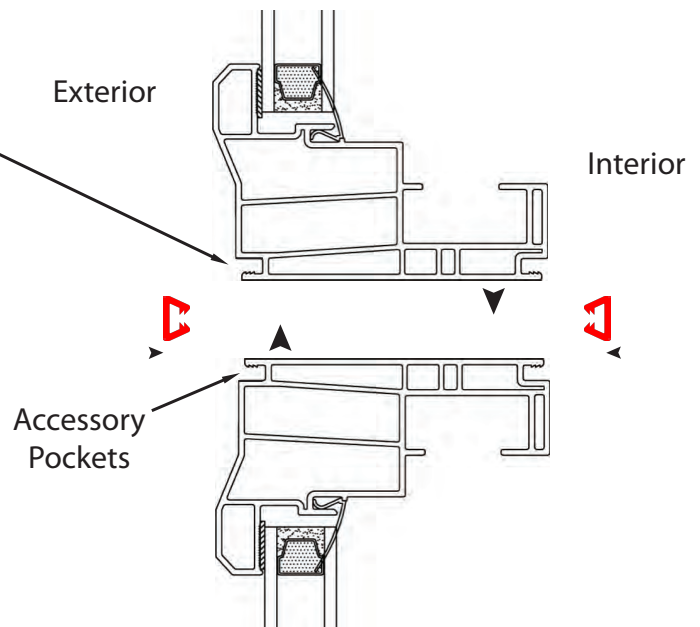


Windows in Black  
Mull Trim in Red  
For Illustration Purposes  
Actual Colors of Trims  
Match Windows

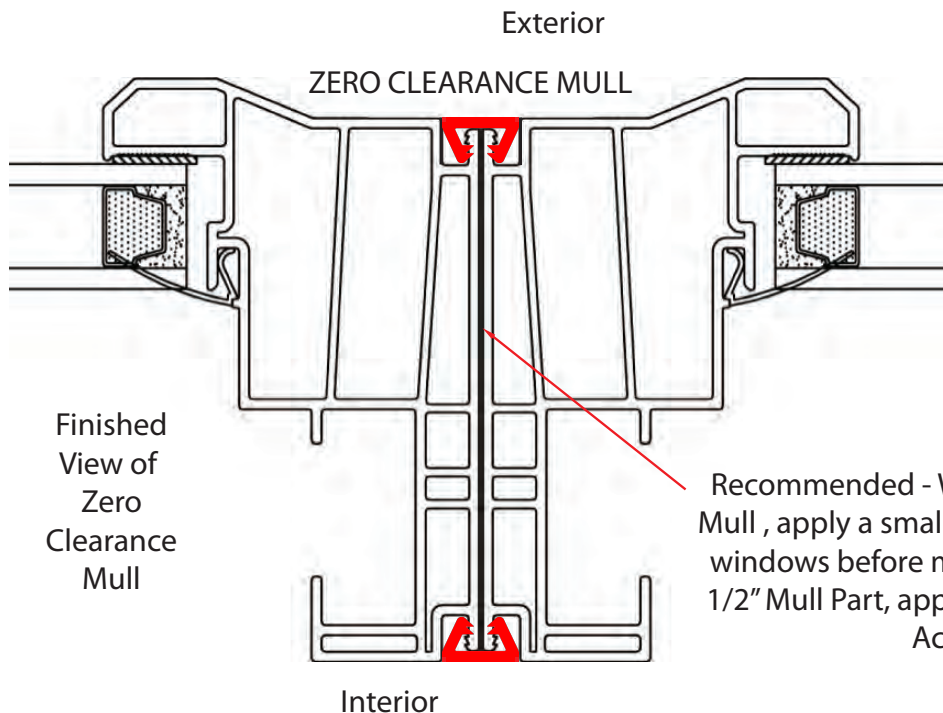


Barbed  
Connectors

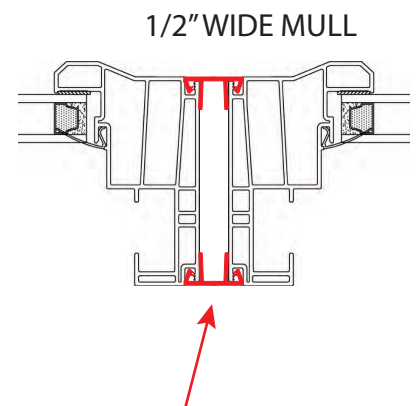
## TOP VIEW ILLUSTRATION



1. Remove Nail Flanges
2. Cut Mull Trims to Height of Window
3. Apply Thin Bead of Silicone Caulk Between Windows for Additional Seal
4. Set Windows Into Opening (Individually or Together)
5. Snap Mull Trims into Accessory Pockets
6. Gently Tap Mull Trim in Place with Flat Wood Block Until Locked, Both Sides

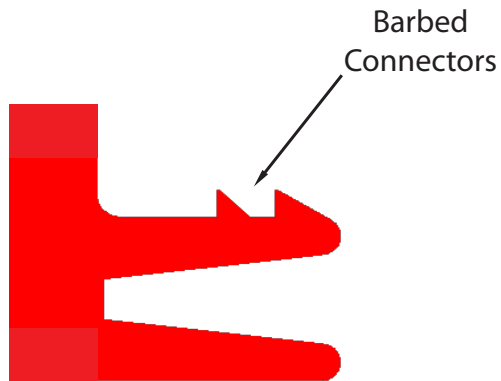


Finished  
View of  
Zero  
Clearance  
Mull



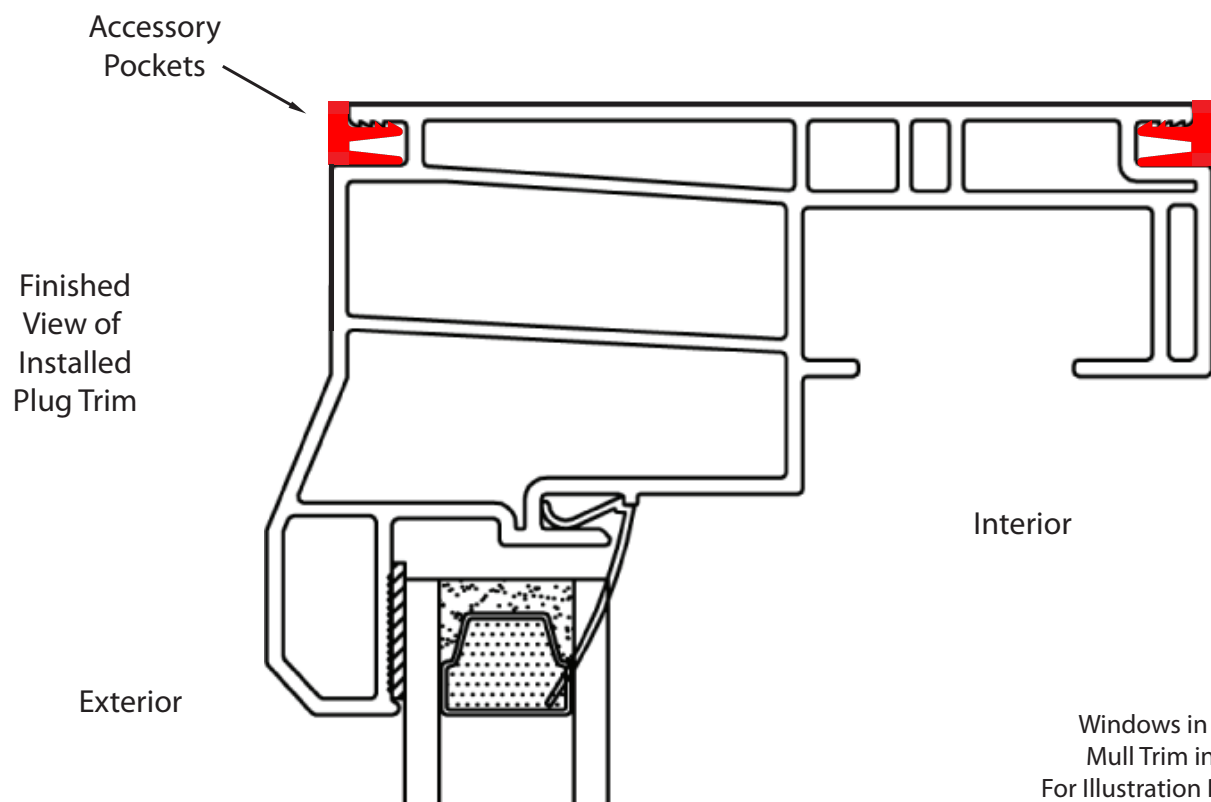
Recommended - When using our Zero Clearance Mull , apply a small bead of silicone caulk between windows before mulling is complete. If using the 1/2" Mull Part, apply thin strips of caulk inside the Accessory Pockets.

## Expanded View Ringer Window Plug Trim



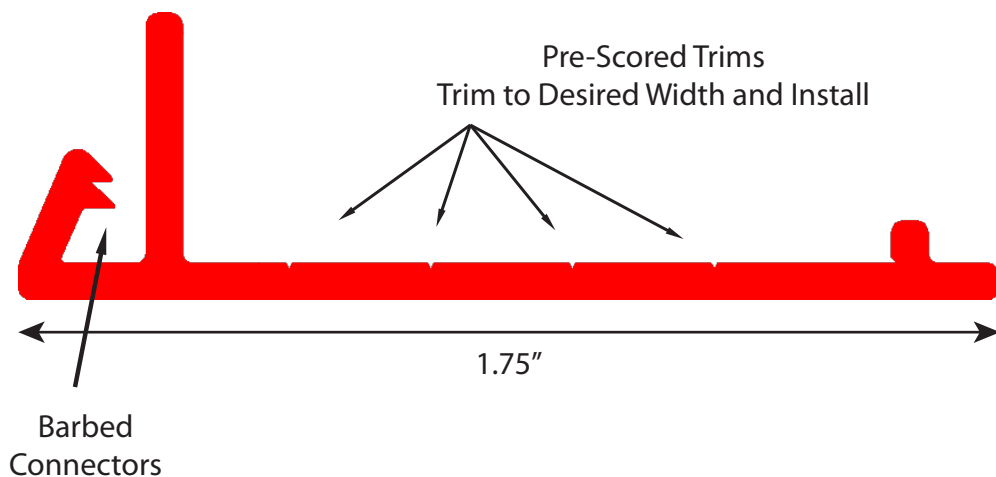
Plug Trims cover the Accessory Pockets to create a sharp and crisp edge to the window. This trim is not always needed or used but available for all our windows. As with all our accessory trims, it's designed to integrate into the window very tightly with a nice finished appearance.

### TOP VIEW ILLUSTRATION

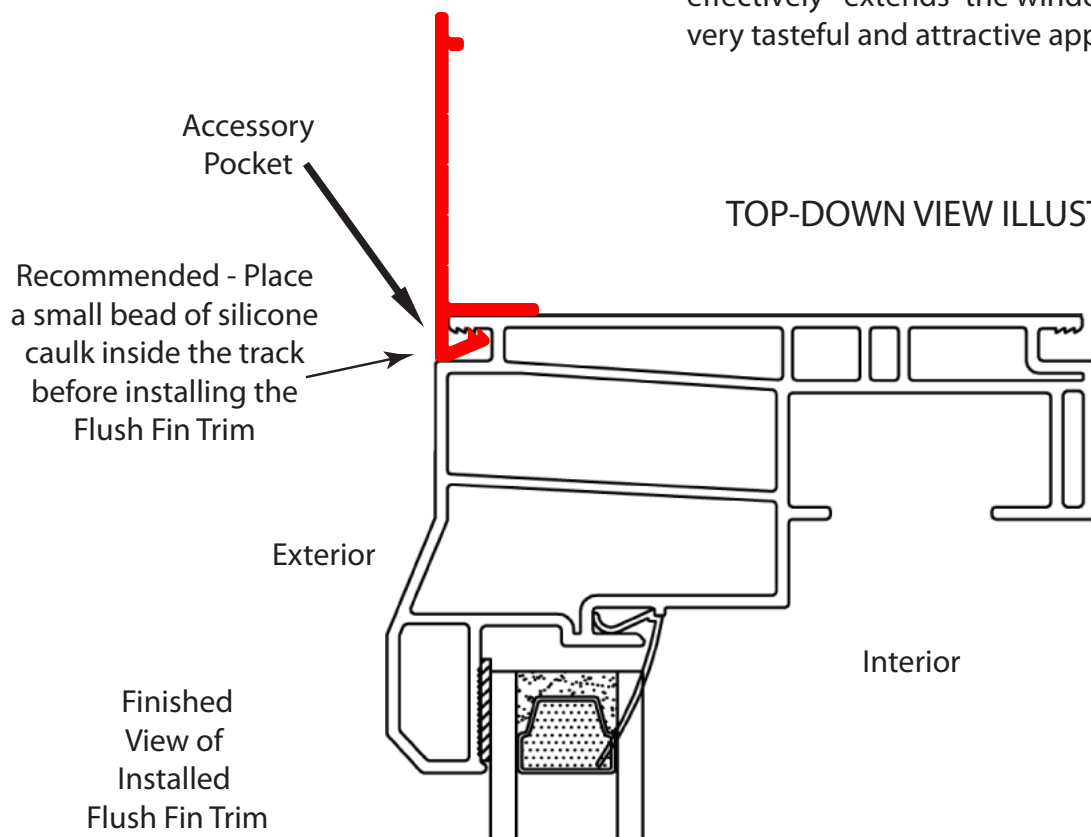


Windows in Black  
Mull Trim in Red  
For Illustration Purposes  
Actual Colors of Trims  
Match Windows

# Expanded View Ringer Window Flush Fin Trim



Our Proprietary Adjustable Flush Fin Snap Trim Provides an Excellent Option to Fill-In Gaps around Windows that sometime occur during replacement applications. This adjustable trim is pre-scored for fast application and installation. Once installed, it effectively "extends" the window perimeter with a very tasteful and attractive appearance.



TOP-DOWN VIEW ILLUSTRATION

Windows in Black  
Mull Trim in Red  
For Illustration Purposes  
Actual Colors of Trims  
Match Windows





# WINDOW SAFETY

Keeping kids safe in our homes should be more than just a passing thought. While your home's windows can provide a safe exit from fire, open windows can present an opportunity for falls, particularly by small children, if precautions are not taken. While your home's windows can provide a safe exit from a fire, they can also be the cause of injury with falls, especially with children. Windows connect us to the outside world but they also play a critical role in home safety as well. Home AND Window safety, demands our awareness, planning, and prevention with our kids!

**Emergency Escape** - Fire is a scary and frightening thing. Children need to know that they can't hide from fire. They must escape it. If possible, several emergency escape routes should be identified and shared with every family member, especially your children. If windows are part of an escape route, kids need to be practice these routes regularly with the help of their parents.

**Fall Prevention** - Every family member 6 years and older should know how to open and close windows. Windows should not be blocked with furniture or anything that impedes emergency escape. Window security bars, grills and grates may act as a safeguard against intrusion but they can block emergency escape as well. Regular maintenance and window checks should be performed to ensure that all the windows work properly. If not, repair them immediately!



Ringer Windows, Inc. • 205 Mustang Cove • Taylor • Texas • 76574 • 512-989-7000

[ringerwindows.com](http://ringerwindows.com)

Certain types of landscaping can impede a safe exit. Avoid landscaping that may prevent a safe exit from egress windows that may be used for emergency escape. Window Air Conditioners should never be installed in egress windows that may be used for emergency escape.

Children, particularly those five years and younger, are more likely than adults to fall out of an open windows. Never leave children unsupervised. Keep windows closed and locked when kids are present and teach them to play away from windows, for their own protection.

NEVER depend on insect window screens to prevent falls. Screens are not designed to stop falls and they will not hold the weight of children.

Ringer Windows Elite Double Hung Windows are equipped with a Window Opening Control Device. After-market WOC devices are available through 3rd party sources such as Home Improvement Stores, Baby Stores, or through a variety of online safety stores.



For additional window safety tips,  
consult the following great  
resources.

National Safety Council  
1121 Spring Lake Drive  
Itasca, Illinois 60143-3201  
[www.nsc.org](http://www.nsc.org)

National Fire Protection  
Association  
One Batterymarch Park  
Quincy, MA 02269-9101  
[www.nfpa.org](http://www.nfpa.org)



SCREENS ARE DESIGNED  
TO KEEP BUGS OUT!

**SCREENS ARE NOT  
DESIGNED AS FALL  
PROTECTION or PREVENTION.**

SCREENS WILL  
NOT SUPPORT THE WEIGHT OF  
EVEN THE SMALLEST CHILD.  
TEACH YOUR CHILDREN ABOUT  
WINDOW SAFETY!

## CARE, MAINTENANCE, AND USAGE GUIDELINES FOR RINGER WINDOWS, INC. PRODUCTS

Caring for your new window – RINGER WINDOWS, INC. (“Ringer Windows”) uses high quality materials and workmanship, giving you one of the best windows available. Proper usage, cleaning and maintenance will result in many years of extended service.

### Care & Cleaning – Guidelines

Great care should be used when cleaning glass. Glass cleaning should only be performed with cleaners specifically designed for glass. If possible, use a dry and soft lint-less cloth to dry the glass after cleaning. ANY type of glass can be scratched and great care should always be exercised when choosing a cleaning method.

Your Ringer Windows vinyl frame and sash parts should be cleaned with a mild household dishwashing soap and water and a clean sponge. Rinse completely with clean water and wipe dry with a soft lint-less cloth if possible. Avoid using outside garden hoses to clean windows, especially if the water is hard. Hard water deposits from hoses are difficult to clean. Care should be used when adjusting landscaping sprinkler systems as well. Water from sprinkler systems, especially hard water, can permanently damage the glass surface. While a number of hard water remover products exist, some Ringer Window clients have reported success with using a mixture of lemon juice and water to remove hard water stains from the glass.

- **Never use any abrasive object or cleaner on glass or vinyl.**
- **Never use any petroleum-based cleaners or caustic chemicals on your glass or vinyl.**
- **Never use a razor blade, abrasive pad or putty knife to clean your glass or vinyl.**
- **Never use a high-pressure nozzle when rinsing or cleaning your glass or vinyl.**

Please consult Ringer Windows if you have any questions or encounter any unique cleaning issues with glass or vinyl.

Single Hung and Double Hung jamb balance tracks should be cleaned periodically to prevent dirt and dust buildup. A light spray of clear, dry, Teflon lubricant may help improve the operation.

#### **Elite 5400 Series**

##### **Casement/Awing/Double-Hung/Single-Hung/Single-Slider, 3-Lite Slider, (Fixed) Picture Window**

The bottom sash of both the Elite 5400 Single Hung and Double Hung windows tilt in for easy cleaning. To tilt in the bottom sash, raise it 2” from the sill. Release the tilt latches on the top of the sash corners and tilt in. Always support the sash while cleaning.

The upper sash of our Elite 5400 Double Hung windows also tilts in. While the bottom sash is tilted in, lower the upper sash approximately 5” from the top of the window frame. Next release the tilt latches at the upper sash corners and tilt in. Again, make sure to support both the upper lower sash while cleaning.

For cleaning a fixed-lite window, this will require cleaning from the outside and inside since there is no operable sash

For cleaning the operable sash in a Ringer Window slider model, simply slide open the window, snugly grasp operable sash on the right and left edges, then lift up and remove off the tracks. Replace it in a reverse manner. The fixed portion of the Ringer Windows slider must be cleaned in place.

For cleaning a Ringer Windows Casement or Awning window, it is recommended to clean it as a picture window, from the outside and inside. The Elite 5400 Casement features a “washability” hinge that swings open to create a 5”/6” gap that allows the user to clean this window from the inside. Awning windows do not open far enough to allow for exterior cleaning so they must be cleaned from the inside AND outside.

Additional pictures, information, and “self-help” videos on how to operate windows, repair racked sashes, etc., may be found on the Ringer Window Website under the Windows & Doors Pulldown, under “Self-Help Videos”.

## **Performa 3300 Series**

### **Single-Hung/Single Slider/3-Lite Slider/(Fixed) Picture Window**

The Performa 3300 Single Hung window features a removable non-tilt bottom sash. The sash on this window is removable but not recommended unless for a specific reason. To remove the bottom sash, the window must be in the closed and locked position. Pull the sash clips, inside the left and right track, until they snap into position at a slight outward angle. Unlock the window and raise the sash, lifting it up and past the sash clips. While lifting the sash, the Apex Balances will disengage and the sash will be unattached from the window. To replace, reverse these instructions. When the sash clips are in a closed position, the sash cannot be removed.

Cleaning and operational instructions for the Performa 3300 windows are identical for the Sliders and Fixed Glass Windows.

### **Operating Guidelines**

Ringer Windows high performance windows are designed to provide style, thermal efficiency and long lasting performance. Very little care is needed to keep them in top operating condition for many years.

Sills should be kept clean and when practical, windows should be locked for maximum weather seal and performance. Excessive dirt and debris can clog a windows drainage capacity so it should be cleaned out from time to time.

Slider window sills should be kept clean so that they glide easily and seal tightly. Drainage holes located in each glider track should be open kept free of debris. Should there ever be a need to get under the glide track, remove the sash and use a semi-sharp object, like a crochet needle to hook the drain hole and pull the glide track up and out. Please consult with Ringer Windows if there are any questions about this operation.

**Due to the nature of vinyl slider windows, water will can set inside the outer slider track, and it will be visible from inside your home during heavy rains. It is NORMAL for the exterior slider track to accumulate water during heavy rains. This water will drain out through the frame and weep holes as it was designed. The appearance of water in the slider track may be unsettling but it is designed to drain away.**

Urban areas have varying degrees of air pollution. To ensure smooth and continuous service, it may be necessary that all hinges and operators should be protected annually with a clear dry Teflon spray lubricant. This can be performed as needed.

Vent stops, often called privacy stops, are installed on our double hung windows. When installed, they restrict the amount of travel that the bottom sash can move upward. *Vent stops add a minimal level of security but are not full-proof deterrents for unauthorized entry to and from the building.* Any open window invites possible risk and vent stops are not designed as a full-proof security measure. To use a vent stop with a Ringer Window, shut and press on the vent stop slide and pop it out. Reverse steps to close. Please contact Ringer Windows for all questions about vent stops.

Screens, when fitted, should be washed as needed. Mild soap and soft-bristled brushes are recommended. Screens are not designed to last a lifetime and they will wear and deteriorate over time. Extra care should be given to older screens. They become much thinner and more susceptible to tearing and failure.

All Ringer Window Hung Windows are fitted with superior “easy-to-lift-and-use” balance systems. Whatever the position of the window, you should only need minimal pressure to open or close the window. No window should ever be slammed or forced into any position that does not come easily. For all issues regarding windows that do not operate smoothly with regards to the balance system, please call Ringer Windows for assistance.

While casement and awning windows provide excellent ventilation, you should be aware that under extreme windy conditions, the windows may become damaged if left open. If in doubt, close and lock the window.

Ringer Windows are efficient and should provide years of use with limited maintenance. Should condensation occur on the interior-facing pane of glass, it's a warning sign that your home's interior humidity levels are high (as evaluated by building authorities, such as the National Warm Air Heating Association). The most common occurrence of interior condensation happens in small un-ventilated bathrooms after a steamy shower. Once the air is vented, the moisture subsides rather quickly. **IT IS EXPECTED AND NORMAL FOR MOISTURE TO COLLECT ON THE EXTERIOR GLASS DURING HUMID DAYS.**

This Chart shows recommended humidity levels, based on 70 degrees interior temperature. Should you experience frequent interior moisture on any Ringer Window, please call our office for guidance on how to correct the issue.

Outside Temperature	Inside Relative Humidity
-20F AND BELOW	15%
-10 to -20	20%
0F to -10F	25%
10F to 0F	30%
20F to 10F	35%
40F to 20F	40%

### Replacement of Broken Glass

All Ringer Windows contain a specially manufactured Insulated Glass Unit. Unlike older window technology, an Insulated Glass Unit contains 2 panes of custom glass that are hermetically sealed together with an advanced Spacer System for superior insulation. When one or both of the panes are broken, the hermetic and functional seal is breached and does not properly insulate. If this occurs, Ringer Windows recommends you contact your original installer, Ringer Windows, or locate a licensed glass service that is trained and knowledgeable on the steps to de-glaze and re-glaze your window.

The efficiency of Ringer Windows depends on the type of glass used in its' original construction. Different glass packages have different appearances and thermal ratings, thus they may look different and perform differently when using another type of glass package. To ensure the same thermal performance and appearance, interested parties should call Ringer Windows to verify the type of Low-E and glass features before replacing an insulated glass unit. Ringer Windows will be happy to assist if at all possible.

### Drainage Systems

Ringer Windows have a drainage system for excess water that might build-up on the sill or around the sashes. This system is designed into the frame of our windows, with exit ports at the base of the sill on the exterior. These exit ports are called weep holes. We install small weep covers over these ports, which use a one-way door for water to exit. These water drainage pathways and weep covers must be kept clean and clear of any obstructions to operate efficiently. It is normal for water to accumulate in the sill or track during a period of wind driven rain. The weep system allows the water to drain to the outside as it builds-up or the outside pressure subsides. Clogged weep holes may prevent or impede proper drainage. Over time, standing water could possibly damage your window from mold, mildew, and/or rot.

With normal maintenance your window should perform for many years. It is important to:

1. Keep all sills and track surfaces clean of dirt and debris.
2. Make sure that your exterior weep covers are clear of any debris or obstructions.
3. Never cover or alter your weep hole system or covers.
4. If clogged or otherwise obstructed, re-open by cleaning with gently rubbing with an old toothbrush.

5. If unable or unsure about any phase of the operation of your weep holes or covers, contact Ringer Windows for assistance. We will mail new weep hole covers to any existing Ringer Windows client if the old ones become damaged or detached. Replacement weep covers are provided at NO CHARGE to our clients.

### **Caulks and Window Sealants**

Virtually all windows utilize caulk at the perimeter areas to ensure a tight and weatherproof seal. **Caulk is not part of the window but often an integral part of the window performance not covered by Ringer Windows' warranty.** Periodic inspections of caulk should be performed. Replacement and or repairs should be maintained as needed to ensure proper weatherproofing.

### **Contact Ringer Windows**

Ringer Windows may be contacted during normal business hours on our toll-free number for answers to care and maintenance questions. A variety of additional information about the maintenance, use, and warranty is available online at the Ringer Window website. Thanks for choosing Ringer Windows. 512-989-7000

Ringer Window Care & Maintenance Guidelines