

NEW CONSTRUCTION, REPLACEMENT AND FLUSH FIN REPLACEMENT WINDOW INSTALLATION INSTRUCTIONS

IMPORTANT! READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION.

Follow your local building codes, customs and building practices for additional installation requirements. The manufacturer will accept no responsibility for air or water leakage above, under, or around the window unit. These instructions are general in nature; for detailed installation instructions by product, contact Ply Gem Windows at 1-888-9PLYGEM.

Recommended Tools & Accessories (not supplied by Ply Gem)

- Hammer
- Tape measure
- Phillips head screwdriver
- Flathead screwdriver
- 1/4" step drillbit
- Utility knife
- Putty knife or flat bar
- Level
- Framing square
- Pliers
- Snips
- Sealant gun
- Exterior-grade sealant
- Shims
- ITW or ELCO masonry/concrete installation anchors per instructions on floridabuilding.org.
- Tape-covered wood block





NEW CONSTRUCTION WINDOW INSTALLATION INSTRUCTIONS

Here is a basic, step-by-step guide to installing a nail fin type, new construction window, including recommended flashing details often used in the industry.

STEP 1:

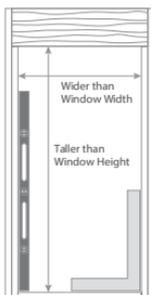
Rough Opening (REQUIRED)

(Before beginning, always review the instructions supplied with the window.)

Check the Rough Opening:

- The Rough Opening should be level, plumb, and square, and should be properly sized to receive the window being installed.
- The framing must be substantial enough to properly support the structure around it.

NOTE: For open-stud installation: Before the window can be installed, wall framing must be covered by backing support material suitable for your region. Mount the window with the nail fin flush against the applied backing support material. Completely surround the rough opening with the backing support material as applicable by local requirements. Be sure backing support is applied prior to weather-resistant barrier.



STEP 2:

Weather Resistant Barrier, (WRB) Wall Preparation (RECOMMENDED)

At the Rough Opening (RO):

1. Ensure that the weather resistant barrier (WRB) is properly and securely fastened to the exterior wall surface and is free of wrinkles, cuts and tears with adequate overlaps as described by the WRB manufacturer.
2. Following the WRB manufacturer's instructions, begin cutting out the RO as instructed.
3. Cut and remove any excess material as necessary or directed by the WRB manufacturer.
4. Cut two 45-degree slits as described, (based on the width of the flashing products used), from the top corners of the rough opening at the header, to create a flap above the rough opening. Fold it up and temporarily secure this flap over the opening.

STEP 3:

Sill Pan Flashing (RECOMMENDED)

1. Most manufacturers require you to measure and cut a portion of flashing membrane that is at least 12" longer than the width of the RO sill. This flashing will be used as a sill pan flashing.
2. Remove a portion of the release paper along the horizontal portion of the sill. Do Not remove all release paper at this time to prevent over-stretching the flashing membrane or allowing it to stick to itself and rendering it unusable.



3. Press the flashing firmly to the horizontal sill plate. Fit the flashing tightly to the corners and extend the flashing a minimum of 6" up each side of the RO side jambs.
4. At this point, if the membrane is a flexible material designed to stretch, fan the material at the bottom corners of the sill while pressing it at the same time ensuring that the flashing covers at least 2" past the outside edge of the sill as seen here. Otherwise, follow the membrane flashing manufacturer's specific instructions for application details.



STEP 4:

Sealing The Window (REQUIRED)

1. Apply a generous (at least 3/8"), continuous bead of exterior-grade sealant designed for window installation, on the back side of the nail fin, across the top portion and vertical sides of the window within close proximity of, or directly over, the nail holes in the nail fin. **NOTE:** For aluminum or aluminum-clad windows, sealant must be applied directly over any joints located at the corners. The bottom nail fin must have a continuous bead of sealant applied. (See Figure A).
2. Leave two 2" skip gaps per unit in the sealant creating a discontinuous bead of sealant to allow any moisture trapped in the sill pan flashing area to escape to the exterior of the home. (See Figure B).

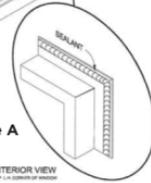
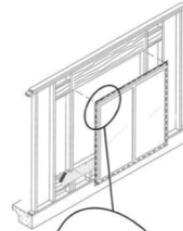
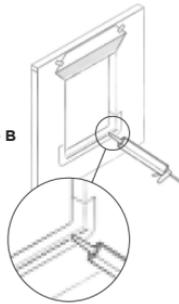


Figure A

NOTE: A vertically mullied combination window unit will require more gaps depending on the number of units combined to create the combination, for example, a twin needs four gaps, a triple needs six gaps, etc..

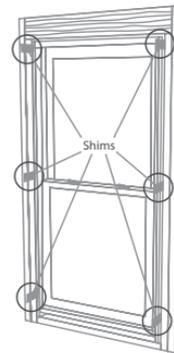
Figure B



STEP 5:

Setting The Window (REQUIRED)

1. Place the window in the RO, centering it from side to side in the opening as needed.
2. Close and lock all locks to help square the window up.
3. If the sill of the rough opening is not level and true, place shims as needed to prevent the sill from bowing or sagging, otherwise you may place the window unit directly onto the rough opening sill. (If your window is a horizontal sliding window, make sure each meeting rail is supported.)

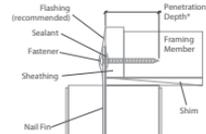


STEP 6:

Level, Square, Plumb & Fasten the Window (REQUIRED)

- Using an approved fastener (See Chart below), fasten the window through in the center of one hole in the nail fin near the top of each vertical nail fin of the window unit. Level the sill as needed and fasten at each corner.
- Next, plumb and square the window unit side to side (shimming if necessary) to maintain square and plumb jambs. Make sure the sill and head are level and not crowned or sagging. Ensure that the window measures the same within 1/16" across the top, middle and bottom, and measures diagonally be relatively square (1/8" +/-). NOTE: Over-shimming can cause binding and prevent proper window operation. Use a small amount of exterior sealant on the shims to help hold them in place.
- After checking the operation of the window, complete attaching the window in the opening by placing fasteners in the provided nailing fin holes, space according to the chart. (If nail holes are not provided, follow the installation instructions provided with the windows.)

SPACING	8" spacing or every other hole
MAX DISTANCE FROM WINDOW CORNERS	4" or nearest hole
BLDG FRAMING PENETRATION	1-2" min. (see instructions with window)
MIN. CORROSION-RESISTANT NAIL SIZE	10 gauge with 3/8" min. head diameter
BLDG FRAMING SCREW PENETRATION	1" min. (local code may dictate)
MIN. CORROSION-RESISTANT SCREW SIZE	#8 or larger modified truss head



NOTE: Muller units may have additional instructions. See Ply Gem Windows website for additional instructions that may apply to muller units.

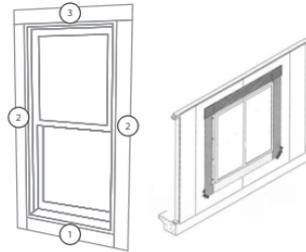


***Consult local building codes to verify that sheathing is considered a framing member.**

STEP 7:

Flashing The Window (RECOMMENDED)

- NOTE:** When a sill pan flashing is present, do not use flashing that will impede proper drainage of the pan on the bottom.
- Following the flashing manufacturer's recommendations, apply flashing to the nail fin and surrounding wall surface starting with the sides, and finally the top, creating a shingle effect.



PRECAUTIONARY NOTES

- For trim and siding, allow 1/8"-1/4" gap all the way around the window frame to allow for expansion. If exterior is brick or masonry, leave a 3/8" gap between the bottom sill of the window and the masonry to avoid "brick binding".
- Exterior wall systems like stucco and EIFS must be designed to manage moisture around the window opening.
- Follow the siding manufacturer's requirements for sealing between the siding and window frames.
- Any low-expansion foam used should conform to AAMA 812-04 (see manufacturer's requirements), but any binding or damage of any type caused by the insulation will not be covered under warranty.
- Painting cellular PVC components dark colors (L<56) may result in deformation or other damage that will not be covered by warranty. Contact Ply Gem for special instructions for painting dark colors.
- Do not paint any vinyl part of this window for any reason. Painting vinyl will render null and void all warranties.
- Seal all open exterior joints (except the gap at the bottom of stationary sash) and fastener holes with a quality exterior latex caulk before painting. Contact Ply Gem Windows for complete painting and finishing recommendations.
- Do not block or seal weep holes.
- Before installing the stool, apply ahead of caulk along the inside edge of sill and end of stool where it makes contact with the side jamb.

The steps in these instructions will help you properly install your Ply Gem Windows. For more information, refer to the installation instructions supplied with your Ply Gem Windows and chosen weather resistant barrier and flashing manufacturer. Additional information may be requested by calling 800-999-8400, Extension 6220.

FOR MORE INFORMATION, VISIT www.PlyGem.com.



REPLACEMENT WINDOW INSTALLATION INSTRUCTIONS

Here is a basic, step-by-step guide to installing a replacement window.

STEP 1:

Inspect the Existing Frame and Preparing the Opening

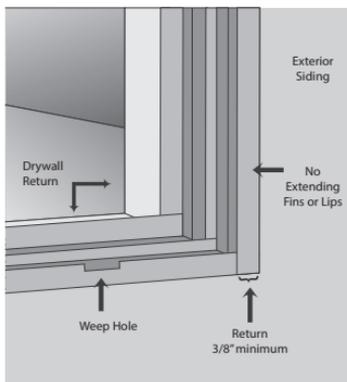
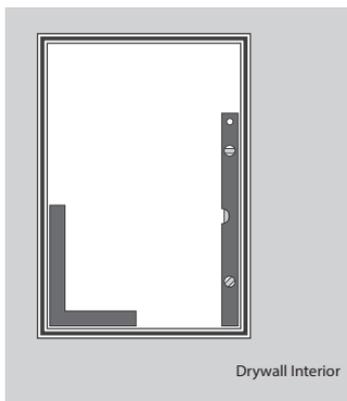
For Vinyl Flush Fin Windows Proceed to Page 7

Flush Fin Window: A vinyl window used for retrofit installation into an existing window frame. The integral exterior trim is decorative and covers the gap between the new window and the existing siding.

1. Verify width and height of new window are each $\frac{3}{4}$ " smaller than the minimum opening width and height of the existing opening.
2. Verify the existing opening is square. Diagonal measurements should be the same. Maximum allowable deviation from square is $\frac{1}{8}$ " for windows 20 sq ft and smaller, and $\frac{1}{4}$ " for windows larger than 20 sq ft.
3. Verify the existing opening is level and plumb. The maximum allowable deviation is $\frac{1}{16}$ " for every 2' (not to exceed $\frac{1}{8}$ ").
4. The exterior face of the rough opening must be in a single plane with less than $\frac{1}{8}$ " twist from corner to corner.
5. Signs of water leakage near the existing frame must be investigated and corrected prior to installing the new replacement window.

Dry fit the new closed and locked window (without the sill adapter or head expander) into the opening with the sill resting on the old sill. Make adjustments to the opening until plumb-level-square is assured.

The lack of an adequate return significantly adds to the complexity of a long-term, water-tight installation. If the existing window frame does not have a sufficient return, consult an installation professional to design an installation that completely seals the new window in a weatherproof manner.





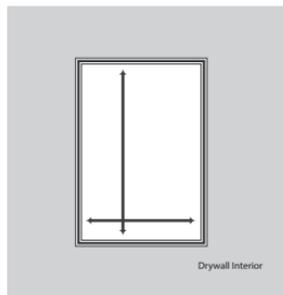
Minimum Opening Width/Height: Measurements taken to determine the size of window that will fit into a retrofit opening. For example, the minimum opening height is the distance between the highest frame point on the sill to the lowest frame point on the header.

This installation assumes that the existing frame has a water-tight installation into the structure.

Vinyl Windows with Nail Fin and Flush Fin

1. These instructions are based on CSA A440.4. For any specific details (ex: different siding type) that may be different, please contact your supplier for recommendations.
2. If installing in an area of high winds, see the structural engineering report of the product for specific fastening requirements.
3. Any local building code requirements supersede the recommended installation instructions. Failure to install square, level and plumb could result in denial of warranty claims for operational or performance problems.

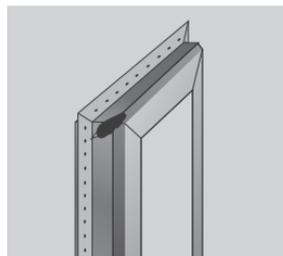
NOTE: Installation such that the window sill is higher than 35 feet above ground level or any window installation into a wall condition not specifically addressed in these instructions must be designed by an architect or structural engineer.



STEP 2:

Prepare the Window

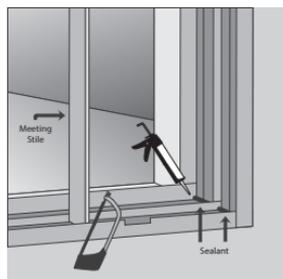
1. To use your new window in an existing opening, you may have to use a utility knife and score and snap the nailing fin off of the window and pre-drill holes thru the side jamb as described above.
2. If your new replacement window is an aluminum window with a nail fin, you may have to use an angle grinder with a metal cut-off blade to remove the nail fin from the window, and pre-drill holes through the side jamb as described above.



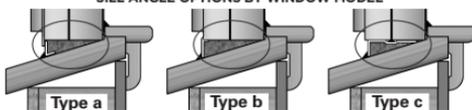
STEP 3:

Prepare the Frame

1. Remove the sashes and/or glass in the existing window. Then remove the meeting stile (if a slider) with a screwdriver or hacksaw. A meeting stile is a vertical frame member of a window that sits in the center of the exterior sill track and either holds one side of the fixed glass or keeps the stationary sash from moving. Seal all four corners of the window frame, and remove all existing window frame cladding.



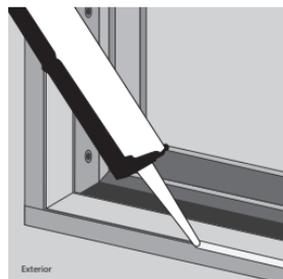
SILL ANGLE OPTIONS BY WINDOW MODEL



STEP 4:

Install the Window

1. Apply backer rod and a continuous bead of exterior grade sealant between the new window frame and the existing frame around the window. Leave 2 x 2-1/2" gaps in your backer rod and sealant at sill and in weep locations to allow for proper water drainage.



- Shim the side jambs aligned with the fasteners from the corners at each end and footer. Inspect the window for square, level and plumb. Adjust as needed with shims. Fasten window through side jambs and shims. Use Chart A for fastener intervals. If the window is wider than 3', fasten the head jamb at 24" maximum intervals with a free floating screw. Do not shim the head. Install vinyl plugs supplied or available through suppliers if desired.
- From the exterior, place the new flush window into the existing frame. Ensure the window sill rests completely on the sill and shim as necessary. **NOTE:** Hold window in place until fully fastened. Fasten window temporarily through the predrilled holes in the jamb from one upper corner. If there are no predrilled holes, use a 1/8" tapered drill bit with 3/8" countersink to drill a screw hole through the side jamb and into the buck (on the interior, or exterior if insufficient space). Countersink should not penetrate the back wall of the frame. Apply sealant to threads of a 3-1/2" screw and drive into the side jamb.
- Insulate with fiberglass batting or low-expansion foam. Fill gap with low-expansion foam around the window perimeter at the sash position. Fill remaining cavity with fiberglass batting. Use as per manufacturer's instructions.

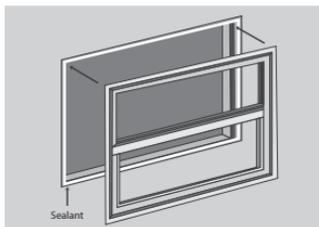
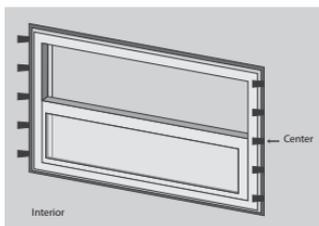
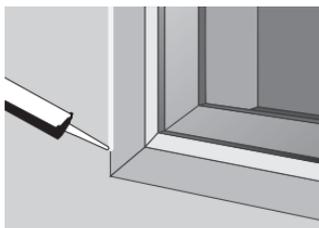


Chart A - Hole Spacing

	JAMB	HEAD	SILL
SH/DH	Provided ¹	Not required	Not allowed
SLIDING WINDOW	Provided ¹	At meeting rail	Not allowed
CASEMENT	20"	Not required	Not allowed
AWNING	12"	16"	Not allowed
FIXED	16"	16"	16"

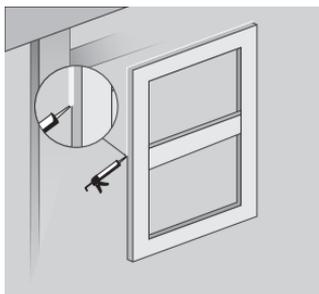
¹ Quantity of pre-drilled holes may vary by brand or series.



STEP 5:

After Installation

- Apply interior trim as desired. Adjust the windows for best operations (if applicable). Protect recently installed units from damage from plaster, paint, etc. by covering the units with plastic. For casement windows, remove the shipping blocks underneath the sash.





FLUSH FIN WINDOW INSTALLATION INSTRUCTIONS

Here is a basic, step-by-step guide to installing a flush fin window.

STEP 1:

Preparing the Opening

1. Dry fit the new closed and locked window (without the sill adapter or head expander) into the opening with the sill resting on the old sill. Make adjustments to the opening until plumb-level-square is assured

STEP 2:

Preparing the Window

1. Single hung, double hung, and sliding windows may have pre-drilled installation holes. Hung windows may have balance covers that must be removed temporarily to access the holes. If the window has shipping clips attached, leave them on until installation is complete.
2. If your windows do not have pre-drilled holes in the jambs and head, you will need to drill them according to the schedule on Chart A.
3. Drill using a 1/8" to 3/8" step drill through the jamb at 4" from the head and another hole at 4" from the sill on each jamb as shown in Figure 1. Reference * marks in Figure 1 to determine which screw locations are required.
4. If you have a side-by-side combination window assembly, you must fasten additional screws in the head 4" on each side of the mullion and 4" from each jamb (see Figure 1).
5. For positions of remaining required installation holes, see Figure 1 and Chart A.
- 6.

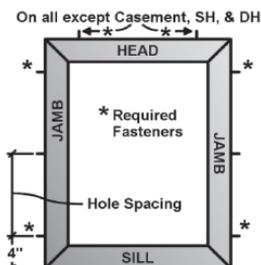


Figure 1

Chart A - Hole Spacing

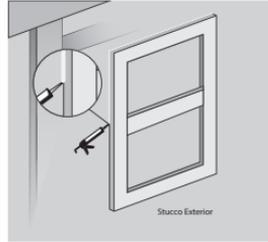
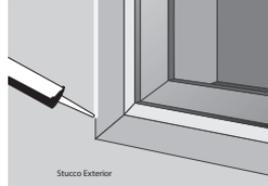
	JAMB	HEAD	SILL
SH/DH	Provided ¹	Not required	Not allowed
SLIDING WINDOW	Provided ¹	At meeting rail	Not allowed
CASEMENT	20"	Not required	Not allowed
AWNING	12"	16"	Not allowed
FIXED	16"	16"	16"

¹ Quantity of pre-drilled holes may vary by brand or series.

STEP 3:

Sealing and Installing the Window

- For windows with sill adapters:
 - For windows with sill adapters and exterior flanges (Figure 2, Type a):**
 - Use a pencil line to mark the sill, then apply sealant along the entire length of the sill to the interior side of the pencil line.
 - Trim the sill adapter to adjust for sill variation.
 - Align the vertical leg of the sill angle and fasten to the sill with screws or staples (not provided).
 - Install insulation on the sill since the void will not be accessible once the window is in place.
 - For all other window types, the sill adapter is installed later under Step 4 of section "Insulating & Finishing"**
- Apply continuous bead of exterior grade sealant along the interior face of the existing blind stop across the head where the new window frame will make contact.
- If head expander is used, install it now (screws not provided).
- Apply continuous bead of exterior grade sealant 1) along the exterior face of the existing window frame where the new window frame will make contact, and 2) along the bottom sill, leaving gaps for the existing weep holes in the old frame.
- Insert window from the interior into opening with the sash installed, closed, and locked.
- Place shims at the four (4) required screw locations, confirm shimming and window position, then tighten all four screws, compressing the vinyl frame against the shims. To prevent jamb bow, DO NOT OVERTIGHTEN.
- Insert more #8 screws with at least a 1" penetration (may not be included) into all remaining installation holes.
- Jamb jacks may be used on the jambs at this time if your product is equipped with them.
- All double hung jambs and sliding windows heads require shims at the meeting rail(s) to prevent frame roll. A fastener or sealant is recommended to hold the shims in place. Avoid over-shimming which can cause sash binding.
- Test window operation and adjust installation if necessary.



STEP 4:

Installing and Finishing

- Insert fiberglass batt insulation between the new frame jambs/head and the old framing. For foam insulation see precautionary note below.
- Cover installation holes if covers come with your window model.
- Install any interior window trim parts (if included).
- If your window includes a sill adapter (on windows without exterior flanges), the vertical leg may need to be cut to length based on variation in the original sill. Insert fiberglass batt insulation between the new sill and the old sill.
- For windows with an exterior accessory groove in the sill, insert the sill adapter tongue into the sill's exterior accessory groove and tap into place (see Figure 2, Type b).

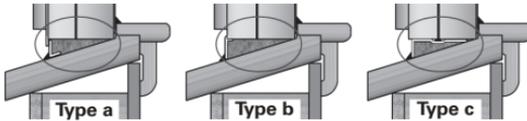


Figure 2

- For windows without an exterior accessory groove in the sill, use an L-shaped sill adapter (see Figure 2, Type c). Apply a 1/4" min. bead of exterior grade sealant along the full length of the trough on the top edge of the profile. Slide the adapter with batt insulation underneath up along the sloped sill until the adapter's top is flush against the new window sill's bottom, compressing sealant bead up against the sill of the replacement window.
- From exterior, apply bead of exterior grade sealant at joint between new frame vinyl and old frame wood blind stops along head and jambs.
- From exterior, apply bead of exterior grade sealant across sill at joint between sill adapter and old sill, then up the sides of the sill adapter, meeting the jamb-to-blind-stop sealant bead.

PRECAUTIONARY NOTES

- Any low-expansion foam used should conform to AAMA 812-04 (see manufacturer's requirements), but any binding or damage of any type caused by the insulation will not be covered under warranty.
- Do not paint any vinyl part of this window for any reason. Painting vinyl will render null and void all warranties.
- Do not use abrasive cleaners when cleaning vinyl.
- Do not block or seal weep holes.



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