AMSCO® WINDOWS



New Construction Stud Frame Vinyl Window Installation Guide

This manual contains procedures based on ASTM E2112
and *Installation Masters Installer Training & Certification Program Manual RLC-1*

The procedures contained in this manual are given as a minimum requirement when installing AMSCO® vinyl window products in a new construction stud frame application. These instructions should meet or exceed window installation codes and regulations. However, the instruction herein may not be sufficient for codes in your particular area or application. Knowing, understanding and satisfying local code requirements is sole the responsibility of the installer.

All procedures outlined in this manual are based on *ASTM E2112* and *InstallationMasters™ Training & Certification Program RLC-1*.

Instruction in this manual may not be applicable to your construction type. For additional information regarding installation into other conditions please contact AMSCO Windows®:

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www.amscowindows.com/installation-instructions

Diagrams have been reprinted from the *InstallationMasters™ Training Manual RLC-1* with permission from the American Architectural Manufacturers Association.

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Guidelines & Conditions

1. This installation practice is intended for low-rise residential and light commercial applications. Installations exceeding four stories in height may have additional structural requirements. These instructions are not intended to advise on structural requirements for any given installation. Consult an engineer regarding load requirements and structural minimums for your given application.
2. Installation of AMSCO Windows products requires adequate framing and sheathing behind the nailing fin to give a continuous surface for nailing and sealing purposes.
3. The details described in this guide are given as a minimum requirement from AMSCO Windows. They are subject to all codes and regulations set by local governments or municipalities that may require additional procedures for any given area. Actual conditions found in buildings vary greatly. There may be cases where substantial additional considerations and precautions may be required.
4. This installation practice does not apply to windows with bent, cracked, or broken nail fins. If damage has occurred in this manner, consult AMSCO Windows for potential repair and proper procedure in repairing the damaged nailing fin. In some cases, nail fins are not repairable. Windows should not be installed with open gaps or holes at any point along the nail fin, including the corners. Windows should not be installed or repaired if there are welds that have been fractured or cracked in any way.
5. AMSCO Windows assumes no responsibility for improper installation. All windows must be properly flashed, anchored, and sealed with the proper materials in order to achieve their specified performance standards. These installation procedures have been tested in a controlled environment and pass or exceed strict performance criteria. Any deviation from these specifications may void any warranty of AMSCO products.
6. Windows and window configurations labeled with installation notices require sufficient support. AMSCO Windows recommends using steel or aluminum L-angle set tight against the sill of these units. Failure to properly support heavy units may result in loss of warranty coverage. See *Additional Support Supplement* in this guide for more information.
7. In homes where tile or masonry roof products are used, the roofing material should be installed before the windows are installed. This will apply the actual weight to the header of the window opening before the window is installed and will prevent the window from bowing or breaking under additional pressure.
8. The installation demonstrated in this guide integrates AMSCO products into a membrane drainage system using proper flexible flashing and sealant. The weather-resistive barrier may be installed by the window installer or by another party. Installers should understand the entire system being incorporated into the building process and should follow all requirements accordingly.
9. Improper installation of AMSCO products may reduce performance, lead to excessive air, water, and sound infiltration and high condensation levels, and can contribute to the deterioration of construction materials from such infiltration.
10. All materials, such as, but not limited to, coatings, flashings, and sealants, shall exhibit chemical compatibility for their intended purpose.
11. All exterior finish systems applied to the building, such as siding, stucco systems (including EIFS2 and DEFS1), masonry products, or any other system, must be installed according to its prescribed installation procedure. AMSCO does not warrant any of its products when incorporated into a building system that has been installed incompletely or incorrectly. These types of exteriors incorporate an engineered drainage system, and all steps must be adhered to in order to function properly.
12. Installation standards referenced herein are not created to address all issues related to every possible situation that could be experienced. The practices do not purport to provide fail-safe installation methods, assurance or protection against installation deficiencies, or a standard that can be specified to ensure delivered performances.
13. It is highly recommended that all individuals installing AMSCO products attend a certification course offered by AMSCO Windows on installation practices and procedures.
14. Strict adherence to *ASTM E2112* or *AAMA 2400* may be followed as alternatives and are considered equivalents to the procedures contained in this guide.

Window Storage & Handling

1 Windows should be stored and transported in an upright and near vertical position. Never lay windows flat for fear of excessive deflection and breakage.

2 Windows should be stored in an area free of excessive dirt, dust, and debris.

3 The storage area should also have good ventilation where heat cannot build up. Never store windows in areas where they can be exposed to direct sunlight. This can result in thermal fractures of glass and warping of frames due to excessive heat.

4 Windows should always be stored in a dry area, free from dripping or standing water. If moisture has come into contact with the windows and doors from transport or any other means, it is extremely important that while stacking the windows, the moisture is allowed to weep out of the windows through the designed weep system in the window. Therefore, windows must be stacked with weep holes on the inside of the tilt angle, allowing water to escape the sill. If these guidelines are not followed, standing water can freeze and expand, causing cracking and breakage, which may not be detectable by sight alone.

5 All locks on windows and patio doors should be engaged in the locked position while storing or transporting the product.

6 Adequate pads or bumpers should be applied between each window and door during storage and transport to keep the windows from scratching or rubbing against each other.

7 Nothing should ever be leaned against the glass of a window or door. Make sure that when stacking windows against each other that the frames are not touching the glass of another window. This is a large cause of stress fractures in windows.

8 Standing or rolling windows on their corners will cause fins to break and oftentimes can fracture welds and frames.

9 AMSCO products are not to be painted. Any finishes applied outside of the manufacturing facility may void the warranty.

10 Painters, stucco contractors, and other tradesmen might cover windows with plastic or other masking materials while performing their trade. This can cause extreme heat build-up on either inside or outside surfaces causing thermal fractures and warping of vinyl frames. If masking materials are required, there must be adequate means of ventilation required for the window products. The easiest method for achieving proper ventilation is to simply cut an opening in the masking material at least 12 inches long.

11 During construction, mortar or concrete can splatter on the glass resulting in scratched glass that could have been avoided by covering the glass in that particular area. See #9 in this section for proper ventilation. If removal of concrete splatters must occur, do not use harsh chemicals or solvents that will damage the window or its components. Additionally, scraping any splatter can result in scratches on the glass.

12 Cleaning smudge marks on vinyl frames may be necessary after installation. When cleaning AMSCO products, it is best to use the mildest cleaners possible. Solvents or abrasive cleansers should never be used. Some chemicals can harm the vinyl surfaces and other components in the window product. Fantastik® and other similar products are recommended for cleaning vinyl surfaces on AMSCO products. Over-the-counter glass cleaning products are acceptable for cleaning the glass on the windows. Below is a chart of cleaners for specific circumstances recommended by the Vinyl Window and Door Institute.

Cleaners to Remove Stains from Vinyl Window and Door Frames

Bubble Gum	Fantastik®, Murphy Oil Soap®, Solution of vinegar(30%), Water(70%), Windex®
Crayon	Lestoil®
DAP (Oil-Based Caulk)	Fantastik®
Felt Tip Pen	Fantastik®, water-based cleaners
Grass	Fantastik®, Lysol®, Murphy Oil Soap®, Windex®
Lipstick	Fantastik®, Murphy Oil Soap®
Lithium Grease	Fantastik®, Lestoil®, Murphy Oil Soap®, Windex®
Mold and Mildew	Fantastik®, Solution of vinegar(30%), Water(70%), Windex®
Motor Oil	Fantastik®, Lysol®, Murphy Oil Soap®, Windex®
Oil	Soft Scrub®
Paint	Brillo® Pad, Soft Scrub®
Pencil	Soft Scrub®
Rust	Fantastik®, Murphy Oil Soap®, Windex®
Tar	Soft Scrub®
Top Soil	Fantastik®, Lestoil®, Murphy Oil Soap®

Cleaning materials are listed in alphabetical order.

AMSCO does not endorse proprietary products or processes and makes no warranties for the products referenced herein. References to proprietary names are for illustrative purposes only and are not intended to imply that there are not equally effective alternatives. **All cleaners used must be thoroughly rinsed off and dried after use, or discoloration of vinyl frames could occur.**

Material Requirements & Guidelines

1. Framing Requirements

The rough framed opening should be 1/2 inch larger than the window in width and 1/4 inch in height to allow for squaring and shimming of the window where necessary. *(i.e. A 47 1/2 x 47 1/2 inch window should have a rough framed opening of 48 x 47 3/4 inches.)* Ideally, the sill of the window should rest on the sill of the framed opening to give full support to the bottom of the window product. Should the sill require shimming, you must shim the entire width of the window to provide continuous support.

Framed openings for windows and doors should be plumb, square, level and structurally adequate. The studs should be free of voids, holes, chipping, twisting or other conditions that will not allow for proper installation and sealing of windows to their openings.

2. Fastener Requirements

The selection of fasteners for use in installation is the responsibility of the installer. Structure and load requirements should be taken into account with regard to selection. When necessary, an engineer should be consulted to ensure structural integrity. The following guidelines should be used when selecting a fastener:

- All fasteners should be non-corrosive and should be compatible with all building materials with which they come into contact so that galvanic corrosion[3] will not occur.
- The head of the fastener must be broad enough to cover the pre-punched slot in the nailing fin and have a shape that is not easily forced through the pre-punched hole in the nail fin. Wedge or bugle-shaped screw heads are not preferred.
- Fasteners must penetrate the sheathing and bury into the stud framing of the structure by no less than one inch to be of sufficient length. This is typically a screw or nail at least 2 inches in length.
- Fasteners are not to be installed with any air gun or pneumatic device under any circumstance whatsoever. Nails must be nailed by hand into the substrate or sheathing. Screws may be attached with a screw gun but must not be over-tightened.
- Fasteners are to be attached to the window through the pre-punched holes at a maximum of 12 inches apart around the perimeter of the window, including the head. To easily achieve this, it is recommended to insert fasteners in every other pre-punched hole. For window frames with dark colors it is recommended that additional fasteners be used so that spacing does not exceed every 6 inches. To acheive this spacing, insert fasteners in every prepuched hole.
- Continuous frame windows should have a minimum of 3 fasteners applied through the prepunched holes of the nail fin at the joint of each transition bar.
- Fasteners at the corners should be installed a minimum of 3 inches from the corner in any direction.

3. Flashing Requirements

Proper flashing and sealing is necessary as a barrier to prevent water from infiltrating the building. Flashing is a recommended part of an overall protective weather barrier system. It is not the responsibility of AMSCO Windows to design or recommend a flashing system appropriate for each job condition. The flashing methods in this guide are a general rule and will satisfy performance criteria for most installations. However, codes and restrictions for local municipalities should be adhered to as a first rule. If there are any questions regarding flashing requirements, contact your local municipality for guidelines and requirements. The instructions set forth in this guide are to be used as a minimum requirement for AMSCO products. In no case shall flashing be omitted from the installation procedure.

- Flashing material must be barrier coated reinforced and must provide a minimum twenty-four-hour protection from water penetration when tested in accordance with *ASTM D-779*. Flashing material should also carry a continuous identification on the exterior. Always use flashing that meets or exceeds the *ASTM D-779* standards.
- When using flexible paper flashing 9-inch minimum width must be used. Flashing must adhere to AAMA 712 standards.
- The use of flexible or self-adhesive flashing is acceptable under these installation guidelines. If using self-adhesive flashings, a minimum of 4-inch wide material is acceptable. When using self-adhesive flashings, always follow the directions provided by the flashing manufacturer to ensure proper adhesion. Flashing must adhere to AAMA 711 standards.
- All flashing must be installed in weatherboard fashion[4] around the full perimeter of the window or window opening.

- Fluid flashing that is designed as a part of an overall Weather Resitive Barrier is permitted as long as the flashing conforms to the AAMA 714 standard.

4. Sealant Requirements

The two main factors when choosing a sealant are adhesion and compatibility. Many sealants do not adhere to vinyl windows and are a poor choice in the installation procedure. Sealant adhesion properties must conform to AAMA 800 standards. Also, some sealants are incompatible with some types of flashing, especially self-adhesive flashing, and can cause serious problems. It is the responsibility of the individual installing the product to verify the compatibility of the materials being used for procedures to test adhesion compatibility reference AAMA 713.

- AMSCO Windows requires the use of sealants meeting an *ASTM C920, Class 25,* for installing AMSCO products. Sealants meeting this specification will be labeled as such. Known compatible sealants include:

  DAP Dynaflex 920
  Dow Corning® 1199 Silicone Glazing Sealant
  Sikaflex® 1a
  OSI® TeQ Seal

  Others may work equally well. Check for compatibility and adhesion in your installation process.

- Wherever sealant is required in the window installation, a ⅜ inch (nominal) diameter bead of sealant should be used.
- During installation, it is important that the application of sealant and installation of the product happen in rapid succession. Do not allow the sealant to dry and form a skin prior to bedding the window product into the sealant.

5. Aerosol Foam Insullation

Aerosol foam insulation that conforms to the AAMA 812 standard is permitted when installing AMSCO Windows. However, great care must be used when applying foam. Aerosol foam can easily distort window frames. **Any use of aerosol foam insulation is at the risk of the installer.** Be sure to understand the expansion rates and application of aerosol foam insulation. Always follow the foam manufacturer's instructions.

Use only "low expansion" or "low pressure" foam products as defined in the AAMA 812 standard.

6. Shim Requirements

- Shims used at the sill should not be made of compressible or water-degradable material. It is not recommended to use wood shims at the sill.
- Shimming the sill of the window requires continuous support.
- Do not over-shim or cause the window frame to hourglass by shimming beyond square and true.

7. Sill Panning Systems

AMSCO Windows does **not** require sill pans or sill pan systems when installing window and door products. However, AMSCO Windows considers the use of sill pan systems to be an acceptable practice. If using sill pan systems, the following guidelines should be used:

- Strict adherence to established sill pan installation practices as outlined in the *ASTM E2112* standard should be followed.
- Pan flashing should be continuously sealed to the weather resistive barrier.
- The use of ridged and flexible membrane sill pan systems are acceptable.
- When using sill pans, consideration for a water egress weeping system must be made when applying sealant to the sill location of the nail fin. A discontinuous bead of sealant should be used only at the sill and only when in conjunction with a sill panning system. Generally, two gaps of at least two inches, approximately 3-4 inches from the corners, are sufficient.

AMSCO recommends the *OSI® WINTeQ Installation System or DAP Spec Line* as best practice.

Installer Experience

The window installation process cannot be specified as an all-inclusive practice covering every possible condition. As such, AMSCO Windows recognizes that installer experience is critical to the success of product installation and performance. Installers should have sufficient experience and an understanding of building envelope technologies and their application. Integrating practices outlined in this guide is only as good as the execution performed during the installation process. Failure to understand the fenestration product's integration into the building envelope can result in poor performance and/or breach of the building envelope by water and/or air.

AMSCO Windows products are designed to work within the scope of a building membrane drainage system. Installers should have a sufficient understanding of the design of the fenestration product with respect to its ability to control water/air infiltration. Modification of the window product is not permitted and will void warranties. Please consult a building professional or engineer for installation conditions that differ from what is covered in this guide. Installations deviating from the process in this guide are at the installer's risk.

It is recommended that the installer complete the Record of Installation contained in this guide and present it to the building owner.

Glossary of Terms

[1]DEFS	(Direct-Applied Exterior Finish System) a stucco finish typically applied to barrier wall system.
[2]EIFS	(Exterior Insulation and Finish System) a stucco finish typically applied to membrane drainage wall systems.
[3]Galvanic Corrosion	A form of deterioration of metal resulting from the electrochemical reaction that occurs when certain dissimilar metals are in contact with each other in the presence of water.
[4]Weather Board Fashion	The layering method where each layer overlaps the previously applied lower layer so that water runs down the outside of the layers as a whole.
[5]Weather Resistive Barrier	The surface or surfaces of a wall system responsible for the prevention of water infiltration into a building interior.

Unpackage & Inspect Product

Only products of sound integrity must be installed in any opening. Damage during shipping and the construction process should be addressed before any installation. Products should also be checked for the following:

- Squareness - Diagonal measurement of the frame should not differ by more than 1/4 inch
- Damaged or Broken Nail Fins - Some damage to nail fins can be repaired. However, the product should not be installed with chipped or broken nail fins. See section 4 of the Guidelines & Conditions.

If you have a product that appears insufficient for use, please contact your dealer or an AMSCO representative.

Tools

You may require the following tools to complete this process.

- Tape Measure
- Level
- Utility Knife
- Phillips and/or Flat Head Screwdriver
- Caulk Gun
- Power Drill Driver
- Hammer

Step 1 Installation Procedure

There are two accepted methods for installing AMSCO products in accordance with InstallationMasters™ approved standards and regulations. The guideline set forth in this installation guide is the minimum requirement for the installation of AMSCO products. A local municipality may set a stricter guideline or code. Know the local regulations for the area where you are installing the windows.

A weather-resistive barrier[5] or house-wrap may or may not already be applied to the exterior wall prior to the window installation. If it is already present, some modifications to the house wrap may be necessary prior to the window installation. See *HOUSE WRAP MODIFICATIONS* section within this installation guide.

The two methods addressed in this guide will be referred to as Method A and Method B. Method A will cover acceptable installation practices applying flashing to the window after the installation of the window. Method B will cover acceptable installation practices applying the flashing before the window is installed. Substitution or omission of any procedure from one method to another is not acceptable.

Step 2 Prepare and Cut Flashing

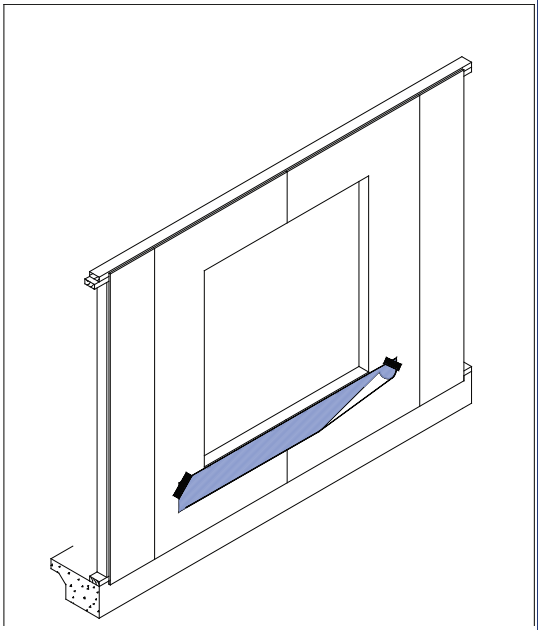
The sill flashing must be cut sufficiently long enough to extend past each side of the window so that it projects even with the vertical jamb flashing that will be applied later. This means that an extension of 9 inches is required on both ends of the sill flashing when using 9-inch flashing.

Next, cut the flashings for the rest of the window. Cut the flashings for the jamb sides so that the length extends beyond the bottom of the window vertically approximately 8 ½ inches, so as to leave ½ inch short from the bottom of the sill flashing and to extend beyond the top of the window an additional 8 ½ inch so that the head flashing will overlap the jamb flashing by ½ inch. Also, cut the head flashing to overlap the jamb flashings by 1 inch on each side when applied horizontally.

Flashing Lengths and Cut Formulas	
Sill Flashing	= RO^W + (2 x Flashing Width)
Jamb Flashing	= RO^H + (2 x Flashing Width) – 1”
Head Flashing	= RO^W +(2 x Flashing Width) + 2”
Legend	
RO = Rough Opening	
RO^H = Rough Opening Vertical Height	
RO^W = Rough Opening Horizontal Width	

Step 3 Apply Sill Flashing

Apply the first strip of flashing material horizontally, immediately below the sill, so that it projects even with the vertical jamb flashing that will be applied later. The flashing must be fastened at the top edge so that the nailing fin covers the fasteners when the window is installed. If the weather resistive barrier[5] has not already been installed previous to the window, the installer should not use fasteners on the bottom edge, or the 9-inch ends extending beyond the sill of the sill flashing so that a weather resistive barrier may be properly installed in weatherboard fashion[4]. The bottom and the ends may be taped down to keep wind and weather from damaging them until the weather resistive barrier is installed.



Step 4 Installation of Window - Jamb Flashing

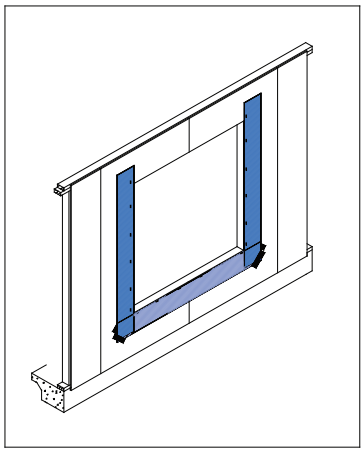
Method A

The window may now be installed into the rough framed opening using acceptable fasteners discussed in the FASTENER REQUIREMENTS section in this guide. The window should be installed using the following procedures:

- Apply a 3/8 inch continuous bead of sealant to the inside perimeter of the nailing fin, making sure that the sealant is in line with, and covering the pre-punched holes in the nailing fin. Do not leave any holes uncovered.

Method B

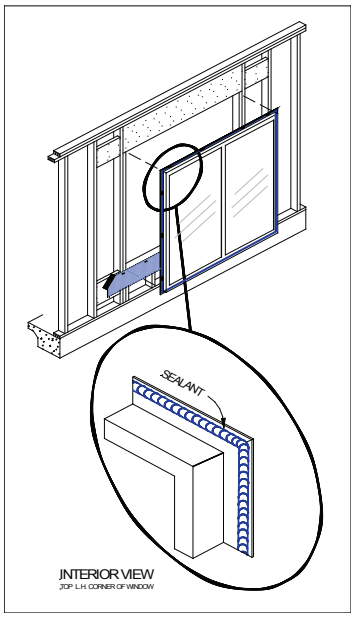
Starting at each jamb, install the flashing cut for the jambs against the rough framed opening and fasten them into place overlapping the sill flashing. Make sure that the nailing fin of the window can cover the fasteners on the inside of the flashing, next to the opening, when it is installed. Secure the outside edges of the jamb flashings with fasteners as well. Do not fasten the bottom 9 inches of the jamb flashings if the weather resistant barrier[5] has not yet been installed, so that the weather resistant barrier can be tucked underneath the jamb and sill flashing in weatherboard fashion. Tape may be used to secure these flaps from the weather to prevent damage.



The window may now

Step 4 Installation of Window - Jamb Flashing (continued)

Method A

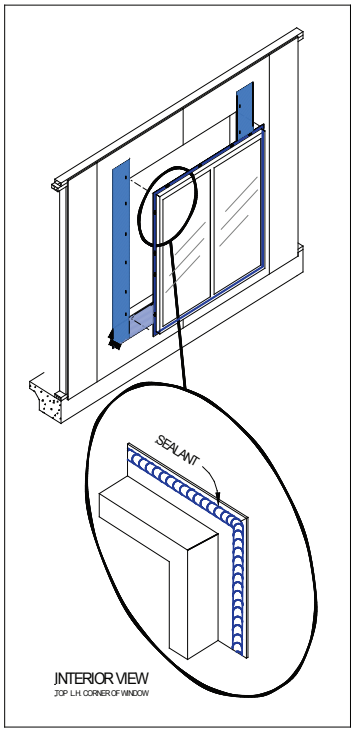


- Immediately set the window into the rough framed opening, pulling the nailing fin in against the sheathing. Bed the window into the sealant and against the sheathing to form a seal between the window and the sheathing.
- When setting the window, make sure that the sill of the window has continuous support underneath it. If shimming is required to level the sill, be sure to offer continuous support, without twisting or binding the frame.
- With the window set in the opening, a single fastener should be installed on the upper corner of the window to hold the window in place. This fastener should be at least 3 inches from the corner of the frame. Once this has been done, check the window for plumb, level and square. When installing operable windows, it is a good idea to check the reveal of the vent during the installation process. To do this close the vent almost all the way and check the gap where the vent meets with the main frame. It should be even across the entire length of the frame.
- Apply additional fasteners at a maximum of 12 inch intervals while continually checking plumb, level and square of the window. See special considerations for dark colors on page 11 of this guide for black, bronze and painted window

Method B

be installed into the rough framed opening using acceptable fasteners discussed in the FASTENER REQUIREMENTS section in this guide. The window should be installed using the following procedures:

- Apply a 3/8 inch continuous bead of sealant to the inside perimeter of the nailing fin, making sure that the sealant is in line with, and covering the pre-punched holes in the nailing fin. Do not leave any holes uncovered.
- Immediately set the window into the rough framed opening, pulling the nailing fin in against the sheathing. Bed the window into the sealant and against the sheathing to form a seal between the window and the sheathing.



- When setting the window, make sure that the sill of the window has continuous support underneath it. If shimming is required to level the sill, be sure to offer continuous support, without twisting or binding the frame.

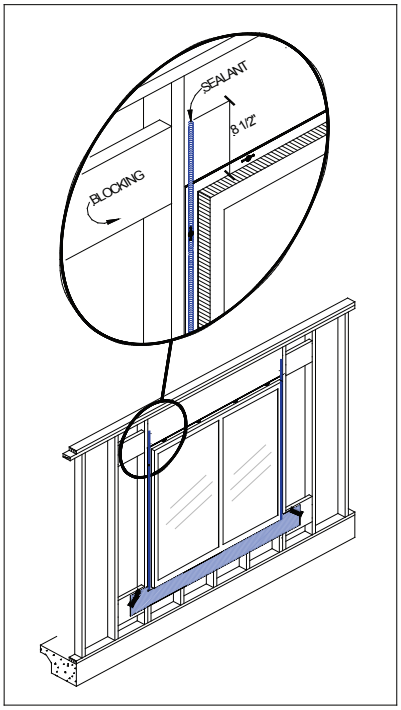
Step 4 Installation of Window - Jamb Flashing (continued)

Method A

fastener spacing. Fasteners applied at the corners should be located at least 3 inches from the corner in any direction.

- Check the operating sashes and locking mechanisms to ensure smooth operation and function during and after the installation procedure.
- Additional shimming may be required on jamb sides or sill to produce an accurate and true installation.
- Avoid over-driving fasteners that may cause the window to distort or bind.
- If any damage to the nailing fin is observed during the installation process, repair the damage if able. If you are unsure if the window is sound for installation contact your dealer or AMSCO Windows for further consultation and instruction.

Apply a ⅜ inch continuous bead of sealant over the top of the nailing fin on the exterior side of the window over the jamb sides only. Make sure that the sealant is applied over pre-punched holes of



Method B

- With the window set in the opening, a single fastener should be installed on the upper corner of the window to hold the window in place. This fastener should be at least 3 inches from the corner of the frame. Once this has been done, check the window for plumb, level and square. When installing operable windows, it is a good idea to check the reveal of the vent during the installation process. To do this close the vent almost all the way and check the gap where the vent meets with the main frame. It should be even across the entire length of the frame.

- For standard colors, apply additional fasteners at a maximum of 12 inch intervals while continually checking plumb, level and square of the window. See special considerations for dark colors on page 11 of this guide for black, bronze and painted window fastener spacing. Fasteners applied at the corners should be located at least 3 inches from the corner in any direction.

- Check the operating sashes and locking mechanisms to ensure smooth operation and function during and after the installation procedure.

Note: When using self adhesive flashing systems the application of sealant may not be required. See the flashing manufacturers instruction for proper application of any given material.

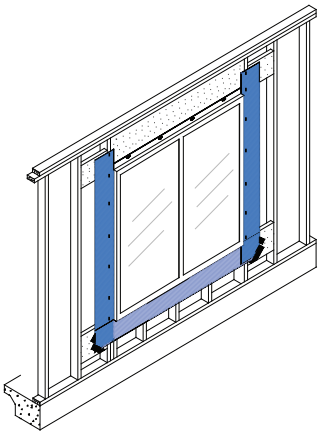
Step 4 Installation of Window - Jamb Flashing (continued)

Method A

the nailing fin and also covering the heads of the fasteners used in installing the window. The sealant applied on the jamb side nail fin of the windows, should extend above the window approximately 8 ½ inches so that the jamb flashing can bed into it all the way to the top of the flashing.

Embed the flashing cut for the jambs into the sealant and fasten them into place. Do not fasten the bottom 9 inches of the jamb flashings if the weather resistant barrier has not yet been installed, so that the weather resistant barrier[5] can be tucked underneath the jamb and sill flashing in weatherboard fashion[4]. Tape may be used to secure these flaps from the weather to prevent damage.

Note: When using self adhesive flashing systems the application of sealant may not be required. See the flashing manufacturers instruction for proper application of any given material.



Method B

- Additional shimming may be required on jamb sides or sill to produce an accurate and true installation.
- Avoid over-driving fasteners that may cause the window to distort or bind.
- If any damage to the nailing fin is observed during the installation process, repair the damage if able. If you are unsure if the window is sound for installation contact your dealer or AMSCO Windows for further consultation and instruction.

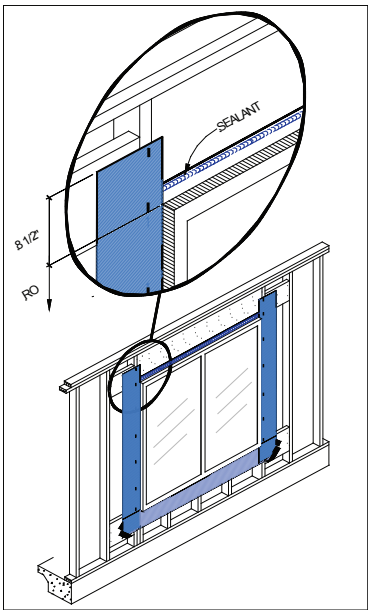
Special Considerations for Dark Color Windows

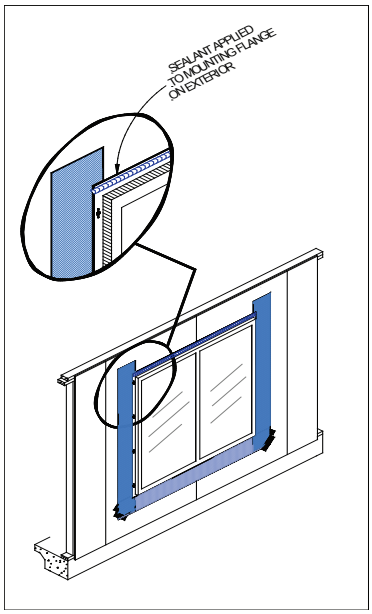
Darker colors can absorb more solar energy into the frame, causing the material to expand. As such, AMSCO Windows requires using additional fasteners when securing the window to the building. Place a fastener at each pre-punched hole in the nail fin or at a spacing of no greater than 6 inches around the entire perimeter of the window. This will help ensure the window frame is fully supported during thermal expansion events.

Step 5 Apply Head Flashing

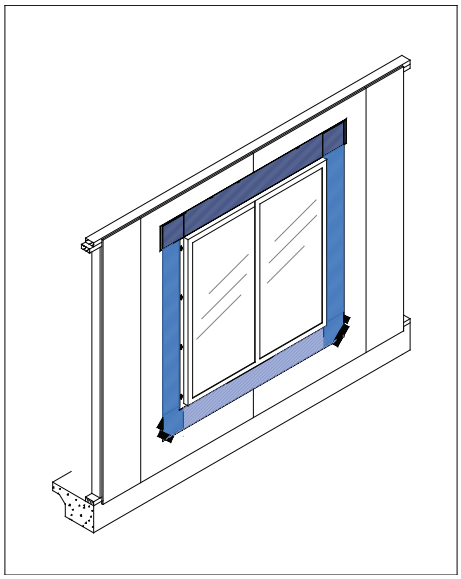
Apply a ⅜ inch continuous bead of sealant to the nailing fin at the head of the installed window, covering the pre-punched holes and fasteners previously installed.

Note: When using self adhesive flashing systems the application of sealant may not be required. See the flashing manufacturers instruction for proper application of any given material.





Apply the head flashing by bedding it into the sealant previously applied, overlapping it 1 inch on each side of the jamb flashing, and secure it with fasteners to the sheathing.



House-Wrap Modifications

Trades other than the window installer may apply the weather resistive barrier or house-wrap. The general contractor shall coordinate this timetable as required. Both installation procedures outlined in this installation guide may be installed prior to or after the weather-resistant barrier or house wrap has been installed. If the house wrap has already been installed, accommodations must be made so that the window installation can take place.

Make the following modifications:

1. Make a *Modified I* cut in the house wrap.
2. Fold the bottom side flaps over and behind the interior sides of the rough-framed opening.
3. Fasten flaps on the interior with staples set every 12 to 16 inches.
    - Measure for diagonal cuts at the top of window corners of the house wrap.
    - Measure from the corner 9 inches up and 9 inches over and mark. This will be a 45-degree diagonal cut.
    - Cut on the diagonal from the marked point to the rough opening corner.
4. Measure and cut the other upper corner in the same fashion.

Gently raise the top edge of the house wrap and tape the corners and center to the barrier surface above. This will allow the window flashing to be installed during the window installation process.

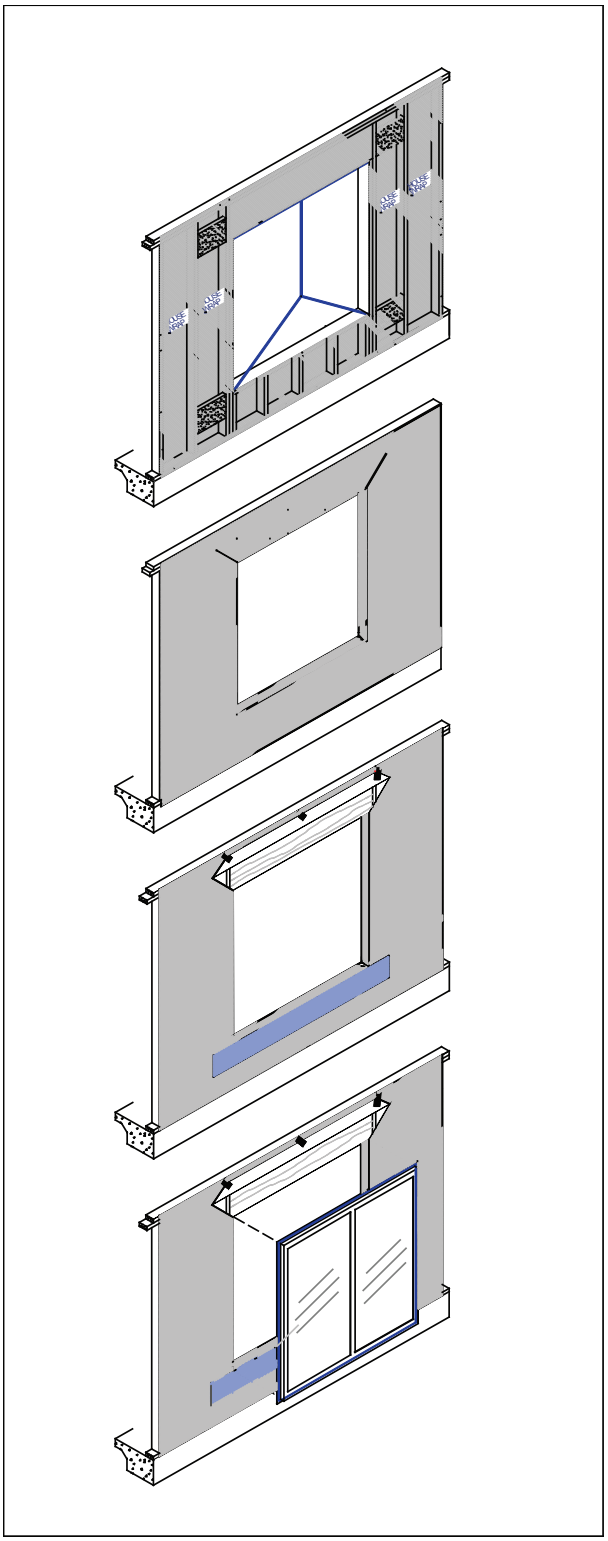
After the modifications have been performed, follow the window installation procedure laid out in this guide.

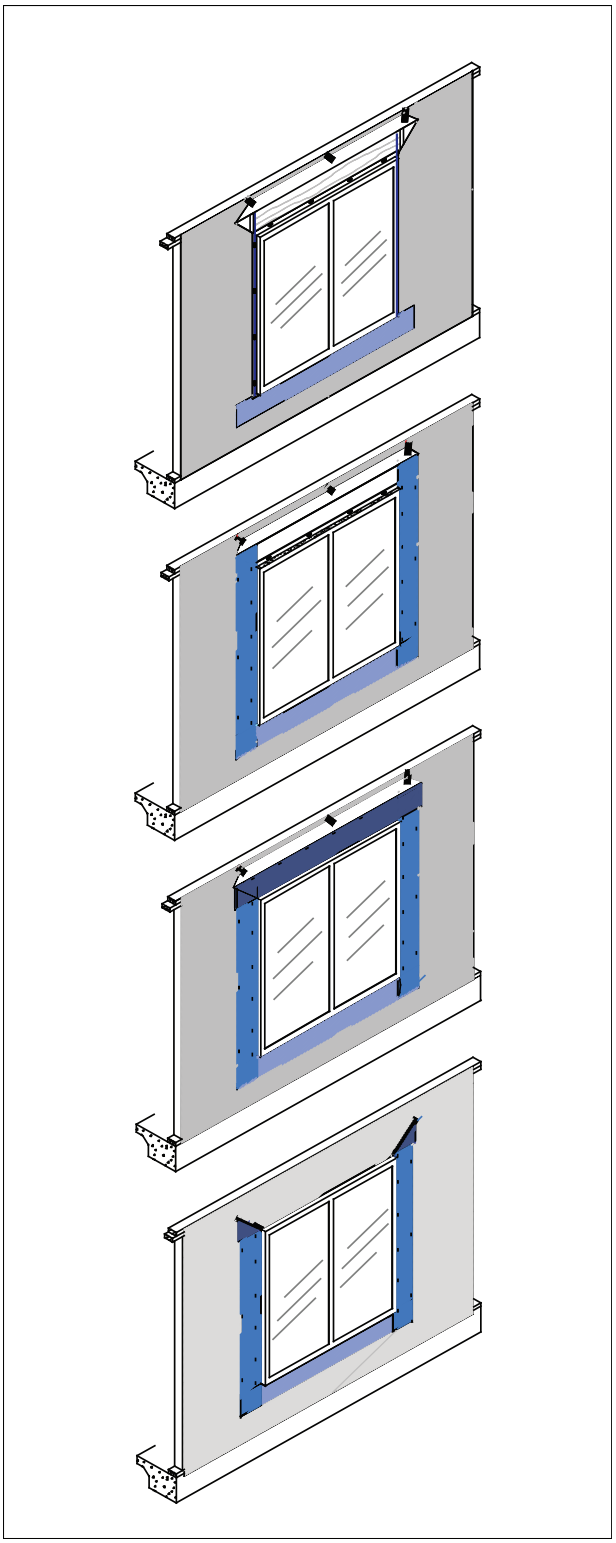
After the window has been installed, follow these steps to complete the house wrap modifications:

1. The flashing applied to the head of the window is to be installed in the same fashion as in the INSTALLATION PROCEDURES section of this installation guide, except it needs to be tucked underneath the house-wrap in the upper corners in a weatherboard fashion in a METHOD A installation.
2. Remove the tape holding the flap of house wrap in place and fold the flap down over the head flashing previously installed.
3. Using an approved house-wrap tape; tape the 45-degree cut corners down to complete a watertight seal. Tape must completely cover and seal the seam or cover any exposed head flashing.

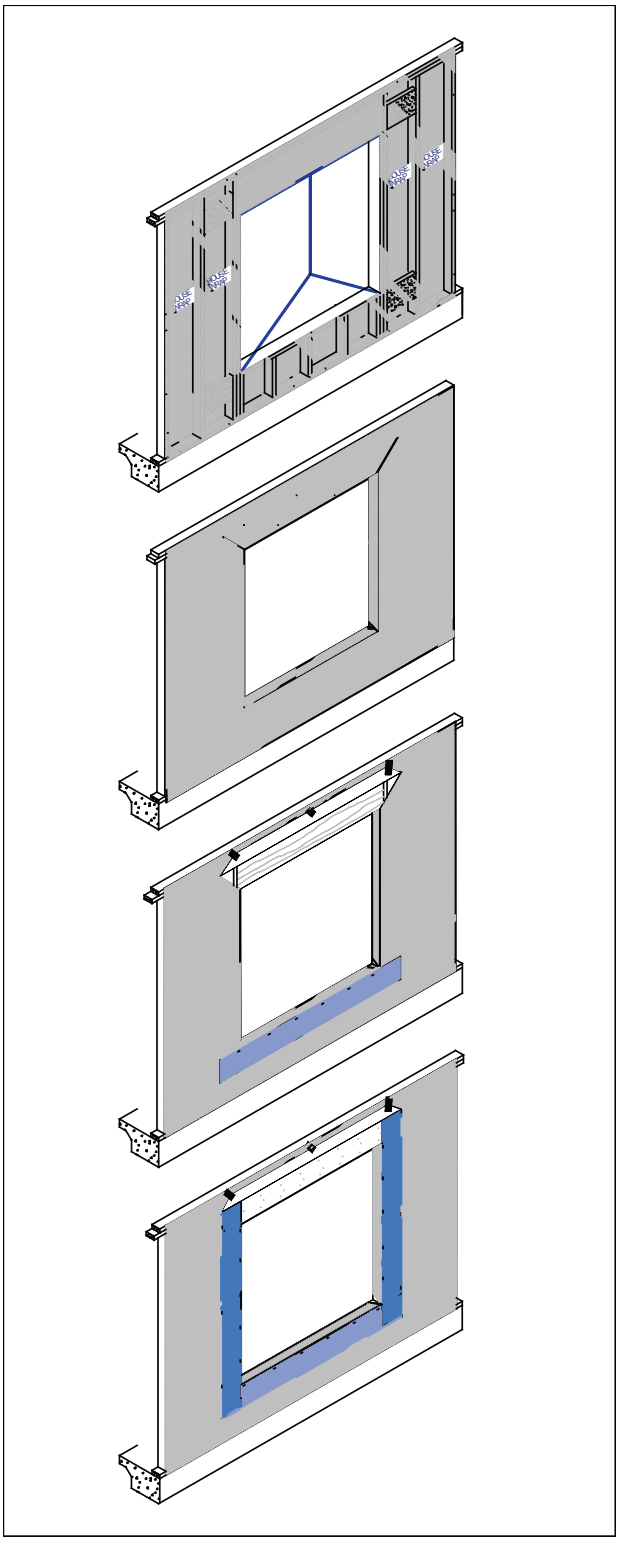
For more information on specific installation methods, see the diagrams on the following pages.

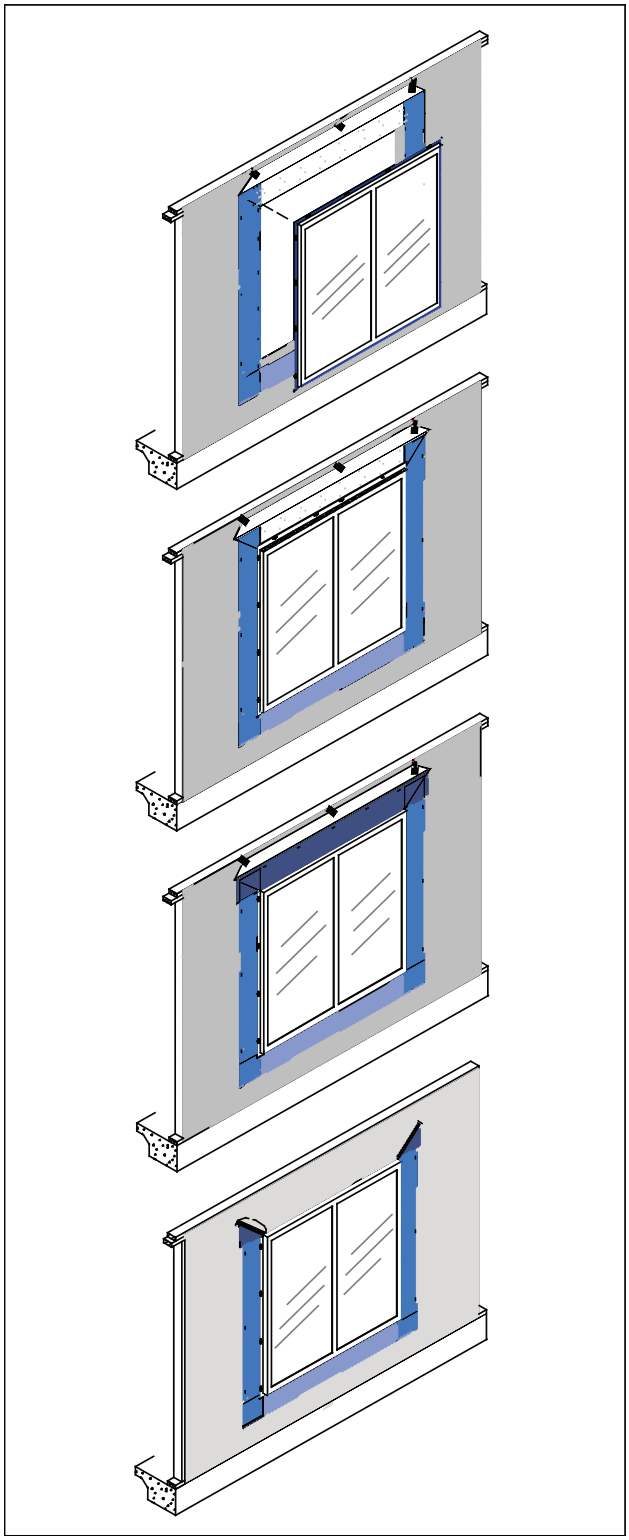
House-Wrap Modifications - Method A





House-Wrap Modifications - Method B





Post Installation Practices

The following is a list of post-installation best practices:

- Repair damaged Weather Barrier and Flashing before installation of exterior cladding.
- Maintain 1/4-inch joints between the window and the final exterior wall surface to accept sealant.
- Flashing materials should be covered within a timeframe recommended by the flashing manufacturers. Exposure to UV through sunlight is known to degrade flashing performance.

This is not an all-inclusive list. There are many other items where other trades may interact with the window product. In many cases, this interaction is after a significant time has elapsed from installation. In these cases, any alterations and/or damage is the responsibility of the interacting trade.

Additional Support Suppliment

Windows and window configurations that meet excess weight criteria are identified with a label on the sill nail fin. This label indicates that the unit requires additional support to prevent movement over time due to heat build-up from the sun.

The following specifications should be used when selecting a support structure for excess weight units:

- Supplemental support material should be sized to carry the weight of the glass unit that is cantilevered outside the support of the building framing.
- A 1-inch minimum depth is recommended. An example of a suitable material is aluminum 1-inch "L" angle $^{1}/_{16}$ inch thick. See **Figure 1.**
- The support can be applied continuously at the sill or cut into shorter segments of no less than six inches and placed at strategic locations along the length of the sill.
- When segmenting support material, place segmented support under the fixed glass area at the end of the window and under the mullion. Center support should also be placed under glass over three feet wide. See **Figure 2**.
- Apply sealant to the back side of the support where screws will penetrate the material.
- Apply sealant over the screw head to ensure a water-tight application of the support material.
- Do not run screws up into the sill cavity of the window.

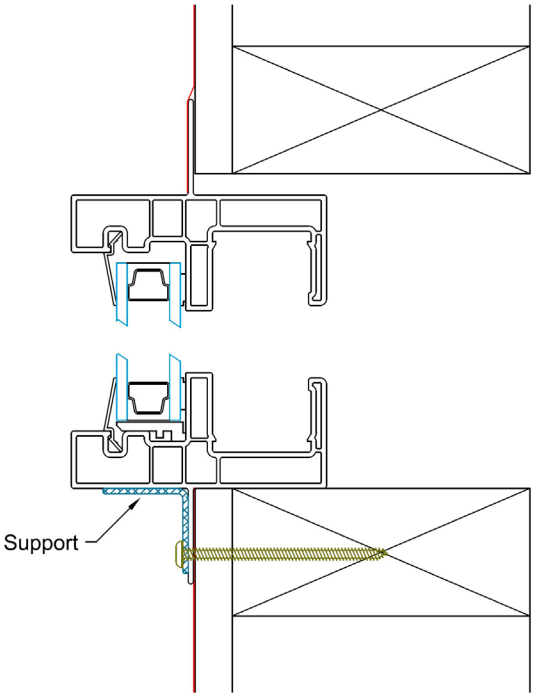


Figure 1

The final installation and exterior finish are significant factors in choosing and applying support.

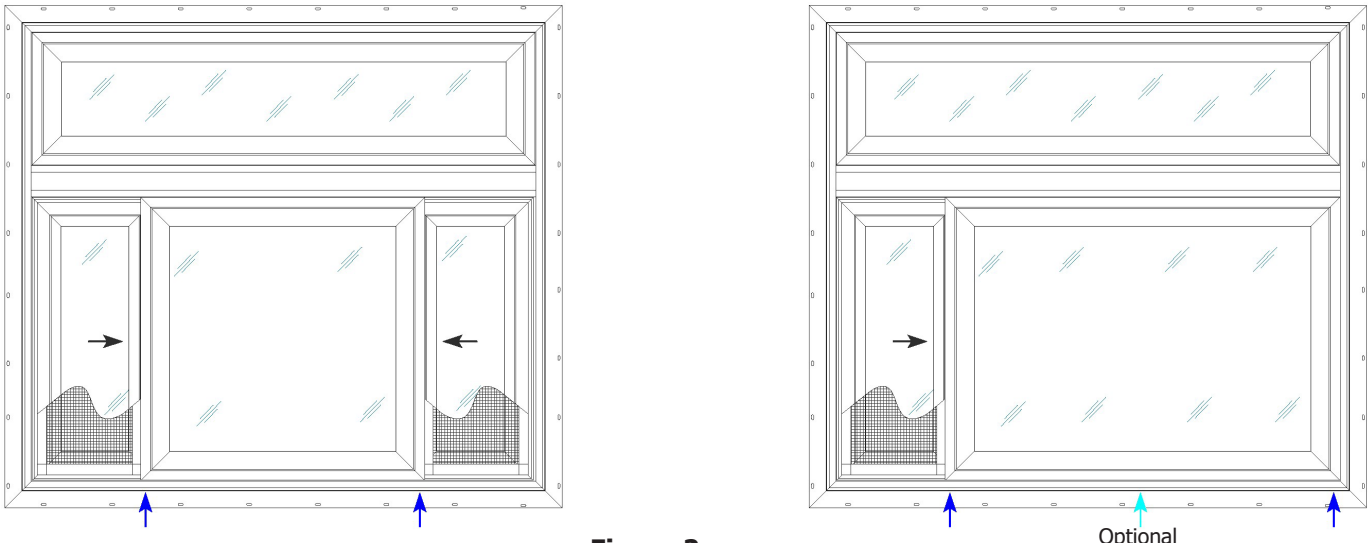


Figure 2

Record of Installation

Date of Install	
Installed By	
Installation Company	
Phone Number	
Flashing Manufacturer	
Sealant Manufacturer	
AMSCO Service Tracking Number	
Dealer of Purchase	
Phone Number	

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