WEB BASED CORE APPLICATION SPECIFIC INSTALLATION INFORMATION AND METHODS

Proper Shimming

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Application, Shimming, Fastening, and Sealing

Application: The new window must be installed plumb, level, and square. Make sure loads from the wall above are not transferred to the window.

Shimming: All shimming should be done with the proper pressure to the mainframe of the newly installed window to guarantee the proper operation of the window sashes.

The shims should be made of a material that is hard enough to support the window, provide good thermal insulation, resist decay, and allow for fastening to run through.

Fastening: To fasten the window properly to the opening, use corrosion resistant fasteners of sufficient size and length to permanently anchor the new window. In most cases, these anchors are supplied with the window unit.

1. Fastening for Replacement or Renovation: Fasten to the jambs, and/or head sections of the left-in-place frame using corrosion resistant screws, or nails when conditions permit. Use non-tapered shims as needed, and install at all fastening points.

2. Fastening for New Construction: Fasten the "new construction" vinyl window into the opening structure by fastening the integral fin. Take care to allow for natural expansion and contraction of the window or door fin. Use cap-nails along header as shown elsewhere. Shim any gap present between the new window and the opening, as needed. Use corrosion resistant fasteners.

Caulking:

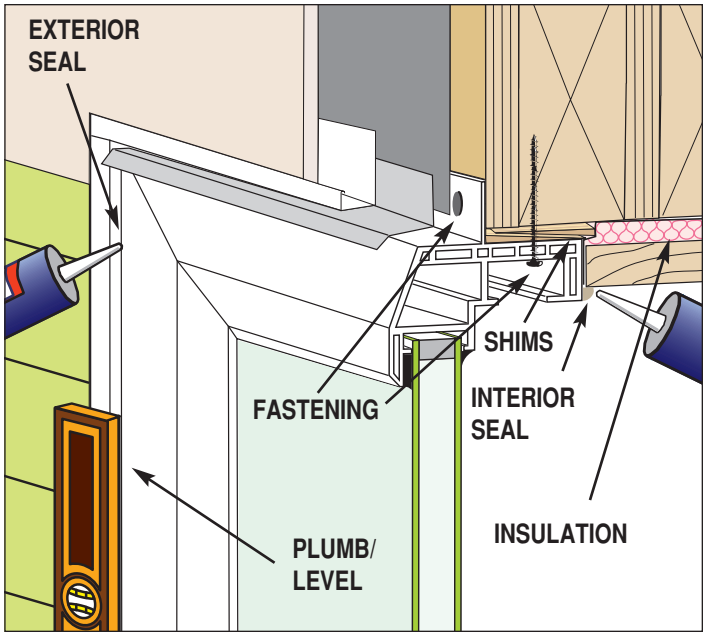
1. Replacement: Use caulking during mounting of replacement vinyl windows as follows:

Inside/Out Application- Apply caulk to the back of the exterior stop, and under the sill when the newly installed window is mounted against the exterior stop leaving weep gaps.

Outside/In Application- Apply caulk to the back of the interior stop, and under the sill when the newly installed window is mounted against the interior stop.

2. Renovation & New Construction: Caulking alone is not recommended for use during renovation or remodeling installation. Instead, use proper flashing methods described in detail elsewhere.

Insulation: After the new vinyl window is mounted in the opening, use fiberglass insulation, or equal to insulate any perimeter voids between the main-frame of the new window, and the opening. The insulation should never be compressed into the void(s) in a manner that lessens its insulation effectiveness.

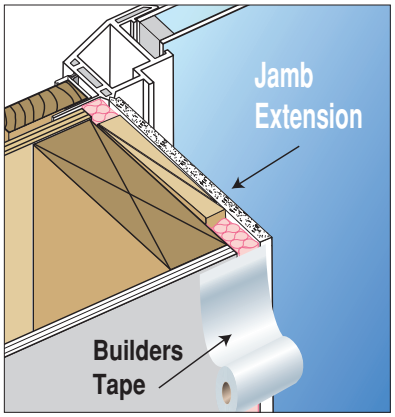


Also, compression of the insulation could exert pressure on the frame of the new window that will distort the frame, which could impede smooth operation of the new window. It is also recommended that a proper air seal on the warm side of the insulation be provided.

Interior Air/Moisture Seal: It is recommended that an air and moisture seal be provided on the interior side of the rough opening gap using sealant, or Barrier Tape. To prevent drafts, heat loss, and further reduce the potential for the formation of condensation between the wall and the new window, it is essential that the rough opening gap doesn't allow air and moisture to pass between the new window and the existing wall into the opening cavity.

1. Sealant Method: Apply Caulk/Sealant to the interior side of the rough opening in a continuous manner to provide an even, unbroken sealant bead sufficient to fill the gap between the new window and the rough opening. Where needed, foam or rubber backer rod can be used as a "bond breaker" ensuring that the sealant only bonds to the window frame and the rough opening.

2. The Barrier Tape Method: Tape that is impervious to air and moisture, with adhesive of sufficient strength to adhere to wood, vinyl, metal, or plastic shall be placed across the rough opening gap adhering to the dry wall on one side of the gap, and the interior surface of the window frame on the other, or between the new window frame and the left-in-place frame.



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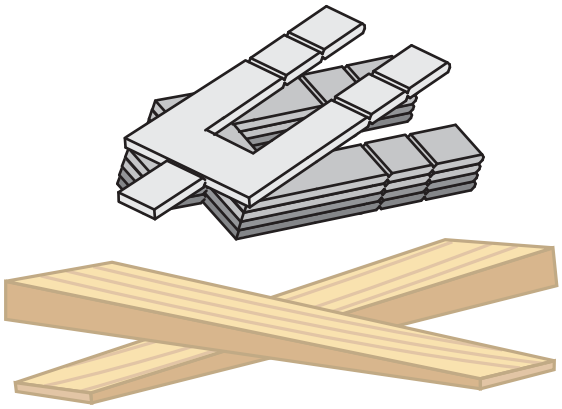
Types of Shims

It really doesn't matter which type of anchor you use or what type of shim. The key is to be able to make the adjustment before you anchor the windows and provide solid support between the frame and the opening behind the anchors.

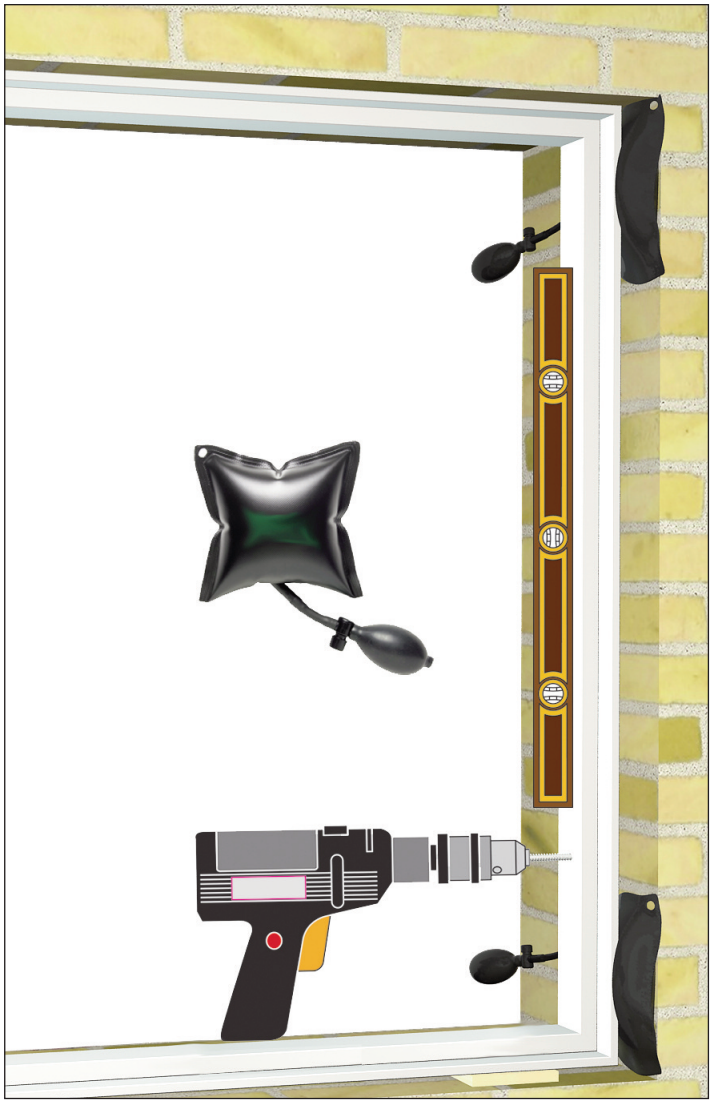
The most common type are tapered wood shims. These are better versions of the wood shake cut-offs improperly used by poor installers. Pre-cut wood shims have a consistent taper and fit in smaller places. The downside is that they are tapered and must be used in pairs. Also, to effectively use a tapered shim, it often needs to go beyond the depth of the window frame, and that is not possible for many replacement applications.



A better solution is stackable plastic shims These can be "U" shaped or "horse shoe" shaped with snap off length adjustment so they fit. The "handle" can then be broken off when final trim is applied. Also, plastic shims will not deteriorate in moist conditions which can be a real plus.

Win-Bag is an inflating bag that when placed between the window frame and the rough opening, allows minute adjustments before anchoring and before final, solid shims are added. The product has wide use in the U.S. as a method to pry open car doors to unlock them, Win-Bag™ and other similar products are used extensively in Europe to center windows and doors in their openings. Many professional window and door installers use them because they are simple, precise, and can fit in the smallest spaces.

Once the window frame is plumb, level and square, anchors are installed with wood or plastic shims added for support behind the anchors and the airbag shims are deflated and removed.



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Details of Proper Shimming

Shimming is necessary for almost every window and door installation - mostly because there is no such thing as a perfectly square and plumb opening. Shimming allows you to center the window and level and plumb the window in the opening.

Shimming is also one of the more misunderstood, and/or carelessly attended to steps in installation. Very few installers bring adequate shimming to the job with them and the installation is the worse for it.

There are two keys to proper shimming

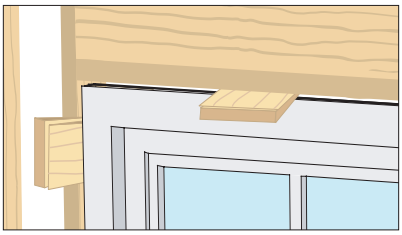
1. Shims must be between the window unit and the rough opening at each spot where the anchor screws are placed, and the screws should pass through the shims in order to keep them from shifting in the opening, and to ensure that the window frame is secure and snug to the rough opening

2. Shimming must be flat. Using tapered shims alone will result in the distorting of the window frame which will not only keep the frame from being adequately secured to the rough opening, but will probably cause the distorted frame to either impede the operation of the window or door unit, or cause the precision balances or weatherstripping to fail to work properly or wear out prematurely.

Tapered Shims in Pairs create "level" support

If the window unit is not fitted with factory installed butterfly clips or flat plastic shims are not available, tapered shims are best used in pairs. In this method, the first shim is placed fat side in, the second is slid in thin side first until the pair makes a flat, and snug fit. Then the shim pair is trimmed flush to the outer edge of the window frame.

Since windows with fins or replacement windows fitted against the old window stops prevent shims from passing through to extend on both sides, it becomes tricky to install them properly. With available shim stock, precuts are usually 12 inches long, 1-1/2 wide and taper from 5/16" at the fat end to nothing at the other end.



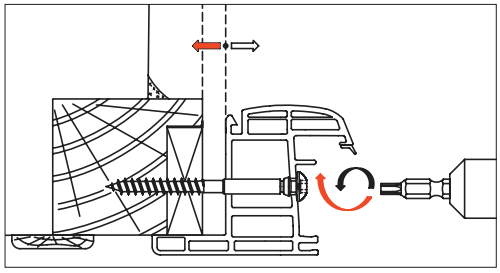
After inserting shim pairs cut off the ends flush with window frame

Two Solutions

Plastic, Stackable Shims

Horseshoe or "u" shaped shims work perfectly because the open portion goes over the anchor screw and because they come in different thicknesses, and are stackable (small grooves lock them in a pile as more are added), shims can be added and removed as the window is leveled, plumbed and squared.

Self Shimming™ Anchors. Developed in Europe for these anchors have a collar set just below the head so that the anchor "snaps" into the hollow lineal holding the lineal's wall between the collar and the head.

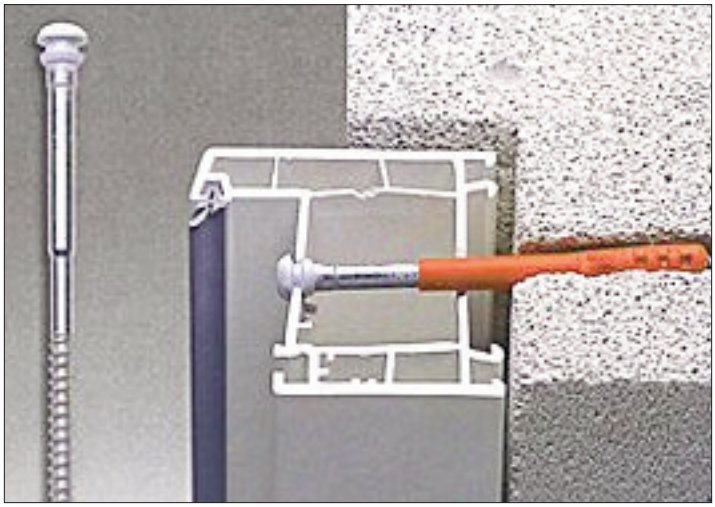


In this way, as the anchor is turned clockwise, the frame is pulled closer to the opening wall.

When the anchor is turned counter-clockwise, the window or door frame is pulled away from the opening wall. The result is dynamic shimming during installation and after.

With Self Shimming™ anchors, final adjustments can be made after all trim is added allowing precision alignment of the locks, interlock and weatherstripping.

Self Shimming™ anchors come with plugs for use in concrete walls to meet Hurricane Codes.



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