



Installation Recommendations for New Construction Casement, Awning, Hung, Picture Window Flange and Finless

These installation recommendations are made available by MI Windows and Doors, LLC (MI) to assist with the integration of finless products into a typical wood-framed window less than three stories in height. Installation into other structures and frame types are not addressed here.

Please contact MI or visit www.miwindows.com for additional information.

Important Design Considerations

Read this entire document before proceeding with installation of MI's products. Responsibility for product selection and installation rests with the owner, architect, and installer. Do not proceed with installation unless all factors necessary to properly integrate MI's products into a building's water management system have been addressed.

MI makes no representation or warranty that these recommendations include all information necessary to ensure proper integration into every building. State and local code requirements may impose different or additional demands which will supersede these recommendations. For additional guidance regarding installation of window products, refer to applicable industry standards (e.g., AAMA 2400, AAMA InstallationMasters™, ASTM E 2112).

Failure to follow these recommendations, local requirements, or good building practices may affect the availability of remedies under MI's warranty. Provide a copy of these recommendations and the applicable MI warranty to the owner before installing. MI does not permit adoption of its installation recommendations into the contracts of others without its prior, written consent.

Important Pre-Installation Considerations

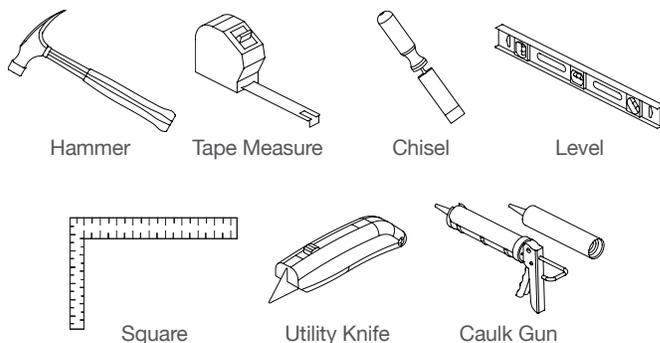
- Window installation may disturb finish surfaces and paint in existing structures. Specific notice and work site precautions may be required. Additional information is available at www.epa.gov/lead. Comply with all applicable federal, state, and local requirements.
- Special disposal considerations may be necessary for materials used during installation. Materials removed from an existing structure may also have their own disposal or recycling requirements. Comply with all applicable federal, state, and local requirements.
- Job site and worker protections are recommended and may be required. Follow all manufacturers' instructions for appropriate and safe use of protective equipment, tools, materials, hardware and site protections necessary for installation.
- Product specification sheets include important information regarding your product and may include additional installation recommendations, such as fastener use with impact resistant windows, finishing instructions, and appropriate use of low expansive foam insulation.

Contact MI for product specifications and additional product information for your MI product.

Materials Required

- Non-compressible shims.
- Fasteners. Type and number as required by code. At a minimum, fastener type should be sufficient to properly affix the frame and penetrate rough framing by 1" or more.
- High quality compatible exterior grade sealant.
- Seal tape for the weather resistive barrier*.
- Self-adhering flashing, in a width required by code but no less than 4". AAMA 711 compliant flexible butyl tape flashing or equivalent is recommended.*
- Backer rod.*
- Low-expansive, low-pressure foam or batt type insulation.*

Tools Required



* Use and placement of these materials may be required by code, plan, or good building practices.

Inspect and Prepare the Product for Installation

1. Inspect the window product thoroughly before beginning installation.
 - Confirm the window matches the size needed for the opening; measuring $\frac{1}{2}$ " smaller than the rough opening dimensions in width and height.
 - Confirm the window's features match the requirements of the project, order, and opening; e.g., Low-E, color, code, rating, operating direction, egress.
 - Confirm there is no damage to the product and that all necessary pieces are in place for a complete installation; e.g., locks, labels, weather stripping.
Do not proceed with installation if there are any concerns about the condition or suitability of the product for installation or compliance with project, order, code, or opening requirements.
2. Keep the jambs plumb and square with the head and sill on the window throughout installation. Keep sashes closed and locked throughout installation. Avoid "crown up" or "bow down" conditions at both sill and head. Avoid "bowed out" installations by confirming equal jamb widths throughout installation, especially at meeting rails.

Inspect and Prepare the Rough Opening

3. Make sure the rough opening is in good condition and sits plumb, level, and square. *See Figure A.* Confirming measures should not exceed permissive tolerances in ASTM 2112: $\frac{1}{8}$ " nominal square tolerance for units less than 20 sq. ft. or $\frac{1}{4}$ " for units more than 20 sq. ft. Framing conditions at the rough opening must be sufficient to support the window unit, framing header above, and permit appropriate integration of the window into the building's water management system. Rough openings should be $\frac{1}{2}$ " larger than window frame in width and height.
4. If the building already has a weather resistant barrier (WRB) installed, it is necessary to prepare an opening in the WRB to accept the window. MI recommends that the installer follow the WRB manufacturer's recommendation to prepare the opening. The steps that follow are MI's general guidelines for preparing a WRB opening and, where used, the installer must confirm these steps will not impact the WRB manufacturer's warranty or otherwise inhibit drainage before proceeding.

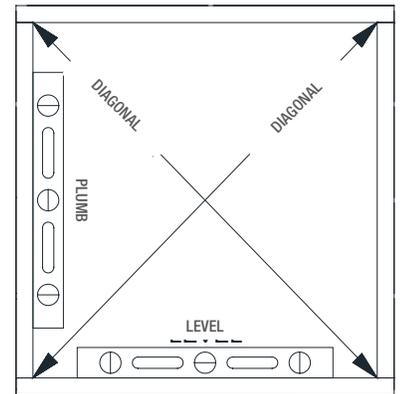


Figure A

Flange Install Recommendations: (Finless Installation Shown Below)

Installation into Wood Buck Frame (Outside-In Method)

1. After assessing and preparing the opening, installing any accessories, and dry fitting the window, the replacement of the new window can begin.
 - A) Apply a liberal bead around the back side of the flange at the head and jambs. Place a bead of sealant across the sill except for small gap(s) near the center of the flange. *See Figure B.*
2. Position the window into the opening. Determine if any wood shims are needed to keep the window plumb, square, and centered in the opening.
 - A) Correctly shimming the new window unit plays a critical role in the operation of the window unit.
 - B) Do not over or under shim. Either can cause distortion of the frame.
 - C) Shims should be positioned so the edge of the window does not vary more than a $\frac{1}{16}$ " from being straight.
 - D) "Lateral" Shims are often placed between the side jambs and the frame to square the window.
 - E) Shims used to establish spacing at anchor points must be penetrated by the anchor. They are trimmed as needed but **not** removed.

Note: *If installing a double-hung unit, continue following instructions. Otherwise skip to step 7.*

3. Raise the bottom sash and the two sash bumper stops. Install a screw into the jambs at each side of the bottom of window. Make screws snug but not too tight.
4. Lower the top sash and the two sash bumper stops at the top. Install a screw into the jambs at each side of the top of the window. Make screws snug but not too tight. **The window must be centered and square in the opening.** Check to be sure window frame is square and adjust installation screws if necessary.
5. Clear the center of the window for adjusting the adjustment screws located there. Do not remove these panels during the adjusting operation as they will help maintain proper spacing between jambs.
6. The jamb adjustment screws are located at the middle on the outside and inside sash tracks on both sides of the window. Turning the screws in a clockwise direction will cause the jamb middles to "pull" toward the center of window. This adjustment is necessary to give a close and even alignment between the sides of sashes and the jambs, to assure proper sash operation. The distance between the operating sashes and the jambs of the window should not exceed $\frac{1}{16}$ ". After making a partial adjustment, replace the sashes, operate the sash and visually judge their alignment with the jambs.

7. For flange and finless window units, place the installation screws in the predrilled holes in the new window frame.

Note: When installing screws, do not over tighten them as it will pull the frame out of line. Tighten screws just snug against the vinyl.

8. Adjustments may have to be made several times until satisfactory performance is achieved. Adjustments can also be made by loosening and tightening the previously installed jamb screws.

9. In extreme cases, the old window opening might be badly “bowed.” If the adjustments do not solve this problem, wood shims will have to be used between the rough opening and the replacement window jambs.

Finless Installation Within Wood Buck

Stop Application:

1. For inside-out block frame replacements, install stops on the exterior of the wood buck. The stops provide a surface for sealant and create a solid mounting surface the new window unit can be pressed against. *See Figure C.*
2. The stops are usually made of $\frac{1}{2}$ " strips of $\frac{3}{4}$ " wood, $\frac{1}{2}$ " quarter round molding, or a similar material.
3. Make sure when choosing stops that they do not impede in the operation of the window unit.
4. Install the stops approximately $\frac{1}{2}$ " from the outer edge of the wood buck on all four sides.
5. Apply a liberal bead around the back side of the flange at the head and jambs. Place a bead of sealant across the sill except for small gap(s) near the center of the flange. *See Figure D.*
6. Follow steps 2 through 9, under the flange installation recommendations listed above.
7. Place a bead of sealant around the exterior perimeter of the stops, making sure the exterior of the stops are sealed to the window condition. Then complete exterior finish per project. (By Others)
8. Place a bead of sealant around the interior of the window. Then complete interior finish as required. (By Others)

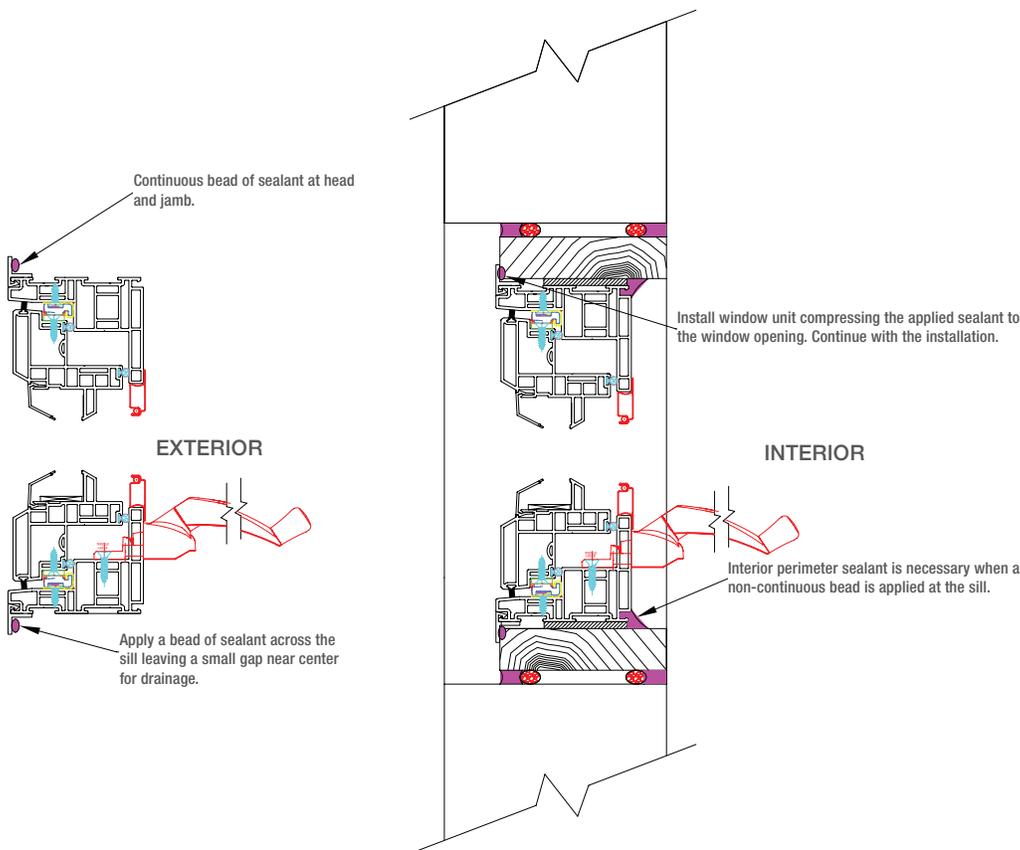


Figure B

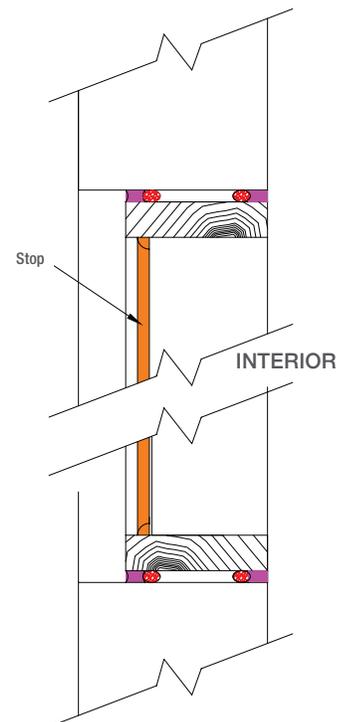


Figure C

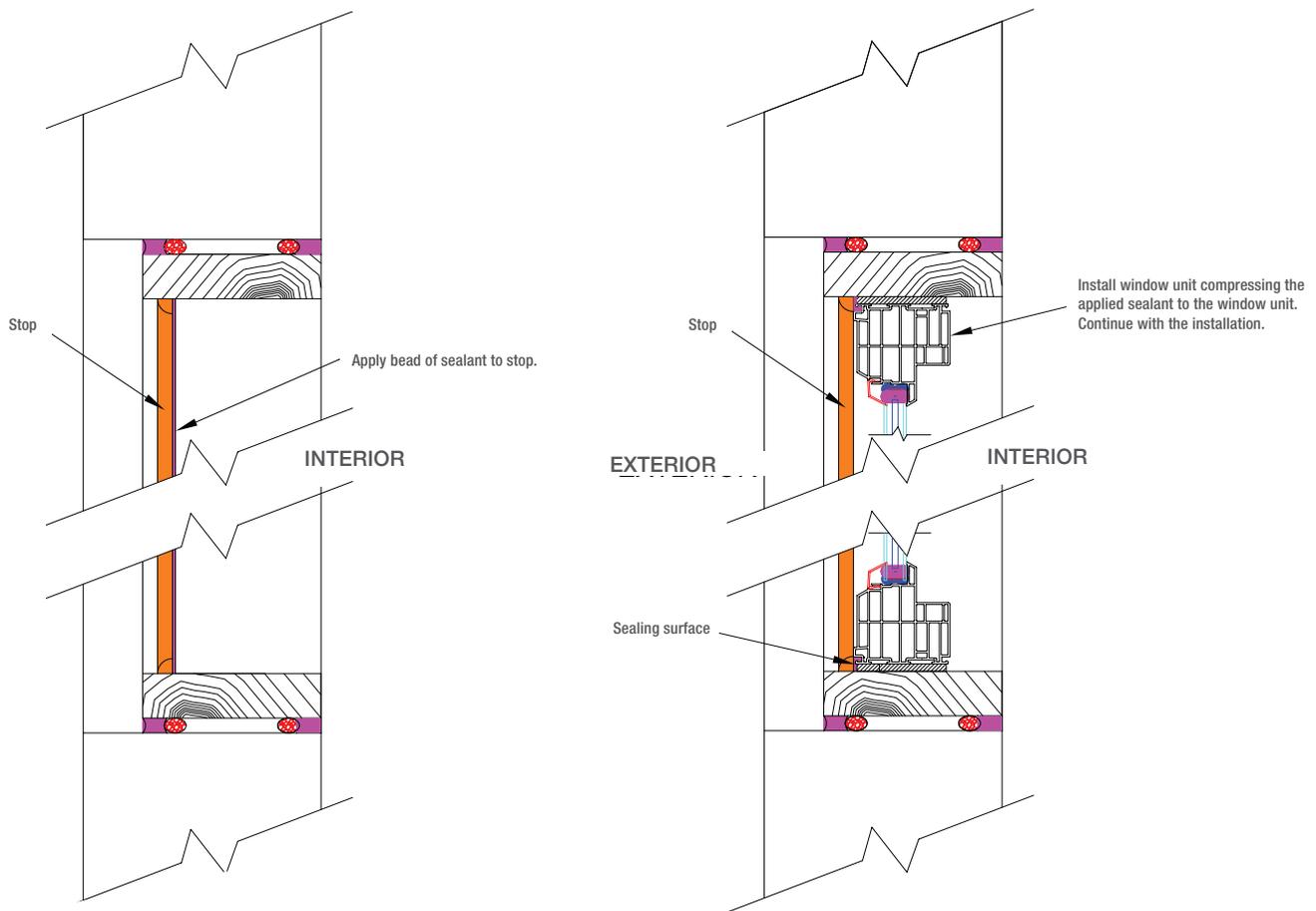


Figure D

Considerations and Cautions

Important Cautions

- ⚠ Use of solvents or acids will damage components of this product and will limit rights under the warranty.
- ⚠ Vinyl windows have pre-punched slots for installation—fastening in any other portion may permanently damage unit which will limit rights under the warranty.
- ⚠ It is the sole responsibility of the owner, architect, and/or builder to select correct products to be in compliance with applicable laws, site requirements, and building codes and to ensure that installation is in compliance with applicable laws, site requirements and building codes.
- ⚠ Do not store in the sun or lay flat before or during installation.
- ⚠ Any penetrations (e.g. alarm sensors) made through any portion of any MI Windows and Doors, Inc. product may affect rights under the manufacturer's warranty.
- ⚠ Some laws and building codes require safety glass. The ordering party is responsible to specify safety glass and ensure compliance.

Post-Installation Reminders

- With the exception of logo and NFRC labels, all MI applied labels should remain in place and not be removed after installation is complete (e.g., AAMA labels, warranty labels, warning labels).
- MI recommends a yearly inspection of its products and the surrounding materials, inside and outside the home. Upkeep of sealant joints, hardware and weather stripping can ensure longevity and proper functioning of the window products.

Please contact MI or visit www.miwindows.com for additional information.