MILGARD®
WINDOWS and DOORS

Installation Recommendations for Flange (Z-Bar) and Finless Windows

These installation recommendations are made available by Milgard Manufacturing LLC (Milgard) to assist with the integration of flange (Z-Bar) and finless products into a typical wood-framed building less than three stories in height. Installation into other structures and frame types are not addressed here.

Please contact Milgard or visit www.Milgard.com for additional information.

IMPORTANT DESIGN CONSIDERATIONS

Read this entire document before proceeding with installation of Milgard'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 Milgard's products into a building's water management system have been addressed.

Milgard 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 Milgard's warranty. Provide a copy of these recommendations and the applicable Milgard warranty to the owner before installing. Milgard 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.

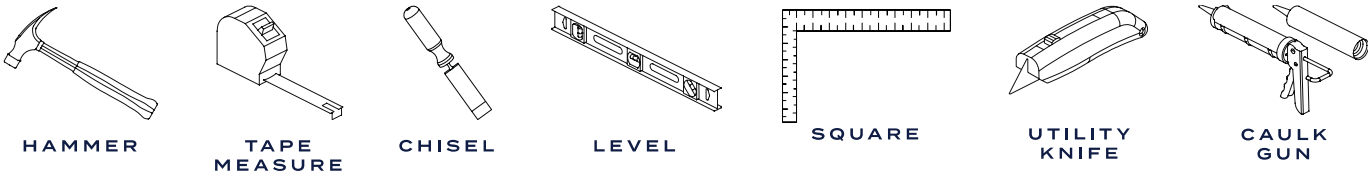
Contact Milgard for product specifications and additional product information for your Milgard product.

MATERIALS REQUIRED

- Non-compressible shims.
- Fasteners - for fastener attachment, see the Milgard Fastener Schedule at:
  https://www.milgard.com/technical-resources
- 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 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.

REMOVING THE EXISTING WINDOW

1. Remove any existing interior stops or trim from the window unit.
2. Cut around the exterior and interior of the existing window unit. This will free the window from any sealed joints. Be careful not to damage any exterior finish. See Figure A.
3. Remove all existing installation screws to free the window from the opening. See Figure B.
4. Carefully remove the window unit, being careful not to damage any exterior finish or weather barriers.
5. Inspect and clean the opening and remove any shims or installation screws. Replace any existing weather barrier material that may have been damaged in the removal process with the appropriate code-compliant material. See Figure C.

FIGURE A

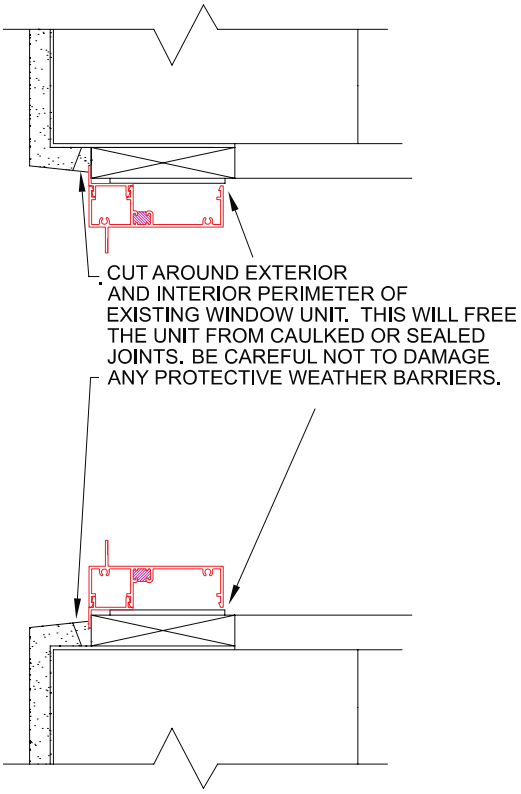


FIGURE B

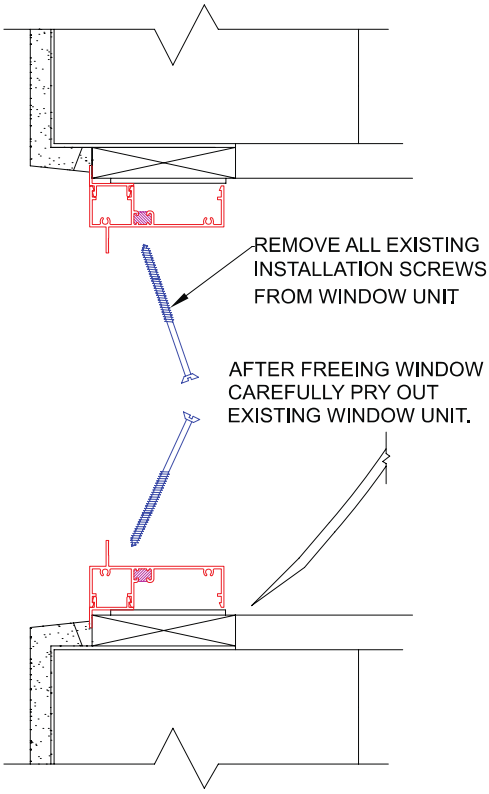
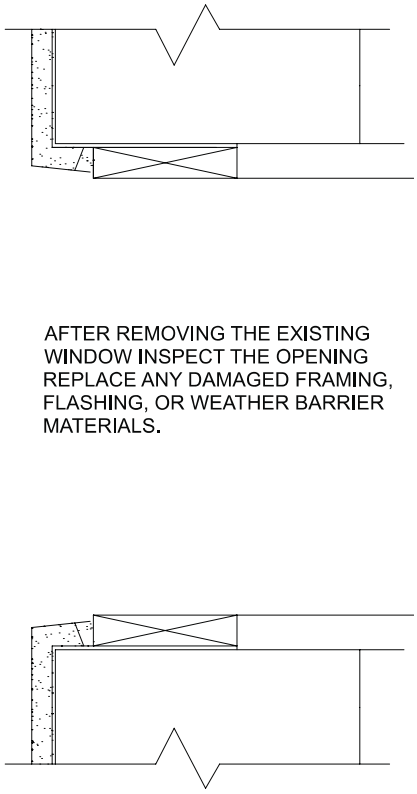


FIGURE C



INSPECT AND PREPARE THE ROUGH OPENING

1. Make sure the rough opening is in good condition and sits plumb, level, and square. See Figure D. Confirming measures should not exceed permissive tolerances in ASTM 2112: 1/8" nominal square tolerance for units less than 20 sq. ft. or 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 1/2" larger than window frame in width and height.
2. 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. Milgard recommends that the installer follow the WRB manufacturer's recommendation to prepare the opening.

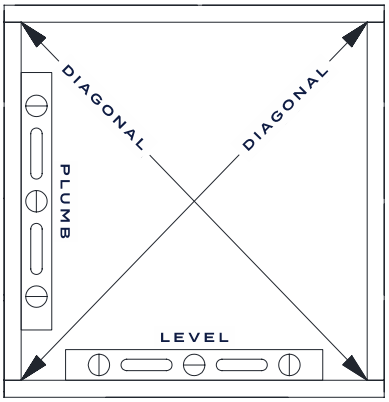


FIGURE D

FLANGE (Z-BAR) INSTALL RECOMMENDATIONS:
(SKIP TO NEXT SECTION FOR FINLESS INSTALLATION)

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.
   - Apply a liberal bead of sealant 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 E. Note: do not seal over ventilation holes of Z-bar flange. For proper adhesion, ensure there is full backing support on the wall where the back of the flange makes contact. Where wet sealant is used, a small amount of "squeeze out" is favorable to indicate a continuous seal. Any "squeeze-out" should be promptly troweled smooth.
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. See Figure F.
   - Correctly shimming the new window unit plays a critical role in the operation of the window unit.
   - Do not over or under shim. Either can cause distortion of the frame.
   - Shims should be positioned so the window does not vary more than 1/16" from being level.
   - "Lateral" Shims are often placed between the side jambs and the frame to square the window.
   - Shims used to establish spacing at anchor points must be penetrated by the anchor. They are trimmed as needed but not removed. Install window with FULL support under the entire width of the sill.
3. For flange (z-bar) and finless window units, drill holes and install fasteners as shown in the Milgard Fastener Schedule: https://www.milgard.com/technical-resources

   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.
4. Adjustments may have to be made several times until satisfactory performance is achieved.
5. 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.

FIGURE E

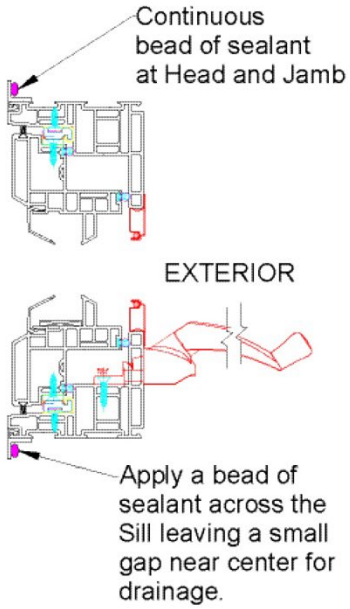
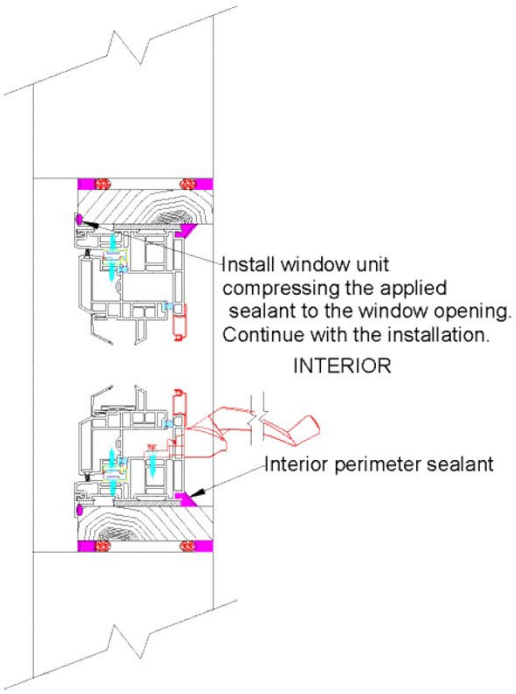


FIGURE F

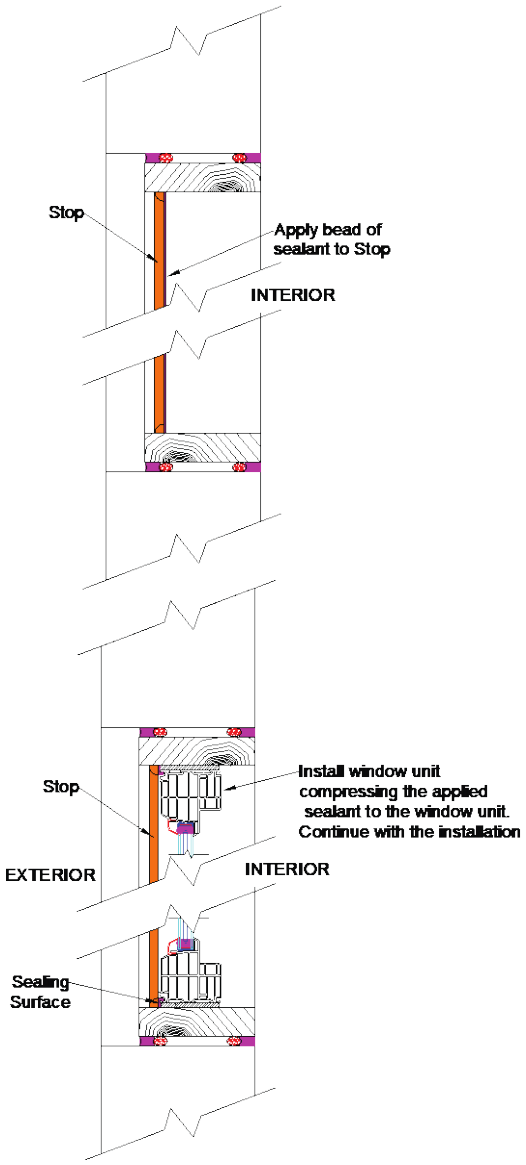


FINLESS INSTALLATION WITHIN WOOD BUCK

Stop Application:

1. For inside-out block frame replacements, install stops on the exterior of the wood buck at the sides and head. The stops provide a surface for sealant and create a solid mounting surface the new window unit can be pressed against. See Figure G.
2. The stops are usually made of ½" strips of ¾" wood, ½" 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 ½" from the outer edge of the wood buck on all four sides.
5. Apply a liberal bead around the back side of the window at the head and jambs. Place a bead of sealant across the sill except for small gap(s) near the center. For proper adhesion, ensure there is full backing support on the wall where the back of the window makes contact.
6. Follow steps 2 through 5, 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.
8. Place a bead of sealant around the interior of the window. Then complete interior finish as required.

FIGURE G



CONSIDERATIONS AND CAUTIONS

Important Cautions

⚠ Use of solvents or acids may damage components of this product and will limit rights under the warranty.

⚠ Stage and store window products with caution. Do not store in the sun or lay flat before or during installation.

⚠ Care must be taken to ensure material compatibility of the window unit and surrounding building conditions. Where necessary, steps should be taken to isolate the window from reactionary building elements.

Post-Installation Reminders

- With the exception of logo and NFRC labels, all Milgard applied labels should remain in place and not be removed after installation is complete (e.g., AAMA labels, warranty labels, warning labels).
- Milgard 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 Milgard or visit www.Milgard.com for additional information.