

Optimum Windows Fire Installation Manual

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Section (1)

Ordering the Installation Components

Review the shop drawings and details to confirm the following installation materials needed:

- a) Plastic Frame ShimsInstallers preference
- b) Anchoring Screws.....Stainless steel recommended
- c) Insulation.....Installers preference
- d) Backarod.....Installers preference
- e) Perimeter CaulkingLow Gloss recommended
- f) Glazing Tape.....Review Shop Drawings
- g) Glazing Silicone (low luster).....Installers preference
- h) Glazing Blocks.....Installers preference
- i) Glazing with low profile spacer 3/8" black color.....Suggested by Optimum

A MUST:

- Shims must be clearly understood for the installation of the windows.
- Glazing operable units are reviewed on the shop drawing.
- Shop drawing must be reviewed by the installer.

Section (2)

Receiving, Handling, Storing, & Protecting

Prior to receiving the unit, please contact Optimum to confirm what, when, where, and how the product will be shipped. (Contact Optimum Window Shipping)

Receiving:

- Count and inspect all materials as received.
- **Shipping Notice** verifies the quantities ordered compared to the amount shipped on that particular shipment. The box and/or crate numbers are listed on this notice to aid in inventorying your purchase.
- Immediately notify our **Customer Service Department** of any error or deficiency in material shipped after reviewing this document.
- Check for freight damage and note damage on the freight bill before signing it. If there is a suspicion of damage after you have signed for the shipment, you have an opportunity within 5 days of arrival to request an inspection from the **Freight Company**. If this is not done, Optimum will not be held responsible for missing material. Notify the **Freight Company** and **Customer Service Department** immediately when shipping damage is discovered. Sending or e-mailing digital photographs assists us in understanding your particular situation; please consider this when notifying us. Failure to do so can result in loss of claim rights against the shipping company. Do not attempt to correct any shipping damage before consulting with Optimum's Customer Service Department. Failure to do so may result in loss of Optimum's warranty and the cost of remedial work.

Handling:

- Lift and carry prefinished materials. DO NOT DRAG! Dragging may result in finish failure and rusting of the frame.
- Once the units are off loaded, they are to be placed near their prospective openings for installation. The lesser frequency of movement results in the lesser probability of damage.
- Use A-frames to assist in maneuvering units to their prospective locations.

Storing & Protecting:

- Location for storage must be readily available.
- The units are to be stacked vertically on skids to avoid damage to the finish.
- Canvas tarps or plastic rolls are to be used as protective coverings.
- The product is to remain covered and protected when not in use. If packaging becomes wet, remove windows, repack, and move to a dry location.
- Remove any adhesive tape from surfaces, otherwise a permanent bonding to the paint may occur and leave blemishes upon removal.
- Acid based materials or corrosive compounds should never come in contact with unpainted hardware surfaces. This can occur when applying sealant in close proximity or from workers' hands and gloves.

- Cement, plaster, terrazzo, mortar, and alkaline or acid-based materials used to clean masonry are very harmful to finishes. They should be removed immediately with water and mild soap. A spot test is recommended before any cleaning agent is used.
- Masonry must be washed down thoroughly prior to window installation. Optimum's products have a factory applied final finish. Acid based chemicals typically used for masonry wash down will attack the finish surfaces.
- Products purchased prime painted from Optimum should be protected very carefully in the field and finish painted as quickly as possible. The prime coating alone provides a much lesser degree of protection than the finish coat.

At all times, precautions must be taken to protect the factory finish on Optimum's windows and doors against scratching, marring or chipping. Repairs must be made promptly to prevent rusting of exposed metal.

Section (3)

Preparing for the install

Shop Drawing Review

- Review approved marked "**FINAL SHOP DRAWINGS FOR FIELD USE**" to become thoroughly familiar with the project. These drawings take precedence and include specific details for the installation.
- Coordinate building openings with the openings shown on the Optimum final shop drawings. Refer to the architectural drawings for accurate coordination.
- The windows and doors in openings used for incoming construction materials should be installed last.

Inspection of Openings

- Openings should conform to Optimum's final shop drawings.
- Verify that the openings are plumb, square and level.
- Check details and opening dimensions. If there are discrepancies, notify Optimum immediately. Do not attempt to install Optimum products until the site conditions have been corrected. Any attempt to modify Optimum products without consulting Optimum will result in loss of Optimum warranty. **Optimum will not be held liable for back charges if installation proceeds without Optimum authorization.**
- Wash down of masonry should be completed. Masonry cleaning materials may damage the finish of the windows.

Alignment and Tolerances

- Work should begin from the benchmarks or column centers established by the general contractor.
- All materials are to be installed plumb, level, true and in proper alignment to established line grades.

Sealant Compatibility

- Consult the sealant supplier for recommendations on compatibility, adhesion, priming, tooling and shelf life.

- Surfaces must be clean and dry before sealants are applied.
- Confirm that all masonry framing and waterproofing is completed prior to installation.

Section (4)

Installing the Window

Prior to Installation

- Check Optimum's final shop drawings to verify if weather bars or other items must be applied to the windows before installation.
- Ensure all installation materials (shims, fasteners, backer rods, etc.) have been pre-purchased and are readily accessible. **NOTE: If necessary, these items can be purchased through Optimum Windows.**
- Be sure that the actual setting conditions match what is shown on the approved shop drawings.

Installing Windows to Flush Openings

- Plastic filler shims should be field attached by the installer to the window frame at each fixing hole location. Filler shims are field attached with sealant or adhesive.
- Between sash shims, glue a rectangular caulking poly filler or install a non-gassing poly backer rod.
- **Insert window into opening carefully, so not to pull the back-up rod from the sash.**
- Between sash shim and building structure use flat fixing shims. Fixing shims should be applied tight to structure preventing window frames from twisting or racking during installation. Distance between the frame and opening is at sealant manufacturer's recommendation.
- Using a level, plumb the window vertically, then horizontally using shims as required.
- **Line drill through fixing holes into opening and install proper screws to suit condition. Make certain to properly touchup any abraded steel surfaces with kit provided by Optimum. Shim between sash shim and opening as required.**
- Caulk the exterior joint between the sash and opening and neatly point. **IMPORTANT: Seal all fixing screw heads to the web of the sash. Utilize sealant washers at holes and seal with sealant at slots. WARNING! Fixing holes left vacant can allow water or air infiltration, distortion of the product and void warranty.**
- **Alignment of vent to frame— The adjustable pivot has three directions of adjustment for accurate fine tune aligning a vent to the frame after installation: $\pm .075$ in the vertical direction, $\pm .040$ in the horizontal position and $\pm .040$ in the front to back direction.**
Using a 3/32" Allen wrench, loosen the set screw keeping it snug. Remove the threaded top cap to access the hex drive with a 3/16" Allen wrench and rotate the wrench to move the vent in the desired direction.

Installing Windows with Anchors

- Attach all anchors to window frames as shown on approved shop drawings with bolts. Utilize sealing washers prior to insertion of bolt through frame into anchor.
- Insert window with anchors attached into opening.
- Using a level, plumb and level the window within the opening using shims between the anchors and the opening.
- Line drill through fixing holes into opening and install proper screws with sealant washers to suit condition. Shim between door shim and opening as required.

- Caulk the exterior joint between the sash and opening and neatly point. **IMPORTANT: Seal all fixing screw heads to the web of the sash. Utilize sealant washers at holes. WARNING! Fixing holes left vacant can allow water or air infiltration, distortion of the product and void warranty.**

Installing Mullions

- Refer to Optimum approved shop drawings for mullion locations and anchorage conditions.
 - **Structural mullions (clipped) shall run to within 1/4" of the floor at the sill and have a 1/4" thick anchor that is welded to the mullion solidly supporting it to the floor. There should be no shimming the anchor at the floor. 6 Structural mullions at the head shall use the standard 3" x 3" mullion clips nut and bolted to the mullion such that the clips can be initially loosely attached, slid up tight to the opening and then tightened down. Again, there will be no shimming at the head unless conditions do not allow the clip to be slid far enough to be tight. Mark mullion locations in opening.**
- All mullions are marked on the header. All holes through mullions are slotted from frame to frame one jamb of the frame will receive a riv nut by option and the proper screw by Optimum.
- Install mullions in proper locations prior to window frames using anchors per approved shop drawings. The mullions are stamped with the proper opening type.
 - For non-structural (unclipped) mullions, the mullion may be attached to the sash during sash installation. Place horse-shoe shim under mullion (at sill only) to add support and take weight off the sash screws. Please note that this will ensure the mullion is not in direct contact with sill materials which may cause corrosion.

Attaching Window Hardware

- In order to prevent shipping damage, Optimum ships roto operator crank handles loose. The installer must apply these hardware components to the windows.
- After installation of the windows, always check for proper operation and bedding of ventilator to insure a weathertight seal.

Cleaning Windows After Installation (for Powder Coated Finishes Only)

- Clean dust, dirt and debris from windows.
- Remove all steel drill shavings. Drill shavings will quickly rust and stain the paint finish.
- Ideally an initial step of a forceful water rinse from the top down should be taken before the use of any cleaners. A volume of water at moderate pressure is better than a high volume at low pressure. Rubbing the surface with soft brushes, sponges or cloth during the rinsing also helps.
- If a simple water rinse is not sufficient then a mild detergent or soap will be necessary. Washing with a mild detergent or soap should be done by brushing or sponging with uniform pressure. Following washing, the surface must be thoroughly rinsed with clean water. If the cleaner has dried, it may become necessary to sponge the surface while rinsing. After the rinsing process, the surface may either be air dried or dried with the aid of a chamois or squeegee.
- Run-down of cleaners should be minimized; areas subject to run-down should be rinsed immediately to avoid possible streaking.
- Cleaning chemicals must not be allowed to collect or puddle on the horizontal surface or in the joints. These surfaces should be flushed with water and dried.
- Mild detergents and soaps that are safe for bare hands should be safe for painted windows. All detergents should be carefully spot tested.
- Some type of mild solvent such as mineral spirits may be used to remove grease. Stronger solvents may have a softening effect on paints. Extreme care must be taken to assure that no marring of the surface takes place since this could give an undesirable appearance at certain viewing angles.

- Cleaners are applied with a clean cloth and removed with a clean cloth. Remaining residue should be washed with a mild soap and rinsed thoroughly. Use solvent cleaners sparingly.
- If cleaning of a heavily soiled surface or stubborn stain is required, a more aggressive cleaner and technique may be required. Some local cleaning at this area may also be required. Always follow the recommendations of the cleaning agent manufacturer. Remember to spot test an area before using. When using stronger cleaners, do not rub excessively.

Section (5)

Installing the Door

General Instructions for Installing Hot Rolled Steel Casement Doors

- Casement doors are custom fabricated with thin-member, hot rolled steel sections. They are subject to racking; therefore, great care is needed to be sure they are installed level and plumb. The installer should determine that the materials used will provide adequate support for the weight of the door and glass.
- Door leaves are shipped separate from the frames in order to minimize rubbing and scratching during shipment. In special cases where field applied hardware is called for, all hardware preparation has been done in the factory. **A pilot hole for the bottom bolts is provided; please apply the loose strike plate (shipped separate) after installation for final adjustment and maximum weather-tightness.**
- All Optimum's casement doors are factory hung, bedded, fitted and inspected before leaving the factory. They are intended to be installed as a completed assembly. Match the door leaf(s) to the frame in the field as marked. Mismatching the doors and frames may adversely affect door operation upon reassembly. They are specific to each other and not interchangeable.
- Alignment of door to frame—The adjustable pivot has three directions of adjustment for accurate fine tune aligning a door to the frame after installation: $\pm .075$ in the vertical direction, $\pm .040$ in the horizontal position and $\pm .040$ in the front to back direction.
Using a 3/32" Allen wrench, loosen the set screw keeping it snug. Remove the threaded top cap to access the hex drive with a 3/16" Allen wrench and rotate the wrench to move the door leaf in the desired direction. Door strike has been designed with adjustment to allow for proper latching of the lock.
- **Any problems encountered with installing the doors, fitting hardware or obtaining proper operation should be referred to Optimum's Customer Service Department immediately.**

Installing Thresholds (Other Than Optimum's Attached Threshold)

- Locate position of threshold in the opening. The threshold must be level end to end and also level outside to inside as shown on approved shop drawings.
- Apply a bed of sealant on the sill of the opening and press threshold into position.
- Line drill holes into the opening and install proper attaching screws into a bed of sealant.

Installing Hot Rolled Steel Casement Doors to Flush Openings

- Check Optimum's final shop drawings to determine if weather bars or other items must be applied to casement doors before doors are installed.
- Plastic filler shims should be field attached by the installer to the door frame at each fixing hole location. Filler shims are field attached with sealant or adhesive.

- Between door frame shims, glue a rectangular caulking poly filler or install a non-gassing poly backer rod.
- Insert door frame into opening being careful not to pull the back-up rod from the sash.
- Between door frame shims and building structure use flat fixing shims. Fixing shims should be applied tight to structure to prevent door frames from twisting or racking during installation. Distance between the frame and the opening is at sealant manufacturer's recommendation.
- Using a level, plumb the door vertically, then horizontally using shims as required. Twisting of the frame will affect the bedding of the leaves. Please measure the in/out dimension around the opening to verify squareness. A simple string from corner to corner creating an "X" will show any twist in frame.
- Line drill through fixing holes into opening and install proper screws with sealant washers to suit condition. Make certain to properly touch-up any abraded steel surfaces with kit provided by Optimum. Shim between door shim and opening as required.
- Caulk the exterior joint between the sash and opening and neatly point. **IMPORTANT: Seal all fixing screw heads to the web of the sash. Utilize sealant washers at holes and seal with sealant at slots. WARNING! Fixing holes left vacant can allow water or air infiltration, distortion of the product and void warranty.**

Installing Hot Rolled Steel Casement Doors with Anchors

- Attach all anchors to door frames as shown on approved shop drawings with bolts. Utilize sealing washers prior to insertion of bolt through frame into anchor.
- Insert door with anchors attached into opening.
- Using a level, plumb and level the door within the opening using shims between the anchors and the opening.
- Line drill through the anchor slots into the opening and install proper screws and plugs to suit conditions.
- Caulk the exterior joint between the sash and opening and neatly point. **IMPORTANT: Seal all fixing screw heads to the web of the sash. WARNING! Fixing holes left vacant can allow water or air infiltration, distortion of the product and void warranty.**

Section (6)

Preparation for Glazing

- Inspect the window glazing pocket. It should be clean and dry.
- Close and lock all ventilators and casement door leaves. Ventilators and casement door leaves must be glazed in the closed and locked position. Support door leaves with shims prior to glazing then remove after glazing.

Removing Optimum Factory Attached Glazing Beads

- Optimum windows and doors are shipped with factory attached glazing beads that are hand-cut and fitted around each glass lite. Before glass can be installed, the glazing beads must be removed and carefully set aside for reinstallation to the same location.
- **Optimum glazing beads are individually pre-fitted around each glass lite and are not interchangeable with other locations, even other lites with the same dimensions. Therefore, glazing beads must be reinstalled to the same location on the window or door from which each was removed.**

- When removing Optimum's snap-in or hook-on glazing beads, observe the bead engagement with retainer; then reinstall the bead to become familiar with the attaching feature. **NOTE:** Glazing bead must fit tight against the frame section and remain in plane with face of the frame section.

Glass Blocking Recommendations

- **WARNING! Failure to position blocking as recommended may result in racking of the window ventilator or casement door leaf and increase its inability to operate properly.** This may occur with large size units and heavy glass due to improper weight distribution.

Glazing Procedure

- Refer to the shop drawings for product specific glazing details.
- Install glazing tape around the perimeter of the fixed glazing rebate (opposite side from glazing bead). The tape should be installed 1/8" below the edge of the rebate to provide a pocket for the sealant cap bead (recommended).
- Do not use a pre-shimmed tape on exterior unless otherwise noted on Optimum shop drawings. **A 3/16" foam tape compressed to 1/8" face clearance or a 1/4" foam tape compressed to 3/16" face clearance is recommended depending on glass thickness and tolerance.**
- Install setting block material at the sill to support glass and prevent sliding prior to curing of cap seal.
- For units that require edge setting blocks (vertically pivoted window vents, reversible window vents, casement window vents and casement door leaves) install 1/4" high head and jamb "primary" edge blocks prior to installing the glass. Attach with sealant or adhesive.
- Set glass on the sill setting blocks and firmly press against the back glazing.
- Where required, wedge "secondary" edge block between primary edge block and glass edge.
- If a "structural" glazing procedure is required because of oversized units or special applications refer to the approved shop drawings for procedures or the sealant manufacturer's recommendations.

Reinstalling Beads, Installing Glazing Wedge and Cap Bead

Insert head and sill glazing beads into retainer. Insert shims or short pieces of glazing wedge between the bead and glass to temporarily hold the glass in position.

- Insert jamb beads into position.
- Cut a length of glazing wedge 1/4" longer per linear foot than the daylight opening of the lite.
- Insert the glazing wedge between the glass and glazing bead beginning at the center working to half the distance to the corner. Spray soapy water to receive wedge. This will aid wedge installation.
- Insert the end of wedge at the corner and work back toward the center. Install the remaining opposite side of the drive wedge in the same manner. Rolling tools and soapy warm water are recommended for ease of installation.
- Complete the installation of the glazing wedge on the remaining three (3) sides. **NOTE:** Do not use one continuous strip, cut each side individually.
- Cap bead the perimeter between fixed glazing rebate and the glass with sealant and neatly point.
- If the glazier elects to add a heel bead of sealant, it must not interfere with the factory prepared glazing weep system.

Section (7)

Ordering the Proper Glazing Components

Review the drawings and details to confirm the glazing materials needed:

Insulated glass thickness.....Noted on drawings
Glass setting blocks and sizes.....Installers preference
Glazing tapeNoted on drawings
Black silicone.....Installers preference
Cleaning solution for glazing tape.....Request info from supplier

A MUST:

- The glass along with the recommended glazing tape must be noted on the drawings. If not noted, the compression seal from the glass frame will be compromised and result in interior gasket failure.
- Clean surface thoroughly prior to applying glazing tape.
- Complete glazing immediately following tape application, providing maximum adhesion.

SUGGESTIONS:

- The insulated glass spacer used should be manufactured in a narrow, black, tight edge aluminum low profile spacer (3/8" height). Please confirm with Optimum the spacer height as different products require different glazing rebates.
- Make sure the glazing silicon used has a low luster, non gloss black for the exterior of each lite.
- Applying glass cleaner to the glazing tape allows for an easier setting of the glass.

After Glazing:

- Do not unlock or operate ventilators or casement doors until glazing has been cured.
- If nylon vent aligners or rider blocks are used for casement windows and the vent drags on the vent aligner, do one of the following: loosen the attaching screw and adjust downward the aligner height (1/16") or remove the 1/16"
- shim under the vent aligner.