



Installation Recommendations for Replacement Windows

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.

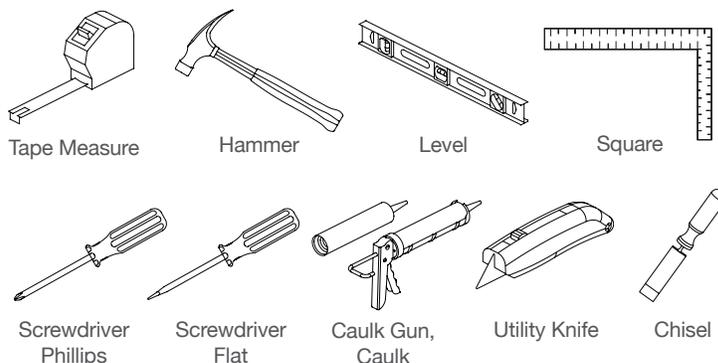
Contact MI for product specifications and additional product information for your MI product.

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*

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

Tools Required



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, fall protection device, and window operating control device.
 - 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, and drip caps on mulled units.

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.

Prepare the Window and Inspect Opening

1. Using a wide chisel, carefully remove the inside stops. If the stops are damaged during removal, it is recommended that the stops are replaced. *See Figure A.*

2. Raise the bottom sash and tilt inward. Carefully use a utility knife to cut any balance cords that may be attached to the bottom sash. Remove the bottom sash after the balance cords are cut.

Caution: *Some sash balancing systems may exert dangerous physical force when the cords are cut, always proceed with caution to avoid injury.*

3. Lower the top sash and tilt inward. Again, use a utility knife to cut any balance cords. Remove the top sash.

4. Using a wide chisel remove any remaining stops from the head or jambs of the existing frame.

5. Remove any remaining hardware or pulleys from the frame. The frame opening must be clear of any obstructions that may interfere with the installation of the new window.

6. Clean and inspect the opening. Fill any existing holes from nails, screws, or balance pulleys with compatible sealant. Large holes from balance pulley should be insulated and covered.

7. If flashing or building membranes are damaged during the removal process, repair them to maintain continuity of the weather barriers. Weather barriers can be repaired with butyl flashing tapes or house wraps.

8. If the exterior will be capped, the sill cap should be installed prior to installation of the replacement window. The sill capping must extend across sill 1" beyond the blind stops. Sill capping must be sealed to prevent water damage.

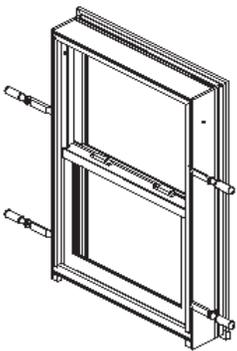


Figure A

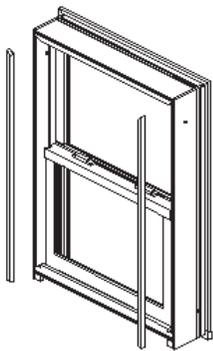


Figure B

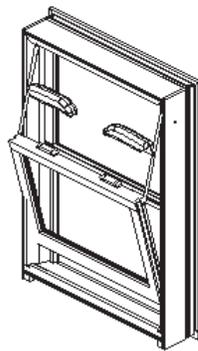


Figure C

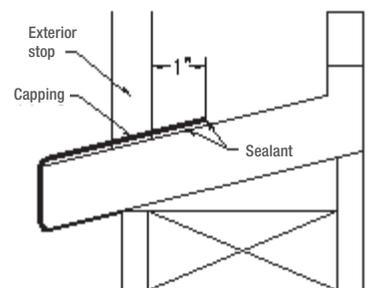
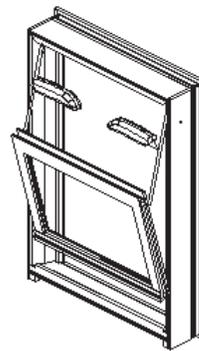


Figure D

Installing the Replacement Window

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.

9. Determine if the sill adapter is required on the exterior. The sill adapter will reduce the gap between the new window and the slope sill of the opening. See Figure E. The ends of the sill adapter should be notched at both ends to allow proper installation. Align the sill adapter with the frame and tap into the accessory groove with a mallet.
10. Temporarily hold the window in the opening to determine whether or not the top expander is needed or if the sill adapter needs to be trimmed. **Note: Expanders not supplied for casements and single hung products.** If window fits snugly enough from top to bottom, the top expander may be removed before installation or trimmed for a better fit. The sill adapter may need be trimmed as well. Score lines on the back side of the adapter will aid the trimming. This sill adapter can be trimmed with a utility knife. Remove the window from the opening. See Figure F.
11. Apply a liberal bead of sealant along the inside of the stop at the top and both sides where the window frame will make contact. Apply a bead of sealant along the inside edge of the stool. See Figure G.
12. Position the window into the opening and push the expander (if required) upward against the head of the opening. See Figure H. Use flat shims to keep the window plumb, square and centered in the opening. Shims are to be positioned behind installation holes. See Figure I.
13. While holding the window in place, raise the bottom sash and the two sash bumper stops in the outer track. Install a screw into the installation holes at each side of the bottom of each jamb. Make screws snug but do not over tighten. See Figure J.
Notes: Casements will require the sash to be opened to expose installation hole. Single Hung windows—all installation holes will be in the inner track—no sash bumpers.
14. Lower the two sash bumper stops at the top of the window. Install a screw into the jambs at each side of the top of the window. **Note: Certain products will have balance track covers instead of sash bumpers. These covers will need to be removed to access the installation holes at the top of the jambs.** Make screws snug - do not over tighten. **The window must be centered and squared in the opening.** Check to be sure window frame is square and adjust installation screws if necessary. See Figure K.
15. Raise and or lower the sashes to access the adjustment screws located on each jamb. Do not remove the sashes during the adjusting operation as they will help maintain proper spacing between jambs. **Note: Casements and single hung products do not have jamb adjuster, additional shimming may be required.**
16. 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 jambs to push 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 operation. The distance between the operating panels and the jambs of the window should not exceed $\frac{1}{16}$ ". After making a partial adjustment, operate the sash and visually judge their alignment with the jambs. See Figure L.
17. 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.
18. In extreme cases, the old window opening might be badly "bowed." If the adjustments do not solve this problem, additional shims will have to be used between the rough opening and the replacement window jambs.
19. If the top expander is used, secure the expander with three white aluminum screws, through the leg of the expander into the window frame. This can be done from either the inside or outside.
20. Insulate between the window and the opening with low-expansion, low-pressure foam or batt type insulation. Use caution when installing insulation—over insulating may affect the operation of the window.
21. Using a quality grade sealant, seal the interior perimeter of the window the opening. See Figure M.

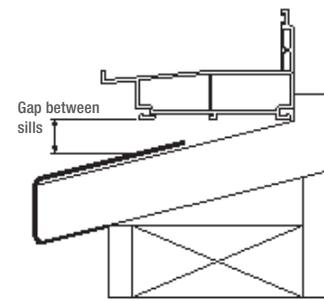


Figure E

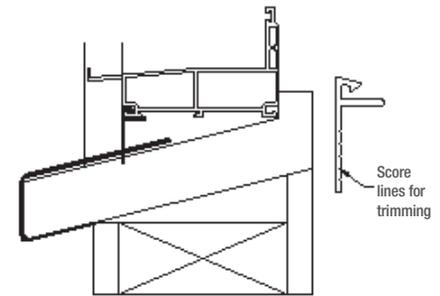


Figure F

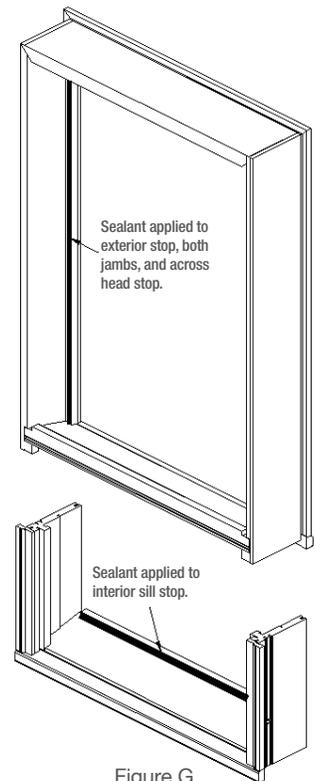


Figure G

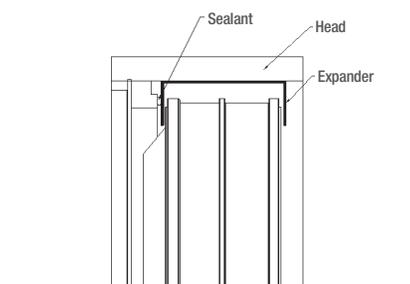


Figure H

22. Replace the interior stops. If the stops were damaged during removal, replace the stops.
23. Using a quality exterior grade sealant, seal the head and jambs on the exterior. Apply sealant across the sill adapter leaving two gaps to allow drainage. Drainage gaps should be 2" wide.

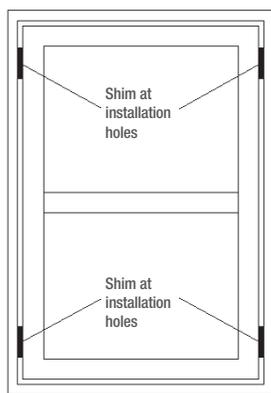


Figure I



Figure J

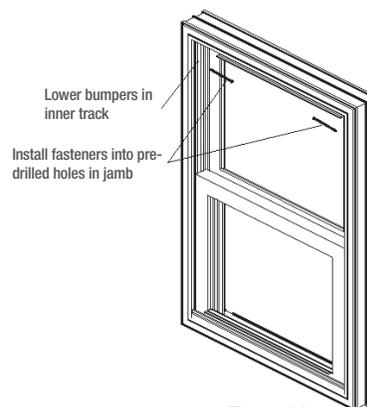


Figure K

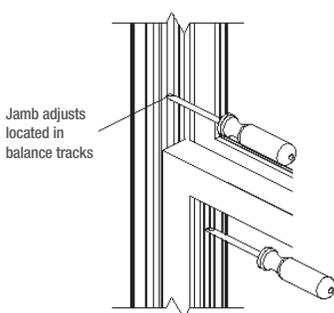


Figure L

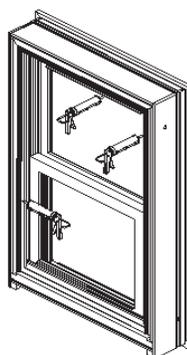


Figure M

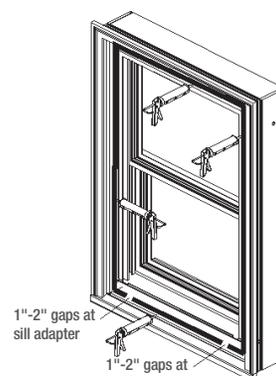


Figure N

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, 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 door products.

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