



# **Recommended Window Installation**

2 credits Minnesota Department of Labor and Industry



Built around you:

This presentation is protected by U.S. and International copyright laws. Reproduction and distribution of the presentation without written permission of the sponsor is prohibited.

© Marvin Windows and Doors

### Course contents

• Overview: Hands-on Presentation

### Installing a Window

- Recommendations (Installation Instructions)
- Choices Right Window for Right Application
   Interfacing Window with Wall Condition
- Level, Plumb, Square, and True
- Clearance Provisions and Shimming
- Sill Pan Flash Choices
- Materials and Compatibility
- Proper Flashing and Perimeter sealing

### **Course Overview**

### • Overview: Hands-on Presentation

- R.O. Clearance provisions
- Sill Pan Flash Types
- Weather seal alignment
- Performance and Operation
- Level, Plumb, Square, and True
- Shimming
- Sealing
- Flashing
- Final Inspection for Operation

## Course goals

- General Knowledge of Windows
- Knowledge of Barrier Systems
- Window Install Methods A,B,A1,B1
- Weatherboard fashion and flashing techniques
- Making choices of materials to be used in Installation

### In Reference to and Recommended

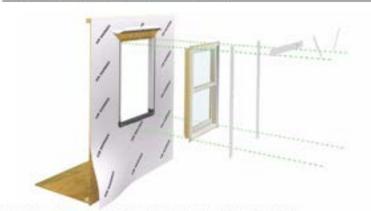
#### ASTM E2112-07

Designation: E 2112 - 07

#### Manufacturer

#### Clad Window Installation

Standard Wood Frame Construction



These instructions are applicable for the following aluminum clad window products:

**Clad Ultimate Casement Family Glad Tit-Turn/Inswing Casement/Hopper Cled Ultimate Double Hung Family** 

**Clad Round Top Glad Polypon Clad Glider** 

ABSTRACT: Please read these instructions in their entirety before beginning to install your Marvin window product. These installation instructions demonstrate the installation of a Marvin eluminum clad window in new wood frame construction using an industry approved water management system. For installation using other construction methods, such as remodeling, replacement, and recessed openings refer to "ASTM E2112-01. Standard Practice for Installation of Exterior Windows, Doors and Skylights," for installation suggestions. information for ASTM E2112 can be found on the ASTM website, www.astm.org.

For product specific issues, service instructions and other field service guides, refer to the Marvin Service Manual. visit our website at www.marvin.com, or contact your Marvin representative.

Regional standard practices, environmental conditions, and codes may vary and supersede the procedures contained within. The responsibility for compliance is yours: the installer, inspector, and owner(s).

The procedures within these instructions are consistent with those used in testing to achieve the edvertised DP nating.

> MARVIN 过 Built around you.

2016-06-X 19970017

Installation

<sup>1</sup> Wate permittee is under the jurisductive of s2TM Consulters HM on Performance of Buildings and in the dense sequentiality of Inducentialities (Biol.N. and Biol.N. and

Overage & ADDI International, 100 Bar Hallow Dow, PO New COX, West Construction, AI 19-09-0034, Under Dates

Standard Practice for Installation of Exterior Windows, Doors and Skylights\*

This standard is issued under the fixed designation \$2212, the number increducely following the designation indicates the year of originer artisption of its the case of newlates, the pase of last revision. A another is presentiones indicates the year of hat mappened, A supercoupt synthes is) indicates an articular change since the last sections or mappened.

#### **PURCHARGED TRON**

This document is intended to provide technical guidance as organizations that are developing training programs for installers of fonestration units in low-rise residential and light commercial structures. The majority of fenestration units aclocited for installation in these types of atractarus are centified as monthly specified performance characteristics in standardized laboratory testing. Experierce indicana, however, that the performance of fonestration installations is frequently significantly inferior to the performance of the manufactured units in laboratory testing. Installation of femoteution units can significantly informer in-service performance.

The requirements promulgated in this practice have, by consensus, (of individuals with specialized knowledge concrusing installation of fenesization units) been identified as necessary to ensure that su-installed performance is roughly opeivalent to performance in laboratory testing. The task group assponsible for development of this practice recognizes that building owners sometimes, accept as adropose, in-service performance of freestration installations that are significantly inferior those of the units in laboratory testing. This practice is not intended for ane in such circumstances, where owner expectations are modest. The intent of this practice is to provide guidance to shose concerned with ensuring that as installed performance is comparable to the capabilities of the units installed for a solid majority of installations.

A particularly noticeable behavior that indicates deficiencies in installation is minwater leakage. Raisewaav leakage has been the leading reason for dissatisfaction of building owners with performance of fenenaution installations. For this reason, this practice places greater emphasis on preventing or limiting ralewater leakage than on any other single performance characteristic.

This practice emphasizes that the water-shedding surfaces of fonestration units must be adequately integrated with adjacent water-shedding surfaces of the building cavelope. It does not, however, attempt to promulgate requirements for watte-shedding surfaces of building envelopes other than those interfacing with fementration units. The standard assesses that the basic dosign of the building's water shedding rooms is adequate, that is, that either (/) there is a high probability that the outcomost where successing researching researching and its mater energy, or (2) the building enverteepe incorporates an effective concealed barrier that will dependably prevent further intrusion of incidental water that breaches the commonst surface. The practice further assumes that fenestration units can be dependably stuled to, and integrated with, at least one of these surfaces. If the basic design of the building's water-shedding system is inadequate, or does not allow for seliable integration of feneraturion units into it, component installation of the units is unlikely to multify these deficiencies.

buildings.

this practice, ferentration products shall be Smited to windows,

sliding patio-type doors, swinging patio type doors, and skylights, as used primarily in residential and light commercial

1.2 This practice assumes that the installer possesses basic woodworking skills and as understanding of wall and soul

construction, sheet metal work, and joint analast practices. 1.3 This practice stronges to instruct and familiarize the

installer with the concepts of both Burrier Systems and

Membrane/Desinage Systems, in order to means the continuity

#### I. Scope

5.8

1.1 This practice covers the installation of femotration products in new and existing construction. For the purpose of

### Manufacturer's Recommendations

ABSTRACT: Please read these instructions in their entirety before beginning to install your Marvin window product. These installation instructions demonstrate the installation of a Marvin aluminum clad window in new wood frame construction using an industry approved water management system. For installation using other construction methods, such as remodeling, replacement, and recessed openings refer to "ASTM E2112-01, Standard Practice for Installation of Exterior Windows, Doors and Skylights," for installation suggestions. Information for ASTM E2112 can be found on the ASTM website, www.astm.org.

For product specific issues, service instructions and other field service guides, refer to the Marvin Service Manual, visit our website at www.marvin.com, or contact your Marvin representative.

Regional standard practices, environmental conditions, and codes may vary and supersede the procedures contained within. The responsibility for compliance is yours: the installer, inspector, and owner(s).

The procedures within these instructions are consistent with those used in testing to achieve the advertised DP rating.

## **Installation Recommendations**

- ASTM E2112-07 provides basic principles to install Window, Door, and Skylight
- Reference to AAMA
- Who's code is it?
- What is the code for installation of window?
- Home Rule Doctrine (most stringent rule applies)
- Best Practices (water management vs. waterproofing)
- Non-Integral vs. Integral Flanges as well as Brick Mold

### **Barrier Systems**

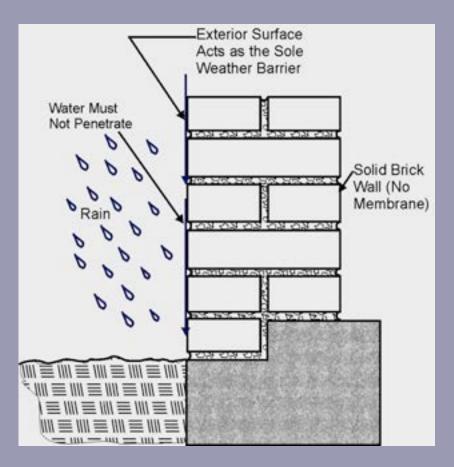
Membrane Drainage Systems

Surface Barrier Systems

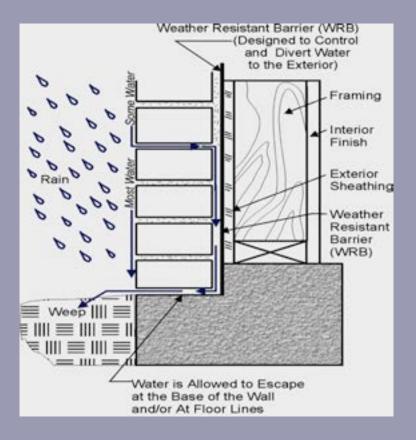
Water Management

Where do I want my incidentals to go? answer: Exterior Drainage Plane

- Exterior surface is relied upon to repel the water
- Can be a solid wall or mass wall
- Does not include a secondary drainage plane
- Ties to window with a sealant joint

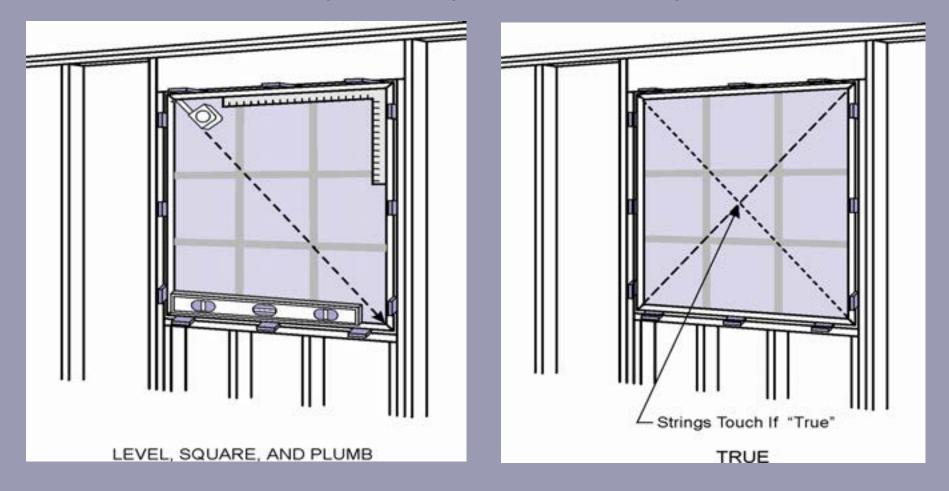


- Exterior surface repels most water, but not all
- Weather resistive barrier (WRB) is located behind the exterior surface
- Integrate windows and doors into WRB with flashing and sealant



#### New Construction - Level, Plumb, Square, and True

Four terms important to performance and operation



## Define - Level, Plumb, Square, and True

#### **Definitions:**

Level — having no part higher than another; having a flat or even surface; being in a plane parallel to the plane of the horizon; horizontal.

Plumb – True (exact or precise) according to a plumb line (a cord with a lead bob attached to one end that is used to determine perpendicularity); perpendicular: vertical

**Square** - to bring to the form of a right angle or right angles; set at right angles to something else.

#### How to Measure:

Level — sometimes called a 'spirit level'. To determine if a floor, shelf, countertop or other flat surface is level you will need a level. I recommend a 2 ft. level for most projects because it is the most versatile. If you have a very long surface you will get more accurate results with a longer level. To use a level place it onto the surface you want to measure. Be sure that surface is smooth without bumps or debris. Look at the liquid filled, glass tube in the center of the level and make adjustments up or down until the bubble is sitting between the 2 black lines.

Plumb — To determine if a vertical surface like a wall, fence post or pole is plumb you can use your level for this job, too. Place the level up against the surface you are check for plumb being sure the surface is smooth and free of debris. For this measurement you will use the liquid filled tube on one end of your level. Make adjustments until the bubble is in between the 2 black lines.

**Square** — To determine if the place at which 2 surfaces meet are 90° apart you will need either a speed square or a framing square. When you place either of these tools at the point at which 2 surfaces the sides of the tool should sit flat on both surfaces. If there is a gap on one side or the other you will need to make the necessary adjustments.

**Author: Judy Browne** 

## **Opening and Framing Requirements**

Rough openings (RO)
1" wider and ½" higher than the outside measurement of frame
Masonry openings (MO)
A minimum of ½" wider and ¼" higher than the outside measurement of frame

Rigid sill pans will decrease the RO height clearance.

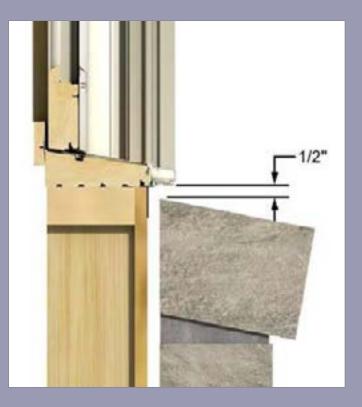




# Brick Bind

Rough Opening Preparation Standard wood frame construction with brick veneer - 1/2" min. between the bottom of the window sill and top row of brick to avoid "brick bind."

Additional clearance may be advisable on multiple story buildings.



#### **Clearance Provisions**

- Unless otherwise specified, provide at least 1/2" at the top and 1/2" clearance on each side.
- Also note the thickness of Sill Pan.

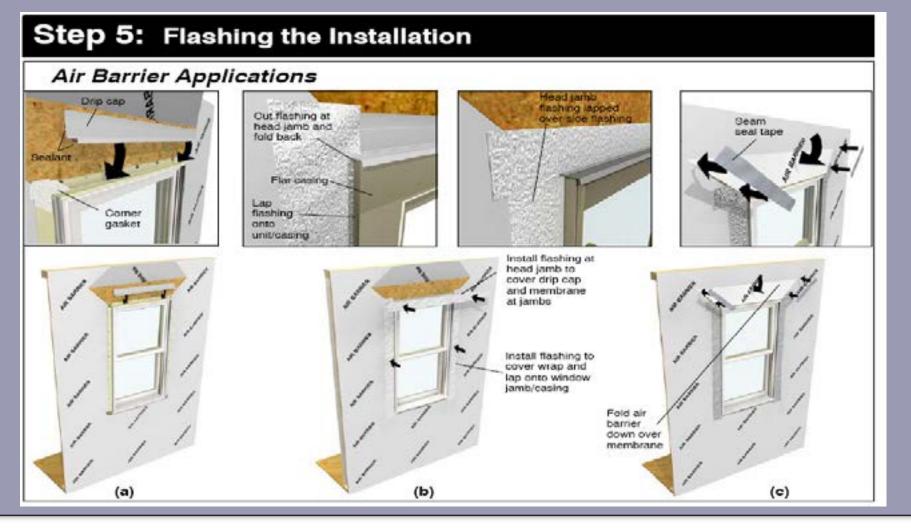
#### **Clearance Provisions**

- Unless otherwise specified, provide at least 1/2" at the top and 1/4" clearance on each side.
- Also note the thickness of Sill Pan.

### **Proper Shimming**

- Within 4" from corners and in intervals of 15" and as directed by Manufacturer.
- Contact points Corners, checkrails, meeting stiles, lock points and hinge points.
- The purpose of shimming is to keep your window frame within 1/16" of straight.
- **Positioning Window:** center it in the opening, level at the sill, and plumb the frame to desired depth. If necessary, shim under the jambs to bring to level.
- Wedge Shims: typically made of wood, easy to apply, used in pairs, restricted to top and side applications.
- **Rectangular Shims, Horseshoe Shims and Shim Packs:** generally made of high impact plastic, can be used in most types of application





#### **Technical Installation Specifications**

The following details are specified for proper installation and for the unit to meet the advertised design pressure (DP) rating.

- Rough Opening Width: 1/4"-1" (5-25) wider than window/door frame outside measurement.
- Rough Opening Height: 1/4"-1/2" (6-13) higher than window/door frame outside measurement.
- Masonry Opening Width: 1/4"-1/2" (6-13) wider than window/door frame outside measurement.
- Masonry Opening Height: 1/8"-1/4" (3-6) higher than window/door frame outside measurement.

#### Architectural Detail Manual Specifications:

- Rough Opening:Width 1" (25); Height 1/2" (13).
- Masonry Opening:Width 1/2" (13): Height 1/4" (6).
- A rigid, sloped sill pan integrated with the weather resistive barrier. The panning must drain water to the exterior of the cladding OR the exterior surface of a

- Properly flash and/or seal all windows at the exterior perimeter.
- Sealants used for installation must be Grade NS Class 25 per ASTM C920 and compatible with the building exterior, window exterior surface, and flashing/water management materials.
- The following materials were used to develop these instructions:

Weather Resistant Barriers: DuPont<sup>™</sup> Tyvek<sup>®</sup> HomeWrap or Grade D building paper.

Flashing Materials: DuPont " FlexWrap or DuPont" Straight Flash, DuPont " Tyvek Tape.

Sealant: OSI® Quad Pro-Series®: solvent release butyl rubber sealant or DAP DynaFlex230~.

Panning System: Marvin SillGuard".

Other materials may be used but must be

 Flashing materials must comply with ASTM E2112-01, section 5.13 and be compatible with all materials used in installation including panning systems, air barriers and building papers, sheathing, and the window unit.
 Flashing material must not contain asphalt and must be compatible with flexible PVC (vinyl). bility

e low comply

iokets.

d head er and is and

sterial. Just be zed or

ct with

2 (51) gaivanized rooting nails spaced no more than 4" (102) from each corner and spaced no more than 8" (203) on center around the entire perimeter.

## Sill Pan Flash

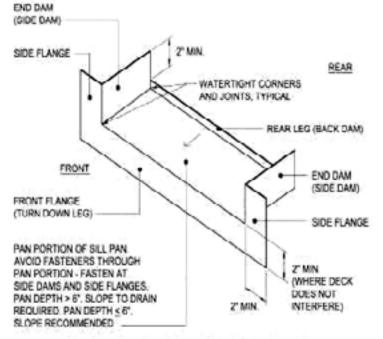


FIG. A3.4 Configurations of Typical Sill Pan Flashing--isometric



### Sill Pan Flash Types

| iquid Membrane      | Continuous coating         | Type V   |  |
|---------------------|----------------------------|----------|--|
| Combination Systems | Multiple pieces            | Type IV  |  |
| Flexible Membrane   | I piece or multiple pieces | Type III |  |
| Rigid Sheet         | Multiple pieces            | Type II  |  |
| Rigid Sheet         | l piece or multiple pieces | Type I   |  |

(Based on and expanded from ASTM E2112-07, Table 5.)

# Types of Sill Pan Flash

| Туре    | Material                                      | Fabrication                                                                                                                      | Diagram |
|---------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------|
| Туре I  | Rigid sheet –<br>metal or plastic             | 1-piece                                                                                                                          |         |
|         |                                               | Multiple pieces<br>soldered or welded<br>watertight                                                                              |         |
| Type II | Rigid sheet –<br>metal or plastic             | Multiple pieces –<br>solid preformed comers,<br>lapped and sealed<br>or joined to a solid center<br>section with watertight seal |         |
| Туре Ш  | Flexible membrane –<br>self-adhering flashing | 1-piece, formable<br>membrane                                                                                                    |         |

# Types of Sill Pan Flash

| Туре     | Material                                      | Fabrication                                                                                                                                           | Diagram |
|----------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Type III | Flexible membrane –<br>self-adhering flashing | Multiple pieces, membrane<br>pieces lapped watertight                                                                                                 |         |
| Type IV  | Combination –<br>rigid + membrane<br>flashing | Multiple pieces – usually<br>formed rigid comers joined<br>with lapped self-adhering<br>membrane sheet(s)                                             |         |
| Type ∨   | Liquid –<br>membrane coating                  | 1-piece: spray-, brush-,<br>or roller-applied coating<br>applied directly to the<br>substrate. Note: integrate<br>with any separate<br>flashing & WRB |         |

#### ASTM C920 Sealant Schedule

• Silicone, Latex, Polyurethane, Butyl, Acrylics, Synthetics

Grade NS

Non-sagging product

Class 25

• 25 % Elongation (the ability to move 15-40%)

Seek proper choices

- Compatibility with other substrates in window interface to the wall (building materials, flashings, sealants, dissimilar materials, fasteners and Etc.)
- KNOW YOUR S (Substrates)

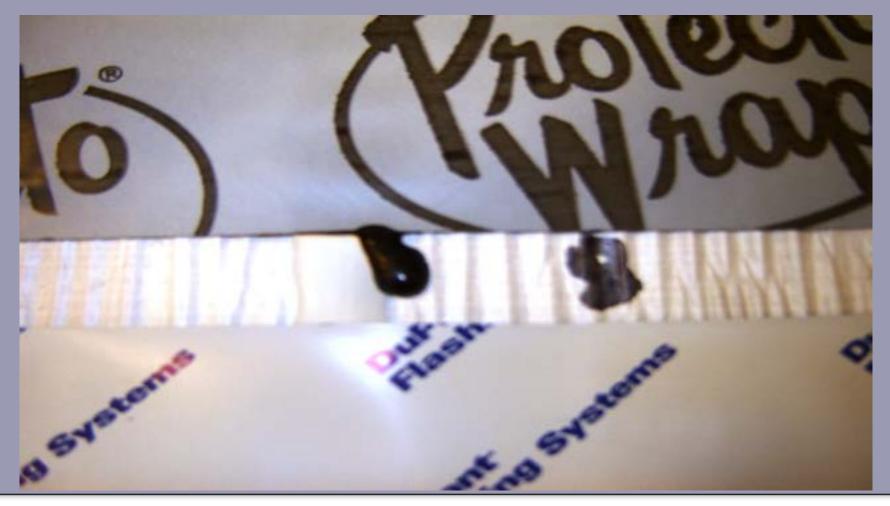
### • **Compatibility** - Watch for:

- Hardening or softening
- Tackiness (after normal cure time)
- Loss of adhesion
- Discoloration or bleeding

### Surface Preparation

- Sound free of rotted wood, loose paint, mortar or concrete, etc.
- Clean free of dirt, dust, oily substances, and/or old sealant
- Dry and free of frost

#### Product Compatibility or Incompatibility ??



#### Sealant Adhesion and Application Matrix

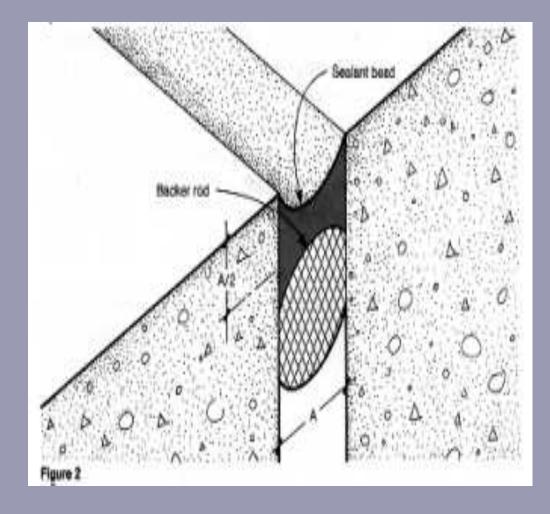
| ADHESION                                |       |         |                 |             |                  |           | APPLICATION                                  |             |             |                |                |             |          |
|-----------------------------------------|-------|---------|-----------------|-------------|------------------|-----------|----------------------------------------------|-------------|-------------|----------------|----------------|-------------|----------|
| SEALANT ADHESION GUIDE                  | SHEE  | se part | Sectores Dio to | State State | . south          | St BELDSO | Bat SEALANT APPLICATION GUIDE                | SHOP        | AL DUT      | Sectore Stores | SUBSISTS JUSIS | Solar Solar | s secoso |
| ALUMINUM ANODIZED                       | Yes   | Yes     | Yes             | Some        | Yes              | Yes       | BEHIND MOUNTING FLANGE                       | Yes         | Yes         | Some           | Some           | Some        | Yes      |
| ALUMINUM MILL FINISH                    | Yes   | Yes     | Yes             | Some        | Yes              | Yes       | BOX FRAME TO OPENING                         | Yes         | Yes         | Yes            | NR             | Some        | NR       |
| ASPHALT BUILDING PAPER                  | Yes   | Yes     | Yes             | Yes         | NR               | Yes       | EXTERIOR CASING                              | Yes         | Yes         | Yes            | Some           | Some        | NR       |
| BRICK                                   | Yes   | Yes     | Yes             | Some        | Yes              | NR        | EXTERIOR/INTERIOR STOP                       | Yes         | Yes         | Yes            | Yes            | Yes         | NR       |
| CONCRETE                                | Yes   | Yes     | Yes             | Some        | Some             | No        | EXTERIOR PERIMETER'                          | Yes         | Yes         | Yes.           | Some           | Some        | NR       |
| COPPER                                  | Yes1  | Yes     | Some            | Some        | Yes              | Yes       | HEADER EXPANDER                              | Yes         | Yes         | Yes            | Some           | Some        | NR       |
| EIFS                                    | Yes   | Yes     | Some            | NR          | NR               | NR        | INTERIOR TRIM AND STOOL                      | NR          | Yes         | Yes            | Yes            | NR          | NR       |
| FIBERGLASS                              | Yes   | Yes     | Some            | Some        | Some             | Yes       | MULL SEAL                                    | Yes         | Yes         | Some           | NR             | NR          | NR       |
| GALVANIZED STEEL                        | Yes*  | Some    | Some            | Some        | Yes              | Yes       | PANNING                                      | Yes         | Yes         | Yes            | NR             | Some        | NR       |
| GLASS                                   | Yes   | Some    | Yes             | Some        | Yes              | Yes       | SILL ANGLE                                   | Yes         | Some        | Yes            | NR             | Some        | NR       |
| HOUSE WRAP                              | Some  | Some    | Some            | Some        | Some             | Yes       | SILL CAPPING                                 | Yes         | Some        | Yes            | NR             | Some        | NR       |
| PAINTED SURFACES <sup>2</sup>           | Yes   | Yes     | Yes             | Yes         | Yes <sup>1</sup> | Yes       | SILL EXTENDER                                | Yes         | Yes         | Yes            | Some           | Some        | NR       |
| POLYETHYLENE                            | Some  | Yes     | No              | No          | Yes              | Yes       | THRESHOLD                                    | Yes         | Yes         | Some           | NR.            | Some        | NR       |
| POLYSTYRENE FOAM BOARD                  | Yes   | Yes     | Yes             | Some        | NR               | Yes       | UNDER DOOR SILL PAN                          | Yes         | Yes         | Some           | NR             | Some        | NR       |
| STUCCO                                  | Yes   | Yes     | Yes             | Some        | Some             | NR        | UNDER FLASHING <sup>2</sup>                  | Yes         | Yes         | Some           | Some           | Some        | Yes      |
| VINYL                                   | Some' | Some    | Some            | Some        | Some             | Some      | WALL STOOL                                   | Yes         | Yes         | Yes            | Some           | Some        | NR       |
| WOOD                                    | Yes   | Yes     | Yes             | Yes         | Yes              | Yes       |                                              |             |             |                |                |             |          |
|                                         |       |         |                 |             |                  |           |                                              |             |             |                |                |             |          |
| *= Neutral Cure Silicone Only           |       |         |                 |             |                  |           | *= Match Sealant Movement Ca                 | pability to | Anticipate  | ed Joint Mov   | rement         |             |          |
| <sup>2</sup> = Check Paint Individually |       |         |                 |             |                  |           | <sup>2</sup> = Check Adhesion and Compa      | bility to M | ating Surfa | ces            |                |             |          |
| <sup>a</sup> = Check for Compatibility  |       |         |                 |             |                  |           | NR = Not Recommended                         |             |             |                |                |             |          |
| NR = Not Recommended                    |       |         |                 |             |                  |           | Some = Many Are Not Adequate                 | 2           |             |                |                |             |          |
| SOME = Many Are Not Adequat             | e     |         |                 |             |                  |           | Yes = Majority Are Adequate                  |             |             |                |                |             |          |
| YES = Majority Are Adequate             |       |         |                 |             |                  |           | and a state of the state of the state of the |             |             |                |                |             |          |

#### Points to know and understand about BUTT Joints

#### **Two Sided adhesion**

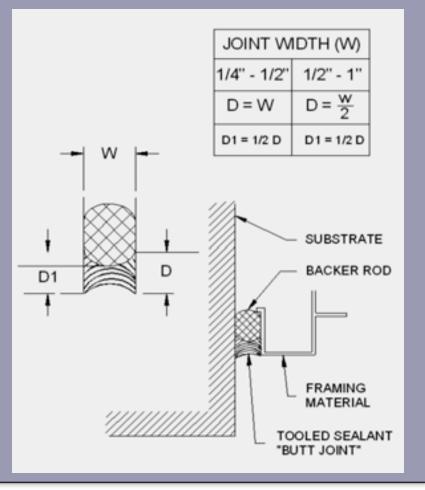
- C Clean
- P Prime
- P Pack
- S Shoot
- T Tool

**Note !** Backer Rod controls depth of joint and helps with adhesion and movement

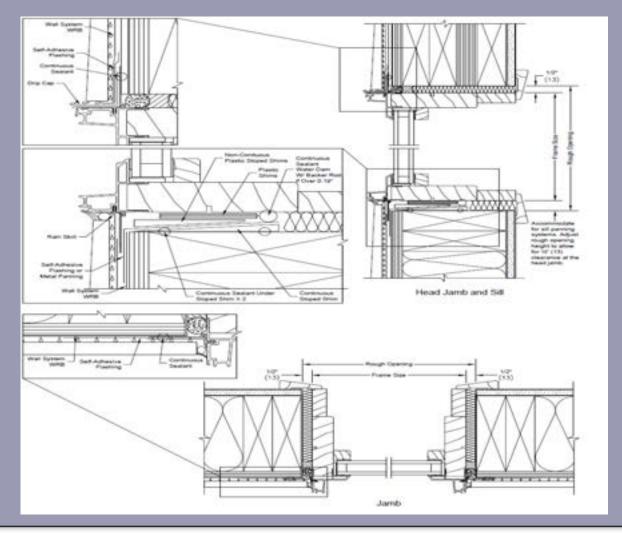


#### Joint and Sealant Dimensions

- At least 1/4" sealant bond to each contact surface
- Butt joints of Porous surfaces (concrete, masonry, or brick)– For 1/4" to 1/2" width, the width should equal the depth



#### ADM Flashing Details



#### THOUGH A SMALL PART OF A BUILDING'S EXTERIOR, SEALANTS PERFORM A VERY LARGE FUNCTION

Joints sealed with an elastomeric sealant usually fail from a

combination of factors that can be summed up in six words -

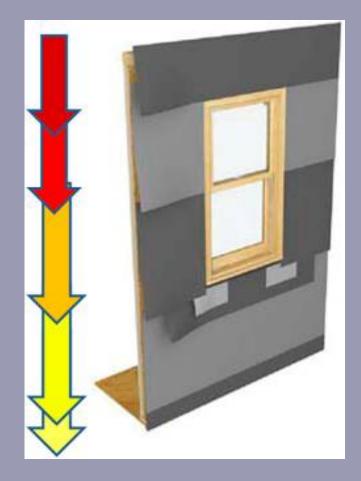
# The lack of attention to detail

Too often, since the sealants are a small percentage of the work, they are perfunctorily specified, easily substituted, and haphazardly applied. Yet successful joints require meticulous design, precise sealant selection, and painstaking application.

### Weather Board Flashing

All wraps and flashings are installed in a weather-board fashion.

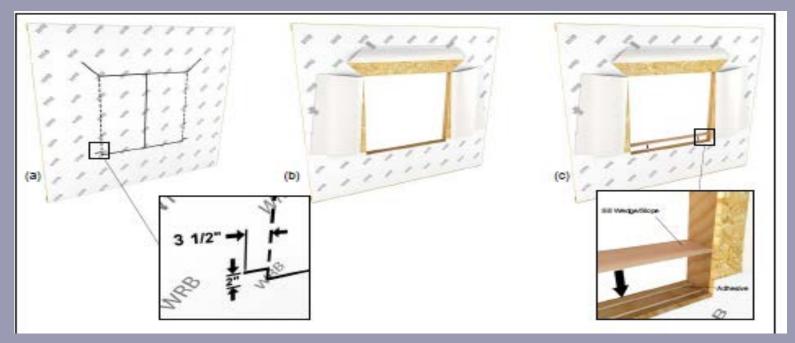
This allows the building to shed any water that may reach the building wrap.



#### Mounting Flange Installation Methods

| Method                                                                                            | A                                             | Flashing Method<br>Selection Chart<br>(Based on doors with integral fins being installed in<br>membrane/drainage type wall systems) |                                                                             |                                                                                            |                                                                                               |  |  |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--|--|
|                                                                                                   |                                               |                                                                                                                                     |                                                                             | A                                                                                          | в                                                                                             |  |  |
| <ul> <li>Method</li> </ul>                                                                        | В                                             |                                                                                                                                     |                                                                             | Jamb                                                                                       | Jamb                                                                                          |  |  |
| <ul> <li>Method</li> </ul>                                                                        |                                               |                                                                                                                                     |                                                                             | flashing will<br>be applied<br>AFTER the<br>door or<br>OVER the<br>face of the<br>mounting | flashing will<br>be applied<br>BEFORE the<br>door or<br>BEHIND the<br>face of the<br>mounting |  |  |
| Method B-1                                                                                        |                                               |                                                                                                                                     | <u></u>                                                                     | flange                                                                                     | flange                                                                                        |  |  |
| DETERMINI                                                                                         | NG THE PROPER LENGTH OF<br>FLASHING           |                                                                                                                                     | Weather<br>resistant<br>barrier<br>(WRB) is to                              | Use<br>Method<br>"A"                                                                       | Use<br>Method<br>"B"                                                                          |  |  |
| SILL FLASHING                                                                                     | = RO <sup>w</sup> + (2 x FLASHING WIDTH)      | T                                                                                                                                   | be applied<br>AFTER the                                                     |                                                                                            |                                                                                               |  |  |
| JAMB FLASHING                                                                                     | = RO <sup>H</sup> + (2 x FLASHING WIDTH) -1"  |                                                                                                                                     | door<br>installation                                                        |                                                                                            |                                                                                               |  |  |
| HEAD FLASHING                                                                                     | = RO <sup>w</sup> + (2 x FLASHING WIDTH) + 2" |                                                                                                                                     | Weather                                                                     | Use<br>Method<br>"A1"                                                                      | Use<br>Method<br>"B1"                                                                         |  |  |
|                                                                                                   | LEGEND                                        | 1.                                                                                                                                  | resistant<br>barrier                                                        |                                                                                            |                                                                                               |  |  |
| RO = ROUGH OPENING<br>RO" = ROUGH OPENING VERTICAL HEIGHT<br>RO" = ROUGH OPENING HORIZONTAL WIDTH |                                               |                                                                                                                                     | (WRB) is to<br>be applied<br>FIRST or<br>BEFORE the<br>door<br>installation | 12.034000                                                                                  |                                                                                               |  |  |

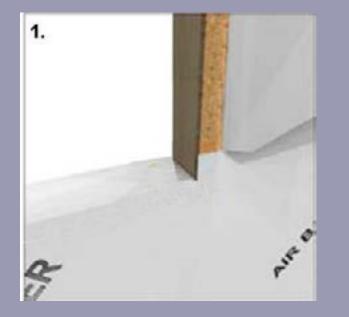
### Air Barrier Application

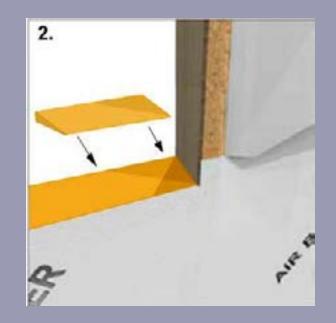


#### Step 1:

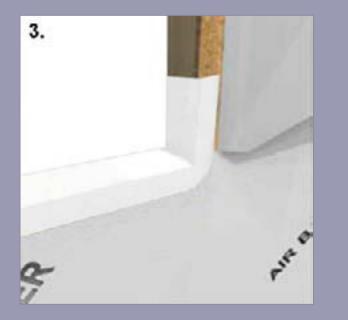
- Trim air barrier across top of head jamb.
- Trim up from the bottom corners ~ 2" then make an additional horizontal cut about 3- 1/2" wide.
- From the horizontal cut, make two 45° cuts toward the center.

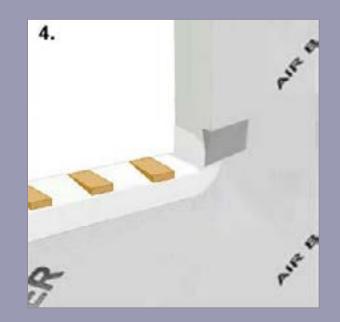
#### Sill Panning Systems: Beveled Cedar Sill (R.O. Prep)





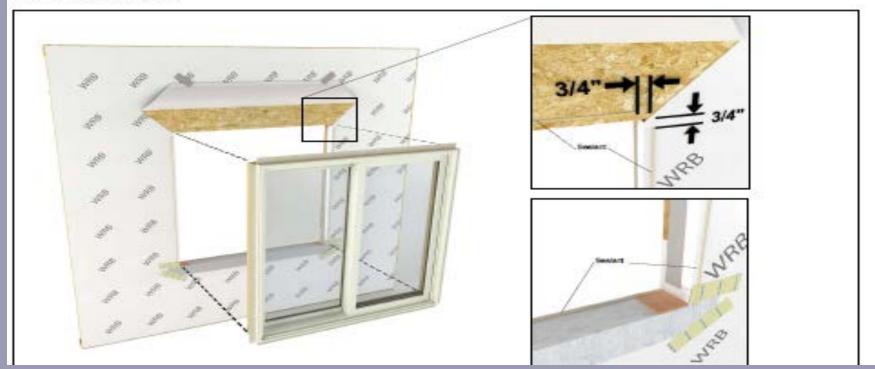
#### Sill Panning Systems: Beveled Cedar Sill



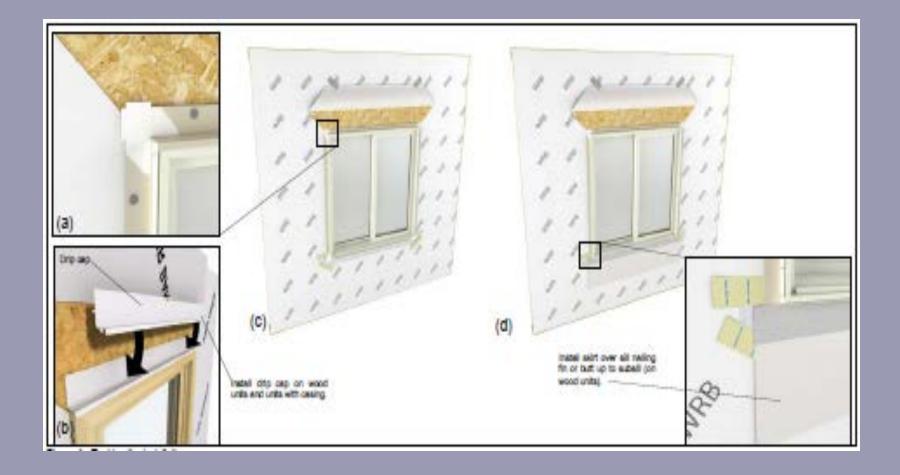


### Installing the Window

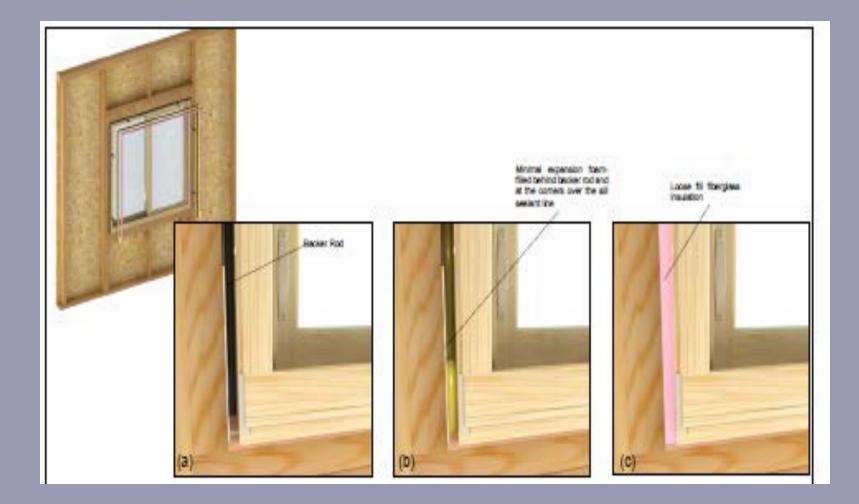
#### Install the Window



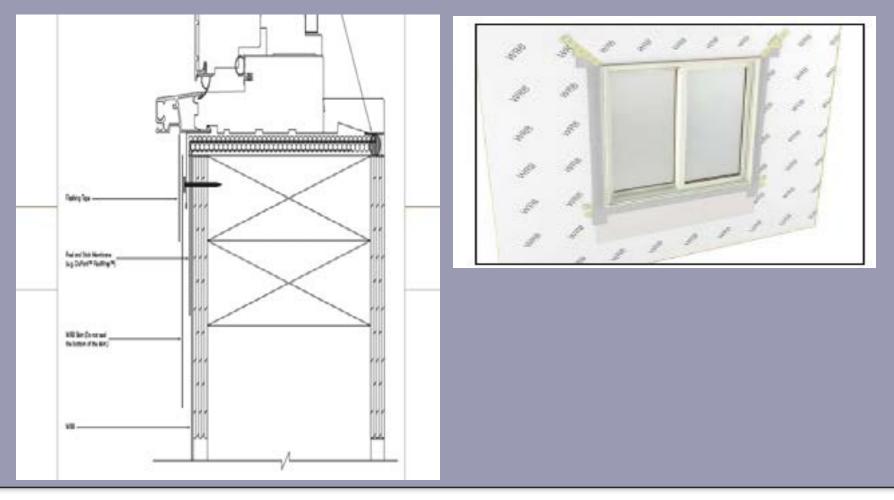
# Flashing the Installation



### Insulating the Window Installation



#### High Pressure Skirt



## Questions

# Items mentioned & used in today's presentation

- Utility Knife
- Level
- Hammer Tacker
- Laser Level
- Speed Square
- Tape Measure
- Flashing Tape
- Type III Sill Pan Flash

- Sealant
- Sheathing Tape
- Beveled piece of Cedar Siding
- Shims
- Corner Gaskets
- High Pressure Skirt
- Tyvek House Wrap
- High Pressure Skirt

### Questions

Thank you for your time and attention to this course. It has been a pleasure to work with you today.

Eric Klein Marvin Windows and Doors Installation and Field Service Instructor Warroad, MN 56763

erickl@marvin.com



Built around you: