



Newer construction methods have led to an increase in air and water tightness in buildings. This frequently leads to negative air pressure inside the house, which can draw water through very small openings. Our installation method integrates the window with the weather barrier of the structure (typically building wrap).

These are Duke Vinyl Windows's recommended installation instructions for Vinyl windows with a nail fin. Consult your local building code official for applicable building codes and regulations. Local building code requirements supersede recommended installation instructions.



IMPORTANT INFORMATION



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**PLEASE NOTE:** Installations where the sill is higher than 35 feet above ground level, or any product installation into a wall condition not specifically addressed in these instructions, must be designed by an architect or structural engineer. *Failure to install windows into square, level, and plumb openings could result in denial of warranty claims for operational or performance problems.* Duke Vinyl Windows is not responsible for faulty installation.

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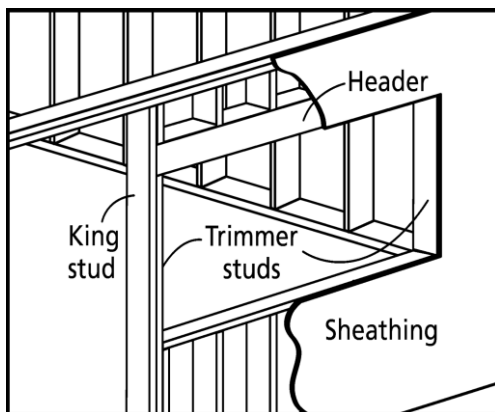
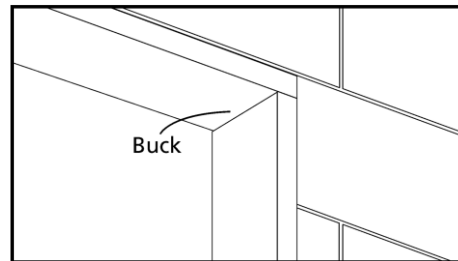
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### ROUGH OPENINGS

This installation guide specifically addresses masonry/block wall, sheathed wall and open-stud construction.

#### ***Masonry/Block Wall Construction***

In this installation, a framework of studs has to be properly fastened and sealed to the concrete/masonry wall by a building professional.



#### Open-Stud Construction:

If self-adhered flashing is to be applied so that it is wider than the framing of the wall, it may be necessary to cover the wall with backing support sufficient to support the entire width of the flashing. Window Will be mounted into opening in a weatherproof manner.

#### **Fully Sheathed Wall Construction**

The wall framing is covered by sheathing. Windows will be mounted flush against the sheathing. Building wrap must be properly installed prior to installation.

## ▲ SAFETY AND HANDLING

### Safety

To safely and properly install windows:

- Read thoroughly and fully comprehend all manufacturers' instructions before beginning. Failure to follow proper installation instructions may result in the denial of warranty claims for operational or performance problems.
- For heavier or complicated Windows, we recommend you DO NOT work alone. Proper lifting and insertion is required for the proper installation technique. Use extra caution when working at elevated heights.
- Use extra caution when handling glass. A broken or cracked glass can cause serious injury.
- Wear protective gear (e.g. safety glasses, gloves, ear protection, etc.).
- Wear proper clothing. When working with heavy window or glass proper clothing is required. (e.g. boots, long sleeves, thick pants, etc.)
- Operate hand & power tools safely and follow manufacturer's operating instructions.
- If disturbing existing paint, take proper precautions if lead paint is suspected (commonly used before 1979). Your regional EPA ([www.epa.gov/lead](http://www.epa.gov/lead)) or Consumer Product Safety Commission offices provide information regarding regulations and lead protection.

### Materials and Window Handling

- Store window in a well-ventilated area in vertical, leaning position to allow air circulation. **Do not stack horizontally.**
- Make sure operable windows are locked prior to installation.
- Protect adhesive surfaces from dirt, moisture, direct sunlight and folding over onto themselves.
- Do not put stress on joints, corners or frames.
- Handle in vertical position; do not carry flat or drag on floor.
- Install only into vertical walls and when conditions and sheathing are dry.

When handling windows it is essential to properly follow these rules. Failure to do so could result in window damage, leakage, sealage issues, etc.

**IF INJURY OCCURS, DO NOT  
HESITATE TO SEEK  
MEDICAL ATTENTION!**

## 🏠 MATERIALS AND TOOLS

### Needed Tools/Hardware

- Utility Knife
- Hammer
- Tape Measure
- Caulking Gun
- Level (4" minimum)
- Drill
- Screwdriver
- Sealant
- Fasteners

**NOTE:** When using flashing, spray adhesive/primer, sealant and foam products, we recommend using the same manufacturer and verifying compatibility. It is the installers responsibility to determine if distinct materials are compatible to the substrates in the application.

## Installation Instructions

Vinyl Windows with Nailing Fin

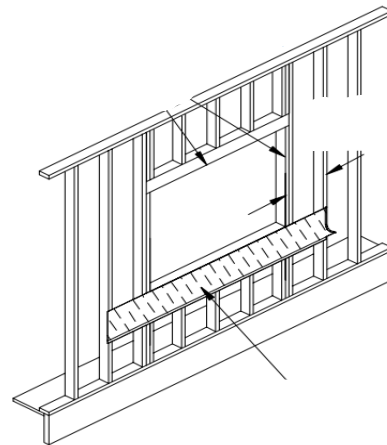


### MATERIALS AND TOOLS CONTINUED

- I. 1 3/4" galvanized roofing nails or #8 x 1 1/4" pan head or washer head (stainless steel recommended) screws. Fasteners must penetrate at least 1" into framing (or as required by local code).
- II. For mulled units: #8 x 1 1/4" pan head or washer head (stainless steel recommended) screws. Screws must penetrate at least 1" into framing (or as required by local code).
- III. A proper sealant is required. We recommend using a Polyurethane Sealant. It must do the job and match the color window if needed.
- IV. Backer rod 1/8" larger than the widest portion of the gap (used in conjunction with sealant bead).
- V. Polyurethane low expansion Window and Door foam.
- VI. Non-compressible or non-water degradable shims.

#### For installations into a stud-framed wall:

- I. 4", 6", or 9" (as required by local code and window configuration) wide self-adhered flashing.
- II. Spray adhesive/primer for self-adhered flashing.



#### For installations into a buck:

- I. Liquid applied flashing (Protecto Wrap LWM 200 or equivalent).

## A

### INSPECT WINDOW

#### Inspect Window

- I. Product squareness (diagonal measurements not more than 1/4" different).
- II. Correct product (size, color, grid pattern, handing, glazing, energy-efficiency requirements, etc.).
- III. Cracked frame welds or other frame damage.
- IV. Splits, cracks, holes, missing sections or other damage to the nailing fin longer than 6" and/or within 1/2" of window frame.
- V. For side-by-side mulled units, a drip cap that extends the length of the frame plus 1/8" overhang on each end is required.

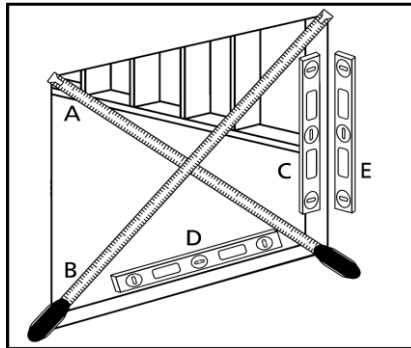
*If any of the above conditions represent a concern, or if you expect environmental conditions to exceed the window's performance rating, do not install the window. Contact your dealer or distributor for recommendations.*

## B

### ROUGH OPEING INSPECTION

Proper inspection of the rough opening is required before installing a window. A couple thing to verify are:

- I. Verify the width and height of the window are each  $\frac{1}{2}$ " -  $\frac{5}{8}$ " smaller than the rough opening width and height. Mulled units should be  $\frac{3}{4}$ " narrower.
- II. Verify the rough opening is square. Maximum allowable deviation from square is  $\frac{1}{8}$ " for windows 20 sq. ft. and smaller, and  $\frac{1}{4}$ " for windows larger than 20 sq. ft.
- III. Verify the rough opening is level and plumb. The maximum allowable deviation is  $\frac{1}{16}$ " for every 2' of rough opening (not to exceed  $\frac{1}{8}$ ").



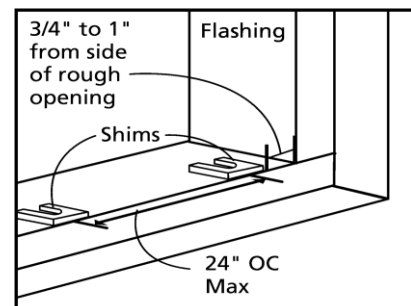
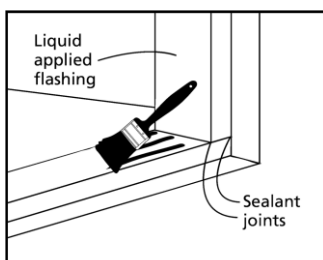
- IV. The rough opening sill must not be crowned or sagged, but rather level or sloped (positive slope) to the exterior.
- V. The exterior face of the rough opening must be in a single plane with less than  $\frac{1}{8}$ " twist from corner to corner.
- VI. Minimum double studs (king and jack/trimmer) should be used to support the header at all rough openings.

## C

### PREPARE BUCK

**NOTE:** This section applies to installations into a masonry wall only. For installations into a stud-framed wall, begin with section D.

- I. Seal any joint larger than  $\frac{1}{16}$ " in the buck and between the buck and the concrete/masonry with sealant.
- II. Cover the buck and the surrounding concrete/masonry at the head and jambs with liquid applied flashing as shown.
- III. If installing into a four-sided buck, seal the sill in a similar manner.



- IV. Place shims on the buck sill as needed to level the window and prevent sagging or bowing. Shims should be aligned in the following fashion:

- Near the exterior edge of the sill.
- No more than 24 inches on center between additional shims.
- For mulled units, ensure there is a shim located  $\frac{1}{2}$ " either side of the mull joint.

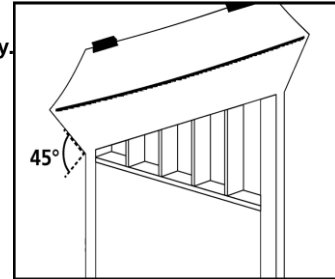
## D

### STUD-FRAMED WALL PREPERATION

#### Preparing Building Wrap

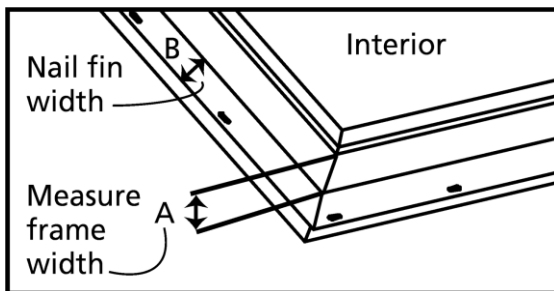
**NOTE:** Check with the building wrap manufacturer to verify the following steps will not void their product warranty.

1. Trim building wrap flush with the rough opening.
2. At the head, cut building wrap at 45° and tape up as shown.
3. Trim the sides sufficiently to allow the nailing fin to be mounted against the sheathing.

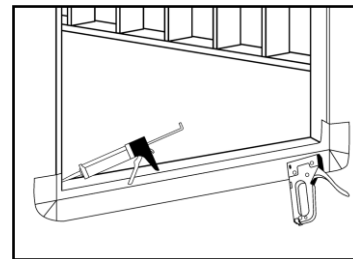


#### Prepare/Shim the Sill

1. Use self-adhered flashing to waterproof the sill.
2. Flashing must have at least 2" of visible material below nail fin.



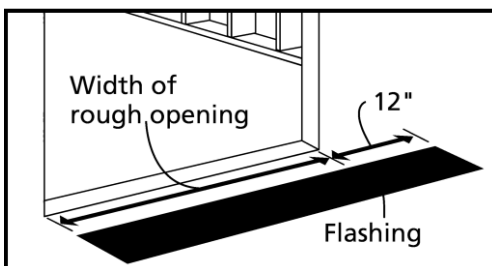
5. Place flashing on rough opening sill, wrapping the flashing up 6" on each jamb as shown.
6. Pull release tape and set flashing into place.



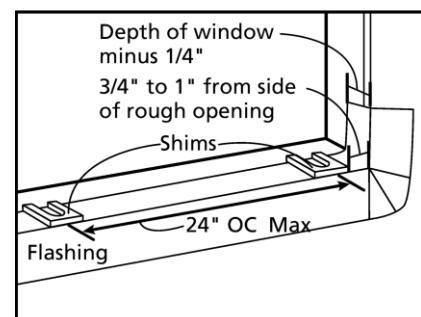
7. Fold the flashing down onto the sheathing. Mechanically fasten if necessary.
8. Smooth out any bubbles or creases.

3. Measure the width of the frame from the interior to the nail fin and subtract 1/4". Transfer this measurement from the outside edge of the rough opening sill and draw a line all along the rough opening sill. This is where the back of the flashing will sit.

4. Cut a piece of flashing the length of the sill plus 12".



9. Place shims on the rough sill as needed to level the window and prevent sagging or bowing. Shims should be properly aligned. *See section C for reference.*





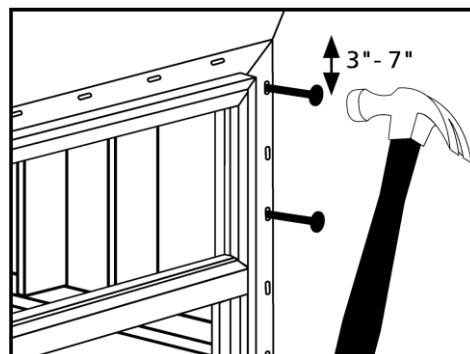
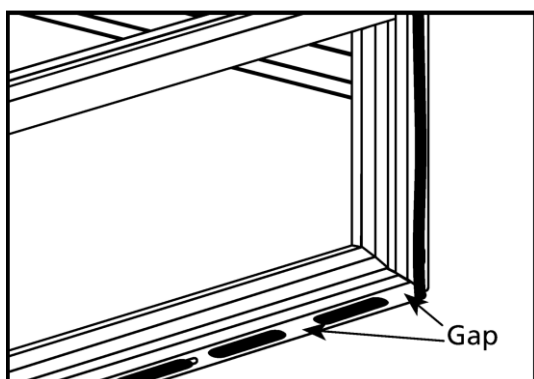
### E

#### INSTALL WINDOW

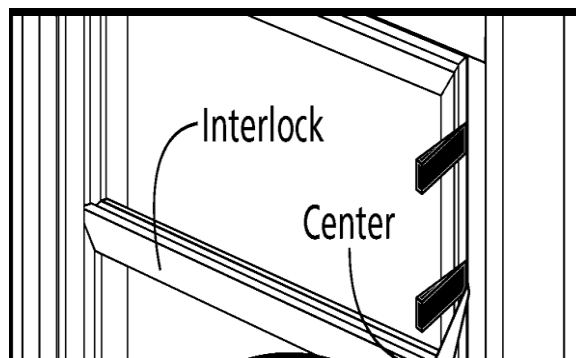
1. Sealant: run a continuous 3/8" bead of your sealant around the interior side of the nail fin on the side jambs and head.

On the sill, leave at least a 2" gap every 8" where it will contact the rough opening.

2. Place window onto the shims and tilt into the rough opening.
3. Fasten window through the nailing fin between 3"- 7" from one upper corner. DO NOT fasten all holes as this could be tight of an installation and may result in fault installation.



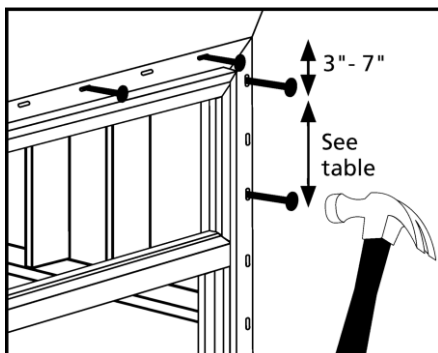
4. Shim at each interlock, or in the center, and within 4"- 6" of each corner on the side and head jambs. Apply additional shims to the side and head jambs as necessary to ensure window position within the opening is plumb, level, and square. Larger windows may usually need additional shims.
5. Inspect window for square, level, and plumb. Test for proper operation.





### INSTALL WINDOW CONTINUED

**NOTE:** Fastener heads must be flush. Do not dent nailing fin. Use the table below to find the correct product and fasten it as directed.



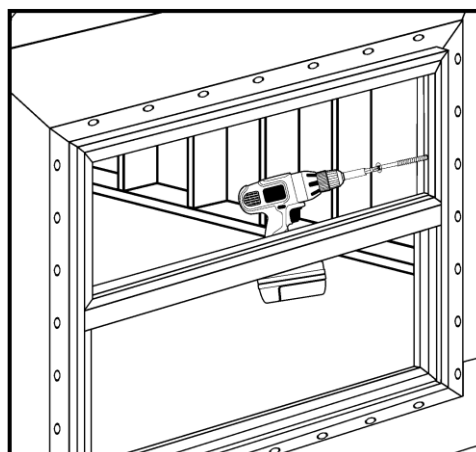
For DVW windows:

Optional: Fasten window through the nailing fin holes 3" – 7" from the corners and 8" apart all the way around the window.

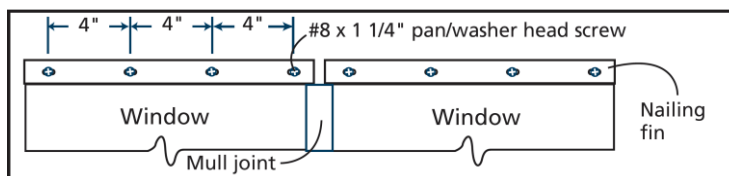
### Tilt Hung Windows

1. From the interior, just above the interlock (where the sashes meet at center), align with shims and drill a 3/8" clearance hole through **ONLY** the first wall of the interior jamb (as shown). This will allow the screw head to pass through.

2. Drive one #8 x 1 1/4" pan/ washer head screw through the jamb and shim. Repeat for opposite side.



### Mulled Units

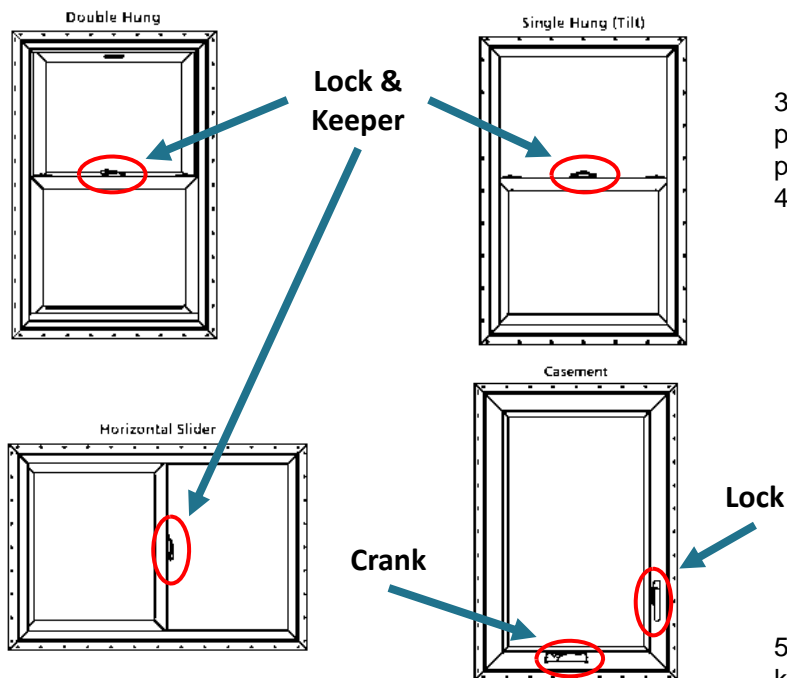


1. The first 12" beyond mull joints, on both side, must be fastened through each nail fin hole.





## INSTALL WINDOW CONTINUED



1. Double check that the windows are installed plumb, level and square.
2. Operate the window to verify bracket location is correct and there are no clearance issue. If a clearance issue is identified adjust brackets as necessary for proper operation.

3. Single/ Double Hungs should operate normally after proper, level, plumb and square installation is performed.

4. If there is an issue with the operational sashes:
- Check if there is any trash/debris between sashes or in the corners of each opening.
  - For Single/Double hungs, check that the pivot bars are properly locked in place. The pivots bars could click out of place during installation.
  - For casements, check that sash cranks properly in and out. Also, casement must properly close and lock if installation was done correctly and there is no debris in between sashes.

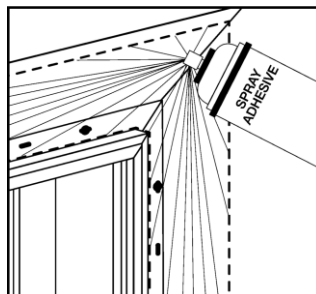
5. For all tilt windows and sliders, check that lock and keeper align properly and lock properly, if not installation may have been too tight.



## FLASH WINDOW - WINDOWS INSTALLED INTO STUD-FRAMING ONLY

### Spray Adhesive/Primer

Protect window from overspray and apply spray adhesive according to instructions on the product to nailing fin and building wrap around the window as shown.

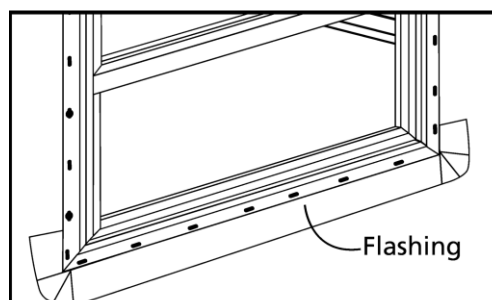


Cut pieces of self-adhered flashing as follows:

Min. sizes or other specified	Flashing
One header piece	10" longer than the header
Two side pieces	8" longer than the jamb

### Apply the Self-Adhered Flashing

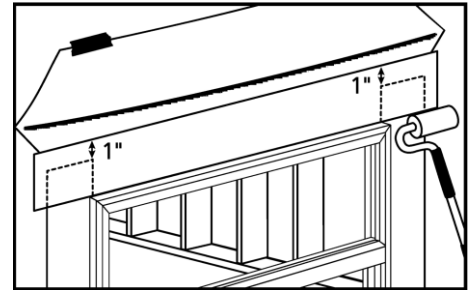
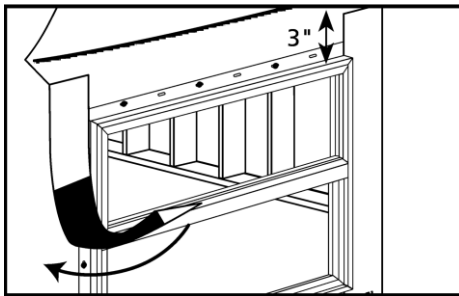
- Keep the edge of the self-adhered flashing as close to the window frame as possible and apply over the nail fin.



### I

## FLASH WINDOW - WINDOWS INSTALLED INTO STUD-FRAMING ONLY CONTINUED

1. Apply the side pieces starting 3" above the header and overlap the flashing on the sill as shown.
2. Install drip cap if required. Pre-drill through the nailing fin if required.



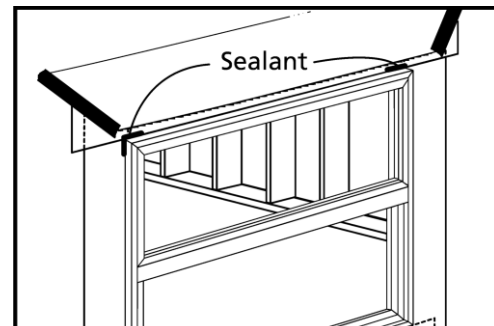
3. Center and apply the header piece above the header, overlapping the side pieces as shown.
4. Press the flashing down with a J-roller, being careful to remove any gaps or bubbles beneath self-adhered flashing (remove and replace if necessary).

### J

## Completing Installation

### Completing installation:

1. Release the building wrap from above the header (previously taped up) and overlap the header flashing. Seal the ends with self-adhered flashing or building wrap tape.
2. Adjust window for best operation.
3. Seal the top corners of the window with a 1/4" bead of sealant. Tool into a fillet shape.



### Continuous Air Seal

Create a continuous air seal on the interior by integrating the rough opening and the window frame with low expansion polyurethane foam or backer rod and sealant.

### After Installation

- Ensure weep holes/channels are clear of debris for proper water drainage. Do not seal weep holes/channels.
- Windows should have no trash or debris in between sashes as this could cause for faulty sashes/mechanism issues for tilt windows, sliders and crank windows.
- Leave an expansion/contraction gap of approximately 3/8" between window frame and final exterior wall surface (siding, stucco, etc.). For a finished look and additional protection, seal this gap on the sides with backer rod and sealant. If sealant is applied above the drip cap ensure the sealant bead is discontinuous to allow for drainage.
- Protect recently installed units from damage from plaster, paint, etc. by covering the unit with plastic.