

## **IMPORTANT! READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION.**

Thank you for purchasing your new replacement windows from Great Lakes Window. The following instructions will help remove the old windows and replace them with windows designed to enhance the beauty of any home while making it more energy efficient.

Refer to the local building codes and practices for additional installation requirements.

Great Lakes Window accepts no responsibility for air or water leakage above, under or around the window unit.

### **Recommended Tools & Accessories not supplied by Great Lakes Window**

- Hammer
- Tape Measure
- Flat-Head Screwdriver
- Phillips-Head Screwdriver
- Screw Gun or Drill
- Drill Bit -  $\frac{1}{8}$  inch
- Utility Knife
- Putty Knife or Flat Bar
- Caulking Gun
- Level
- Framing Square
- Pliers
- Snips

### **Additional Materials Needed**

- Replacement Window - with or without nail fin
- Spray foam insulation material conforming to ASTM 812-04 regulations and designed for use with windows or fiberglass batt insulation
- Shims
- Four  $1\frac{1}{2}$  inch Drywall Screws
- Sealant
- Optional Dow® Flashing Material
- Optional Corrosion Resistant Nails or Pan Head Screws with a length to penetrate the framing at least  $1\frac{1}{2}$  inches with a minimum  $\frac{3}{8}$ -inch head size

**Attention:** Before beginning work, please refer to local codes and compliance needs. While working with windows or tools, your safety is the most important step of all. Please use adequate safety precautions and protective wear when performing these steps. Care should be taken when removing old window products and preparing for the new installation. Testing for lead paint in the home may be necessary. Each state may have its own lead program and regulations. For more information, contact the National Lead Information Center (NLIC) at 800-424-LEAD or visit [www.epa.gov/lead](http://www.epa.gov/lead).

### **Step 1:**

Determine which installation method best fits your project:

#### **Method (A)**

Remove and replace from the interior of the home.

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#### **Method (B)**

Remove and replace from the exterior of the home.

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### **General Information**

Information that applies to all methods of installation.

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### **Step 2:**

Set aside the instructions that do not apply to your application.

### **Step 3:**

Verify you have all the tools and materials necessary to complete the installation by referring to the guide to the left.

### **Step 4:**

Follow the step-by-step instructions for the application you have chosen.

## Method (A)

### Install from Interior of Home

Before new windows are installed, carefully measure the window opening width and height, and determine the method that works best for your project.

### Step 1: Initial Preparation

- Prior to removing the old sash, new Great Lake replacement windows should have been purchased and on-hand for installation. From the interior of the home, verify the measurements of the existing frame opening (**Figures 1a<sup>1</sup>, 1a<sup>2</sup>**).
- Double check that the frame purchased for this opening is the correct size to fit in the jamb pocket of the old window frame or rough opening by measuring the width and height of the opening, the pocket, and the new frame. Carefully remove the window from its packaging and recycle materials appropriately. To disengage top and bottom sash, make sure the unit is unlocked. Then slide the bottom sash upward several inches, slide the tilt latches towards one another and pull the sash towards you.
- Move the bottom sash so one side is higher than the other and free the sash tilt pivot pin from the balance shoe. Then do the same to the other side and set sash aside (**Figures 1b and 1c**).
- Lower the top sash and follow the same procedure as you did with the lower sash. Set sash aside until frame is completely installed in the opening (**Figures 1d and 1e**).
- Only if you are installing into an existing window frame, apply the sill angle adapter by aligning the barb with the kerf and snapping it into the bottom exterior of the frame (**Figure 1f**). Starting on one end, drive in with the hammer. Trim sill angle adapter to fit.*
- Remove any interior window dressings such as blinds, plantation shutters or curtains and their hardware.



Figure 1a<sup>1</sup>



Figure 1a<sup>2</sup>



Figure 1b



Figure 1c



Figure 1d



Figure 1e

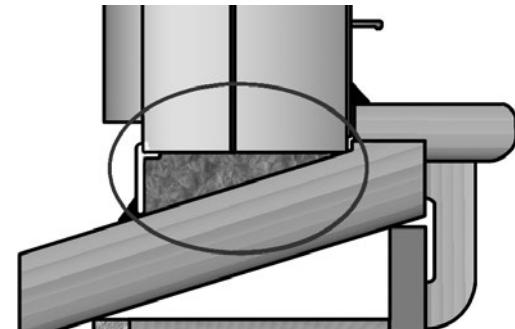


Figure 1f



Figure 2a

### Step 2: Preparing the Opening

- From the exterior of the home, remove any screens, storm windows or shutters that will be in the way of your replacement project and carefully set them aside.
- Determine the type of counterweight system in the existing windows. If a sash rope or chain is present, and pulleys are located in the jamb pocket, unlock the sash, raise the bottom sash six inches and lower the top sash six inches. Near the pulley, run drywall screws through the rope or chain and into the side jambs of the existing window frame to prevent the sash and counterweight from falling when you cut it loose from the sash (**Figure 2a**). If a spring-type balance system is used, lower the top sash halfway and raise the lower sash halfway.

# Method (A)

# Great Lakes Window Replacement Product Lines INSTALLATION INSTRUCTIONS

3. Next, remove the interior trim from the top and both sides of the opening, which will expose the stop. The stop can be removed by prying it away from the window frame (**Figure 2b**), or by using a rotary or reciprocating saw, which is the preferred method (see next step).
4. Using a rotary or reciprocating saw, carefully cut the interior blind stop off of the interior frame (**Figure 2c**). A sharp chisel may be used to cut the blind stop off and replace with a new purchased stop material. No matter which method or tool is used, be sure not to damage the window frame.
5. Once the interior blind stop is removed, the sash and balances are free to move. Care should be taken to prevent the sash from falling out of the opening.
6. **Counterweight System:** Support the sash from underneath by screwing a drywall screw into the side jamb directly under the sash to prevent it from falling when the weight is cut loose. Using a utility knife or sharp snips, carefully cut the sash weight rope or chain just above the top of the sash (**Figure 2d**). Remove the drywall screws you drove through the rope or chain and gently let the weight down into the weight pocket. Repeat this process for the other side to eliminate the sash counterweights and ropes or chains. Remove the sash and the screws that are temporarily supporting the sash.
7. Next, remove the parting stop from the frame on each side and across the top (**Figure 2e**). This is what separates the top and bottom sash. Use the same process for the upper sash and the lower sash to free the top sash to set aside.
8. Using a flat-tipped screwdriver, remove the sash counterweight pulleys by prying them out and disposing of them appropriately (**Figure 2f**).
9. At this time, it is recommended you use low-expanding foam insulation conforming to ASTM 812-04 regulations, such as Dow® Great Stuff™ Window & Door Insulating Foam Sealant, to fill the void in this old weight cavity. First, measure approximately six inches from the sill and drill a 1/8-inch hole in the center of the side jamb on each side. Next, drill holes every six inches on the center of the jamb, until you reach the top of the frame (**Figure 2g**). Beginning with the bottom hole, insert the tip of the expanding foam and inject the insulation until foam begins expanding out of the opening (**Figure 2h**). Stop injecting the foam and move to the other side. Wait approximately five minutes, move to the next hole and repeat the previous steps until finishing at the top hole.
10. Clean the area where the new window will sit and remove any expanding foam that may have escaped out of the holes.



Figure 2b



Figure 2c



Figure 2d



Figure 2e



Figure 2f



Figure 2g

Figure 2h

# Method (A)

# Great Lakes Window Replacement Product Lines INSTALLATION INSTRUCTIONS

**11. Spring-type System:** If a spring-type balance system is in place, firmly grasp both sash and tilt them out of the opening as a pair. As you do so, the top of the jamb liners will start coming out of the frame as well (**Figure 2i**). As the top of the jamb liners gets close to the edge, remove the jamb liner and sash at the same time by holding them as one unit. **Do not hold near you, as the springs in the jamb liners have tension in them.** Once clear of the wall and window frame, gently set the combined sash and jamb liners down and allow the tension on the balance springs to relax. Once this is done, separate the sash from the jamb liners and safely remove from the installation site.

12. Remove any remaining fasteners, screws, staples or nails that hold the balances to the jambs. Clean out any debris that has collected behind the old balances, and check the jambs and sill for possible deterioration or damage (**Figure 2j**).



Figure 2i



Figure 2j

## Step 3: Sealing and Installing the Window from the Interior

*We recommend the window is dry fitted prior to applying any sealant.*

1. When dry fitting, check to see if the sill angle adapter needs adjusting. The sill angle adapter is scored and may be trimmed using a utility knife, following the score marks as needed. This step may require you to set the frame into the opening more than one time.
2. Once the unit has been adjusted and properly fitted, remove the balance covers from the frame (**Figures 3a<sup>1</sup>, 3a<sup>2</sup>, 3a<sup>3</sup>**). Next, remove the frame and set it aside. Locate the existing frame's exterior blind stop faces; using a quality exterior grade caulk or sealant, apply a minimum 1/4-inch continuous bead of sealant up each side and across the top where the replacement frame comes into contact with the existing frame (**Figure 3b**). Sealant should be applied where the existing sill and side jamb meet and along the area where the new sill and existing stool meet (**Figure 3c**).
3. From the interior of the opening, insert your window frame and press the frame firmly into the sealant to achieve a solid seal around the side and top of the frame.
4. Start each of the four screws into the pre-drilled holes in the frame (**Figure 3d**). Do not tighten at this time. Place shims at the four required screw locations and square your window frame. Begin tightening the screws but **do not over-tighten**. Just as the head of the screw head pulls through the first layer of vinyl, **STOP**.
5. From the interior, install the upper sash by holding the sash with the meeting rail and tilt latches against your body and the keepers facing down. Lift one side higher than the other at a diagonal so you can insert the tilt pin into the balance shoe. Next, allow the other side to drop into the shoe on the opposite side.
6. Rotate the sash into the installed position and ensure the tilt latches engage the frame.



Figure 3a<sup>1</sup>



Figure 3a<sup>2</sup>



Figure 3a<sup>3</sup>



Figure 3b

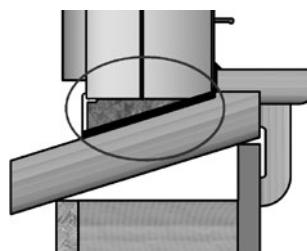


Figure 3c



Figure 3d

7. Repeat the process for the lower sash, making sure the locks are on the side closest to your body and facing up toward you and the lift rail is facing down.
8. Move the locks to the closed position and check the unit for level and square. If square, tighten the four screws you installed earlier in an X pattern (start with upper right, move to lower left; next, tighten upper left and move to lower right), not over-tightening but firmly securing the screws against the outer vinyl wall.
9. Utilize the jamb jacks at this time to help maintain a straight, plumb side jamb frame. The jamb jacks are the small threaded screw heads in the jamb pocket, and they will need to be adjusted (**Figure 3e**). All double hung window jambs require shims at the meeting rails to prevent frame roll. The use of caulk on the shims to hold them in place may be necessary to prevent over-shimming, which can cause sash binding. Sash binding causes difficulty operating the unit.
10. Test the window operation frequently and adjust the installation if necessary.



Figure 3e



Figure 4a



Figure 4b



Figure 4c

## Method (B)

### Install from Exterior of Home

Before new windows are installed, carefully measure the window opening width and height, and determine the method that works best for your project.

### Step 1: Initial Preparation

- Prior to beginning installation of the new windows, new windows should have been purchased and on-hand for the install. From the interior of the home, verify the measurements of the existing frame opening (**Figures 1a<sup>1</sup>, 1a<sup>2</sup>**). Set the new frame aside where it will not be damaged.
- Double check the frame purchased for this opening is the correct size to fit in the jamb pocket of the old window frame or rough opening by measuring the width and height of the opening, the pocket, and the new Great Lakes Window frame. Carefully remove the window from its packaging and recycle materials appropriately. To disengage top and bottom sash, make sure the unit is unlocked. Then slide the bottom sash upward several inches, slide the tilt latches towards one another and pull the sash towards you.
- Move the bottom sash so one side is higher than the other and free the sash tilt pivot pin from the balance shoe. Then do the same to the other side and set sash aside (**Figures 1b and 1c**)
- Lower the top sash and follow the same procedure as you did with the lower sash. Set sash aside until frame is completely installed in the opening (**Figures 1d and 1e**).
- Only if the new windows are being installed into an existing window frame, apply the sill angle adapter by aligning the barb with the kerf and snapping into the bottom exterior of the frame. Starting on one end, drive in with the hammer (**Figure 1f**).*
- Remove all interior window dressings such as blinds, plantation shutters or curtains and their hardware.



Figure 1a<sup>1</sup>



Figure 1a<sup>2</sup>



Figure 1b



Figure 1c



Figure 1d



Figure 1e

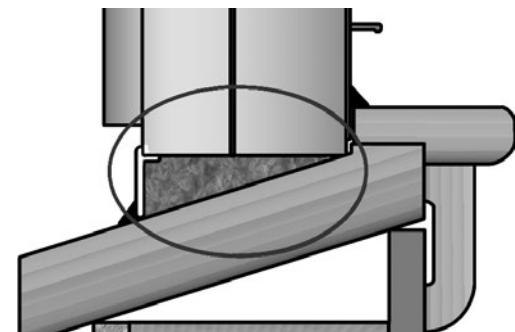


Figure 1f



Figure 2a

### Step 2: Preparing the Opening

- From the exterior of the home, remove any screens, storm windows or shutters that will be in the way of your replacement project and carefully set them aside.
- Determine the type of window counterweight system is in the existing windows. If a sash rope or chain is present and pulleys are located in the jamb pocket, unlock the sash, raise the bottom sash approximately six inches, and lower the top sash approximately six inches. Near the pulley, run drywall screws through the rope or chain and into the side jamb of the existing window frame (**Figure 2a**). This will prevent the sash and counterweight from falling when you cut it loose from the sash. If a spring-type balance system is used, lower the top sash halfway and raise the lower sash halfway.

## Method (B)

# Great Lakes Window Replacement Product Lines INSTALLATION INSTRUCTIONS

3. Next, remove the exterior trim from the top and both sides of the opening, which will expose the stop. The stop can be removed by prying it away from the window frame, or by using a rotary or reciprocating saw, which is the preferred method (see next step).
4. Using a rotary or reciprocating saw, cut the exterior blind stop off of the exterior frame (**Figure 2b**). You may also use a sharp chisel to remove the stop and replace with a newly purchased stop material. Do not damage the window frame.
5. Once the exterior blind stop is removed, the sash and balances are free to move. Care should be taken to prevent the sash from falling out of the opening.
6. Support the sash from underneath by screwing a drywall screw into the side jamb directly under the sash to prevent it from falling when the weight is cut loose. Using a utility knife or sharp snips, carefully cut the sash weight rope or chain just above the top of the sash (**Figure 2c**). Remove the drywall screw you drove through the rope or chain and gently let the weight down into the weight pocket. Repeat this process for the other side to eliminate the sash counter weights and ropes or chains. Remove the sash and the screws that are temporarily supporting the sash.
7. Remove the parting stop from the frame on each side and across the top. This is what separates the top and bottom sash (**Figure 2d**). Use the same process for the upper sash as for the lower sash. This will free the top sash to set aside.
8. Using the flat-tipped screwdriver, remove the sash counterweight pulleys by prying them out (**Figure 2e**).
9. Next, it is recommended a low-expanding foam insulation conforming to ASMT 812-04 regulations is used, such as Dow® Great Stuff™ Window & Door Insulating Foam Sealant, to fill the void in the old weight cavity. Measure approximately six inches from the sill and drill a 1/8-inch hole in the center of the side jamb on each side. Drill holes approximately every six inches on the center of the jamb until you reach the top of the frame (**Figure 2f**). Beginning at the bottom hole, insert the tip of the expanding foam and inject insulation into the cavity until foam begins expanding out of the opening (**Figure 2g**). Move to the other jamb. Wait approximately five minutes and move to the next hole and repeat the previous steps until finishing at the top hole.
10. Clean up the area where the new window will sit and remove any expanding foam that may have escaped out of the fill holes (**Figure 2h**).
11. If a spring-type balance system is in place, firmly grasp both sash and tilt them out of the opening as a pair. As you do this, the top of the jamb liners will start coming out of the frame as well (**Figure 2i**). As the top of the jamb liners gets close to the edge, remove the jamb liner and sash at the same time by holding them as one unit. **Do not hold near you, as the springs in the jamb liners have tension in them.** Once clear of the wall and window frame, set the combined sash and jamb liners down and allow the tension on the balance springs to relax. Once this is done, separate the sash from the jamb liners and remove from the installation site.



Figure 2b



Figure 2c



Figure 2d

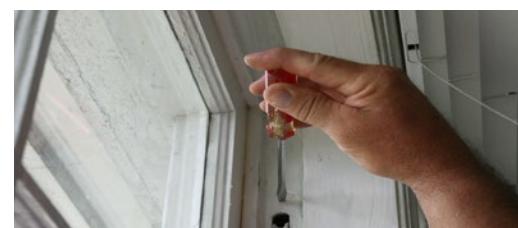


Figure 2e

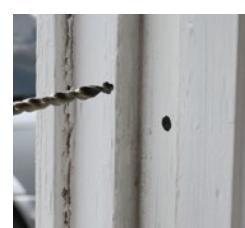


Figure 2f

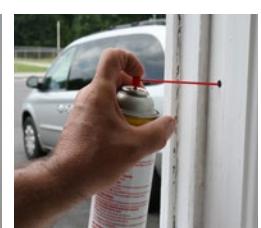


Figure 2g



Figure 2h



Figure 2i

12. Remove any remaining fasteners, screws, staples or nails that hold balances to jambs. Clean out any debris that has collected behind the old balances, and check the jambs and sill for possible deterioration or damage. (**Figure 2j**).

## Step 3: Sealing and Installing the Window

*It is highly recommended that windows are dry fitted prior to applying any sealant.*

1. When dry fitting, check to see if the sill angle adapter needs adjusting. The sill angle adapter is scored and may be trimmed using a utility knife, following the score marks as needed. This step may require you to set the frame into the opening more than one time.
2. Once the unit has been adjusted and properly fitted, remove the balance covers if supplied from the frame (**Figures 3a<sup>1</sup>, 3a<sup>2</sup>, 3a<sup>3</sup>**). Next, remove the frame and set it aside.
3. Locate the existing frame's interior blind stop face. Using a quality exterior grade caulk or sealant, apply a minimum 1/4-inch continuous bead of sealant up each side and across the top where the replacement frame comes into contact with the existing frame (**Figure 3b**). Sealant should be applied where the existing sill and side jamb meet and along the area where the new sill and the existing stool meet.
4. From the exterior of the opening, insert the window frame and press the frame firmly into the sealant to achieve a solid seal around the side and top of the frame.
5. Start each of the four screws into the pre-drilled holes in the frame (**Figure 3c**). Do not tighten at this time. Place shims at the four required screw locations and square the window frame. Begin tightening the screws but **do not over-tighten**. Just as the head of the screw head pulls through the first layer of vinyl, **STOP**.
6. From the interior, install the upper sash by holding the sash with the meeting rail and tilt latches against your body and the keepers facing down. Lift one side higher than the other at a diagonal so you can insert the tilt pin into the balance shoe (**Figure 3d**). Next, allow the other side to drop into the shoe on the opposite side.
7. Rotate the sash into the installed position and ensure the tilt latches engage the frame.
8. Repeat the process for the lower sash, making sure the locks are on the side closest to your body and facing up toward you and the lift rail is facing down.
9. Move the locks to the closed position and check the unit for level and square. If square, tighten the four screws installed earlier in an X pattern (start with upper right, move to lower left; next tighten upper left and move to lower right), not over-tightening but firmly securing the screws against the outer vinyl wall.



Figure 2j



Figure 3a<sup>1</sup>



Figure 3a<sup>2</sup>



Figure 3a<sup>3</sup>



Figure 3b



Figure 3c



Figure 3d

10. Utilize the jamb jacks at this time to help maintain a straight, plumb side jamb frame. The jamb jacks are the small threaded screw heads you see in the jamb pocket, and they will need to be adjusted (**Figure 3e**). All double hung window jambs require shims at the meeting rails to prevent frame roll. The use of caulk on the shims to hold in place may be necessary to prevent over shimming, which can cause sash binding. Sash binding causes difficulty operating the unit.
11. Test the window operation frequently and adjust the installation if necessary.



Figure 3e

### Step 4: Insulating and Finishing from the Exterior

1. Apply low-expanding foam insulation or precut insulation between the side jambs and existing frame as well as the header area. Do not insulate at the bottom unless local code requires it.
2. Reinstall the balance covers if supplied (**Figures 4a and 4b**).
3. Install any exterior window trim parts you removed earlier.
4. From the exterior, apply a bead of exterior grade sealant at the joint where the new vinyl window contacts the existing frame blind stops at the sides and head only (**Figure 4c**). Do not caulk at the sill.



Figure 4a



Figure 4b



Figure 4c

## Install Screen

1. Hold the screen so that the lift rail is at the bottom and facing toward the interior of the home. Insert the spring side of the screen into the side screen pocket.
2. Compress the screen into the screen pocket while snapping the other side of the screen into the opposite side screen pocket (**Figure 7**).



Figure 7

## Insulate and Finish

3. Apply low-expanding foam insulation or precut insulation between the side jambs and existing frame as well as the header area. Do not insulate at the bottom unless local code requires it.
4. Reinstall the balance covers if supplied (**Figures 8a and 8b**).
5. Install any interior window trim parts removed earlier.



Figure 8a



Figure 8b

## GLASS CLEANING TIPS:

- DO NOT USE SPRAY CLEANERS AND RAGS OR PAPER TOWELS FOR CLEANING WINDOWS. THESE PRODUCTS LEAVE BEHIND MOISTURE, AND ARE ABSORBED INTO THE GLASS SURFACE. THIS CAUSES SOFTENING AND LEAVES BEHIND DEPOSITS OF CHEMICALS, PARTICLES AND DIRT, CAUSING STREAKS AND SMEARS (ESPECIALLY IN DIRECT SUNLIGHT). INSTEAD, USE A SOFT SPONGE APPLICATOR, A CLEANING SOLUTION SUCH AS DISHWASHING DETERGENT MIXED WITH WATER, AND A SQUEEGEE.
- WHEN ADHESIVES, BUGS OR OTHER CONTAMINANTS ARE STUCK TO THE GLASS, A PLASTIC SCRAPER BLADE OR SINGLE SIDED RAZOR BLADE MAY BE USED. SATURATE THE WINDOW WITH CLEANING SOLUTION TO SOFTEN THE CONTAMINANT. WHILE STILL WET, USE THE PLASTIC SCRAPER BLADE OR RAZOR BLADE TO GENTLY REMOVE THE CONTAMINANT.
- TEMPERED GLASS HAS A SOFTER, YET ROUGHER SURFACE, WHICH CAN BE SEEN WHEN MAGNIFIED UNDER A MICROSCOPE. EXTREME CARE SHOULD BE TAKEN WHEN CLEANING TEMPERED GLASS WITH A SINGLE EDGE RAZOR BLADE. CHANGE THE RAZOR BLADE FREQUENTLY AS THE EDGE BECOMES DULL AND DAMAGED AND CAN CAUSE SCRATCHES TO THE GLASS.
- PROTECT WINDOWS WHEN CAUSTIC CLEANING MATERIALS ARE USED TO CLEAN THE EXTERIOR OF YOUR HOME. DO NOT USE A PRESSURE WASHER TO CLEAN YOUR WINDOWS AND DOORS, AS THIS CAN CAUSE IRREVERSIBLE DAMAGE.

## PRECAUTIONARY NOTES:

- FOR TRIM AND SIDING, ALLOW 1/8-INCH TO 1/4-INCH GAP AROUND THE FRAME FOR EXPANSION.
- FOR BRICK OR MASONRY, ALLOW 3/8-INCH GAP BETWEEN THE WINDOWSILL AND THE MASONRY TO AVOID BRICK BINDING.
- EXTERIOR WALL SYSTEMS LIKE STUCCO OR EXTERIOR INSULATION FINISHING SYSTEM (EIFS) MUST BE DESIGNED TO DIRECT MOISTURE AWAY FROM THE WINDOW OPENING.
- FOLLOW THE SIDING MANUFACTURER'S REQUIREMENTS TO SEAL BETWEEN THE WINDOW AND SIDING.
- ANY EXPANDING FOAM INSULATION USED SHOULD CONFORM TO ASTM 812-04 REGULATIONS AND BE DESIGNED FOR USE WITH WINDOWS. ANY BINDING OR DAMAGE CAUSED BY EXPANDING FOAM WILL NOT BE COVERED UNDER THE WINDOW WARRANTY.
- DO NOT USE ANY KIND OF ABRASIVE CLEANER WHEN CLEANING VINYL.
- DO NOT BLOCK OR SEAL WEEP HOLES.