

This supplement is included in the Evolve Installation Guide to illustrate the criticality of bulk water control in our built environment. This guide shows the necessity for windowsill pans and waterproofing measures, door sill pans, proper WRB installations, drainage, flashings, and a multitude of solutions to the proper installations of a complete water control layer(s) prior to the install of the evolve drainage mat and Evolve Stone. It is critical and incumbent upon the owner and installer that a complete and robust WRB system and bulk water control system be installed prior to the install of the Evolve products.

It is further the complete responsibility of the owner, architect, specifier, and installer to choose details, means and methods that preclude water from entry into the wood wall assembly.

This guide presents a variety of recommendations for minimizing water intrusion into homes. These recommendations are not intended to apply to every conceivable situation but are intended to illustrate principles.

This guide addresses water in the liquid form — rain water and ground water. This guide is not intended to address water in the vapor form transported by either air flow or diffusion.

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Water Management Guide

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TABLE OF CONTENTS

PRINCIPLES	5.
Water Management	5.
Fundamental Principle	5.
Drainage	6.
Drain the Site	7.
Drain the Building	8.
Drain the Assembly	9.
Screen Assemblies	9.
Barrier Assemblies	9.
Water Entry	10.
Foundations	11.
Drain the Opening	12.
Drain the Component	15.
Drain the Material	16.
Stucco with Drainage Plane and Drainage Space	17.
Cultured Stone with Drainage Plane and Drainage Space	17.
Other Important Moisture Transport Mechanisms	18.
Inward Moisture Movement Due to Solar Radiation	18.
Ventilated Cavity	19.
Drained Cavity with Condensing Surface	19.
Summary	20.
 WINDOW INSTALLATION	
RISK FACTORS	21.
Average Annual Rainfall Map	22.
 DETAILS	23.
Drained Openings	24.
Barrier Openings	62.
Concrete Block Openings	72.

ADDITIONAL DETAILS	87.
Taped Rigid Insulation as Drainage Plane	87.
Wall to Roof Flashing with Stucco	87.
Wall to Roof Flashing with Foam Sheathing	88.
Drainage Plane Behind Brick Over Bay Window or Shed Roof	89.
Drainage Plane Behind Eyebrow Return	90.
Flashing Over Deck Ledger	91.
Masonry Wall and Wood Framed Wall Intersection with Stucco	92.
Drainage Plane Behind Deck Ledger	93.
Flashing Other Penetrations	94.
Flanged Mechanical Penetration	94.
Flanged Dryer Vent	94.
Flashed Pipe Penetration	95.
Flashed Electrical Outlet	95.
Saddle Flashing	95.
Vent Installation with Building Paper Over Wood Studs	96.
Electrical Box Installation with Building Paper Over Wood Studs	96.
Windows and Doors in Masonry Barrier Walls	97.
Window with Waterproofed Wood Buck in Basement Cast Concrete Wall	97.
Window Sill Drainage Details	98.
Flush Precast Sill	98.
Protruding Precast Sill	98.
Concrete Porch/Foundation Intersection	99.
Concrete Porch Slab with Insulating Sheathing	100.
Concrete Porch Slab with Housewrap	100.
Garage Slabs	101.
Exterior Door—Pan Flashing “Seat”	101.



PRINCIPLES

WATER MANAGEMENT

Controlling rain and ground water are the single most important factors in the design and construction of durable buildings and in the control of mold. Mold problems cannot exist without water problems. No water problems, no mold problems. The most important water problems to address are rain and ground water.

Water management techniques are used in the design and construction of building enclosures to control rain and ground water.

FUNDAMENTAL PRINCIPLE

The fundamental principle of water management is to shed water by layering materials in such a way that water is directed downwards and outwards out of the building or away from the building. The key to this fundamental principle is drainage.

Gravity is the driving force behind water management and drainage. The “down” direction harnesses the force of gravity and the “out” direction gets the water away from the building enclosure assemblies, openings, components and materials. In general, the sooner water is directed out the better.

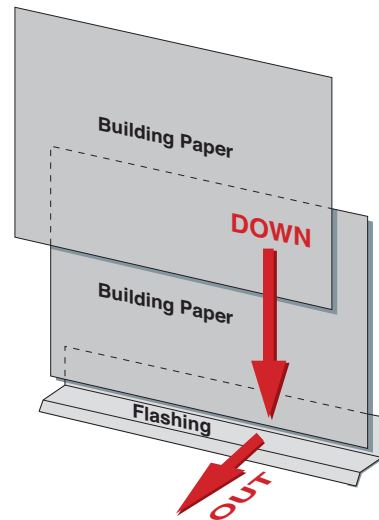
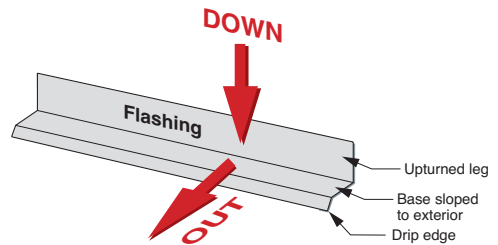
The most elegant expression of this concept is a flashing. Flashings are the most underrated building enclosure component and arguably the most important.

Drainage also applies to materials. Water that is absorbed in a material can not be drained away. We paint and stain wood siding so that water is not absorbed by the wood siding and can be drained from the siding surfaces. We damp-proof concrete foundations for the same reason.

Drainage applies to assemblies such as walls, roofs and foundations. Drainage also applies to the components that can be found in walls, roofs and foundations such as windows, doors and skylights. It also applies to

the openings for the windows, doors and skylights. And it applies to assemblies that connect to walls, roofs and foundations such as balconies, decks, railings and dormers.

Finally, drainage also applies to the building as a whole. Overhangs can be used to drain water away from walls. Canopies can be used to drain water away from windows, and site grading can be used to drain water away from foundation perimeters.

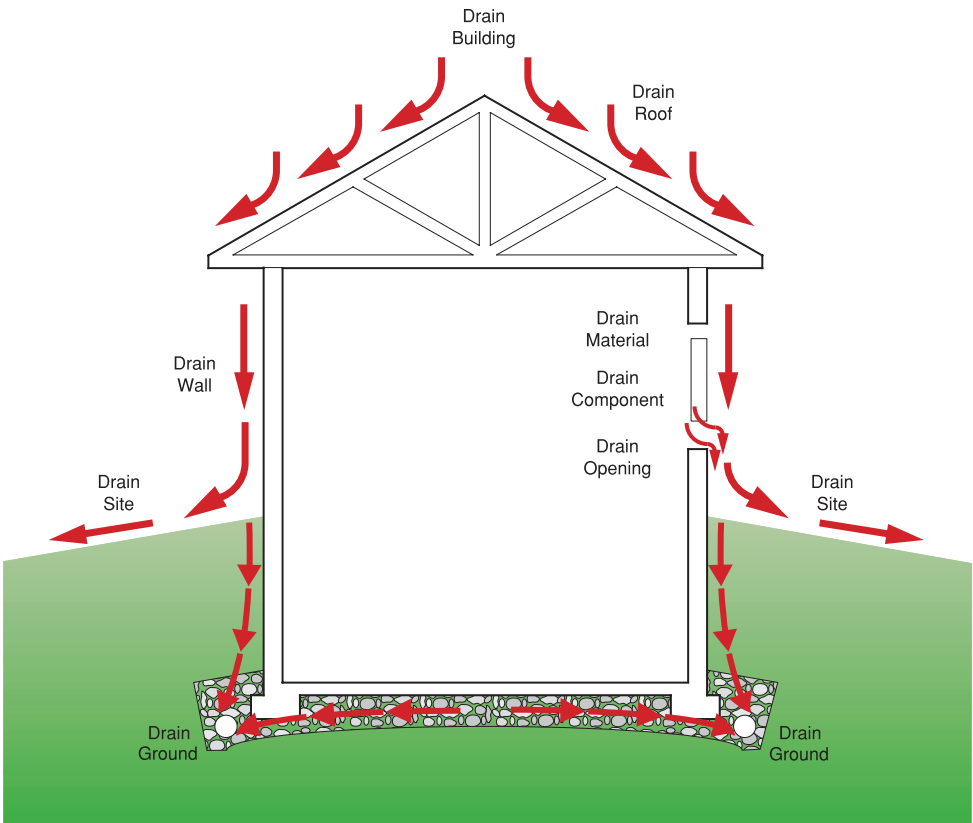


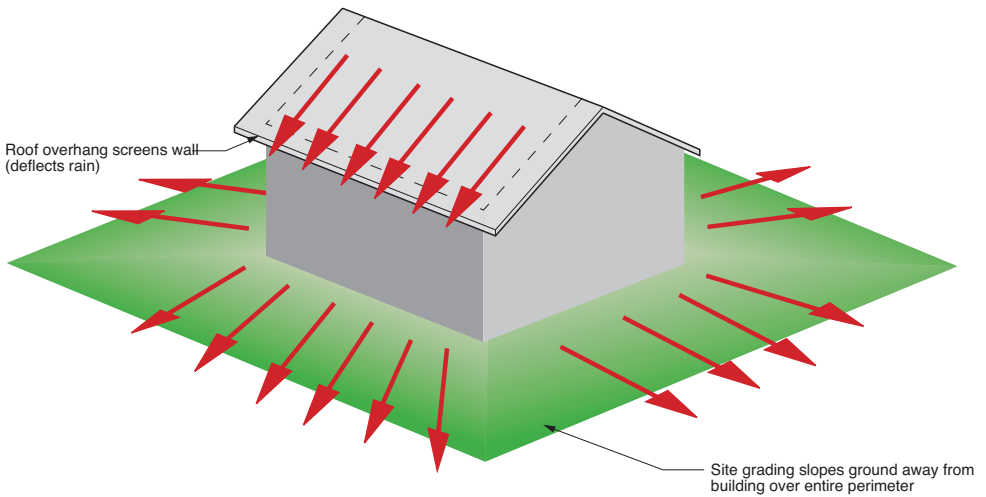
DRAINAGE

Drainage is the key to water management:

- Drain the site
- Drain the ground
- Drain the building
- Drain the assembly
- Drain the opening
- Drain the component
- Drain the material

Drain everything.





DRAIN THE SITE

Site grading is used to direct surface water away from building foundations and walls. The steeper the slope away from the building perimeter the better. Floor levels should always be above the surrounding grade - the higher the better (except basement floors which should be higher than the surrounding drainage system). Standing water beside a building is a bad idea. Driveways and walkways should drain away from the building and be lower than floor levels. Patios and decks should also be lower than floor levels and should drain away from the building.

Layer the site. Floors on top – higher than the surroundings. Patios, stoops and garages lower than floors. Driveways and walkways lower than patios, stoops and garages. And finally, driveways and walkways should slope with the grade away from the building.

Nothing should be flat and level except the floor of the building. Slope everything away from the building. Slope the garage slab, the patio, the stoop, and the walkway. Slope everything.

Remember: “down and out”. Direct the water down and away from the building.

DRAIN THE BUILDING

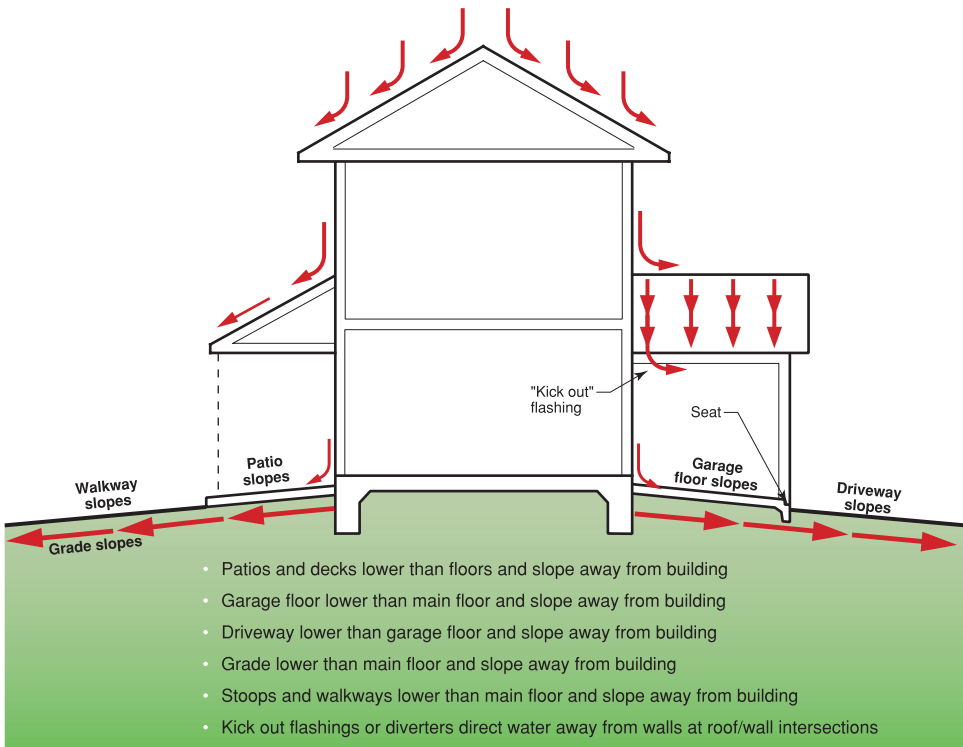
Sloping roofs should be used to drain water away from the top of buildings. The steeper the slope the better. Overhangs, canopies and porch roofs should be used to drain water away from the side of buildings – away from the walls. The bigger the overhang the better. The bigger the canopy the better.

Flat roofs should never be flat. All “flat” roofs should be tilted and sloped to drains. Remember, the roof should be higher than the drain.

Roofs can concentrate rainwater at building perimeters. Danger! Danger! Use a really big overhang to protect the walls and slope the grade away from the building foundation.

Collect the roof run-off with a gutter system and direct it away from the building. Do not put this roof water into the ground near the building. Do not connect the gutter system to a perimeter foundation drain. It’s okay to infiltrate rainwater into the ground, just don’t do it next to the building.

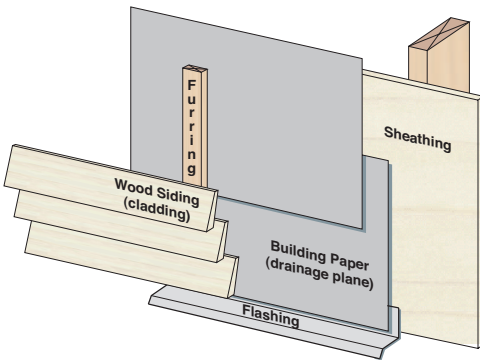
Roofs can also concentrate rainwater where roofs intersect walls. Kick-out flashings are critically important at these locations and do what their name implies — they kick the roof-concentrated rain water out of the wall.



DRAIN THE ASSEMBLY

Assemblies such as walls, roofs and foundations are constructed from materials such as sheathings, claddings, insulations and components such as windows and doors.

Some assemblies have more than one layer dedicated to water management and are called “screens”. Other assemblies have only one layer dedicated to water management and are called “barriers”.



SCREEN ASSEMBLIES

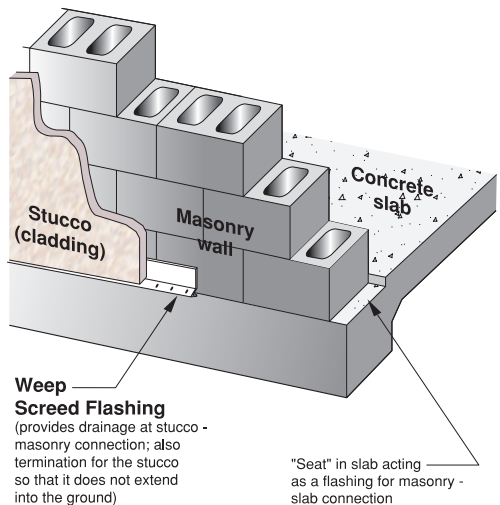
Screen assemblies have multiple lines of defense for water entry. In addition to the exterior cladding, screen assemblies layer building materials shingle fashion to direct water that penetrates the cladding back to the exterior. The inward layer (or layers) is often, but not always, called a drainage plane. A space between the cladding and the drainage plane promotes drainage and ventilation. Screen assemblies are typically used with water sensitive building materials such as wood framing, steel studs, wood-based sheathings and gypsum-based sheathings.

An example of a screen assembly is a wood frame wall with OSB sheathing covered with a housewrap and clad with wood siding on furring strips ($\frac{3}{8}$ " or thicker).

BARRIER ASSEMBLIES

Barrier assemblies typically rely on the exterior cladding to be the drainage plane. Barrier assemblies are often used with water resistant building materials such as masonry, concrete, multi-wythe brick and stone.

An example of a barrier assembly is a masonry wall rendered with a portland cement based stucco.



WATER ENTRY

Both barrier assemblies and screen assemblies rely on flashings to control water entry and to direct penetrating water back to the exterior at critical areas such as connections between materials, at openings and penetrations.

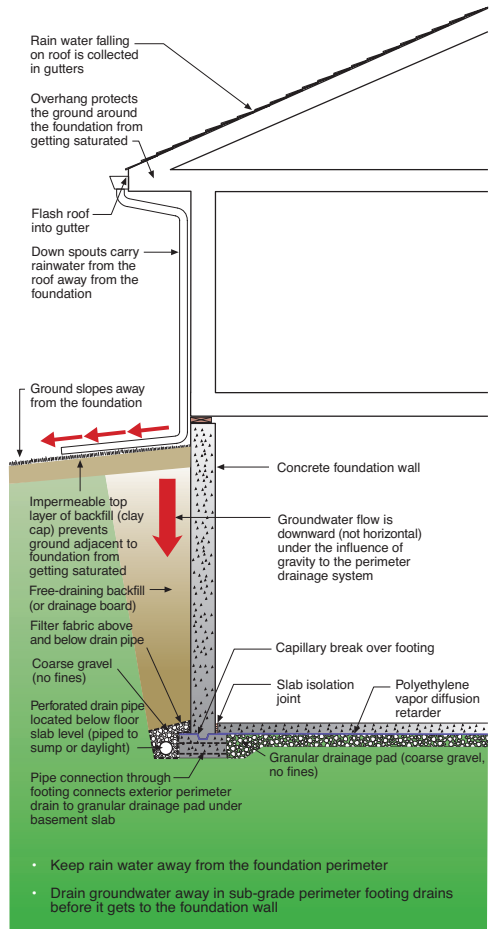
Both barrier assemblies and screen assemblies anticipate water entry past the exterior cladding. In barrier assemblies this penetrating water is stored and redistributed in the water resistant building materials until it can be released to either the exterior or interior in the vapor form in a controlled manner that does not damage interior or exterior finishes or materials. Some barrier assemblies also provide drainage of penetrating water to the exterior.

In screen assemblies the penetrating water is drained back to the exterior in liquid form along the drainage plane behind the cladding. Some water also penetrates the drain-

age plane and is stored and redistributed and subsequently released in the vapor form as in barrier assemblies. However, the tolerance for such stored and redistributed water in screen assemblies is typically significantly less than barrier assemblies due to the water sensitive nature of the building materials commonly used with screen assemblies.

Barrier systems typically rely on the exterior cladding to shed water effectively for the life of the building.

Screen systems assume some water will enter and provide a mechanism to remove it.

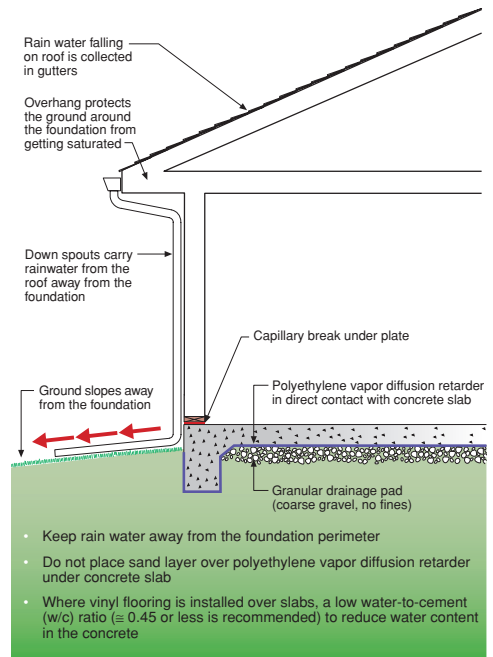
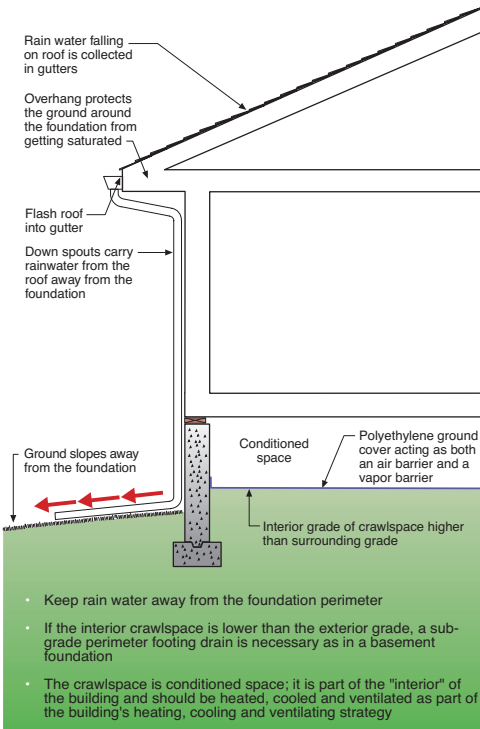


FOUNDATIONS

Most foundation assemblies (as are most wall assemblies) are a combination of screens and barriers. The “drain screen” foundation involves using a free-draining backfill such as gravel or sand to direct water downwards to a perimeter drain and away from the building. This free-draining material is installed outboard of a concrete or masonry foundation barrier wall that is damp-proofed to prevent water absorption. However, some water penetration and absorption is tolerated by the concrete and masonry as long as this penetrating water can be released to the interior or above grade in a controlled manner. This of course is typically complicated by interior basement finishing and insulation.

Interior insulation systems and finishes should be vapor permeable in order to allow this penetrating water to pass into the interior space and be removed by the mechanical system or by ventilation.

With slab foundations, site grading is critical. Direct the water away from the building perimeter so that the ground next to the foundation does not get saturated. Do not over-water plantings near the house. Better still, do your planting away from the house. If you insist on ignoring this advice and plant stuff right beside your house anyway, consider installing a french drain right beside your house and “dampproof” the edge of the slab foundation.



DRAIN THE OPENING

Water should be directed out of building assembly openings – especially openings for windows, doors and skylights. The seal between a window or door component and the building assembly layer dedicated to water management (the “drainage plane”) is rarely perfect – and even if it is perfect at the time of installation it certainly will not be perfect forever.

Furthermore, the window or door component within the opening can leak, especially if installed improperly or if it is of poor quality. Even the best made windows and doors can leak as they age. This leakage should be managed in the same manner any leakage is managed by drainage to the outside.

Window and door openings should be drained to the exterior using the same principles used in the design and construction of walls, roofs and foundations.

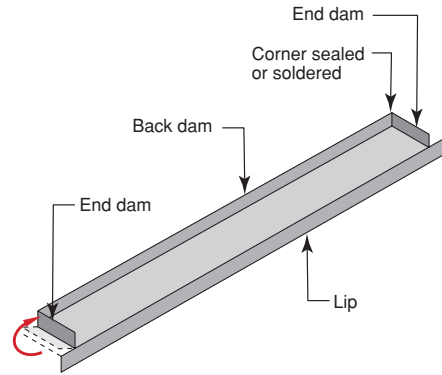
Pan flashings, membranes lining openings, precast sills with seats extending under window and door units, formable flashings, building papers, housewraps and concrete seats in slabs are all elements of drainable systems. These approaches work best when they are sloped to the exterior, have back-dams and have end dams.

These techniques allow for sealants to be installed imperfectly or for sealants to age without resulting in catastrophic failure of the assembly. A leak is not truly a leak if it leaks back to the exterior without wetting a water sensitive material.

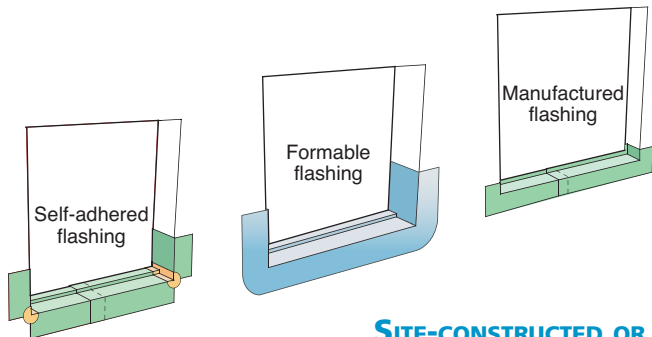
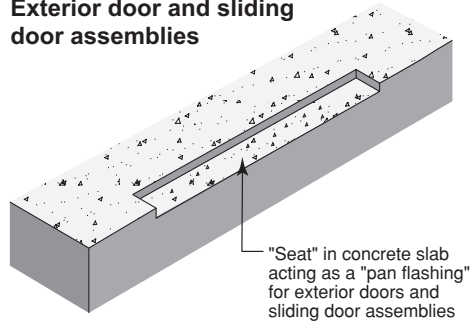
Windows and doors should be integrated into water managed walls using water management installation techniques.

All windows and doors should be air sealed around their entire perimeters on the interior

Constructing a sheet metal pan flashing



Exterior door and sliding door assemblies



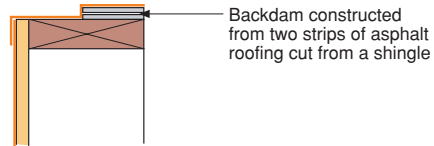
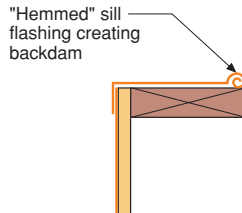
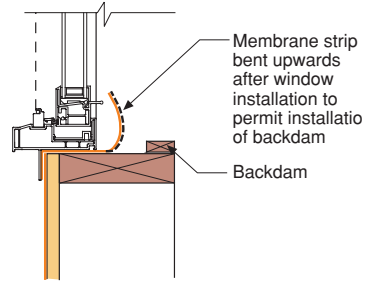
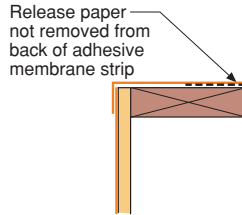
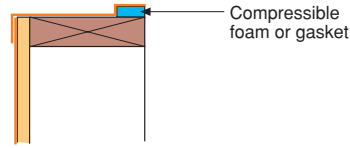
SITE-CONSTRUCTED OR MANUFACTURED PAN FLASHINGS FOR WINDOW AND DOOR OPENINGS IN FRAME WALLS

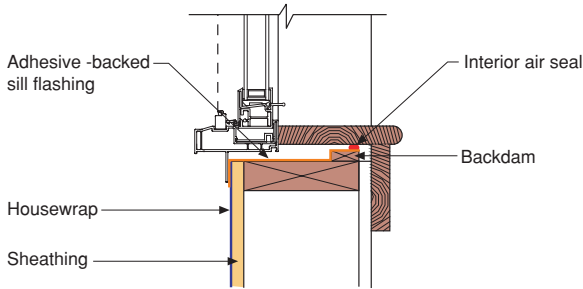
with sealant or non-expanding foam.

The air seal around the entire perimeter of the window interior provides for pressure equalization across the unsealed bottom flange of the window. This reduces the necessary height of the backdam. The bottom flange is unsealed to permit drainage back to the exterior.

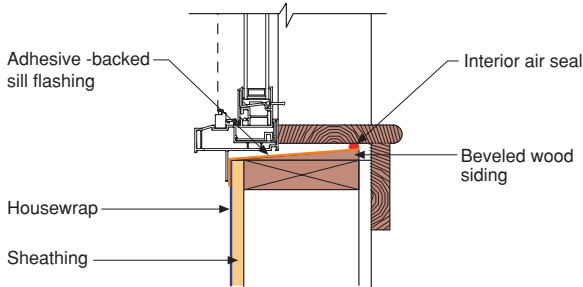
Without the perimeter air seal on the interior, the height of the backdam would have to equal the wind pressure incident on the window. With the air seal, the height of the backdam can be reduced by an order of magnitude. In most applications a backdam of $\frac{3}{8}$ -inch to $\frac{3}{4}$ -inch is more than adequate where pressure equalization is provided by an effective interior air seal.

Backdams can interfere with the installation of shims. For this reason some backdams are made from compressible foam (a "flat gasket" or weatherstrip) or are installed after the window is installed and shimmed. Alternatively, the adhesive-backed sill flashing can be "hemmed" to provide a backdam.

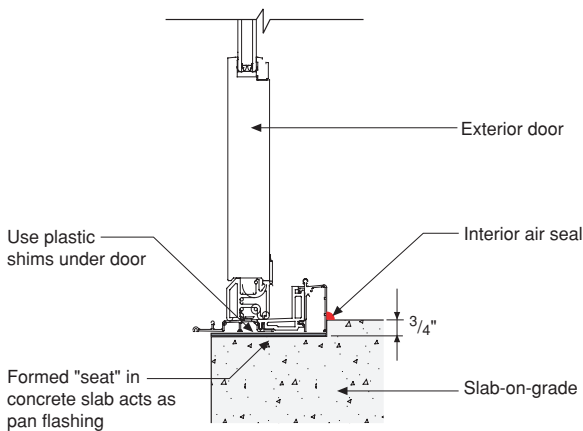




A strip of wood nailed at the back of the rough opening sill forms a dam to prevent water from draining into the interior



A piece of wood bevel siding nailed over the sill to create positive drainage toward the exterior is even better. Note that the rough opening needs to be enlarged to account for this and tapered shims in the opposite direction of the slope may be required.

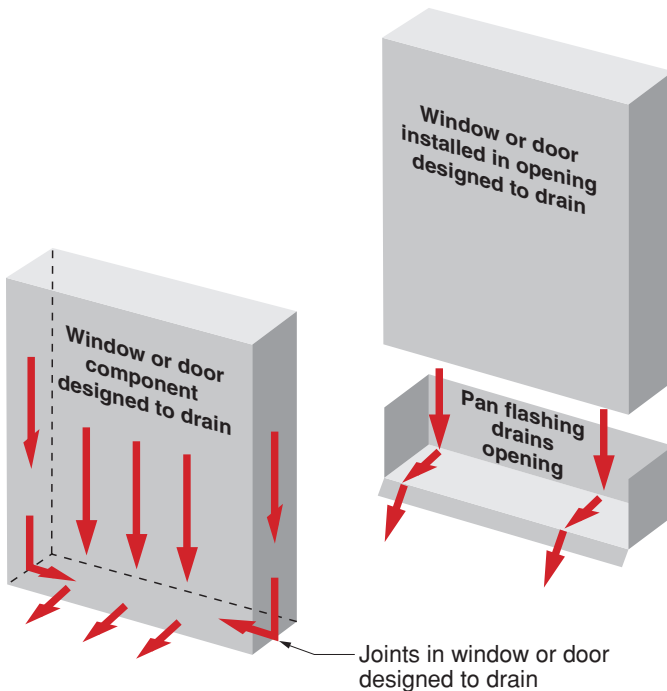


Forming a depression in a cast-in-place floor slab creates a built-in drainage pan for mulled entry doors and sliders, which are prone to leakage at joints.

DRAIN THE COMPONENT

Windows and doors are components that are assembled from elements. Where elements join together a potential for water leakage exists. Ideally, elements should be designed and assembled in such a way that each element sheds water to the exterior and each joint connection between elements drains to the exterior.

Sealants and gaskets at joints should not be relied on to provide the only defense against water entry. The principle of water management and drainage applies to the design and construction of window and door components in the same way that it applies to wall, roof and foundation assemblies.



DRAIN THE MATERIAL

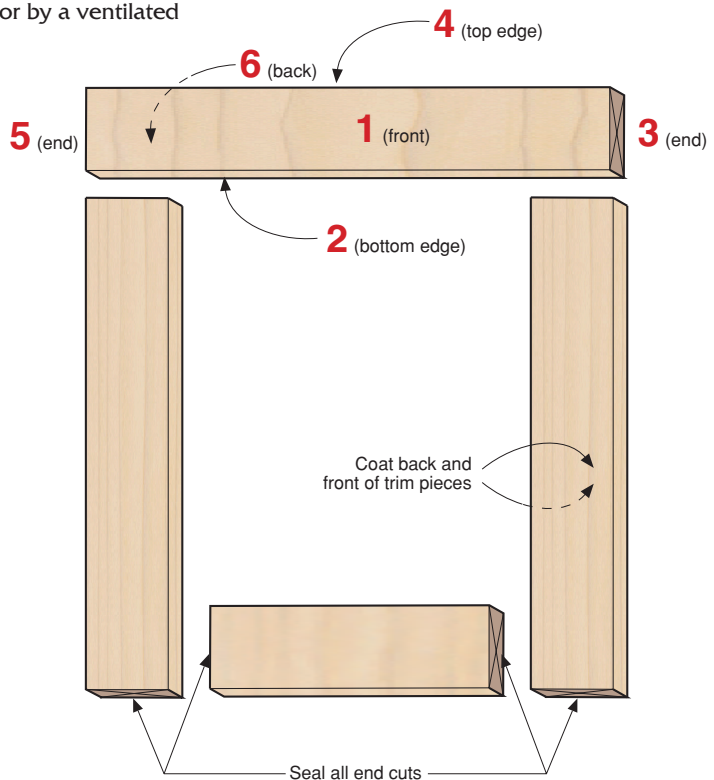
Water that is absorbed in a material can not be drained away. Assembly materials dedicated to water management or materials that are outboard of drainage planes should not absorb water or should be treated to shed water. Or, the assembly should be constructed in such a manner as to permit the drying of the absorptive materials. This can be done by providing an airspace between the absorptive materials and the drainage plane that allows the absorptive materials to dry both inwards and outwards. Alternatively, the absorptive material selected can be non-water sensitive such as brick or stucco and be separated from the interior by a ventilated air space or a condensing surface that is drained to the exterior.

Wood trim and wood siding should be coated on all surfaces to repel water. The repelled water should be drained away. Ideally, these materials should also be “back-vented” so that absorbed water can evaporate and be vented to the exterior.

Window and door elements should also be treated to repel water or coated to repel water or manufactured from materials that do not absorb or transmit water. For wood windows this means that all wood pieces that comprise the window should be coated and treated on all six surfaces – with the most critical surfaces being the ends. End grain surfaces are the most prone to water absorption and subsequent decay.

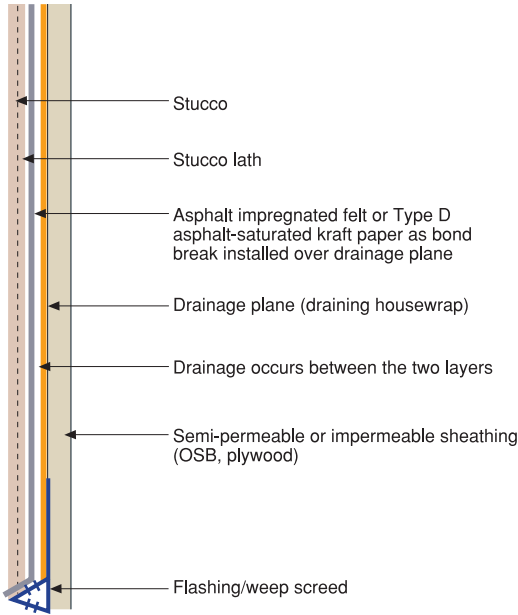
Stucco and brick should be separated from the rest of the assembly because they are water absorptive. This separation can be a vented airspace or a material that drains water and does not pass water vapor.

Stuccos over barrier wall assemblies should be coated to reduce water absorption.



- Seal or coat all surfaces (six sides) of materials exposed to rain water to limit water absorption and to facilitate drainage of water that contacts material surfaces
- Back-ventilate trim materials so that absorbed water can evaporate and be vented to the exterior

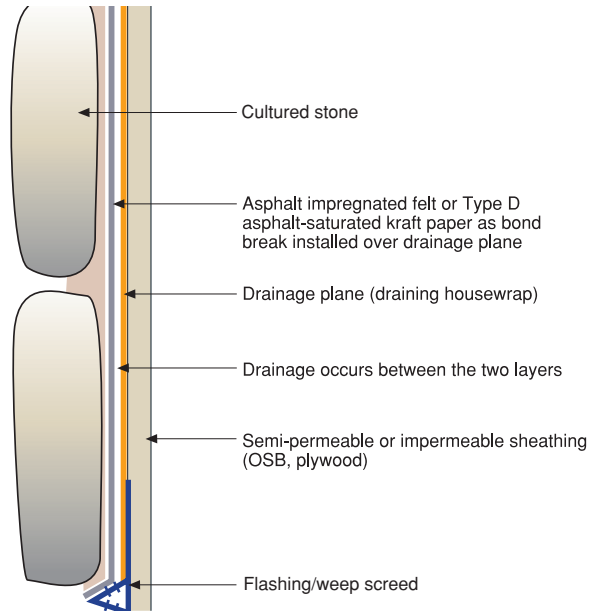
STUCCO WITH DRAINAGE PLANE AND DRAINAGE SPACE



- Stucco applied over water sensitive materials must be uncoupled from the water sensitive materials. This can be accomplished via drainage and a capillary break.
- For drainage to occur both a drainage plane and a drainage space are required. In some assemblies a ventilated air space is used. The stucco must not bond continuously to the drainage plane in order for drainage to occur—a bond break is necessary.
- The capillary break can be an airspace, foam sheathing or the drainage plane material itself.

CULTURED STONE WITH DRAINAGE PLANE AND DRAINAGE SPACE

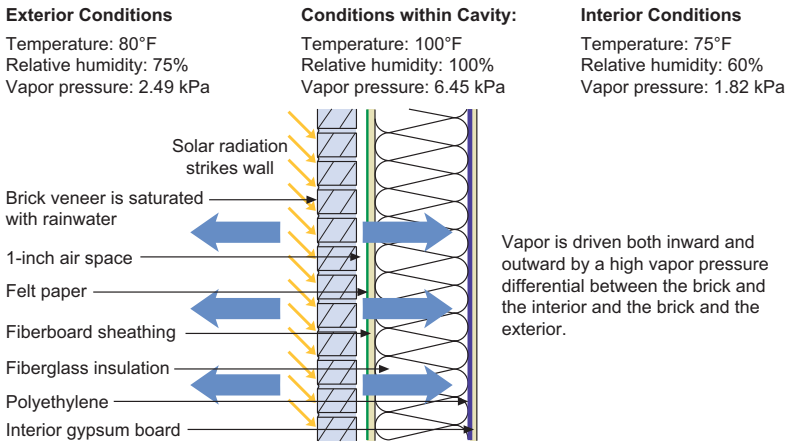
- Cultured stone is nothing more than “lumpy” stucco; therefore, it needs both a drainage plane and a drainage space.



OTHER IMPORTANT MOISTURE TRANSPORT MECHANISMS

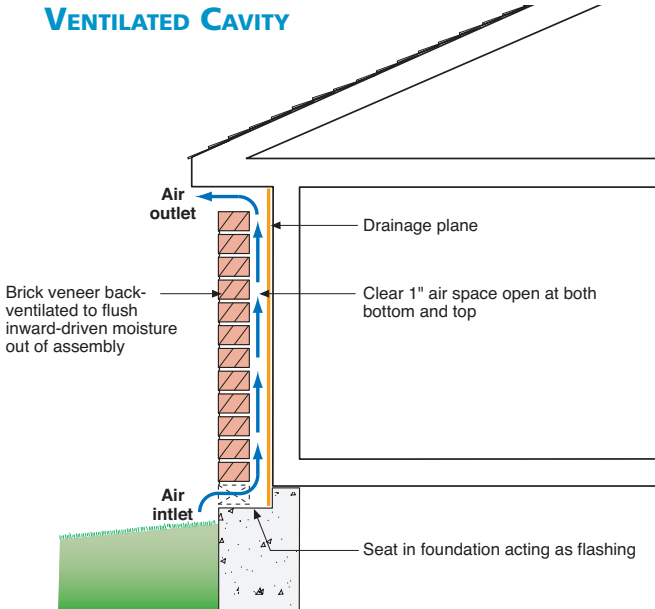
Absorptive claddings such as brick veneers and stucco get wet from rain. Absorbed water can then migrate inward in the liquid form by capillary transport or change to a vapor and migrate inward by air flow or diffusion. In such cases rain is the wetting mechanism and capillarity, air flow and diffusion are the moisture redistribution mechanisms.

INWARD MOISTURE MOVEMENT DUE TO SOLAR RADIATION

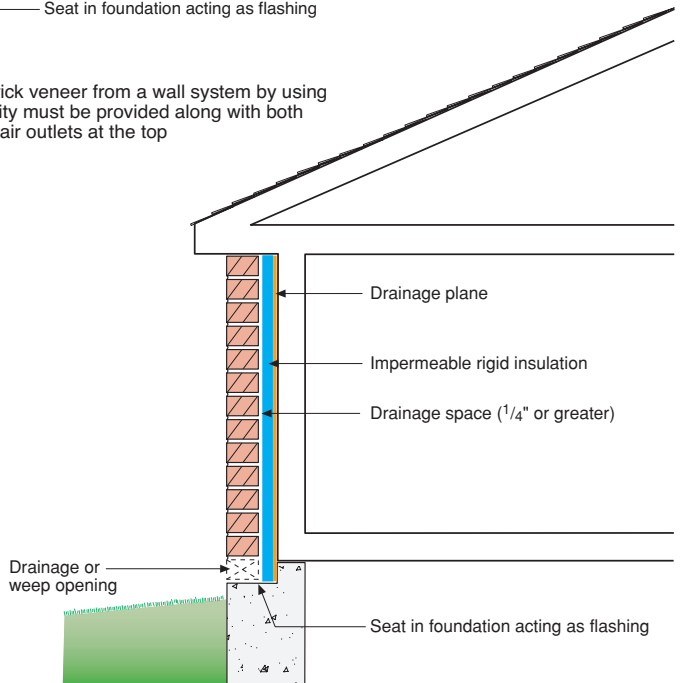


- It is not a good idea to install a vapor barrier (polyethylene) on the inside of an air conditioned assembly. Vinyl wall coverings and foil-backed batt cavity insulation should also be avoided.
- Absorptive claddings, such as brick veneers, when used over a vapor permeable combination of exterior sheathing and weather-resistant barrier should have a ventilated cavity and high inward drying potential (i.e. no polyethylene vapor barriers). A ventilated cavity will both reduce inward driven moisture and increase drying to the exterior.
- Failure can occur when brick without a ventilated air space is installed over a frame wall constructed with felt paper, fiberboard sheathing and a polyethylene vapor barrier. Kraft-faced fiberglass batts should be used in place of unfaced batts and a polyethylene vapor barrier. OSB, plywood or foam sheathing should be used in place of the fiberboard sheathing. A ventilated air space should be installed behind the brick.

VENTILATED CAVITY



- To effectively uncouple a brick veneer from a wall system by using back ventilation a clear cavity must be provided along with both air inlets at the bottom and air outlets at the top



- To effectively uncouple a brick veneer from a wall system by using a condensing surface the drainage plane must also be a vapor barrier or a vapor impermeable layer (i.e. rigid insulation) must be installed between the drainage plane and the brick veneer. Alternatively, the rigid insulation can be configured to act as a both the drainage plane and vapor impermeable layer.
- When a condensing surface is used to uncouple a brick veneer from a wall system a ventilated air space is no longer necessary. Additionally, the width of the drainage space is almost irrelevant.

**DRAINED CAVITY WITH
CONDENSING SURFACE**



SUMMARY

Walls, roofs and foundations should be designed and constructed to shed or drain water to the exterior. Windows and doors should be designed and manufactured to shed or drain water to the exterior. Window and door openings should be designed and constructed to shed or drain water to the exterior. Building materials should drain or be treated such that they drain.

This logic should encompass the entire building enclosure. Deck, balcony and railing connections should be designed and constructed to shed or drain water to the exterior. Roof-wall connections and roof dormer connections should be designed and constructed to shed or drain water to the exterior. And sites should be graded to shed or drain water away from building perimeters.

. . . DRAIN EVERYTHING

WINDOW INSTALLATION RISK FACTORS

The window installation approaches illustrated in this guide use two different strategies:

- Drained openings
- Barrier openings

A drained opening is where a pan flashing or similar approach is used. A barrier opening is where the window opening is not drained and the window unit is flashed or sealed directly to the drainage plane.

The choice of strategy is determined by many factors. Drained openings are better than barrier openings.

FOR EXAMPLE

Windows installed in exposed facades in high rain zones should be installed in drained openings.

Whereas, windows installed in sheltered facades in low rain zones can be installed in barrier openings.

Local experience and designer judgement should be exercised.



**Risk
Low**

WATER RESISTANCE RATING

As the water resistance rating of the window increases the risk of using a barrier strategy decreases. Windows with a low water resistance rating should always be installed with a drained opening.

RAINFALL

As the amount of rainfall at a site increases the risk of using a barrier strategy increases.



**Risk
High**



**Risk
Low**

MOISTURE TOLERANCE OF ASSEMBLY

As the moisture tolerance of the materials that comprise the assembly increases (masonry and concrete vs. wood and steel) the risk of using a barrier strategy decreases.

DRYING POTENTIAL

As the ability of an assembly to dry increases due to the climate, design or both, the risk of using a barrier strategy decreases.



**Risk
Low**



**Risk
High**

EXPOSURE

As the exposure of the window to rain water increases (no overhangs, windy, treeless sites, height above grade) the risk of using a barrier strategy increases.

WORKMANSHIP

As the craftsmanship of the window installation increases the risk of water problems decreases.







**Risk
Low**



**AVERAGE ANNUAL
RAINFALL MAP**



Exposure

Extreme		Over 60"
High		40" - 60"
Moderate		20" - 40"
Low		Under 20"

DETAILS

DRAINED OPENINGS

WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL	
FORMABLE FLASHING — EIGHT STEPS	24
SELF-ADHERED FLASHING — TEN STEPS	28
MANUFACTURED PAN FLASHING — TEN STEPS	33
WINDOW WITH BUILDING PAPER ON OSB OVER A WOOD FRAMED WALL	
SELF-ADHERED FLASHING — TWELVE STEPS	38
WINDOW WITH FOAM SHEATHING ON A WOOD FRAMED WALL	
SELF-ADHERED PAN FLASHING — EIGHT STEPS	44
WINDOW WITH THIN PROFILE SHEATHING ON A WOOD FRAMED WALL	
SELF-ADHERED PAN FLASHING — EIGHT STEPS	48

BARRIER OPENINGS

FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB ON A WOOD FRAMED WALL	
TEN STEPS	52
FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL	
TEN STEPS	57
BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL	
SELF-ADHERED FLASHING — TEN STEPS	62
BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING OVER A WOOD FRAMED WALL	
FACTORY INSTALLED FLASHING — TEN STEPS	67

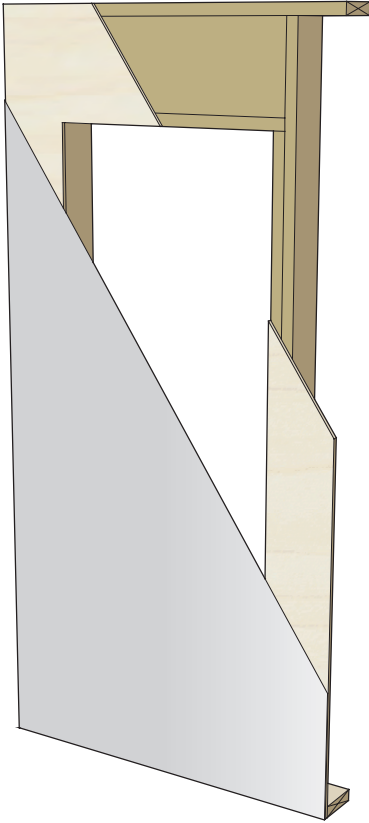
CONCRETE BLOCK OPENINGS

WINDOW WITH A PRECAST SILL AND STUCCO OVER A CONCRETE BLOCK WALL	
EIGHT STEPS	72
WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL	
TEN STEPS	76
WINDOW WITH A WATERPROOFED WOOD BUCK AND SIDING OVER A CONCRETE BLOCK WALL	
TWELVE STEPS	81

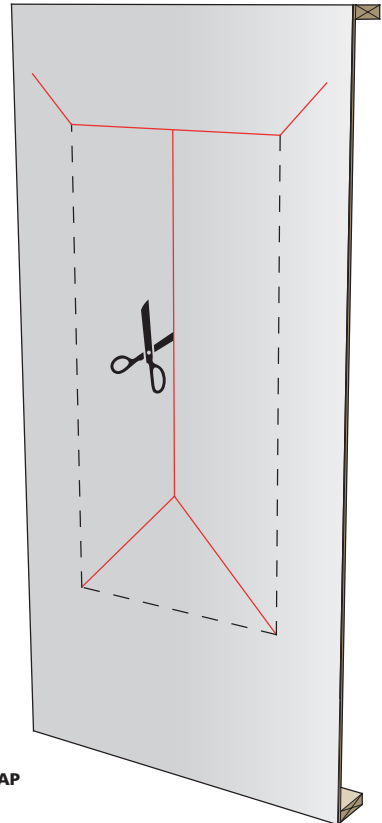


DRAINED OPENINGS

WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL FORMABLE FLASHING

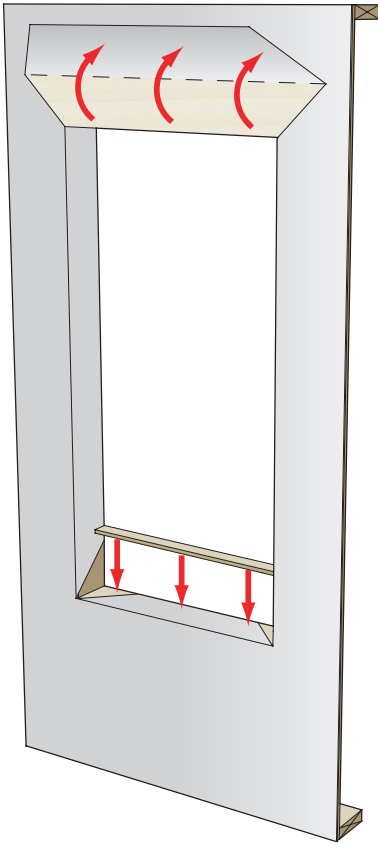


STEP 1
**WOOD FRAME WALL WITH OSB
AND HOUSEWRAP**

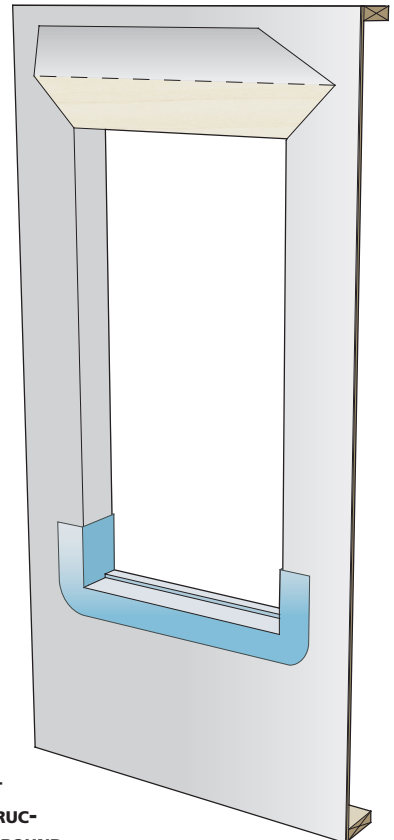


STEP 2
MODIFIED "I" CUT IN HOUSEWRAP

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
FORMABLE FLASHING**

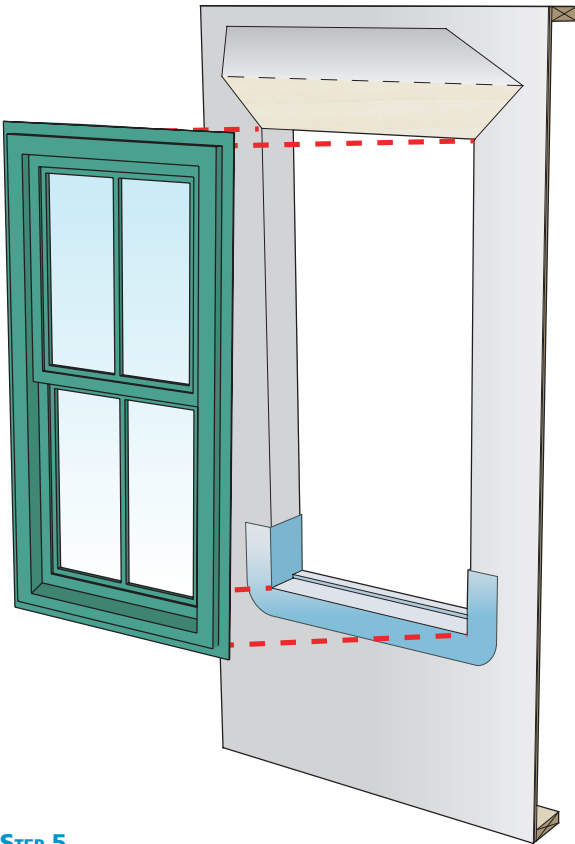


STEP 3
**FOLD HOUSEWRAP IN AT JAMBS
AND SILL; HOUSEWRAP AT HEAD TEM-
PORARILY FOLDED UP OR, ALTERNATIVE-
LY, TUCKED UNDER; INSTALL BACKDAM**



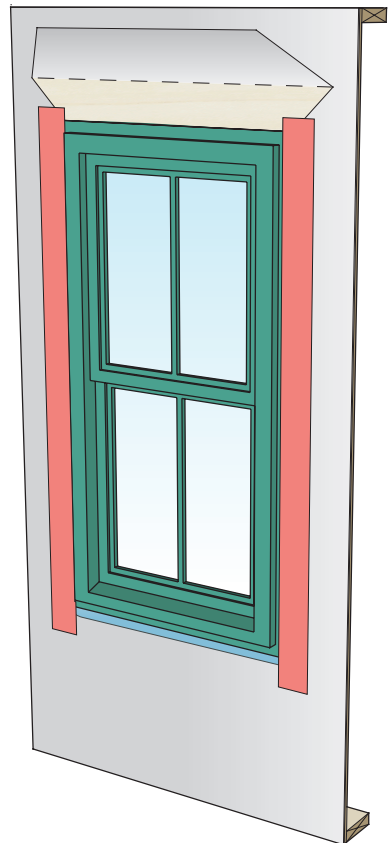
STEP 4
**INSTALL FORMABLE FLASHING AT
SILL PER MANUFACTURER'S INSTRU-
CTIONS; USE CARE IN FORMING AROUND
BACKDAM AND CORNERS**

WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL FORMABLE FLASHING



STEP 5

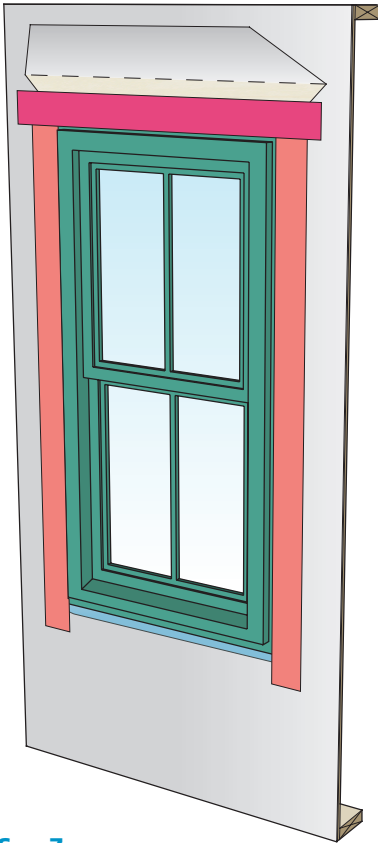
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH HOUSEWRAP AND FLASHING



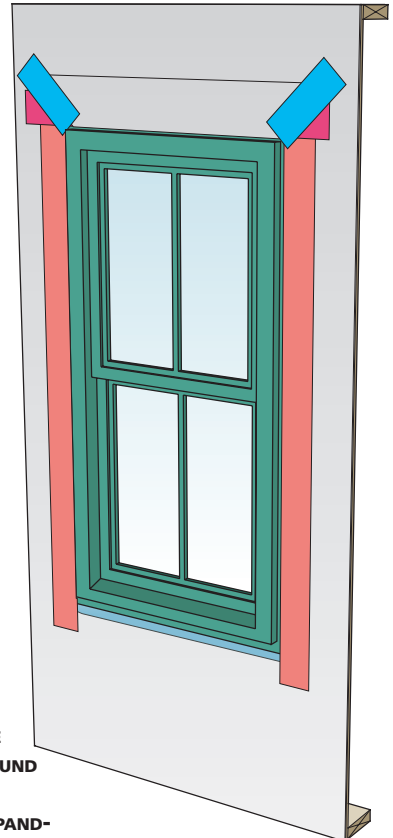
STEP 6

INSTALL JAMB FLASHING

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
FORMABLE FLASHING**



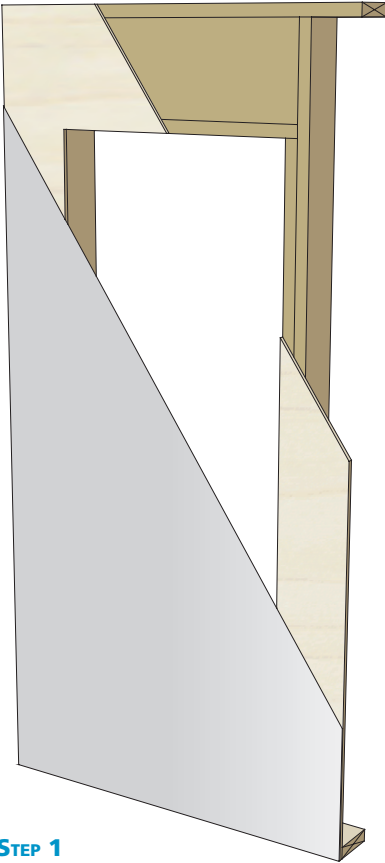
STEP 7
INSTALL A DRIP CAP (IF APPLICABLE);
INSTALL HEAD FLASHING



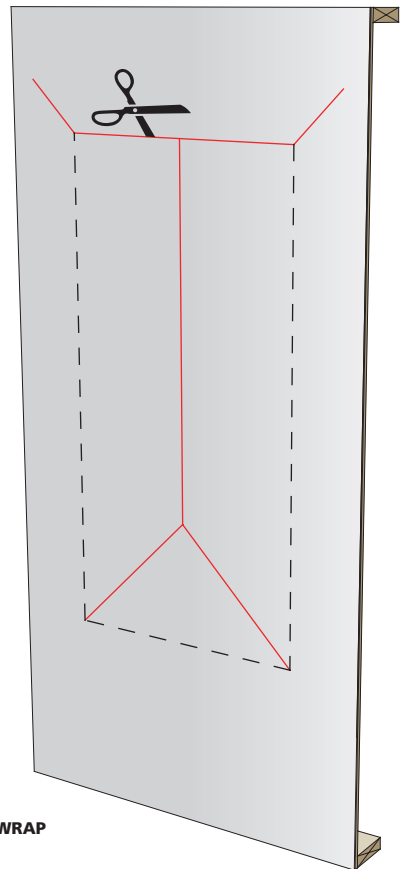
STEP 8
FOLD HOUSEWRAP DOWN AT HEAD; TAPE
HEAD FLASHING; AIR SEAL WINDOW AROUND
ENTIRE PERIMETER ON THE INTERIOR WITH
SEALANT OR NON-EXPANDING FOAM; EXPAND-
ING FOAM SHOULD NOT FILL THE SILL PAN



**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

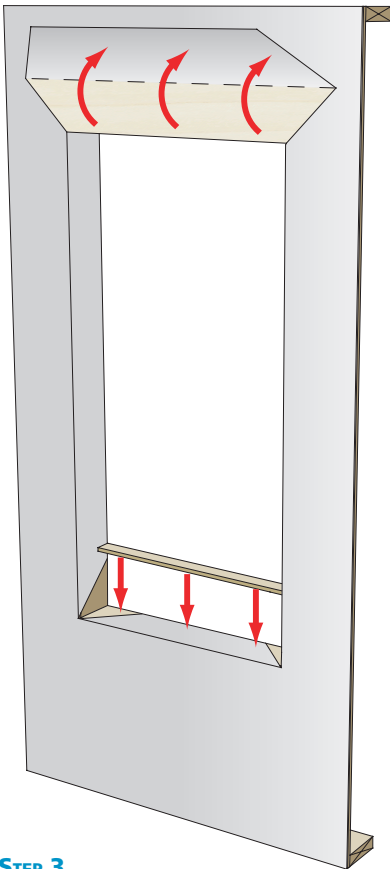


STEP 1
**WOOD FRAME WALL WITH OSB
AND HOUSEWRAP**

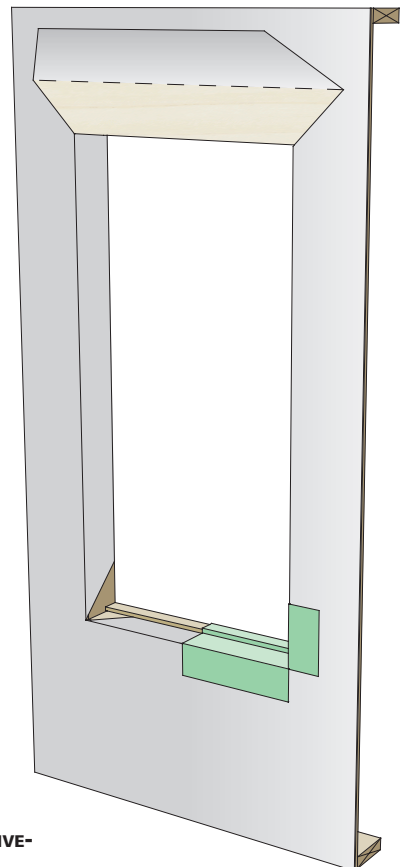


STEP 2
MODIFIED "I" CUT IN HOUSEWRAP

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

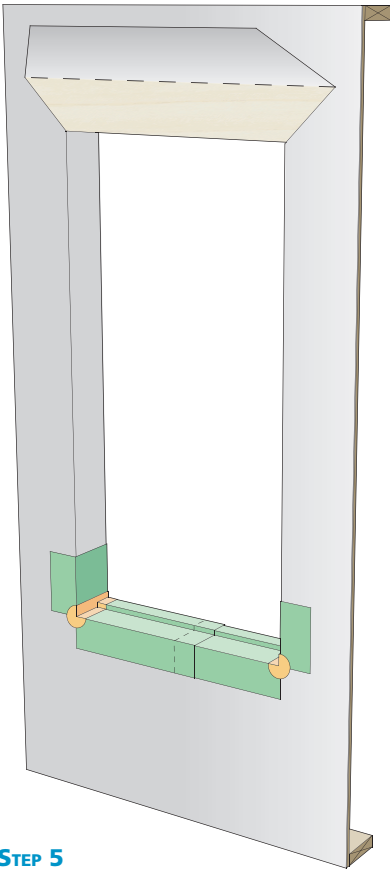


STEP 3
HOUSEWRAP FOLDED IN AT JAMBS AND SILL. HOUSEWRAP AT HEAD TEMPORARILY FOLDED UP OR, ALTERNATIVELY, TUCKED UNDER; INSTALL BACKDAM

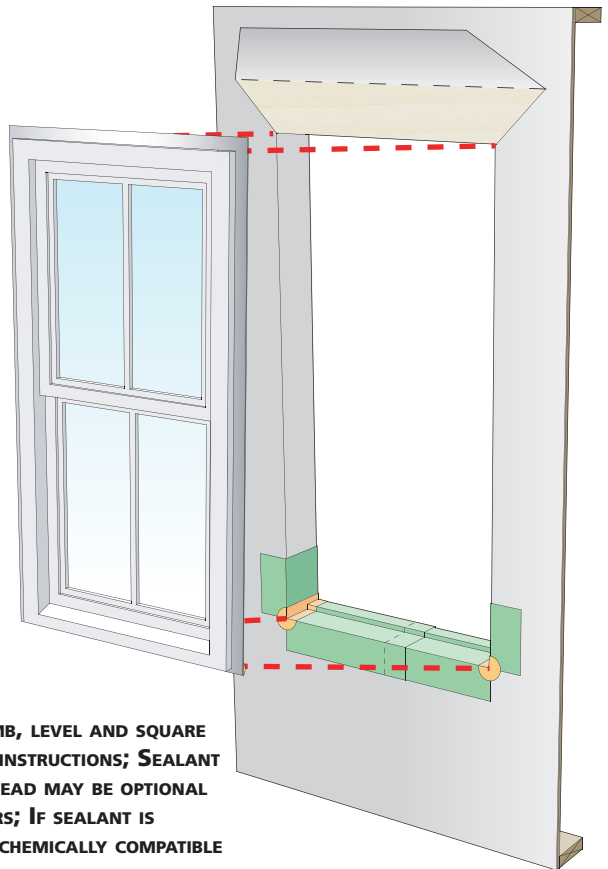


STEP 4
INSTALL FIRST PIECE OF ADHESIVE-BACKED SILL FLASHING

WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING

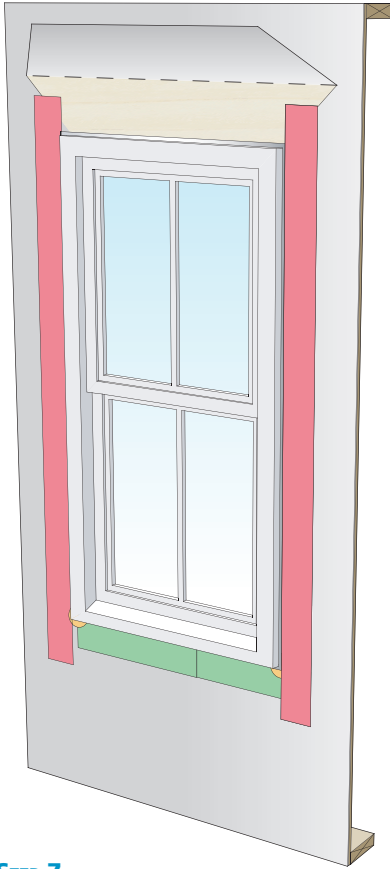


STEP 5
INSTALL SECOND PIECE OF
ADHESIVE-BACKED SILL FLASHING
AND CORNER FLASHING PATCHES
AT SILL

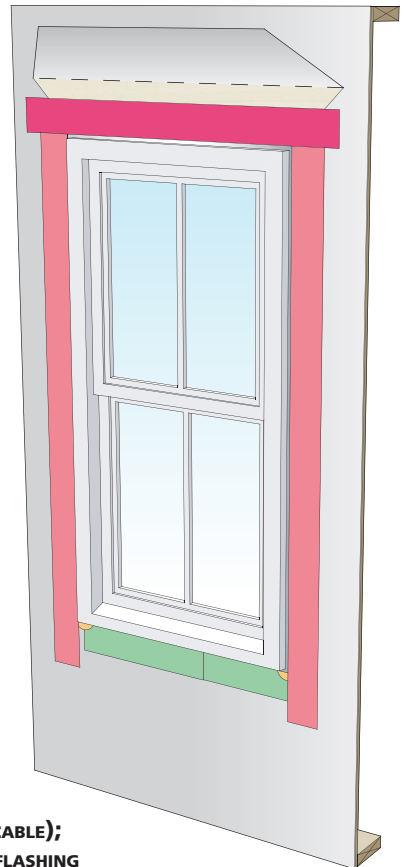


STEP 6
INSTALL WINDOW PLUMB, LEVEL AND SQUARE
PER MANUFACTURER'S INSTRUCTIONS; SEALANT
BEAD AT JAMBS AND HEAD MAY BE OPTIONAL
BASED ON RISK FACTORS; IF SEALANT IS
INSTALLED IT MUST BE CHEMICALLY COMPATIBLE
WITH HOUSEWRAP AND FLASHING

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**



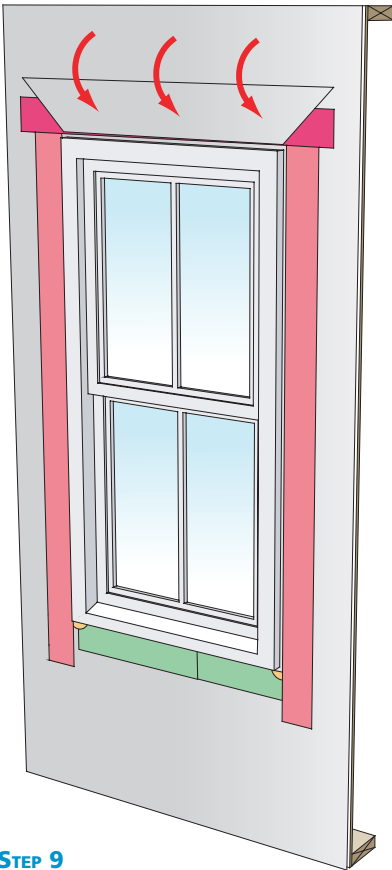
STEP 7
INSTALL SELF-ADHERED JAMB FLASHING



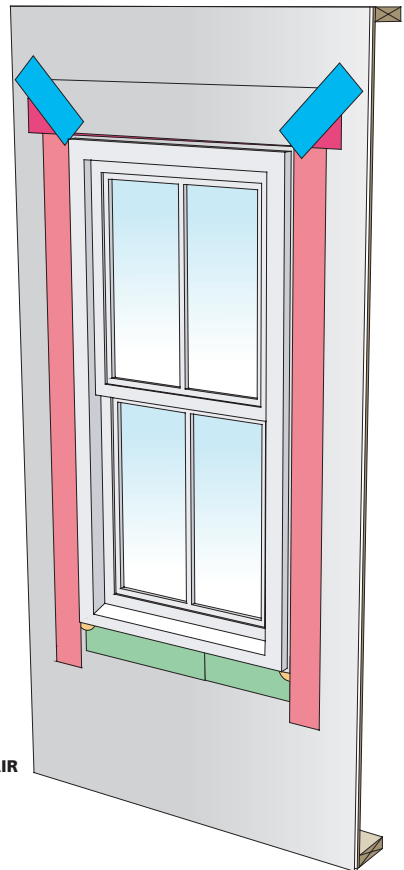
STEP 8
INSTALL A DRIP CAP (IF APPLICABLE);
INSTALL SELF-ADHERED HEAD FLASHING



WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING

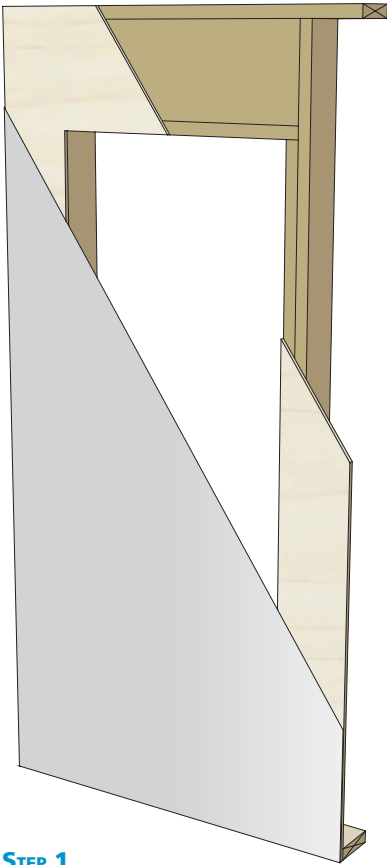


STEP 9
FOLD DOWN HEAD HOUSEWRAP

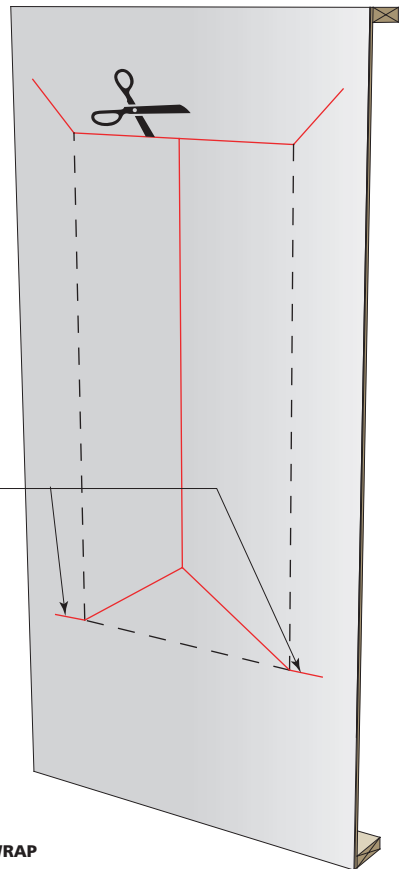


STEP 10
APPLY CORNER TAPE PATCHES AT HEAD; AIR
SEAL WINDOW AROUND ENTIRE PERIMETER
ON THE INTERIOR WITH SEALANT OR NON-
EXPANDING FOAM; EXPANDING FOAM
SHOULD NOT FILL THE SILL PAN

WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
MANUFACTURED PAN FLASHING



STEP 1
WOOD FRAME WALL WITH OSB AND
HOUSEWRAP

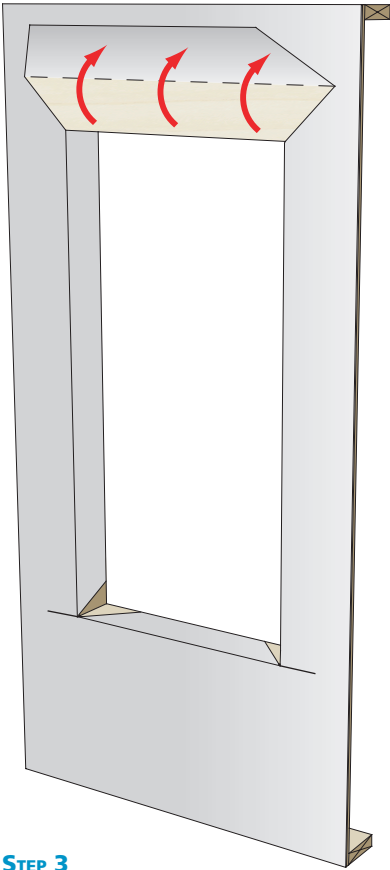


Note the
horizontal
slit in the
housewrap

STEP 2
MODIFIED "I" CUT IN HOUSEWRAP

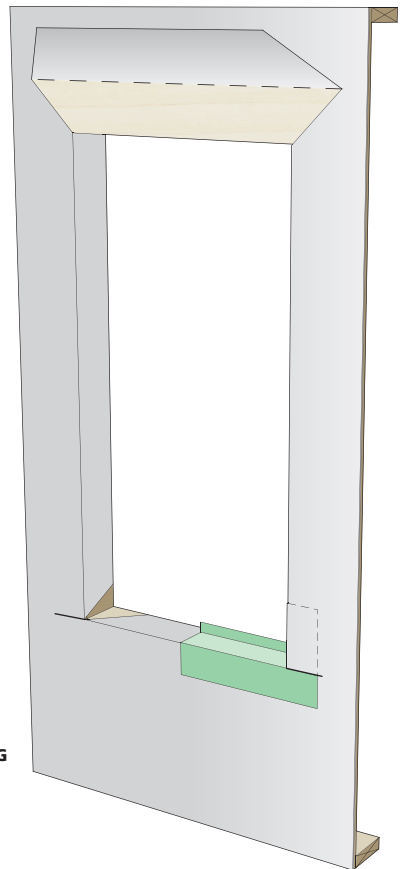


WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL MANUFACTURED PAN FLASHING



STEP 3

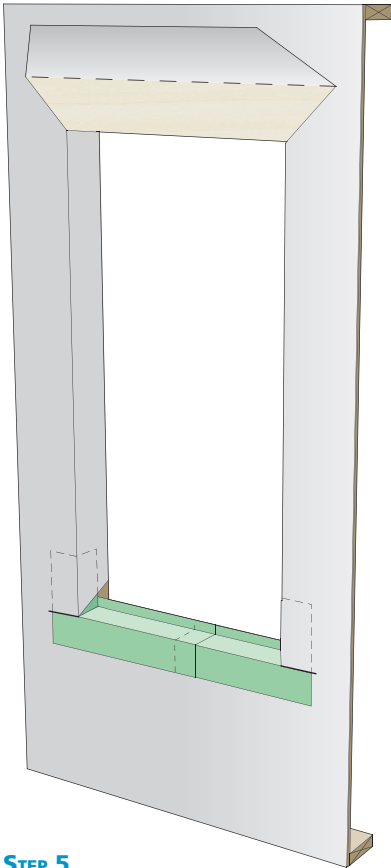
FOLD HOUSEWRAP IN AT SILL AND JAMBS; HOUSEWRAP AT HEAD TEMPORARILY FOLDED UP OR TUCKED UNDER



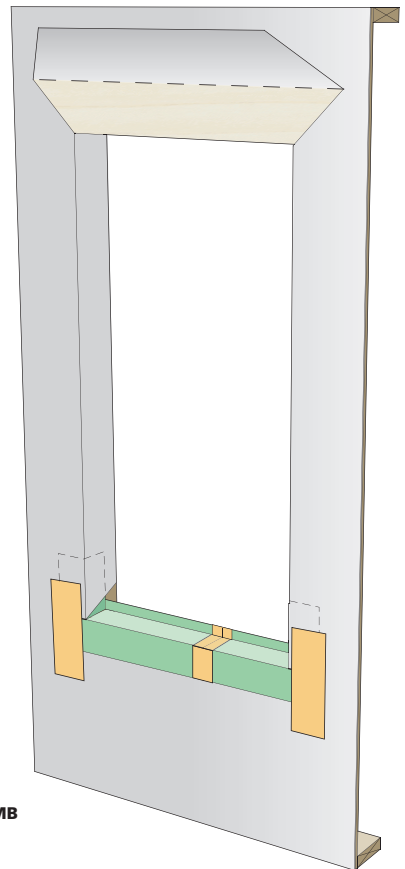
STEP 4

SLIP FIRST PIECE OF PAN FLASHING INTO HORIZONTAL SLIT IN HOUSEWRAP; PAN MUST FIT TIGHTLY; MECHANICALLY FASTEN AT EXTERIOR VERTICAL FACE ONLY

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
MANUFACTURED PAN FLASHING**



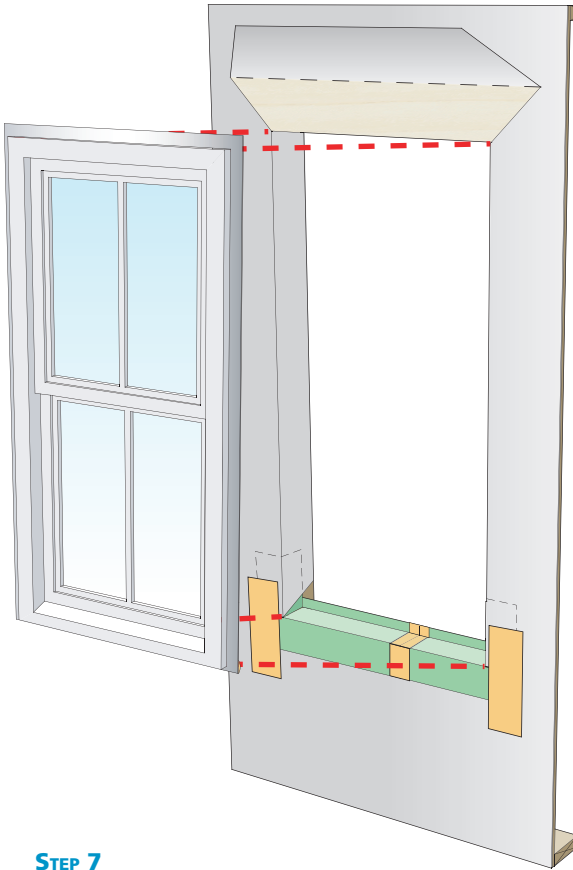
STEP 5
SLIP SECOND PIECE OF PAN FLASHING
INTO HORIZONTAL SLIT IN HOUSEWRAP¹
ENSURE A 3" MINIMUM OVERLAP AT
SILL



STEP 6
TAPE OR FLASH SILL PAN AT JAMB
AND SILL JOINT

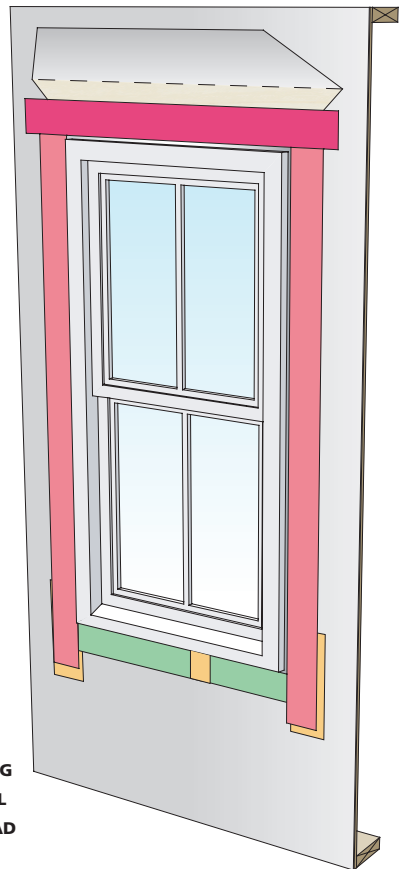


WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL MANUFACTURED PAN FLASHING



STEP 7

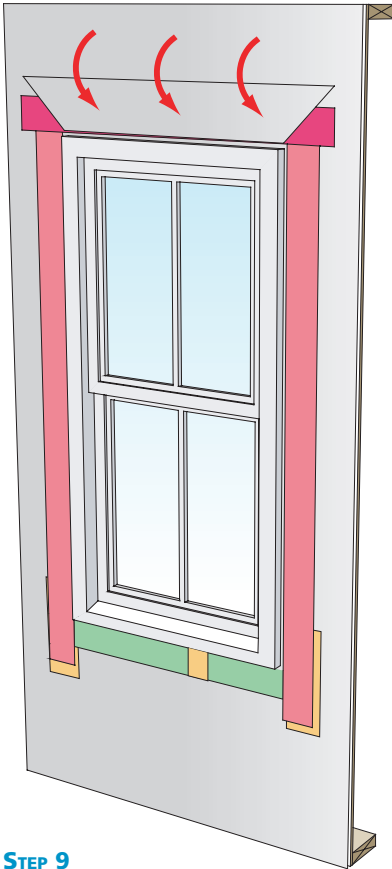
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH HOUSEWRAP AND FLASHING



STEP 8

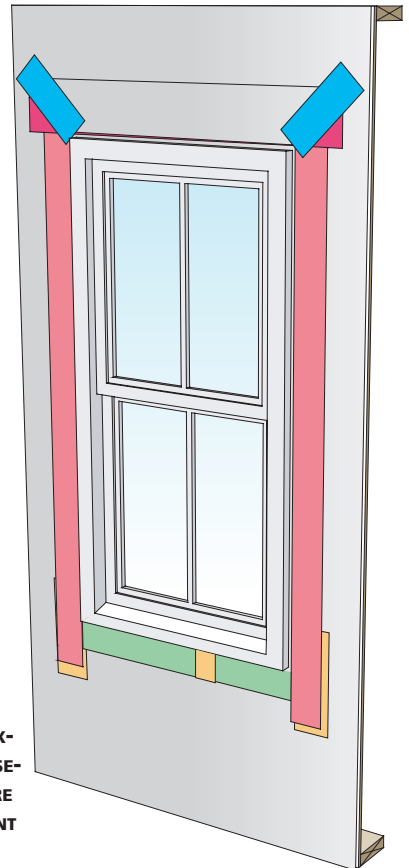
APPLY SELF-ADHERED JAMB FLASHING EXTENDING MINIMUM 1" ABOVE HEAD NAILING FLANGE AND A MINIMUM OF 3" BELOW SILL NAILING FLANGE; APPLY SELF-ADHERED HEAD FLASHING EXTENDING MINIMUM 2" PAST EDGE OF JAMB FLASHING

**WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
MANUFACTURED PAN FLASHING**



STEP 9

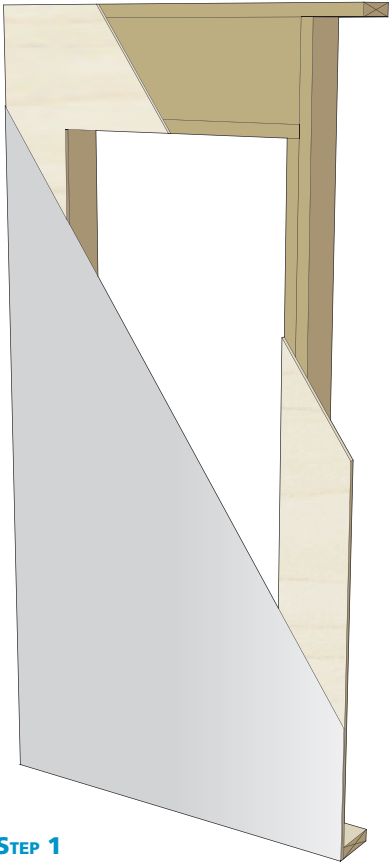
**FOLD DOWN HOUSEWRAP AT HEAD;
ENSURE HEAD FLAP HAS NOT BEEN
DAMAGED DURING INSTALLATION**



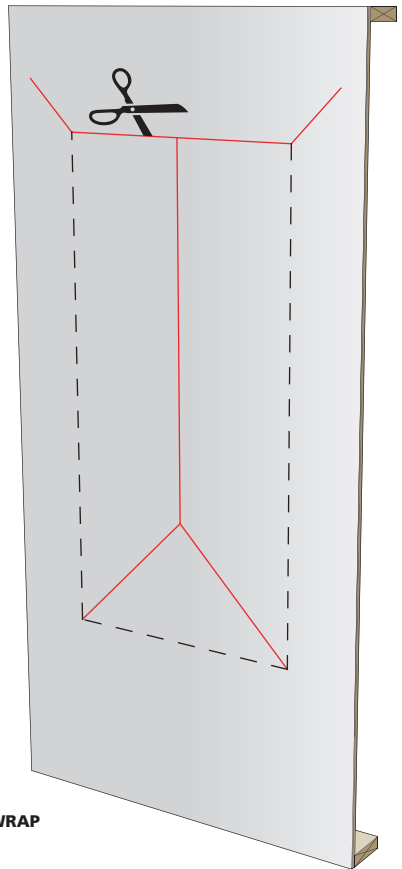
STEP 10

**APPLY CORNER TAPE PATCHES AT HEAD EX-
TENDING MINIMUM 1" PAST CUT IN HOUSE-
WRAP; AIR SEAL WINDOW AROUND ENTIRE
PERIMETER ON THE INTERIOR WITH SEALANT
OR NON-EXPANDING FOAM; EXPANDING
FOAM SHOULD NOT FILL THE SILL PAN**

**BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

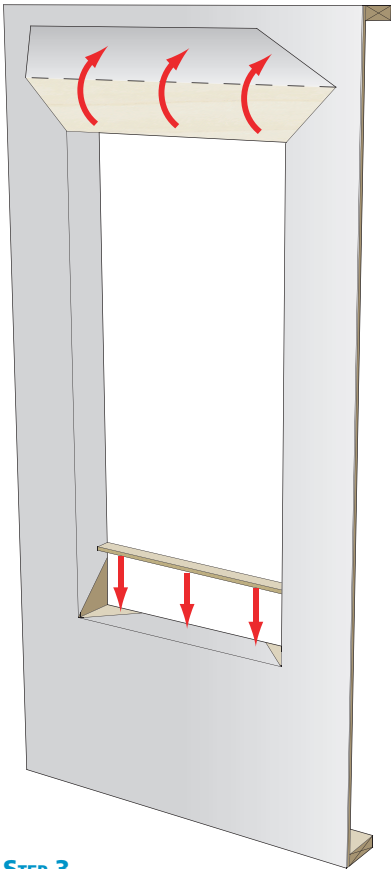


STEP 1
**WOOD FRAME WALL WITH OSB
AND HOUSEWRAP**

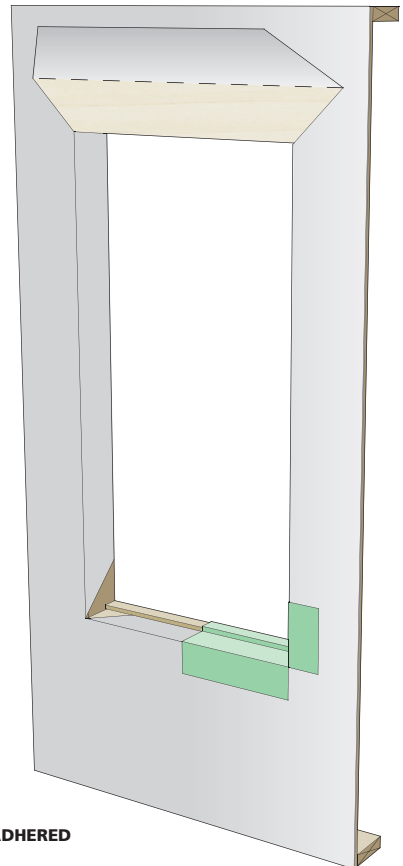


STEP 2
MODIFIED "I" CUT IN HOUSEWRAP

**BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

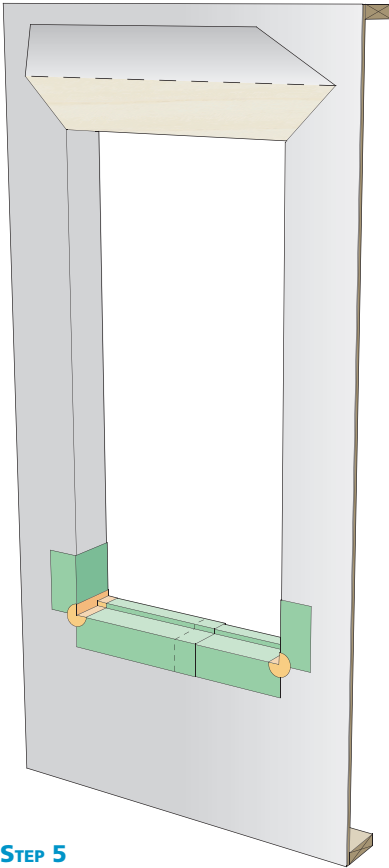


STEP 3
HOUSEWRAP FOLDED IN AT JAMBS AND SILL. HOUSEWRAP AT HEAD TEMPORARILY FOLDED UP OR, ALTERNATIVELY, TUCKED UNDER; INSTALL BACKDAM



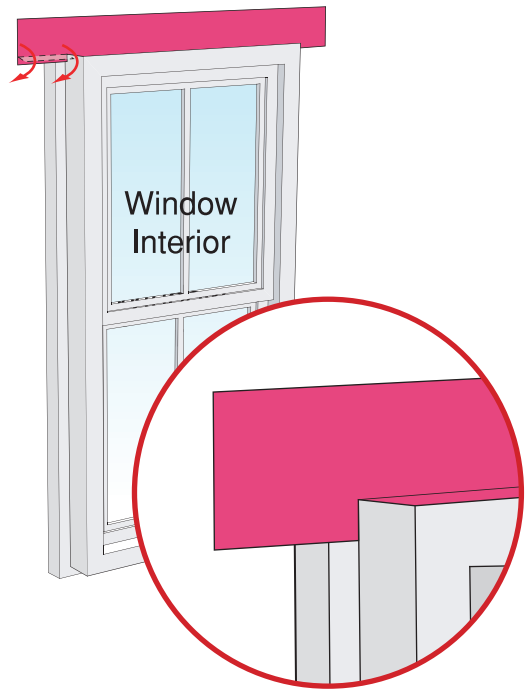
STEP 4
INSTALL FIRST PIECE OF SELF-ADHERED SILL FLASHING

BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING



STEP 5

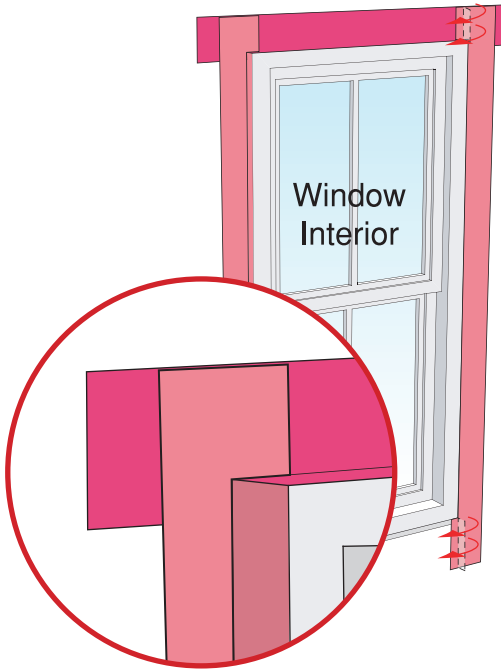
INSTALL SECOND PIECE OF SELF-ADHERED SILL FLASHING AND CORNER FLASHING PATCHES AT SILL



STEP 6

INSTALL SELF-ADHERING FLASHING ON INTERIOR OF BRICK MOLD TO CREATE "FLANGED" WINDOW; AT CORNERS BETWEEN THE HEAD AND JAMB, CUT THE FLASHING ALONG THE CORNER SO IT LIES FLAT AGAINST THE MOLDING; FOLD THE CUT SECTIONS DOWN

**BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

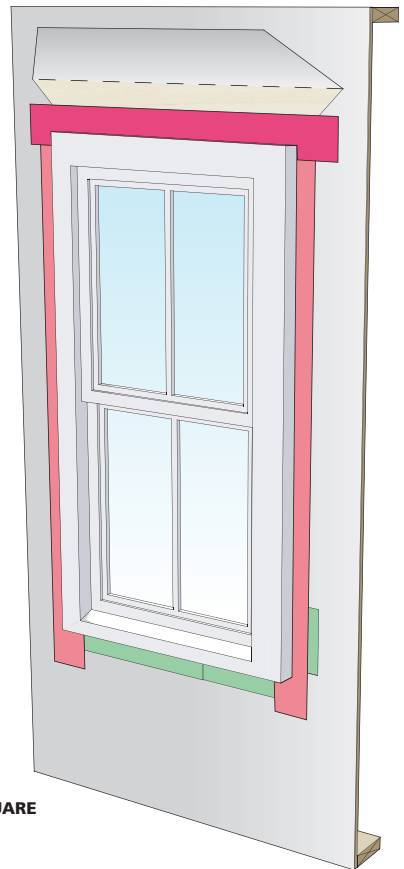


STEP 7

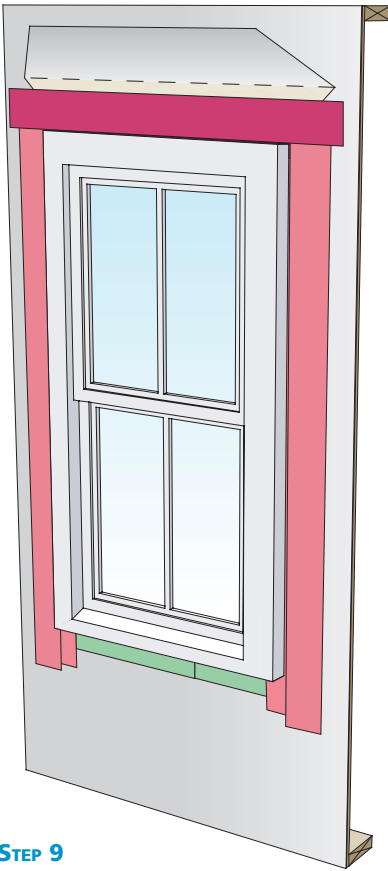
**AT CORNERS BETWEEN THE HEAD AND JAMB,
CUT THE FLASHING ALONG THE CORNER SO IT
LIES FLAT AGAINST THE MOLDING; FOLD THE
CUT SECTIONS DOWN**

STEP 8

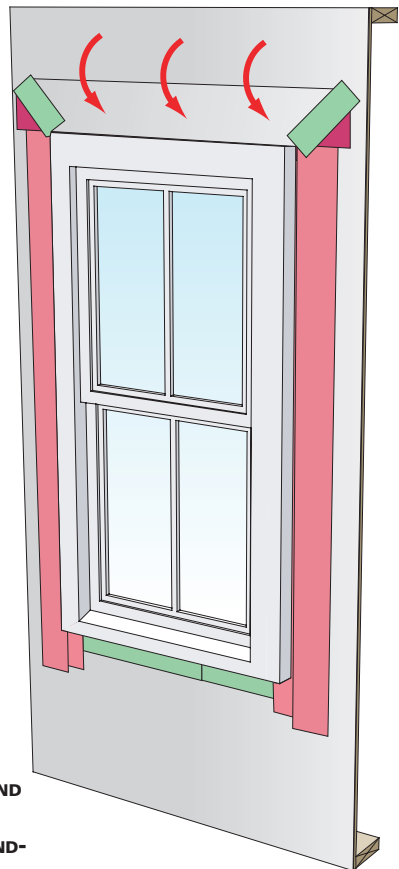
**INSTALL WINDOW PLUMB, LEVEL AND SQUARE
PER MANUFACTURER'S INSTRUCTIONS**



BRICK MOLD WINDOW WITH HOUSEWRAP ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING

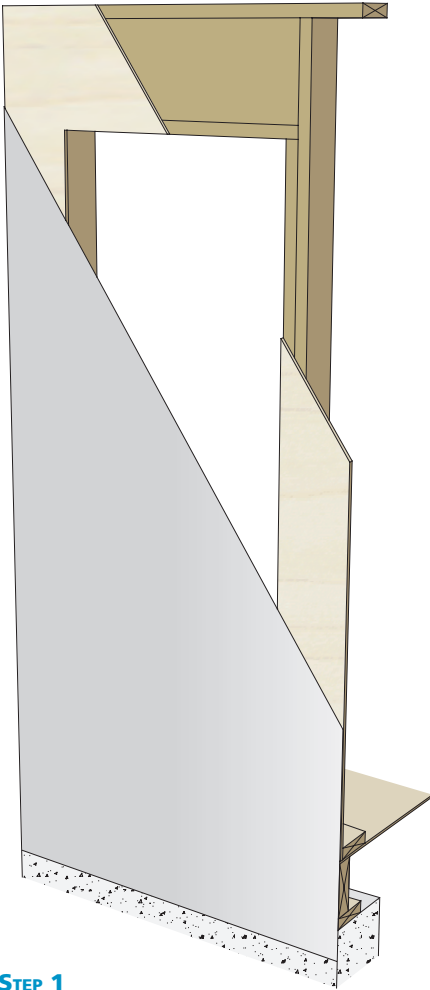


STEP 9
INSTALL SELF-ADHERED JAMB
FLASHING; INSTALL SELF-ADHERED
HEAD FLASHING

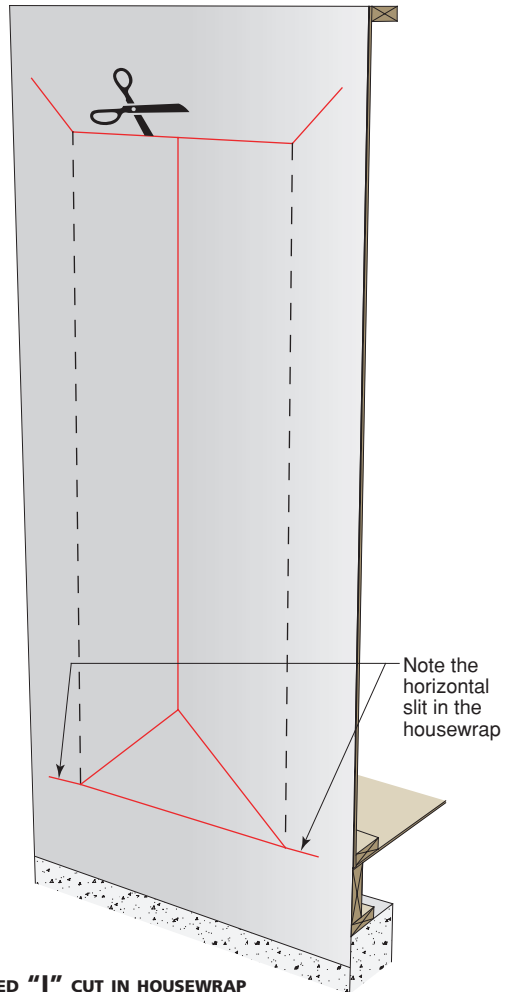


STEP 10
FOLD HOUSEWRAP AT HEAD DOWN; APPLY
CORNER PATCHES AT HEAD; AIR SEAL AROUND
ENTIRE PERIMETER ON THE INTERIOR WITH
SEALANT OR NON-EXPANDING FOAM; EXPAND-
ING FOAM SHOULD NOT FILL SILL PAN

**BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING
OVER A WOOD FRAMED WALL
FACTORY INSTALLED FLASHING**



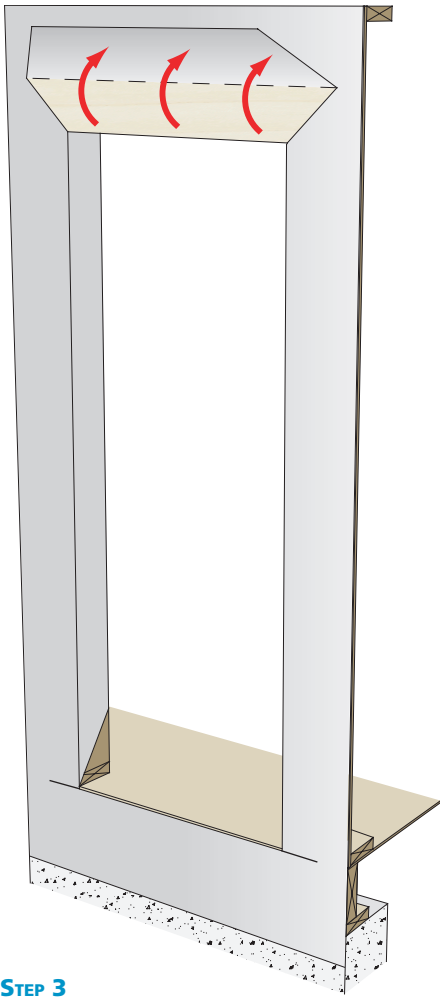
STEP 1
**WOOD FRAME WALL WITH PLYWOOD
AND HOUSEWRAP**



STEP 2
MODIFIED "I" CUT IN HOUSEWRAP

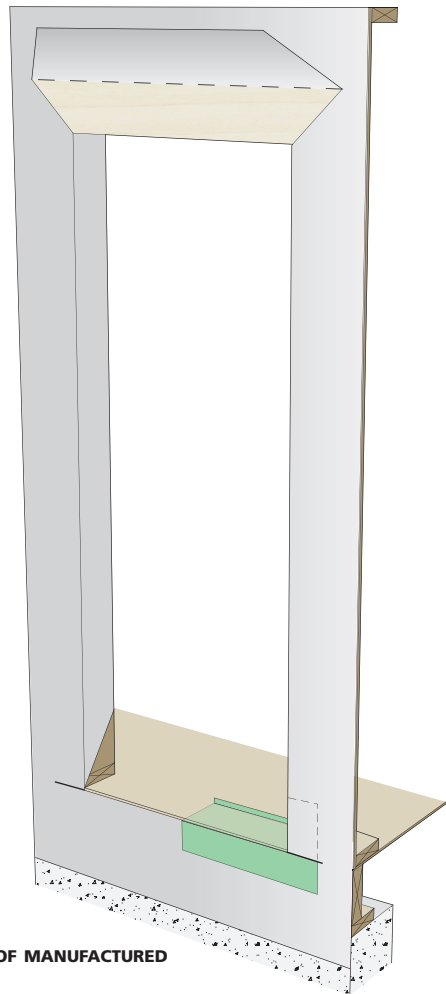


BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING OVER A WOOD FRAMED WALL FACTORY INSTALLED FLASHING



STEP 3

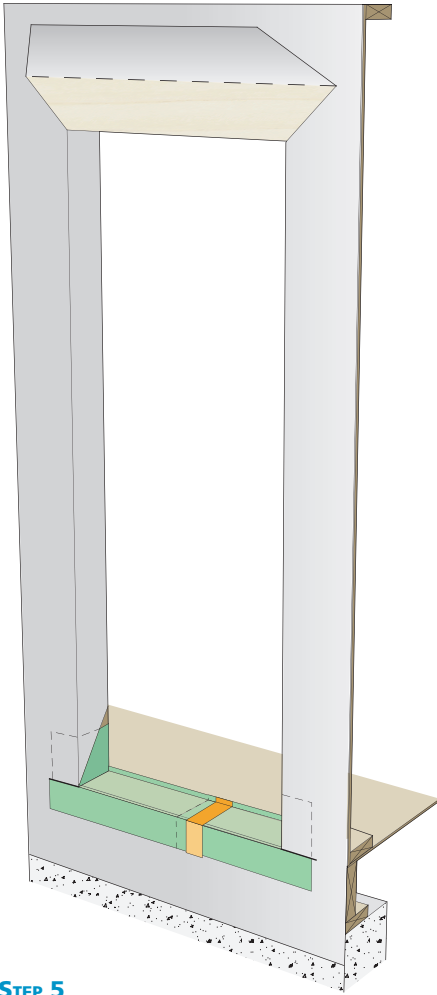
HOUSEWRAP FOLDED IN AT SILL AND JAMBS. HOUSEWRAP AT HEAD TEMPORARILY FOLDED UP OR, ALTERNATIVELY, TUCKED UNDER



STEP 4

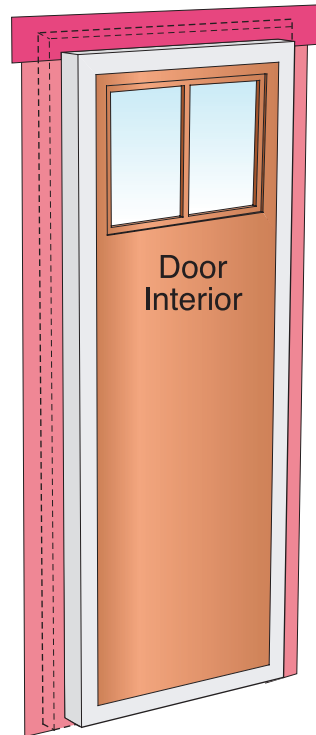
INSTALL FIRST PIECE OF MANUFACTURED PAN FLASHING

**BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING
OVER A WOOD FRAMED WALL
FACTORY INSTALLED FLASHING**



STEP 5

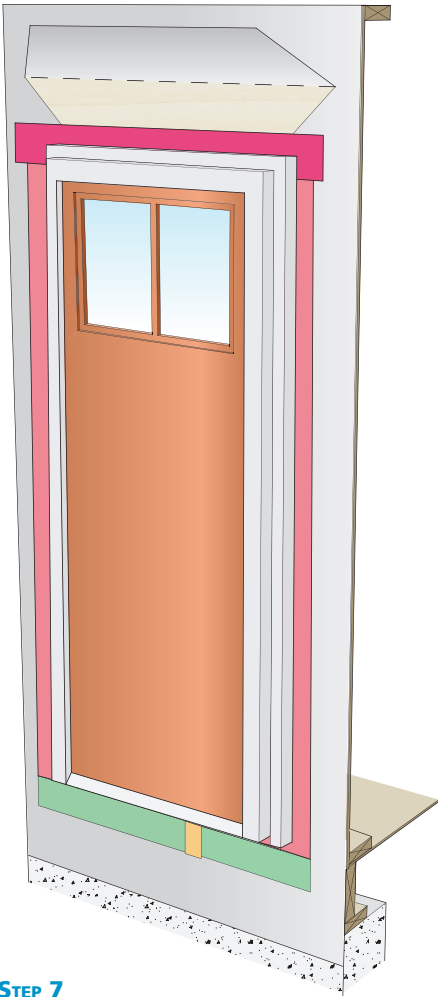
**INSTALL SECOND PIECE OF MANUFACTURED
PAN FLASHING; TAPE SILL PAN AT SILL JOINT**



STEP 6

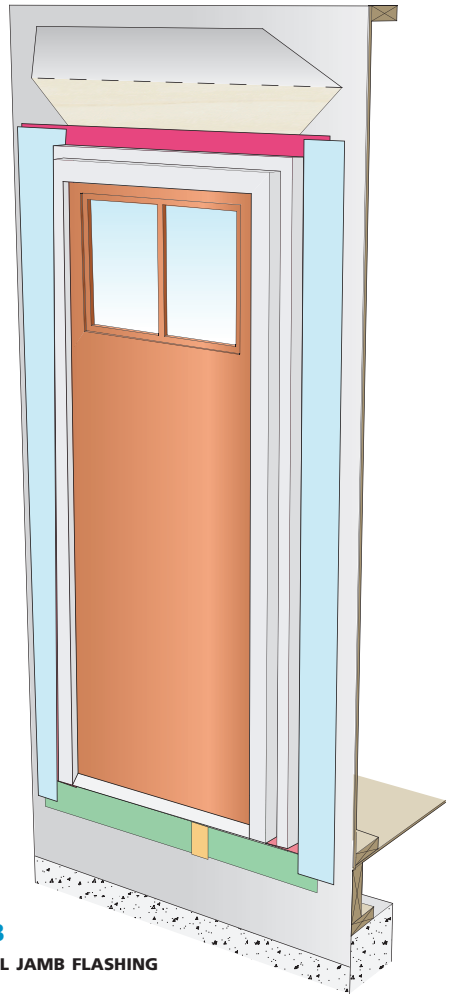
**DOOR MANUFACTURER SUPPLIES BRICK
MOLD DOOR WITH FLASHING ALREADY
INSTALLED AT JAMBS AND HEAD**

**BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING
OVER A WOOD FRAMED WALL
FACTORY INSTALLED FLASHING**



STEP 7

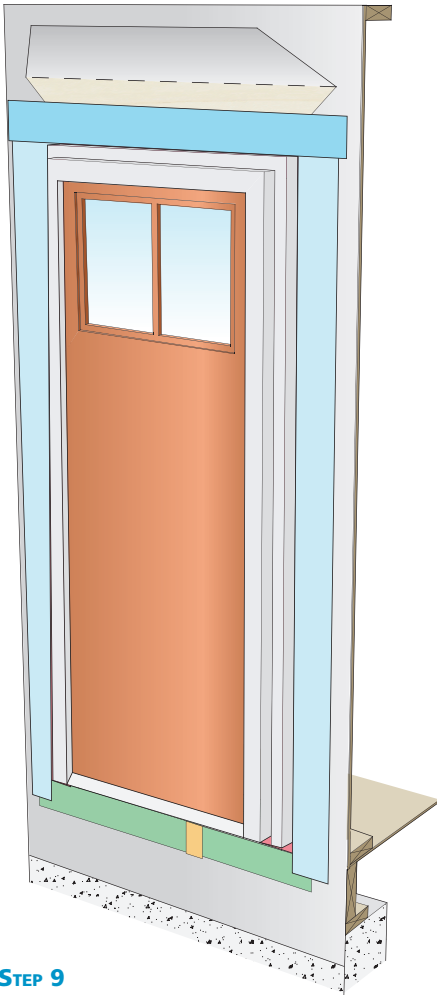
**INSTALL DOOR PLUMB, LEVEL AND SQUARE
PER MANUFACTURER'S INSTRUCTIONS**



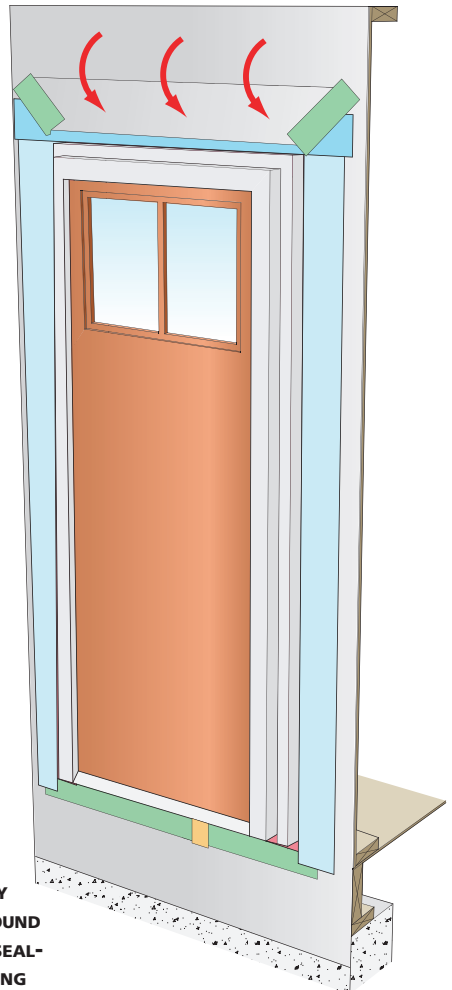
STEP 8

INSTALL JAMB FLASHING

**BRICK MOLD DOOR WITH HOUSEWRAP AND PAN FLASHING
OVER A WOOD FRAMED WALL
FACTORY INSTALLED FLASHING**



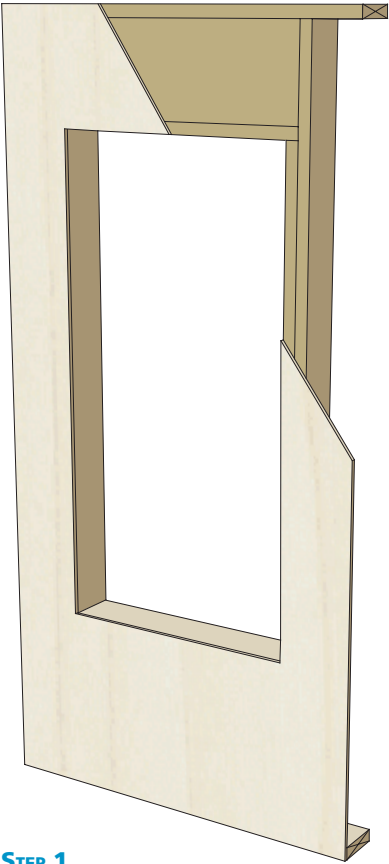
STEP 9
INSTALL HEAD FLASHING



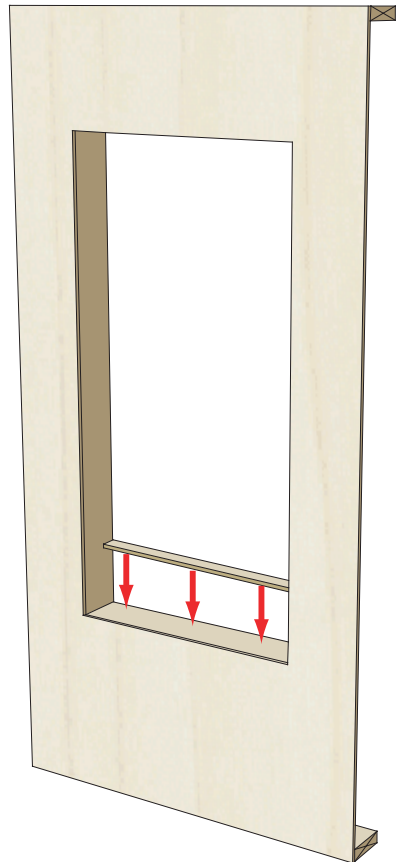
STEP 10
**FOLD DOWN HOUSEWRAP AT HEAD; APPLY
CORNER PATCHES AT HEAD; AIR SEAL AROUND
DOOR PERIMETER ON THE INTERIOR WITH SEAL-
ANT OR NON-EXPANDING FOAM; EXPANDING
FOAM SHOULD NOT FILL SILL PAN**



**WINDOW WITH BUILDING PAPER ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

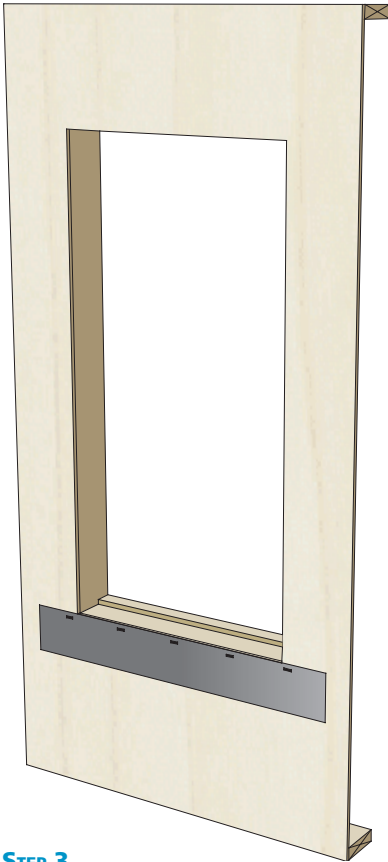


STEP 1
OSB ON A WOOD FRAMED WALL

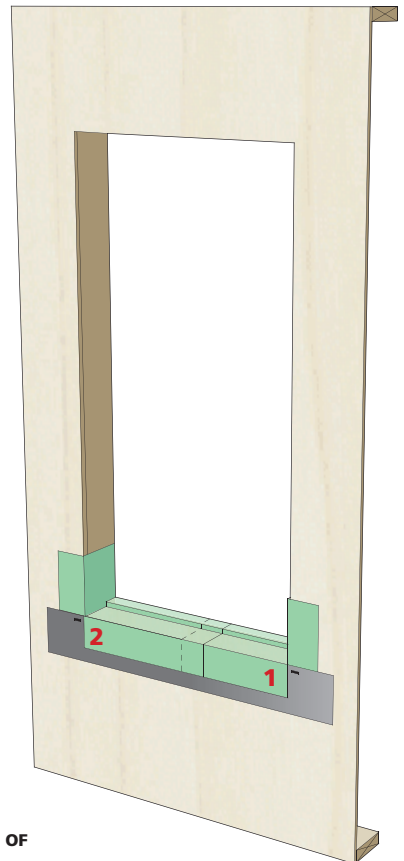


STEP 2
INSTALL BACKDAM

**WINDOW WITH BUILDING PAPER ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**

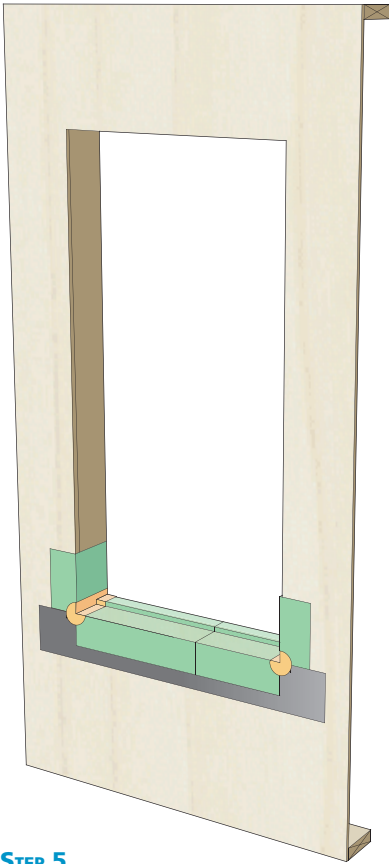


STEP 3
MECHANICALLY ATTACH STRIP
OF BUILDING PAPER AT SILL;
ATTACH AT TOP ONLY, LEAVE SIDES
AND BOTTOM LOOSE

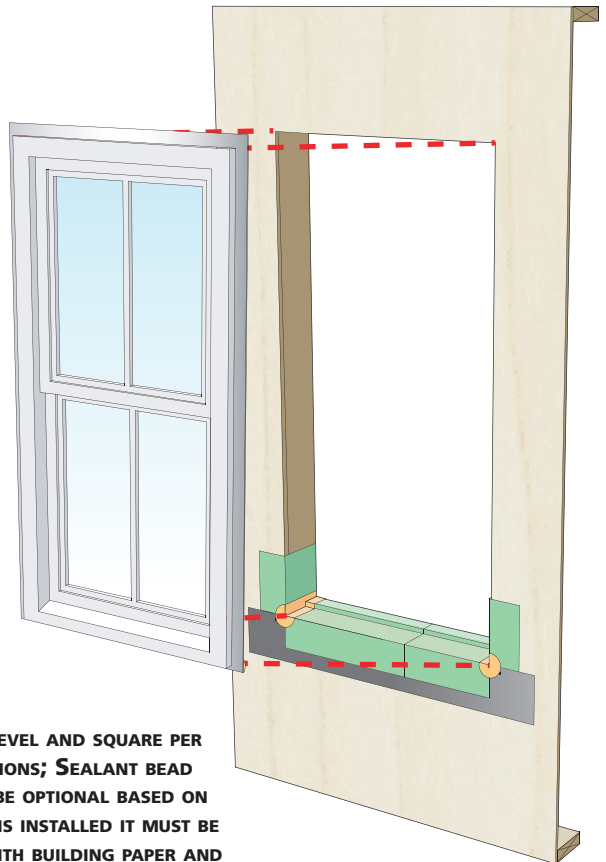


STEP 4
APPLY FIRST PIECE OF SELF-ADHERED
SILL FLASHING; APPLY SECOND PIECE OF
SELF-ADHERED SILL FLASHING

WINDOW WITH BUILDING PAPER ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING

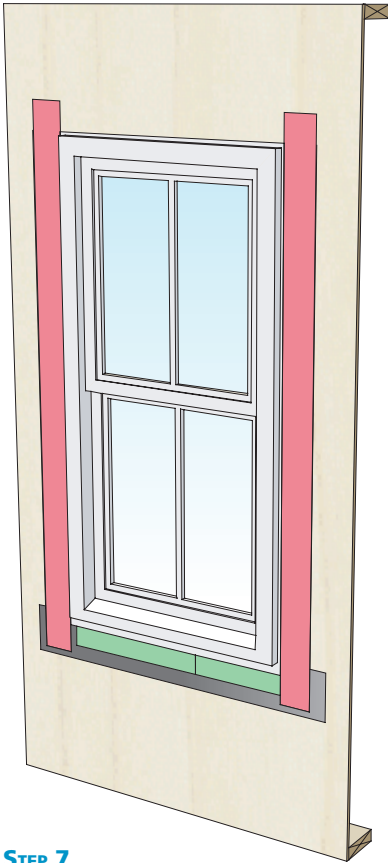


STEP 5
INSTALL CORNER FLASHING PATCHES
AT SILL

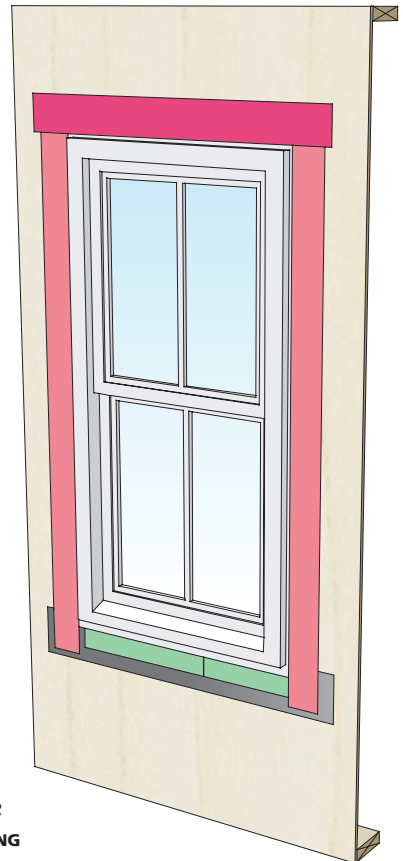


STEP 6
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER
MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD
AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON
RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE
CHEMICALLY COMPATIBLE WITH BUILDING PAPER AND
FLASHING

**WINDOW WITH BUILDING PAPER ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**



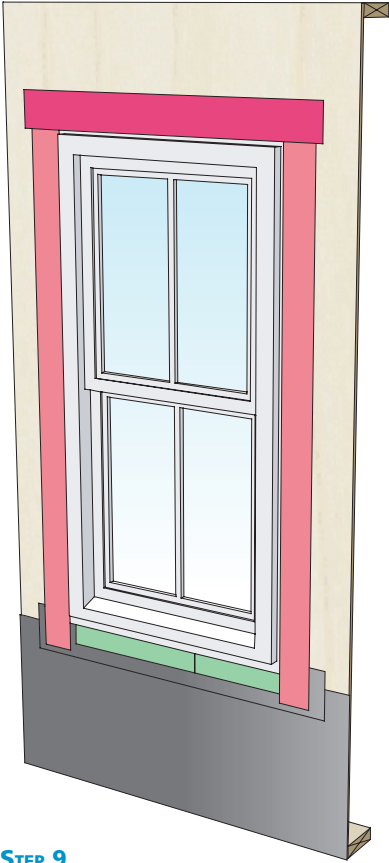
STEP 7
INSTALL SELF-ADHERED JAMB FLASHING



STEP 8
**INSTALL A DRIP CAP (IF APPLICABLE);
INSTALL SELF-ADHERED HEAD FLASHING**

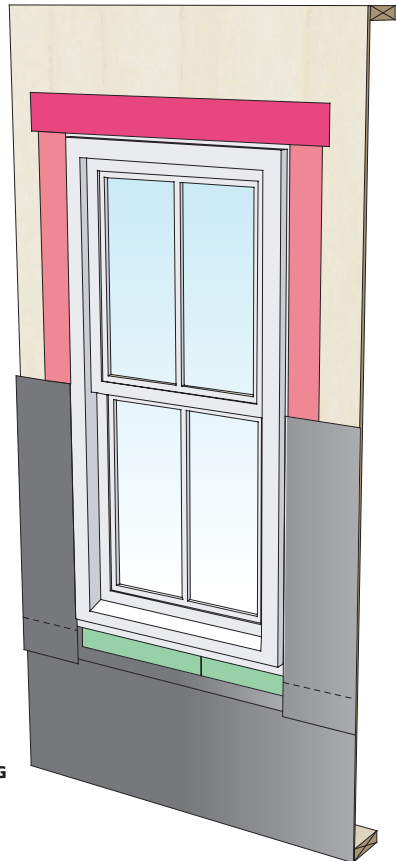


WINDOW WITH BUILDING PAPER ON OSB OVER A WOOD FRAMED WALL SELF-ADHERED FLASHING



STEP 9

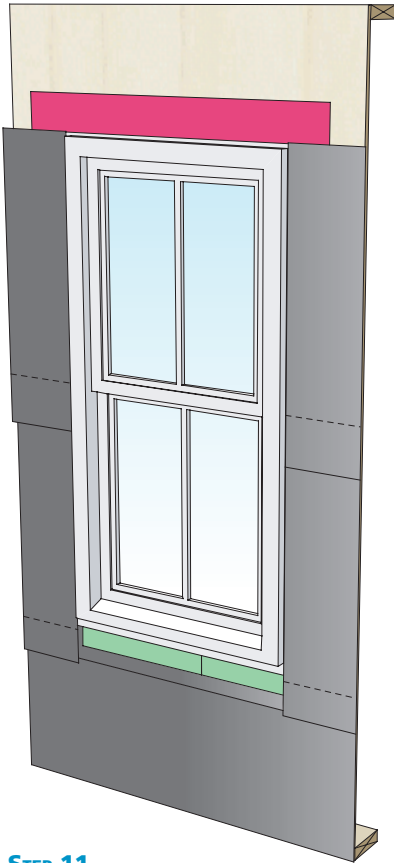
INSTALL FIRST COURSE OF BUILDING PAPER UNDER THE PAPER THAT IS UNDER THE SILL FLASHING



STEP 10

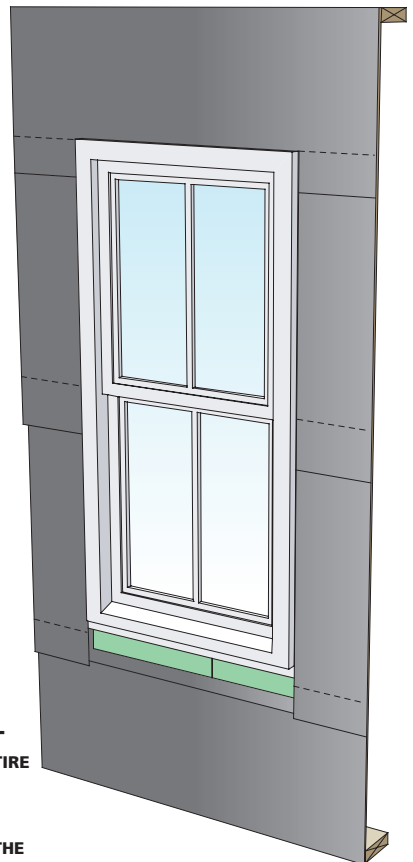
INSTALL SECOND COURSE OF BUILDING PAPER AT JAMBS; PAPER SHOULD BE SEALED TO JAMB FLANGES WITH SEALANT

**WINDOW WITH BUILDING PAPER ON OSB
OVER A WOOD FRAMED WALL
SELF-ADHERED FLASHING**



STEP 11

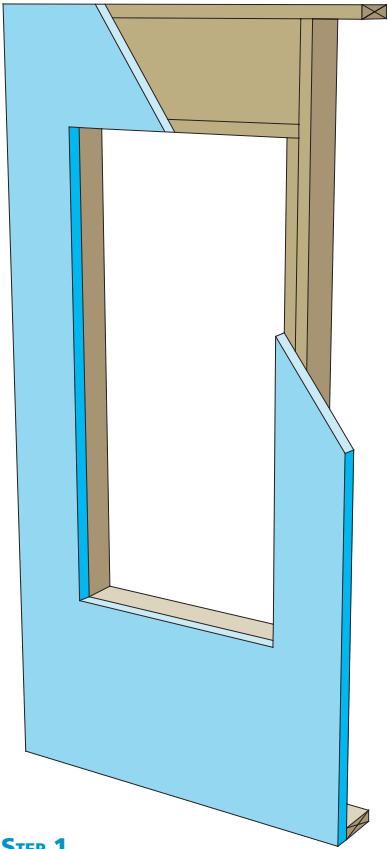
INSTALL THIRD COURSE OF BUILDING PAPER AT JAMBS; PAPER SHOULD BE SEALED TO JAMB FLANGES WITH SEALANT



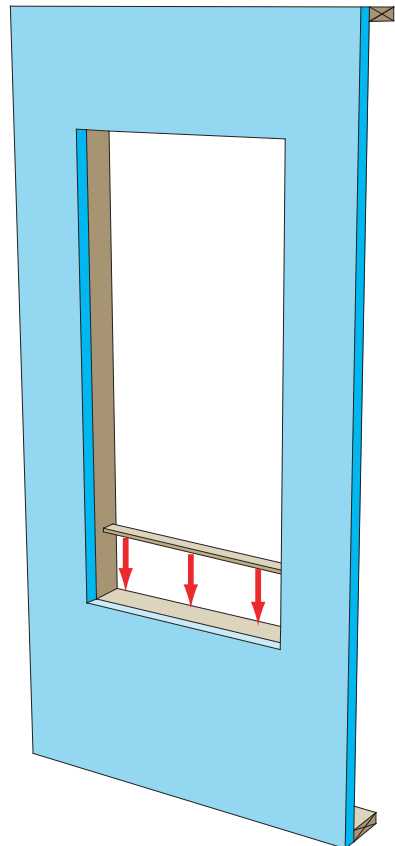
STEP 12

INSTALL FOURTH COURSE OF BUILDING PAPER AT HEAD; PAPER SHOULD BE SEALED TO JAMB FLANGES WITH SEALANT; AIR SEAL WINDOW AROUND ENTIRE PERIMETER ON THE INTERIOR WITH SEALANT OR NON-EXPANDING FOAM; EXPANDING FOAM SHOULD NOT FILL THE SILL PAN

WINDOW WITH FOAM SHEATHING ON A WOOD FRAMED WALL SELF-ADHERED PAN FLASHING

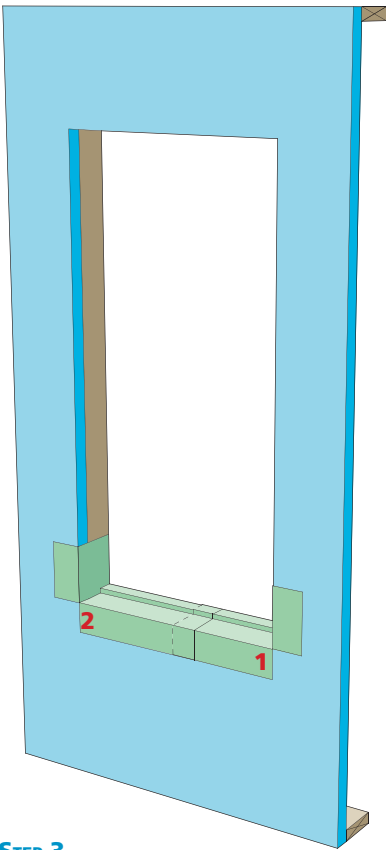


STEP 1
INSULATING SHEATHING ON WOOD
FRAME WALL



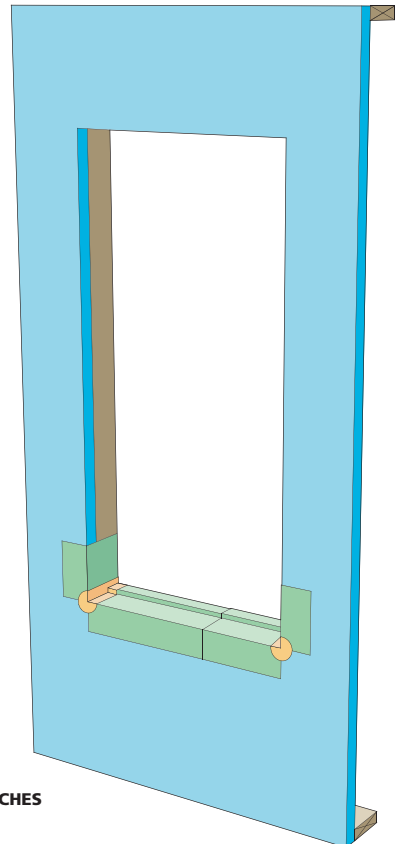
STEP 2
INSTALL BACKDAM

**WINDOW WITH FOAM SHEATHING
ON A WOOD FRAMED WALL
SELF-ADHERED PAN FLASHING**



STEP 3

**APPLY FIRST PIECE OF SELF-ADHERED
SILL FLASHING; APPLY SECOND PIECE OF
SELF-ADHERED SILL FLASHING**

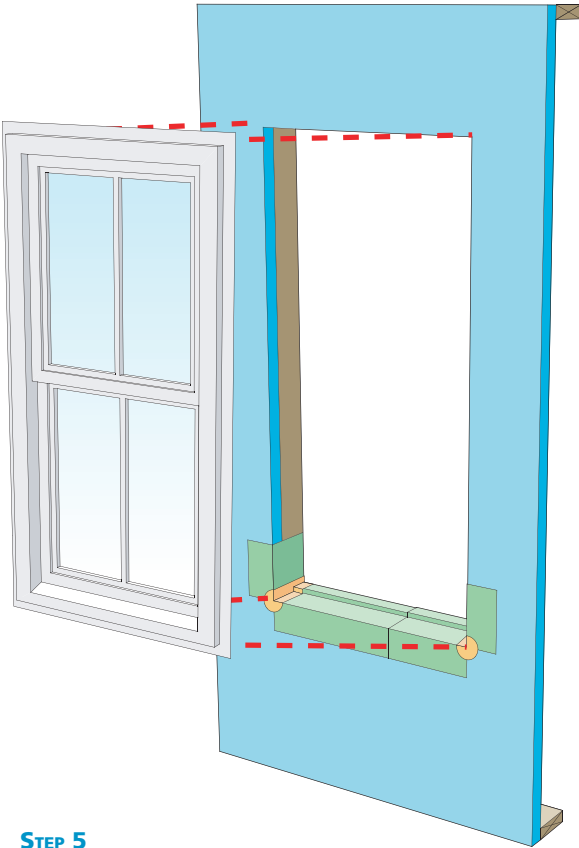


STEP 4

**INSTALL CORNER FLASHING PATCHES
AT SILL**

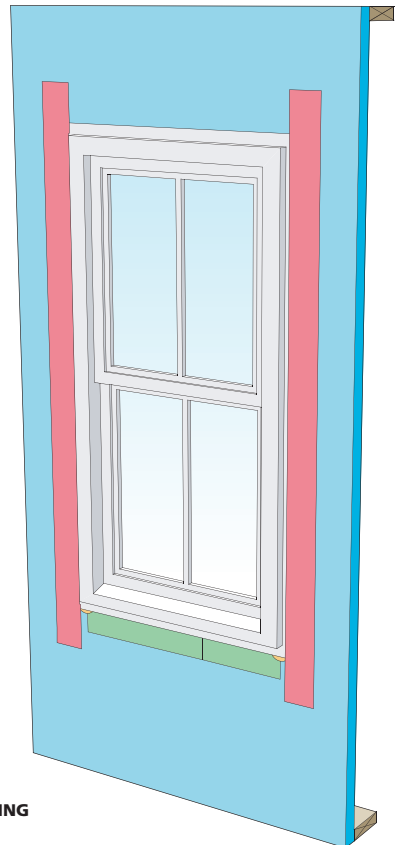


WINDOW WITH FOAM SHEATHING ON A WOOD FRAMED WALL SELF-ADHERED PAN FLASHING



STEP 5

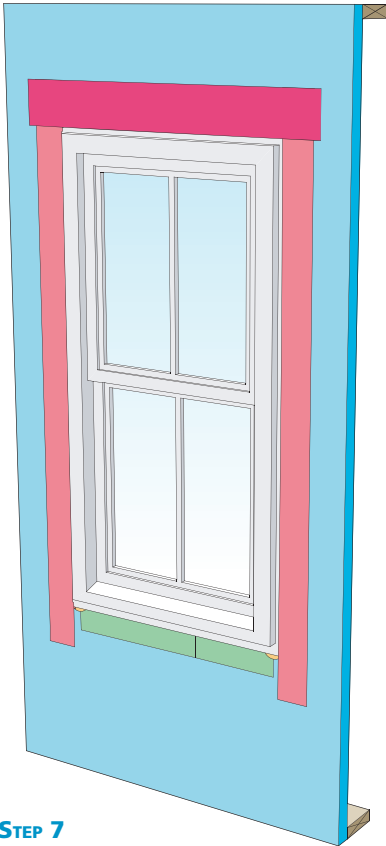
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH FOAM SHEATHING AND FLASHING



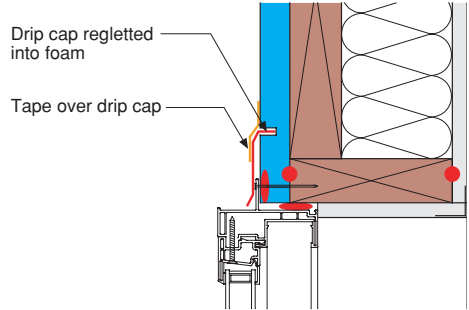
STEP 6

INSTALL SELF-ADHERED JAMB FLASHING

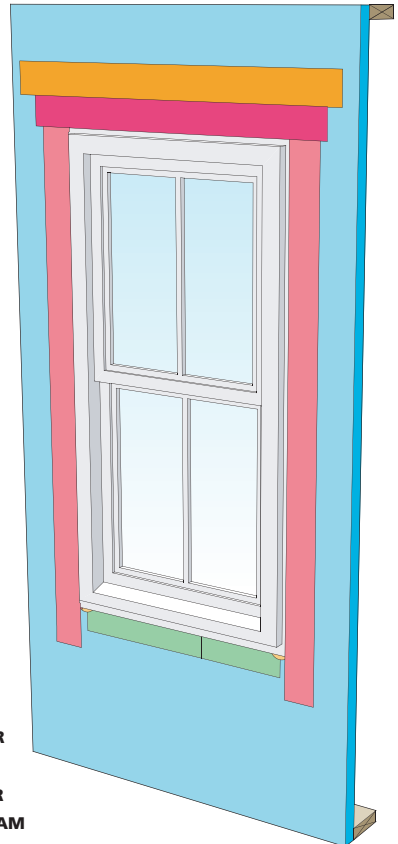
WINDOW WITH FOAM SHEATHING ON A WOOD FRAMED WALL SELF-ADHERED PAN FLASHING



STEP 7
INSTALL DRIP CAP (IF APPLICABLE);
INSTALL SELF-ADHERED HEAD FLASHING

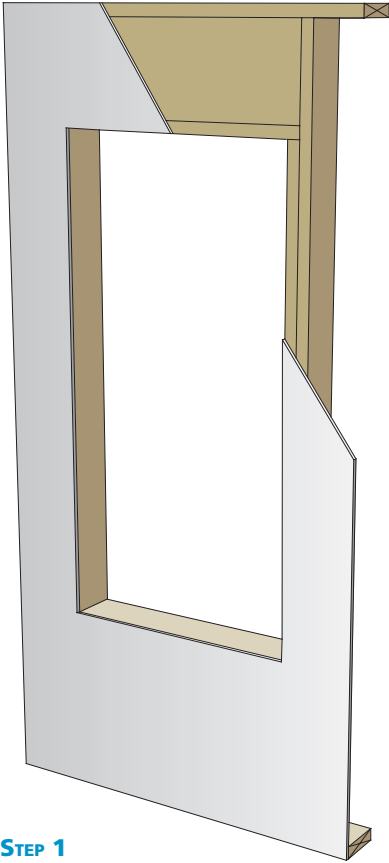


**DRIP CAP REGLETTED INTO FOAM
SECTION DETAIL**

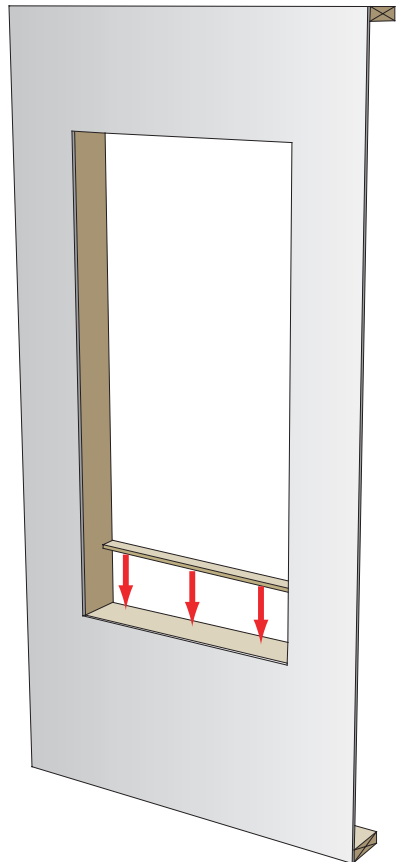


STEP 8
TAPE TOP EDGE OF HEAD FLASHING; AIR
SEAL WINDOW AROUND ENTIRE PERIM-
ETER ON THE INTERIOR WITH SEALANT OR
NON-EXPANDING FOAM; EXPANDING FOAM
SHOULD NOT FILL THE SILL PAN

WINDOW WITH THIN PROFILE SHEATHING ON A WOOD FRAMED WALL SELF-ADHERED PAN FLASHING

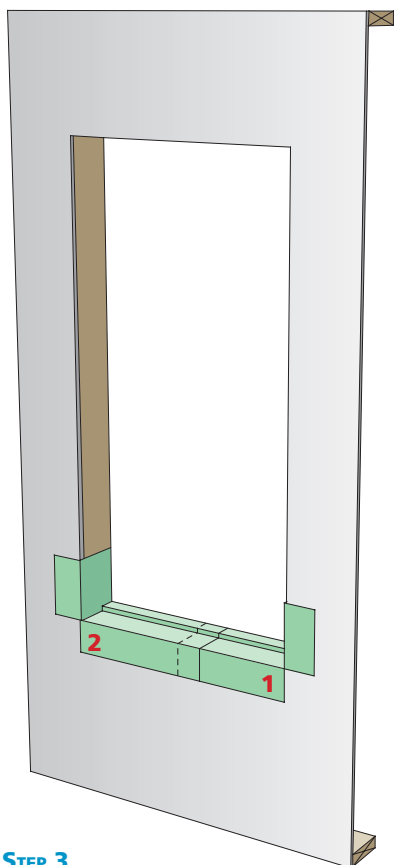


STEP 1
THIN PROFILE SHEATHING
ON WOOD FRAME WALL

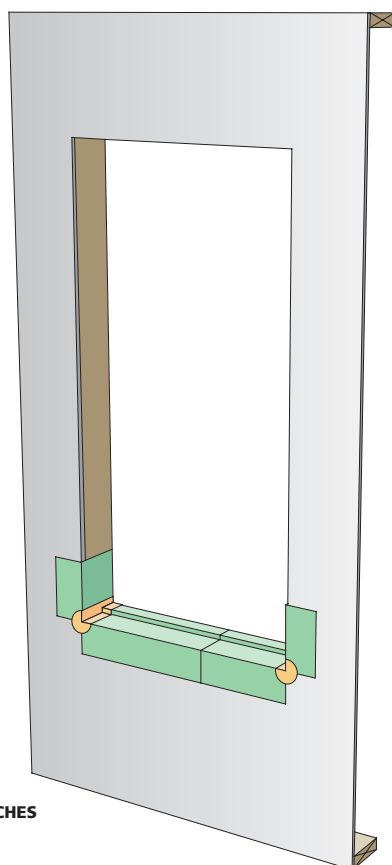


STEP 2
INSTALL BACKDAM

**WINDOW WITH THIN PROFILE SHEATHING
ON A WOOD FRAMED WALL
SELF-ADHERED PAN FLASHING**

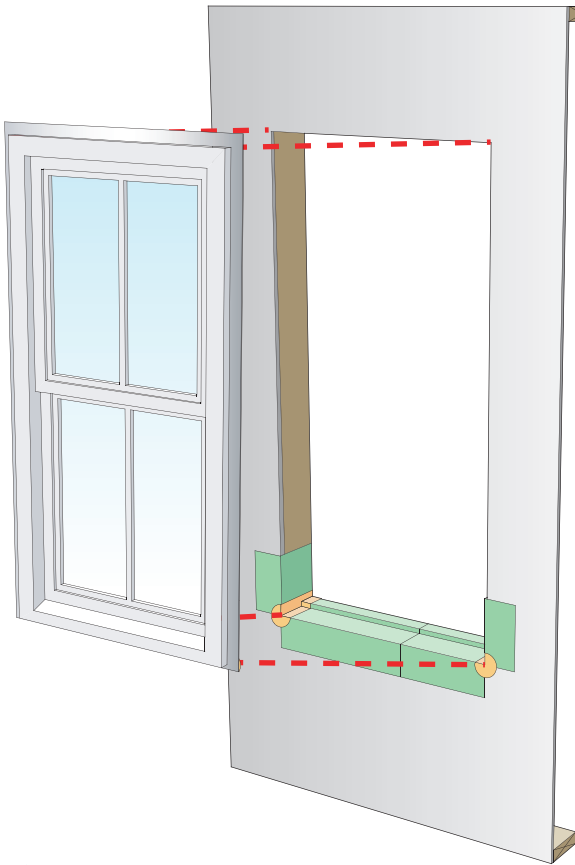


STEP 3
**INSTALL FIRST PIECE OF SELF-ADHERED
SILL FLASHING; INSTALL SECOND PIECE
OF SELF-ADHERED SILL FLASHING**



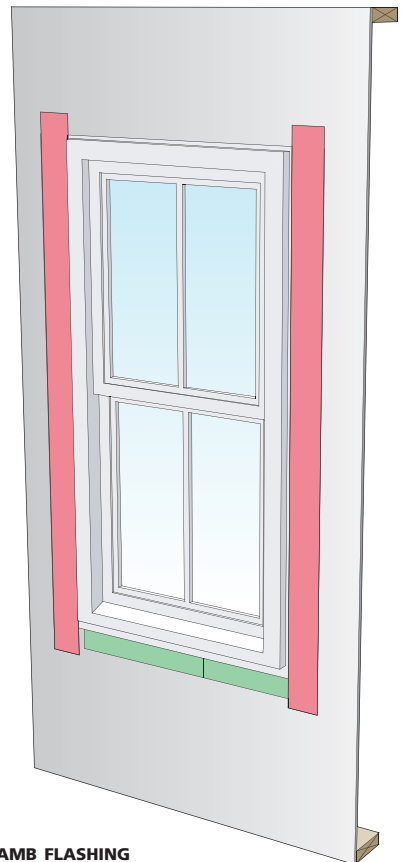
STEP 4
**INSTALL CORNER FLASHING PATCHES
AT SILL**

WINDOW WITH THIN PROFILE SHEATHING ON A WOOD FRAMED WALL SELF-ADHERED PAN FLASHING



STEP 5

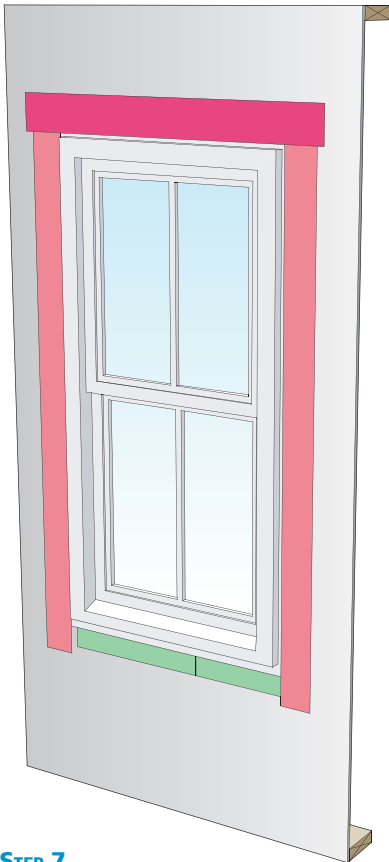
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH SHEATHING AND FLASHING



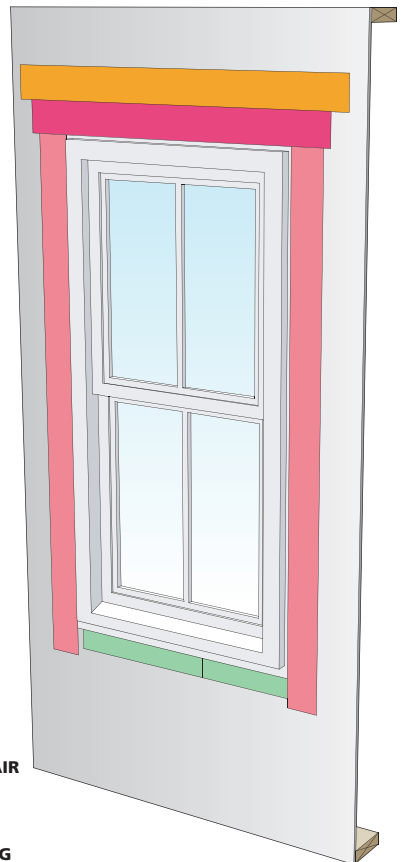
STEP 6

INSTALL SELF-ADHERED JAMB FLASHING

**WINDOW WITH THIN PROFILE SHEATHING
ON A WOOD FRAMED WALL
SELF-ADHERED PAN FLASHING**



STEP 7
INSTALL DRIP CAP (IF APPLICABLE);
INSTALL SELF-ADHERED HEAD FLASHING

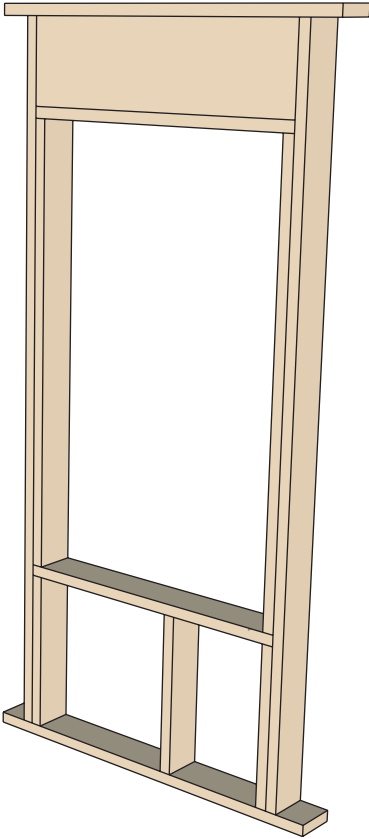


STEP 8
TAPE TOP EDGE OF HEAD FLASHING; AIR
SEAL WINDOW AROUND ENTIRE PERIM-
ETER ON THE INTERIOR WITH SEALANT
OR NON-EXPANDING FOAM; EXPANDING
FOAM SHOULD NOT FILL THE SILL PAN

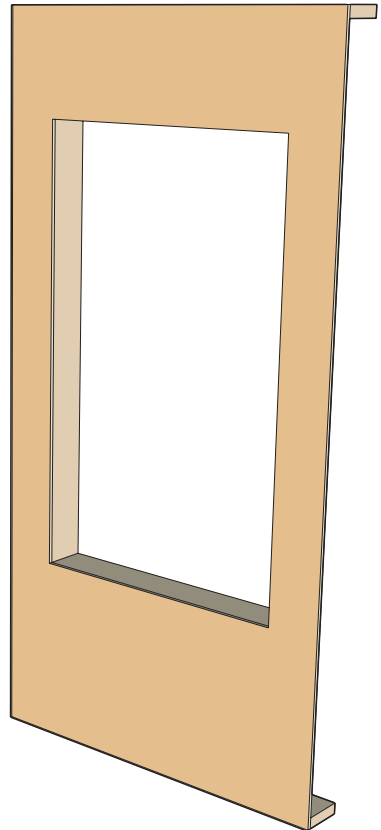


BARRIER OPENINGS

FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB
ON A WOOD FRAMED WALL

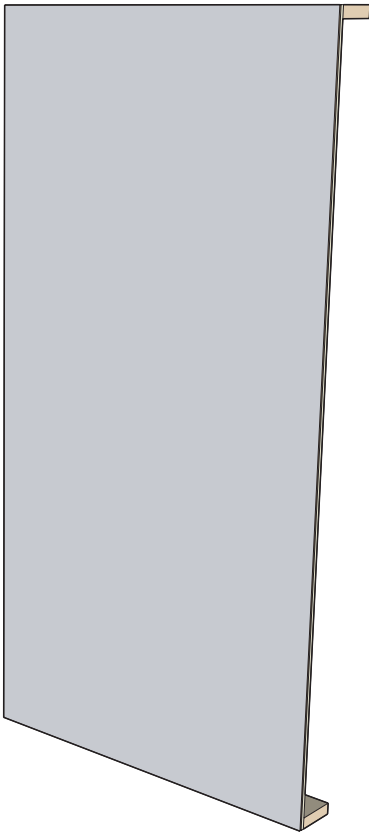


STEP 1
WOOD FRAME WALL

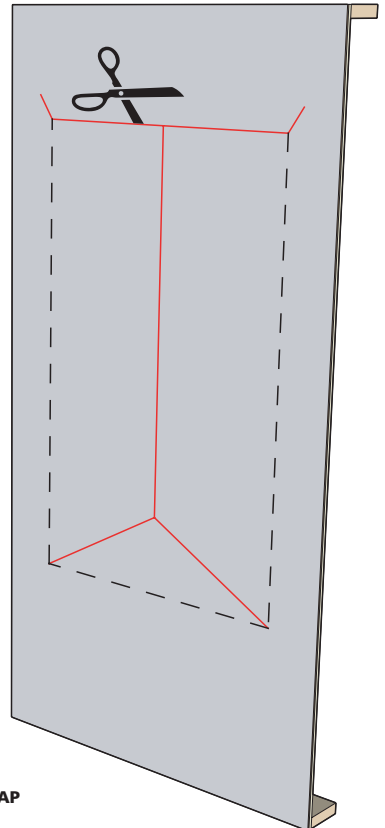


STEP 2
INSTALL OSB OR PLYWOOD

**FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB
ON A WOOD FRAMED WALL**

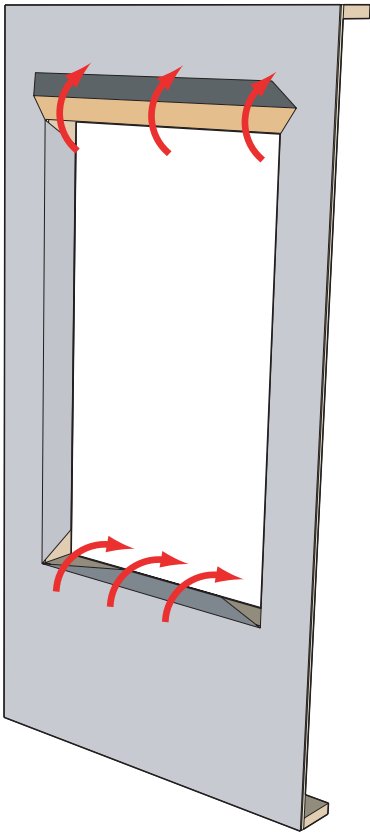


STEP 3
INSTALL HOUSEWRAP



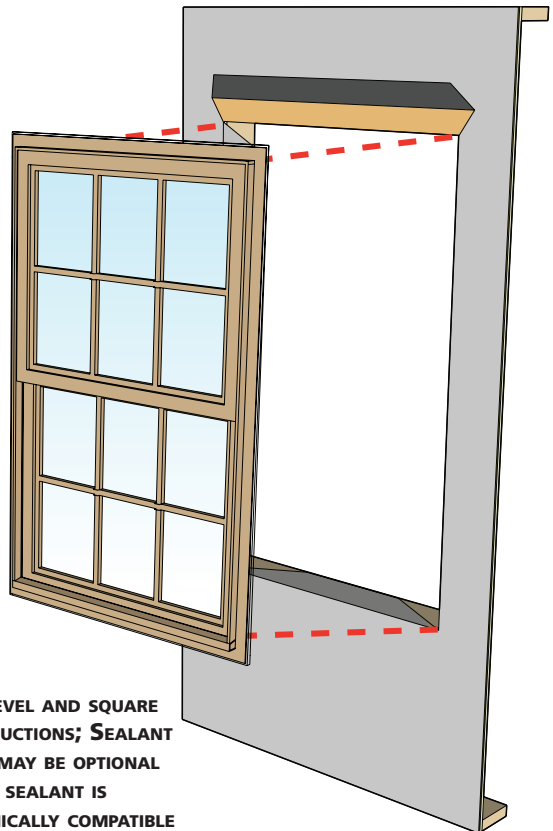
STEP 4
MODIFIED "I" CUT IN HOUSEWRAP

FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB ON A WOOD FRAMED WALL



STEP 5

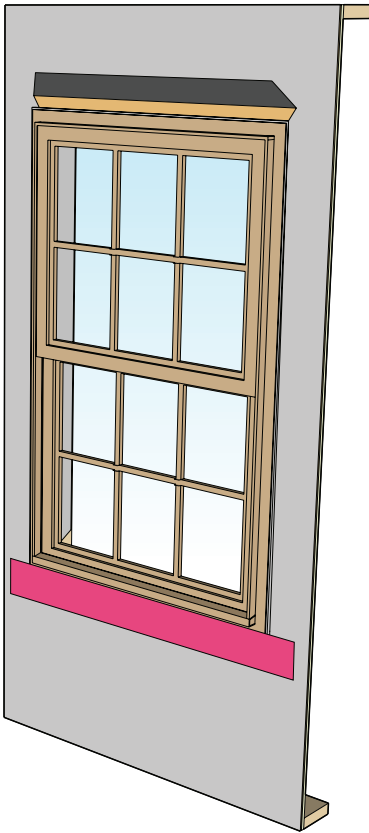
FOLD HOUSEWRAP IN AT JAMBS AND SILL; HOUSEWRAP AT HEAD TEMPORARILY FOLDED UP OR, ALTERNATIVELY, TUCKED UNDER



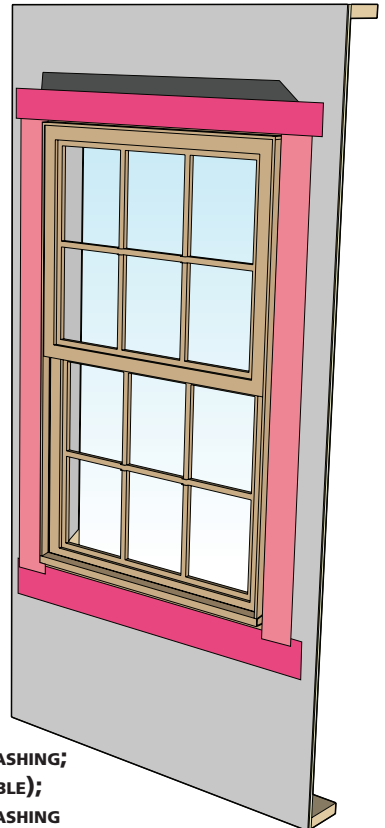
STEP 6

INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH HOUSEWRAP AND FLASHING

**FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB
ON A WOOD FRAMED WALL**

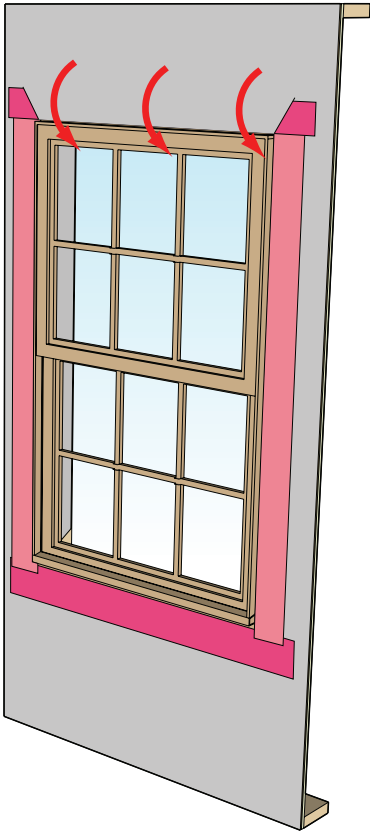


STEP 7
INSTALL SELF-ADHERED SILL FLASHING

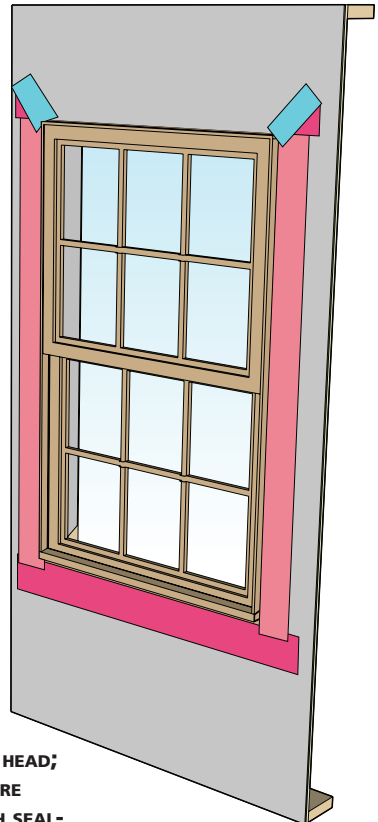


STEP 8
INSTALL SELF-ADHERED JAMB FLASHING;
INSTALL A DRIP CAP (IF APPLICABLE);
INSTALL SELF-ADHERED HEAD FLASHING

FACE SEAL WINDOW WITH HOUSEWRAP OVER OSB ON A WOOD FRAMED WALL

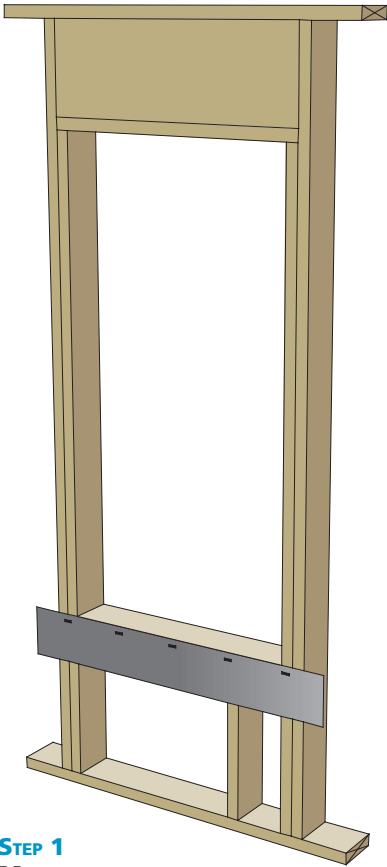


STEP 9
FOLD HOUSEWRAP AT HEAD DOWN

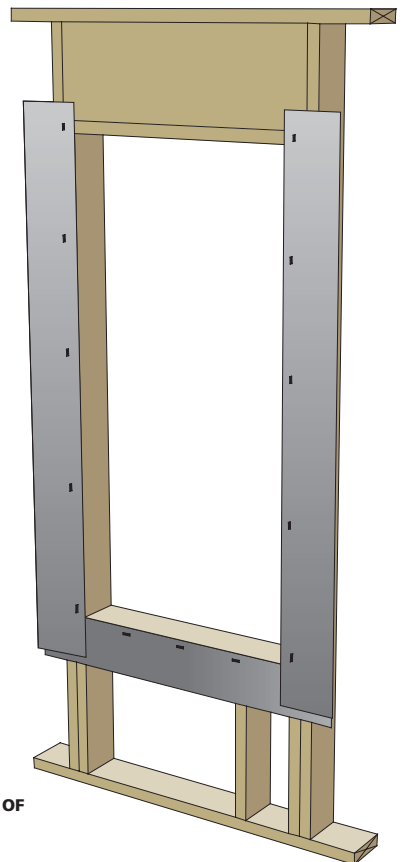


STEP 10
APPLY CORNER TAPE PATCHES AT HEAD;
AIR SEAL WINDOW AROUND ENTIRE
PERIMETER ON THE INTERIOR WITH SEAL-
ANT OR NON-EXPANDING FOAM

FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL

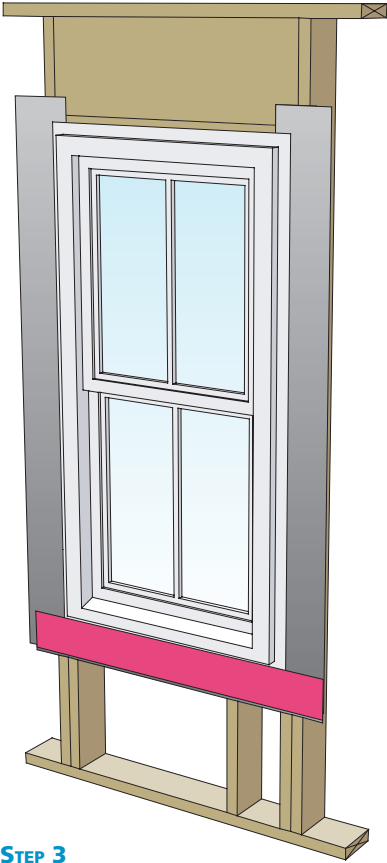


STEP 1
MECHANICALLY ATTACH STRIP
OF BUILDING PAPER AT SILL;
ATTACH AT TOP ONLY, LEAVE SIDES
AND BOTTOM LOOSE



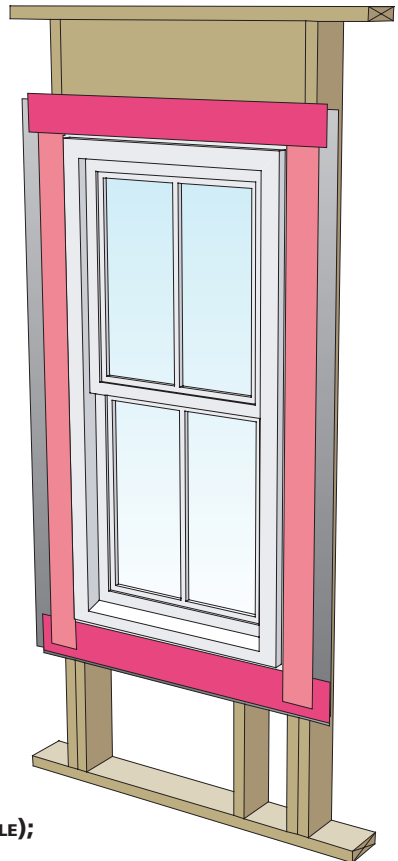
STEP 2
MECHANICALLY ATTACH STRIPS OF
BUILDING PAPER AT JAMBS

FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL



STEP 3

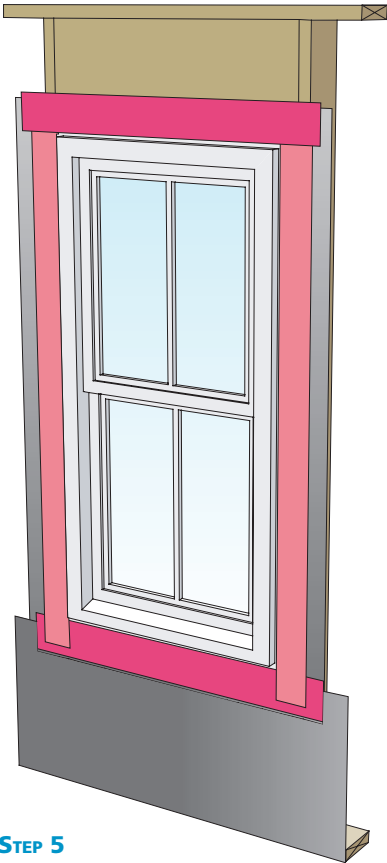
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD AT JAMBS, HEAD AND SILL MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT BEAD IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH BUILDING PAPER AND FLASHING; INSTALL FLASHING AT SILL



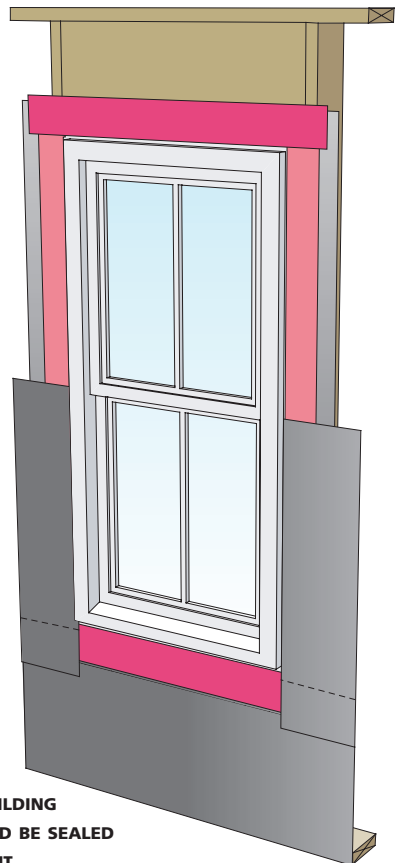
STEP 4

INSTALL FLASHING AT JAMBS;
INSTALL DRIP CAP (IF APPLICABLE);
INSTALL FLASHING AT HEAD

FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL

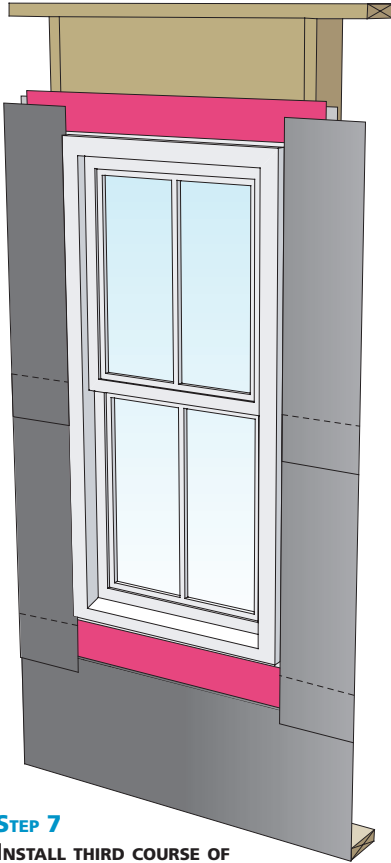


STEP 5
INSTALL FIRST COURSE OF
BUILDING PAPER UNDER SILL FLASHING



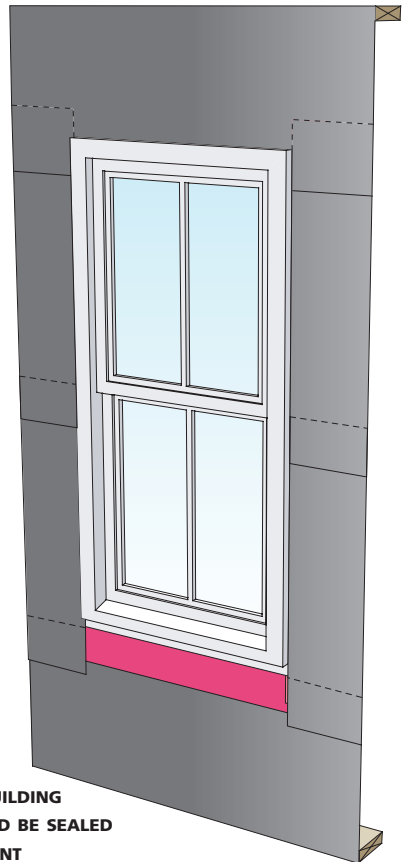
STEP 6
INSTALL SECOND COURSE OF BUILDING
PAPER AT JAMBS; PAPER SHOULD BE SEALED
TO JAMB FLANGES WITH SEALANT

FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL



STEP 7

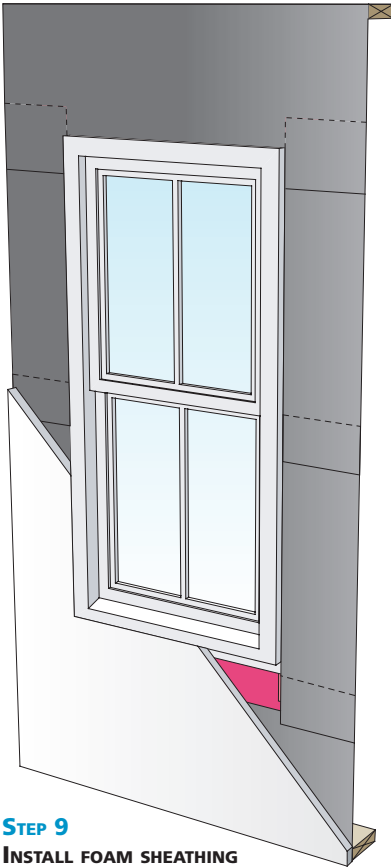
INSTALL THIRD COURSE OF BUILDING PAPER AT JAMBS; PAPER SHOULD BE SEALED TO JAMB FLANGES WITH SEALANT



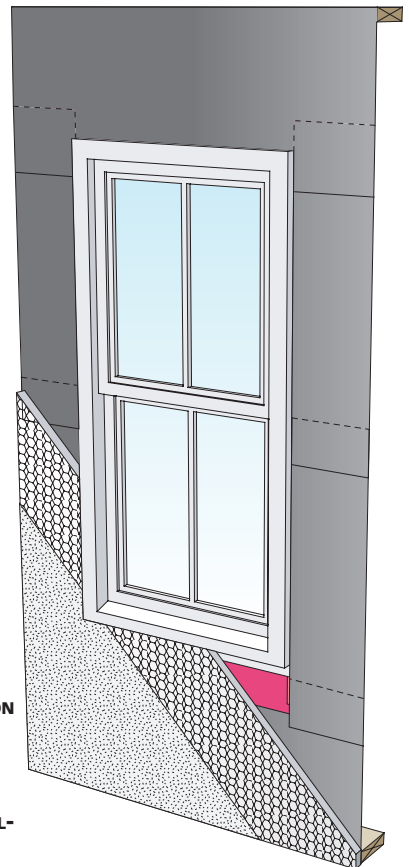
STEP 8

INSTALL FOURTH COURSE OF BUILDING PAPER AT HEAD; PAPER SHOULD BE SEALED TO JAMB FLANGES WITH SEALANT

FACE SEAL WINDOW WITH BUILDING PAPER, FOAM SHEATHING AND STUCCO ON A WOOD FRAMED WALL



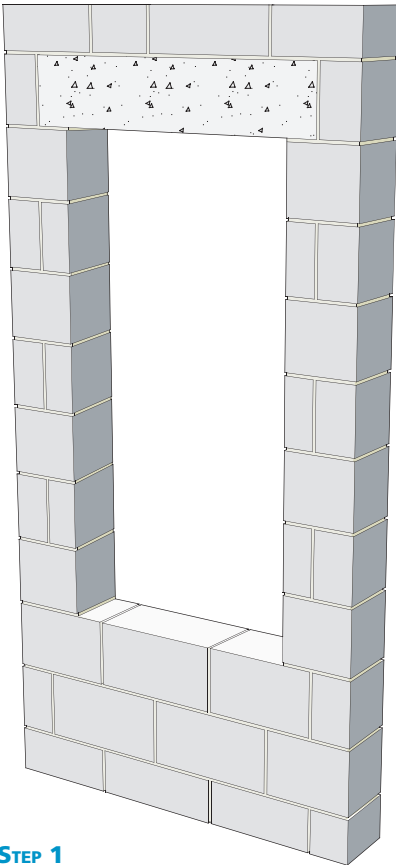
STEP 9
INSTALL FOAM SHEATHING
OVER BUILDING PAPER



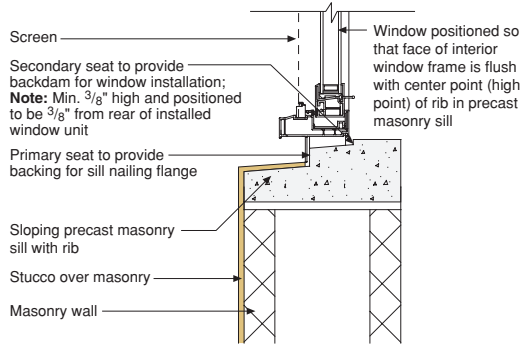
STEP 10
APPLY LATH AND STUCCO; PROVIDE EXPANSION
JOINT BETWEEN STUCCO AND WINDOW — I.E.
LEAVE GAP FOR BACKER ROD AND SEALANT,
INSTALL SEALANT IN GAP; AIR SEAL AROUND
ENTIRE PERIMETER ON THE INTERIOR WITH SEAL-
ANT OR NON-EXPANDING FOAM

CONCRETE BLOCK OPENINGS

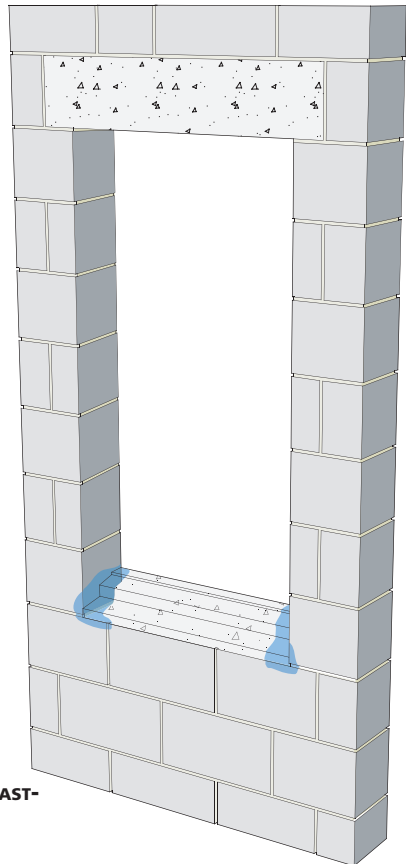
WINDOW WITH A PRECAST SILL AND STUCCO OVER A CONCRETE BLOCK WALL



STEP 1
CONCRETE BLOCK WALL

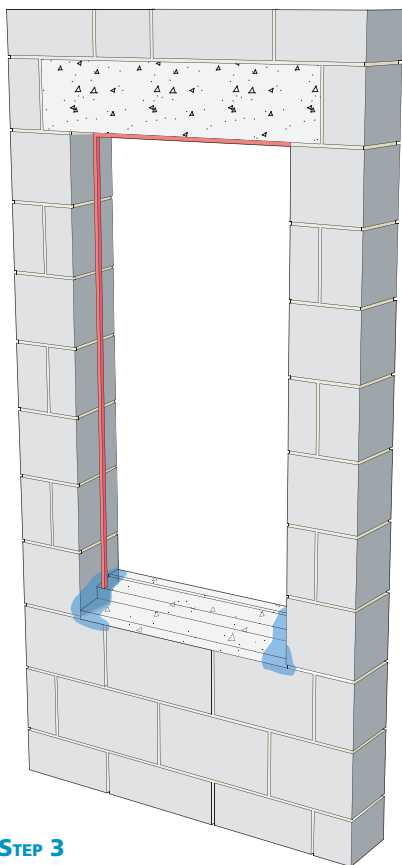


**WINDOW SILL DRAINAGE DETAIL —
MASONRY WALL SECTION**

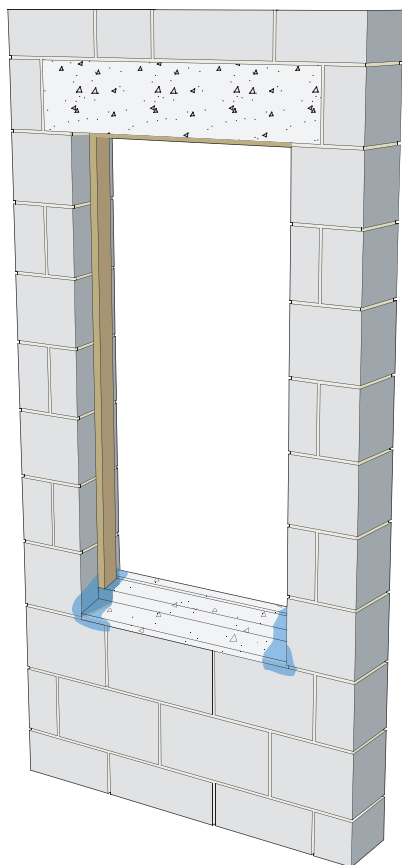


STEP 2
INSTALL 2-TIER PRECAST OR CAST-IN-PLACE SILL; APPLY LIQUID APPLIED MEMBRANE TO SILL CORNERS

WINDOW WITH A PRECAST SILL AND STUCCO OVER A CONCRETE BLOCK WALL



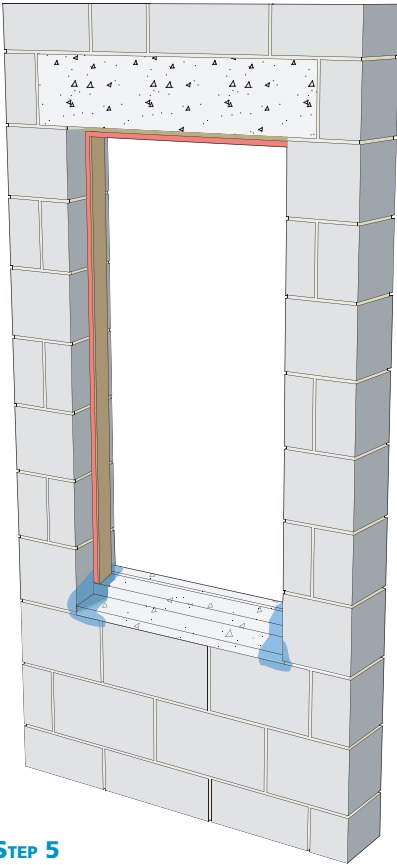
STEP 3
APPLY SEALANT FOR WOOD BUCK



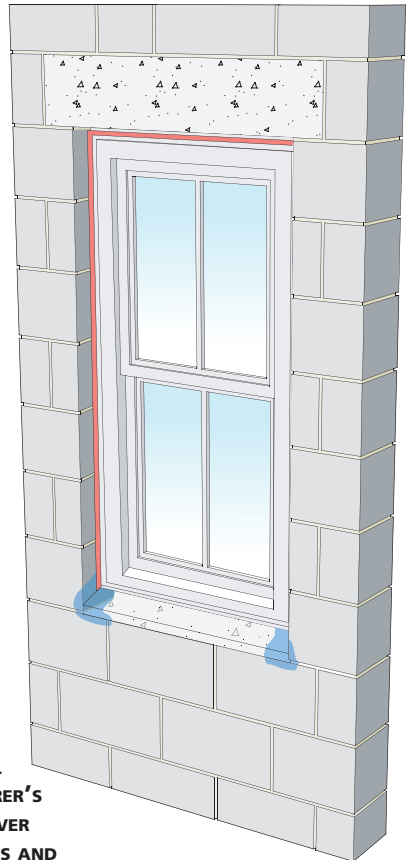
STEP 4
INSTALL WOOD BUCK OVER SEALANT



WINDOW WITH A PRECAST SILL AND STUCCO OVER A CONCRETE BLOCK WALL

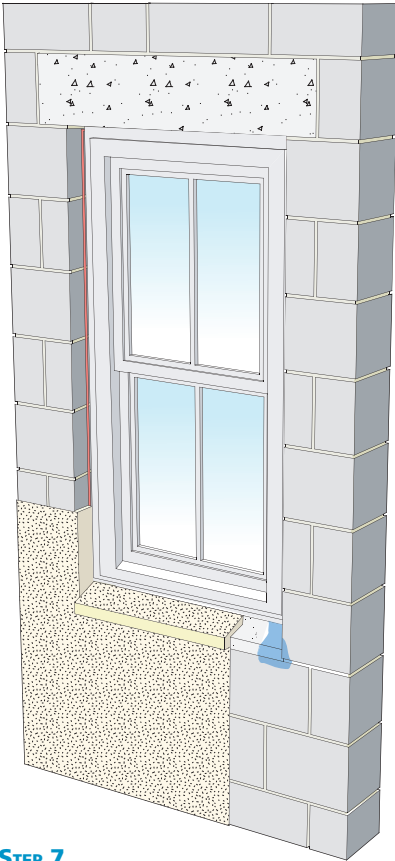


STEP 5
**APPLY WINDOW SEALANT AT
JAMBS AND HEAD**

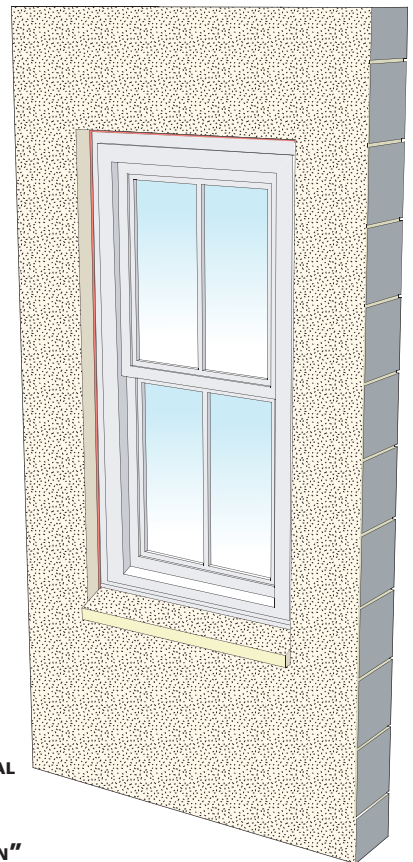


STEP 6
**INSTALL WINDOW PLUMB LEVEL
AND SQUARE PER MANUFACTURER'S
INSTRUCTIONS AND SEALANT OVER
EXPOSED WOOD BUCK AT JAMBS AND
HEAD**

WINDOW WITH A PRECAST SILL AND STUCCO OVER A CONCRETE BLOCK WALL

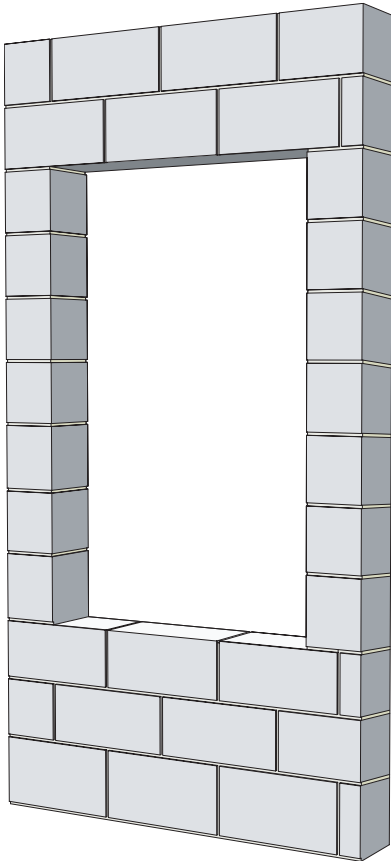


STEP 7
APPLY STUCCO FINISH

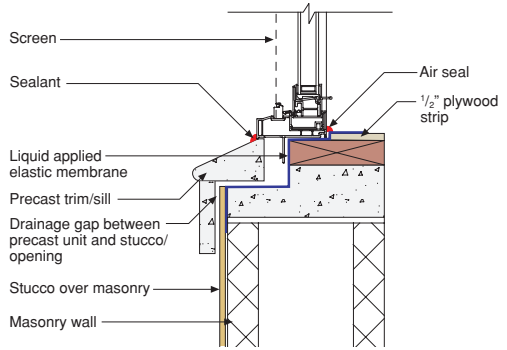


STEP 8
COMPLETE STUCCO FINISH WITH CONTINUOUS BEAD OF SEALANT AT JAMBS AND HEAD SEALING STUCCO FINISH TO WINDOW UNIT; AIR SEAL AROUND ENTIRE PERIMETER ON THE INTERIOR WITH SEALANT OR NON-EXPANDING FOAM; EXPANDING FOAM SHOULD NOT FILL SILL "PAN" AREA

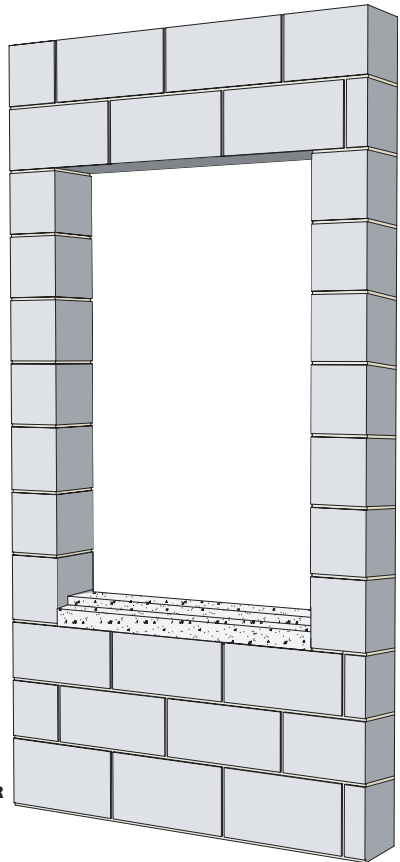
WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL



STEP 1
CONCRETE BLOCK WALL

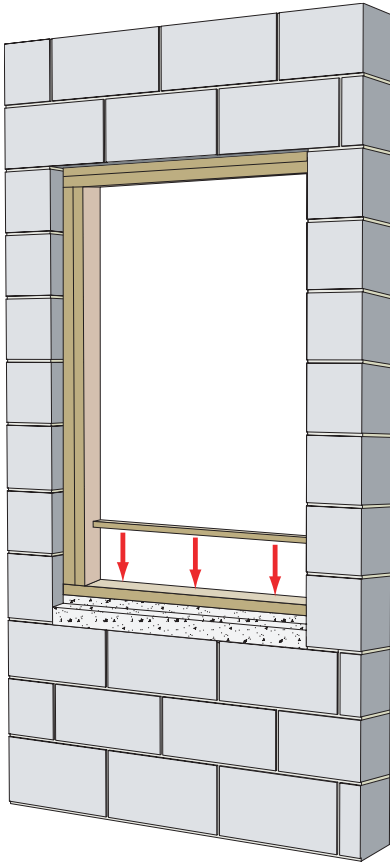


**WINDOW SILL DRAINAGE DETAIL —
MASONRY WALL SECTION WITH LIQUID APPLIED
ELASTIC MEMBRANE**



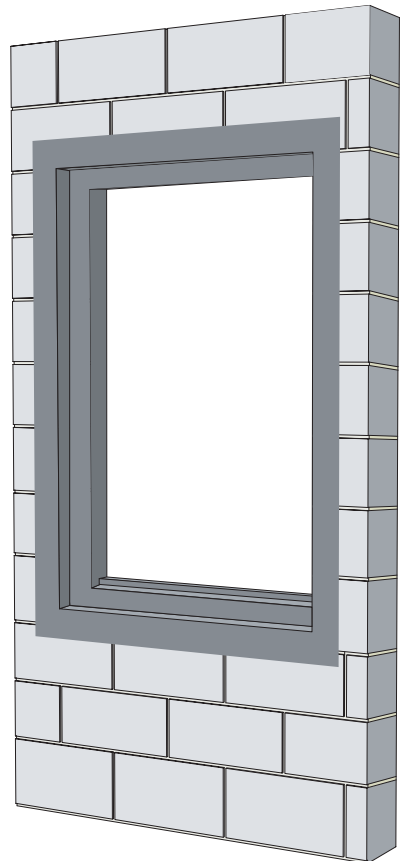
STEP 2
INSTALL CAST-IN-PLACE SILL OR
SITE CAST CONCRETE SILL WITH
"TIER"

WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL



STEP 3

INSTALL TWO WOOD BUCKS AT HEAD AND JAMBS, INSTALL ONE WOOD BUCK AT SILL; INSTALL WOOD SILL BACK DAM

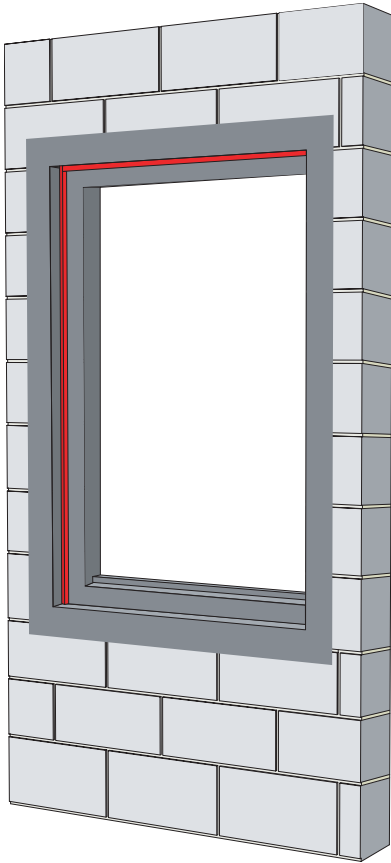


STEP 4

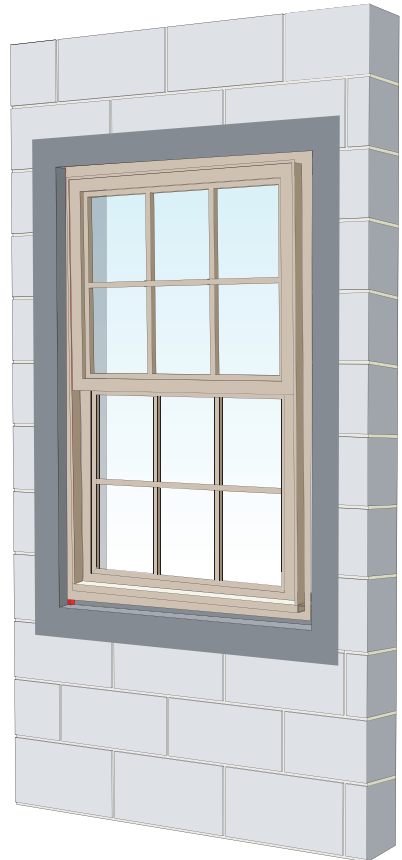
APPLY LIQUID APPLIED ELASTIC MEMBRANE OVER BUCKS, SILL BACK DAM AND FACE OF BLOCK



WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL

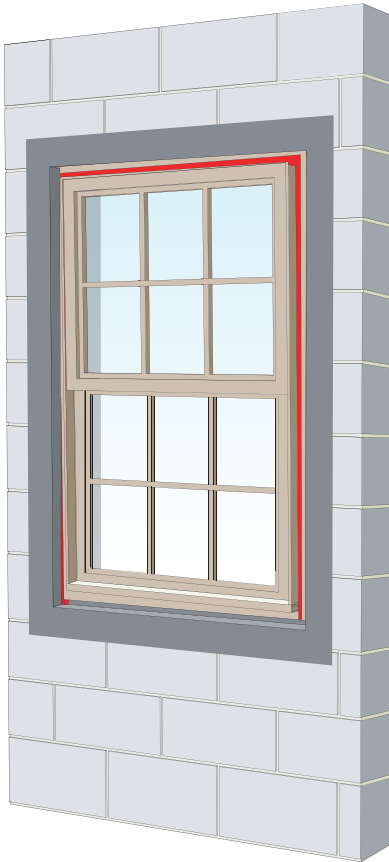


STEP 5
**APPLY WINDOW SEALANT AT
JAMBS AND HEAD**



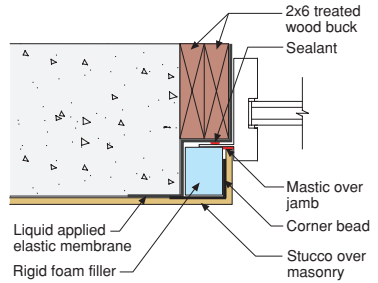
STEP 6
**INSTALL WINDOW PLUMB LEVEL
AND SQUARE PER MANUFACTURER'S
INSTRUCTIONS**

WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL

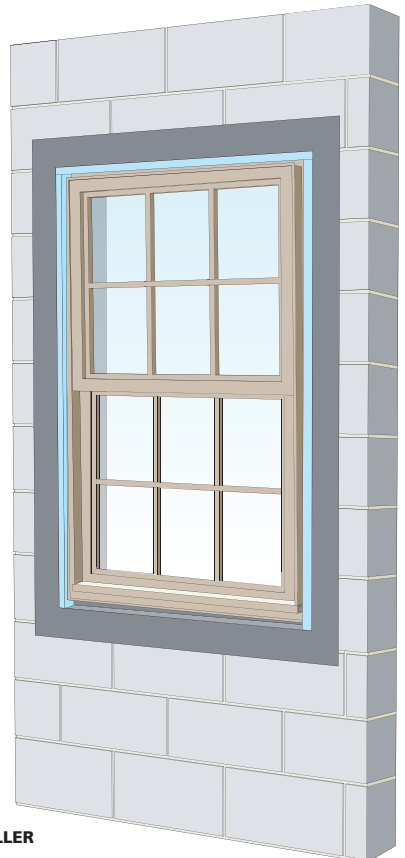


STEP 7

INSTALL MASTIC JAMB FLASHING AND HEAD FLASHING OVER FLANGES



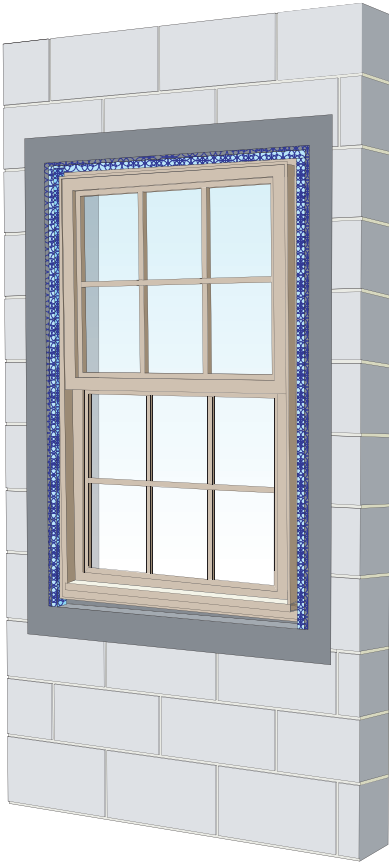
WINDOW JAMB DETAIL — MASONRY WALL SECTION WITH LIQUID APPLIED ELASTIC MEMBRANE



STEP 8

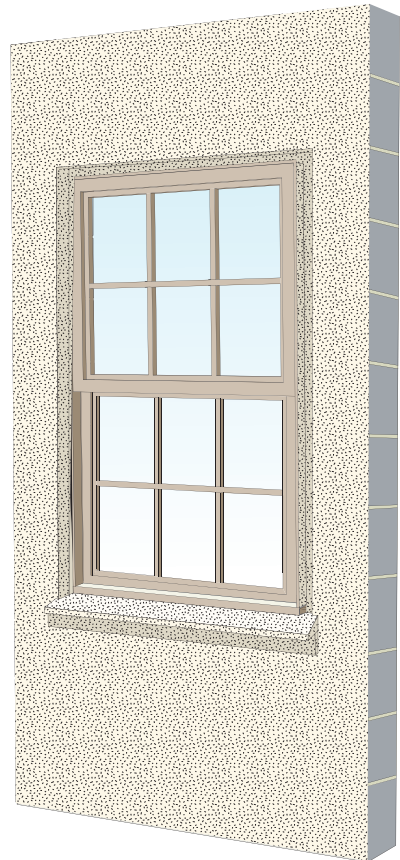
**INSTALL RIGID FOAM INSULATION FILLER
AT JAMBS AND HEAD**

WINDOW WITH A WATERPROOFED WOOD BUCK AND STUCCO OVER A CONCRETE BLOCK WALL



STEP 9

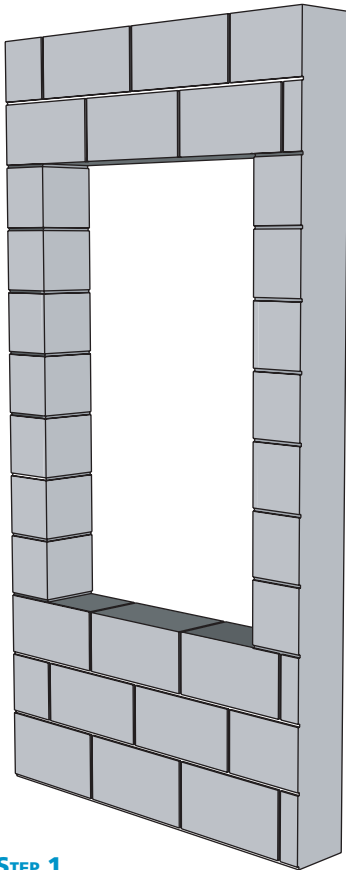
INSTALL CORNER BEAD OVER RIGID FOAM INSULATION FILLER



STEP 10

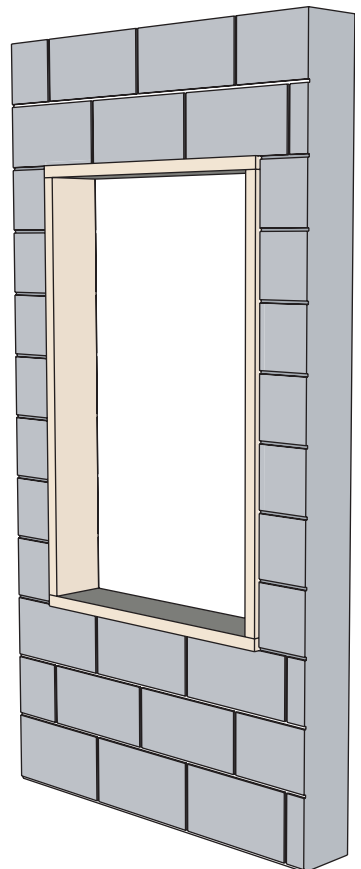
APPLY STUCCO FINISH; AIR SEAL WINDOWS AROUND ENTIRE PERIMETER ON THE INTERIOR WITH SEALANT OR NON-EXPANDING FOAM; EXPANDING FOAM SHOULD NOT FILL THE SILL "PAN" AREA

WINDOW WITH A WATERPROOFED BUCK AND SIDING OVER A CONCRETE BLOCK WALL



STEP 1

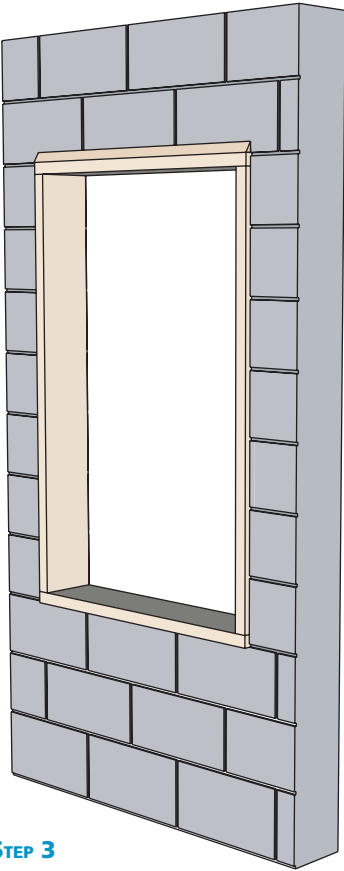
CONCRETE MASONRY WALL—COATING/
PAINTING THE ENTIRE SURFACE OF THE
MASONRY WALL WITH LATEX OR ACRYLIC
PAINT IS RECOMMENDED TO REDUCE
WATER ABSORPTION BY THE MASONRY
SURFACE BEHIND SIDING AND TO PRO-
MOTE DRAINAGE



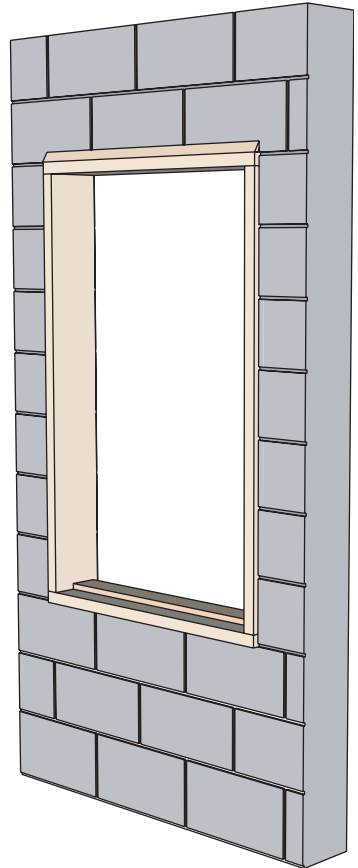
STEP 2

INSTALL WOOD BUCKS AT HEAD,
JAMBS AND SILL

WINDOW WITH A WATERPROOFED BUCK AND SIDING OVER A CONCRETE BLOCK WALL

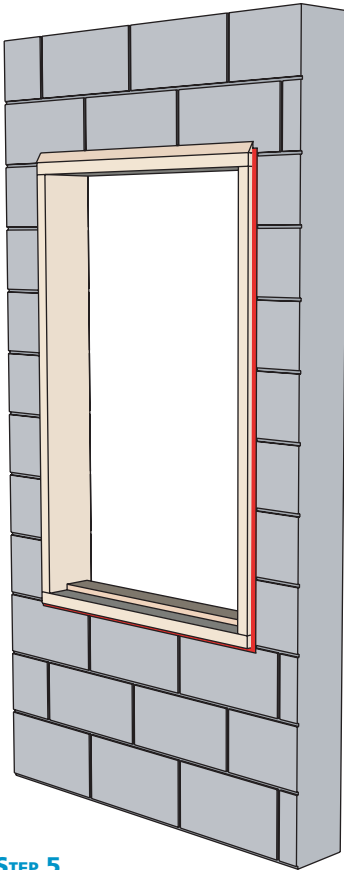


STEP 3
INSTALL WOOD CANT STRIP
OVER BUCK AT HEAD



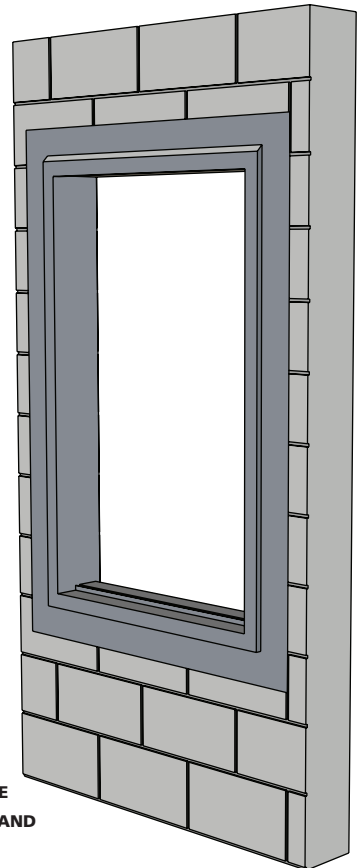
STEP 4
INSTALL WOOD SILL BACK DAM

WINDOW WITH A WATERPROOFED BUCK AND SIDING OVER A CONCRETE BLOCK WALL



STEP 5

**ADD A FILET BEAD OF
SEALANT ON WOOD BUCKS**

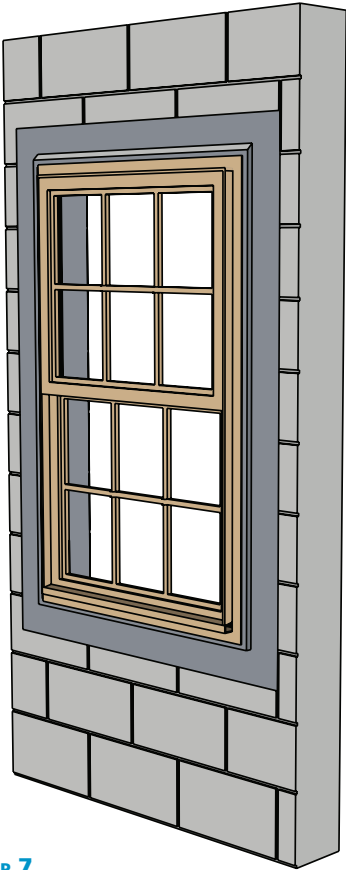


STEP 6

**LIQUID APPLIED ELASTIC MEMBRANE
INSTALLED OVER BUCKS, SILL DAM AND
FACE OF BLOCK**

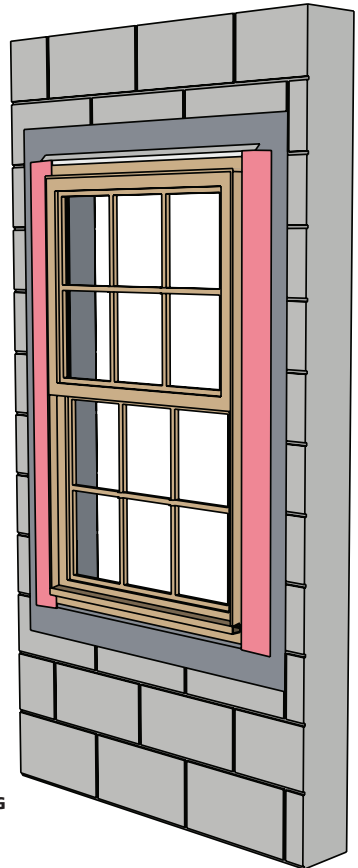


WINDOW WITH A WATERPROOFED BUCK AND SIDING OVER A CONCRETE BLOCK WALL



STEP 7

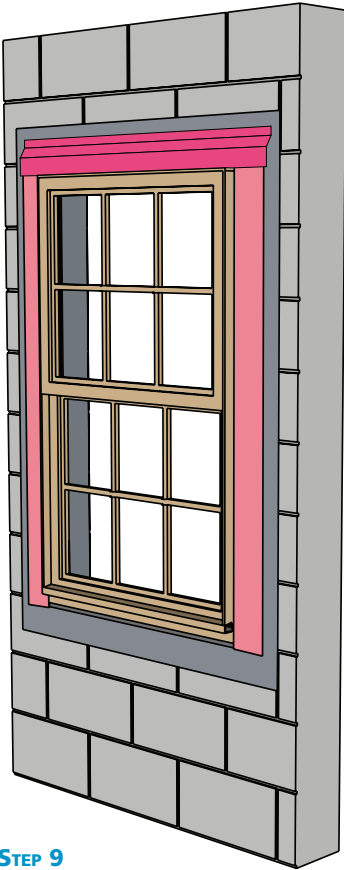
INSTALL WINDOW PLUMB, LEVEL AND SQUARE PER MANUFACTURER'S INSTRUCTIONS; SEALANT BEAD JAMBS AND HEAD MAY BE OPTIONAL BASED ON RISK FACTORS; IF SEALANT IS INSTALLED IT MUST BE CHEMICALLY COMPATIBLE WITH LIQUID APPLIED ELASTIC MEMBRANE AND FLASHING



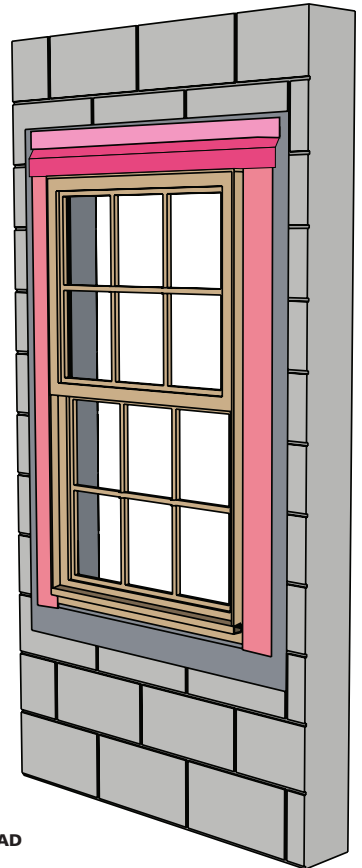
STEP 8

INSTALL SELF-ADHERED FLASHING AT JAMBS

**WINDOW WITH A WATERPROOFED BUCK AND SIDING
OVER A CONCRETE BLOCK WALL**



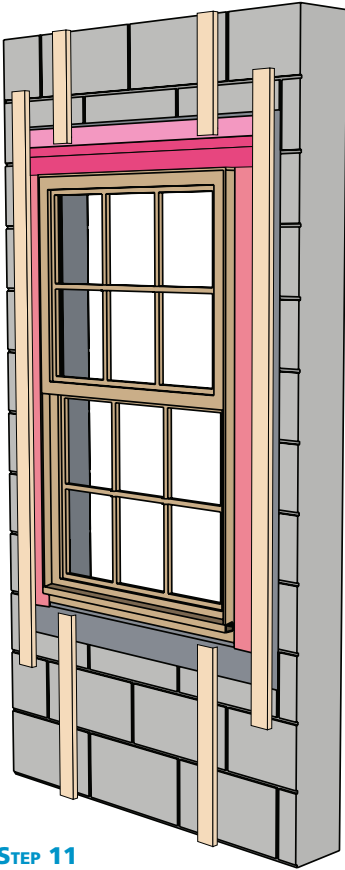
STEP 9
INSTALL DRIP CAP (IF APPLI-
CABLE); INSTALL SELF-ADHERED
FLASHING AT HEAD



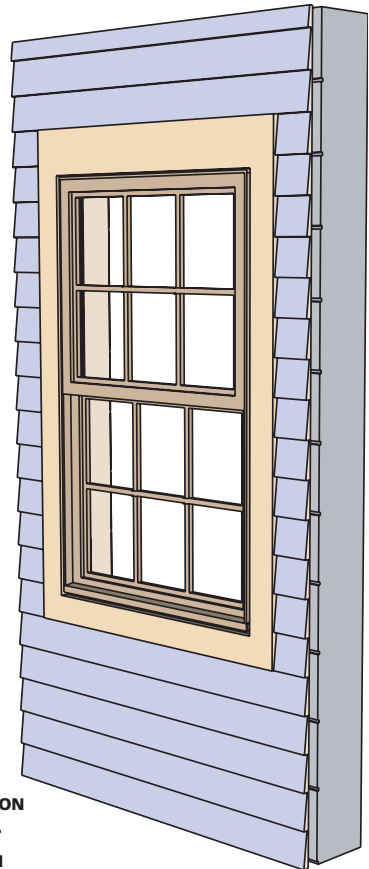
STEP 10
INSTALL SHEATHING TAPE AT HEAD



WINDOW WITH A WATERPROOFED BUCK AND SIDING OVER A CONCRETE BLOCK WALL



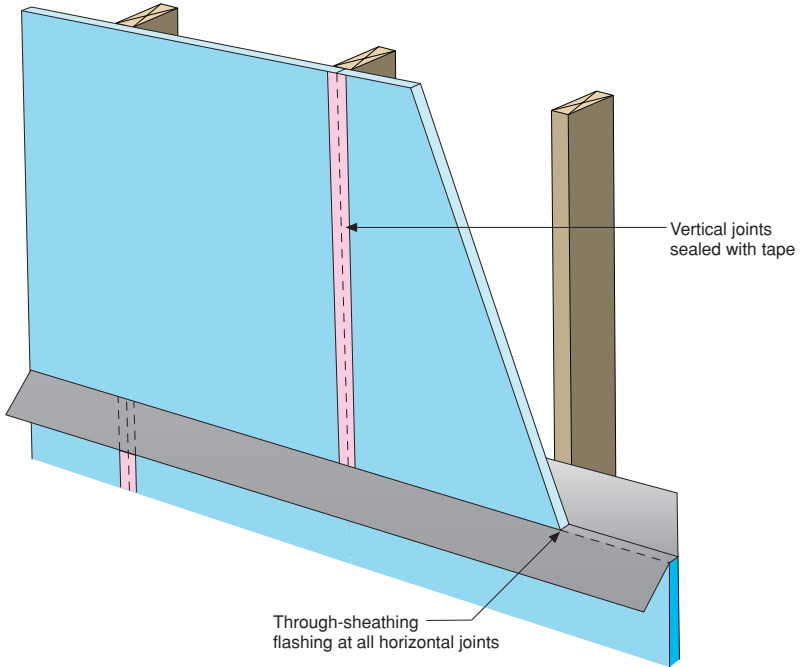
STEP 11
INSTALL FURRING
STRIPS



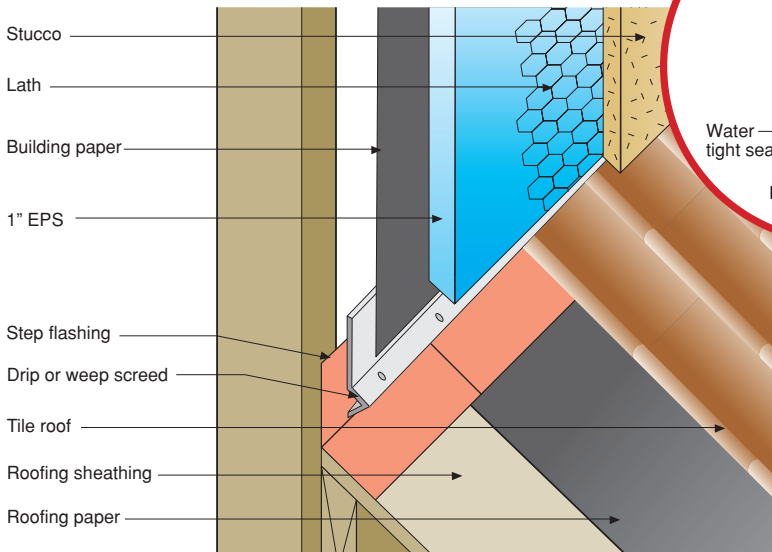
STEP 12
INSTALL SIDING AND TRIM; AIR SEAL
WINDOW AROUND ENTIRE PERIMETER ON
THE INTERIOR WITH SEALANT OR NON-
EXPANDING FOAM; EXPANDING FOAM
SHOULD NOT FILL SILL "PAN" AREA

ADDITIONAL DETAILS

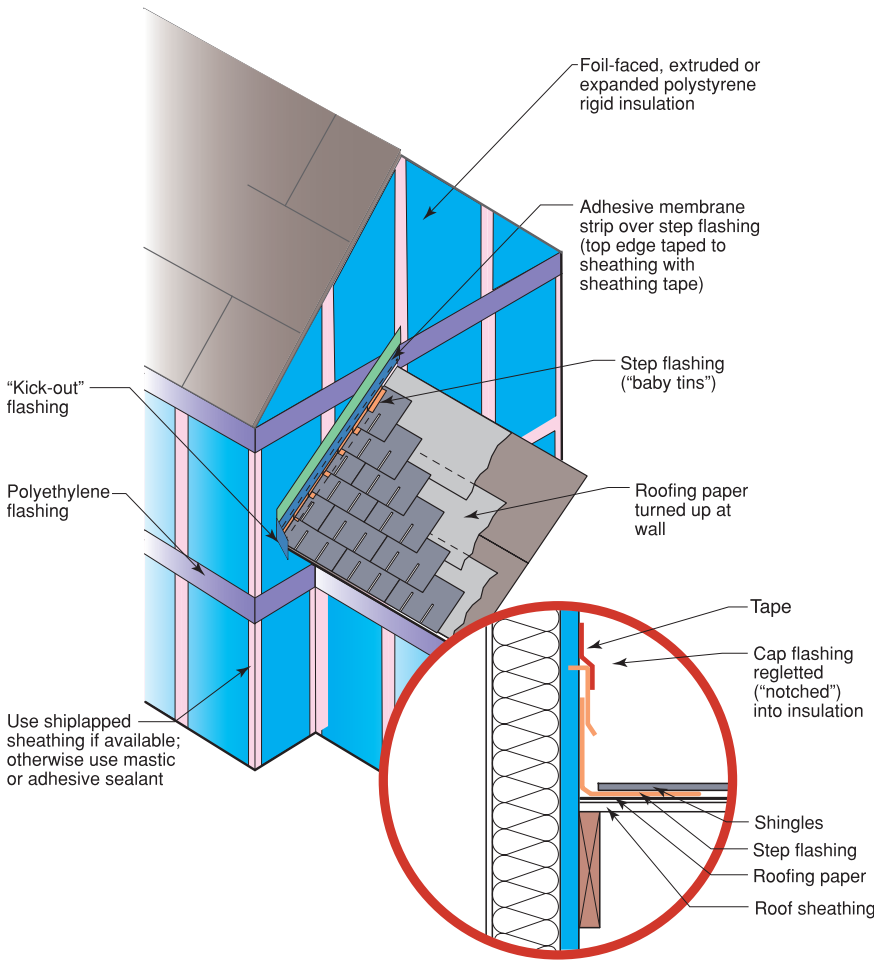
TAPED RIGID INSULATION AS DRAINAGE PLANE



WALL TO ROOF FLASHING WITH STUCCO

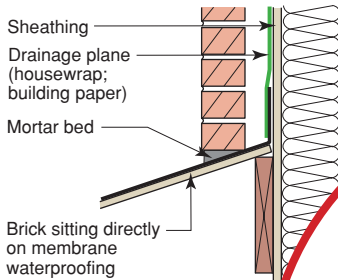
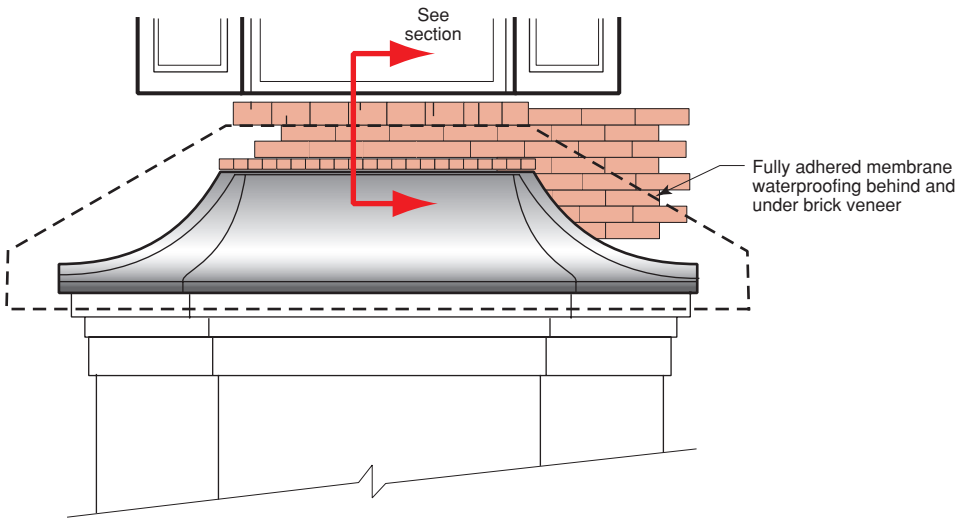


WALL TO ROOF FLASHING WITH FOAM SHEATHING



Alternate Flashing Detail

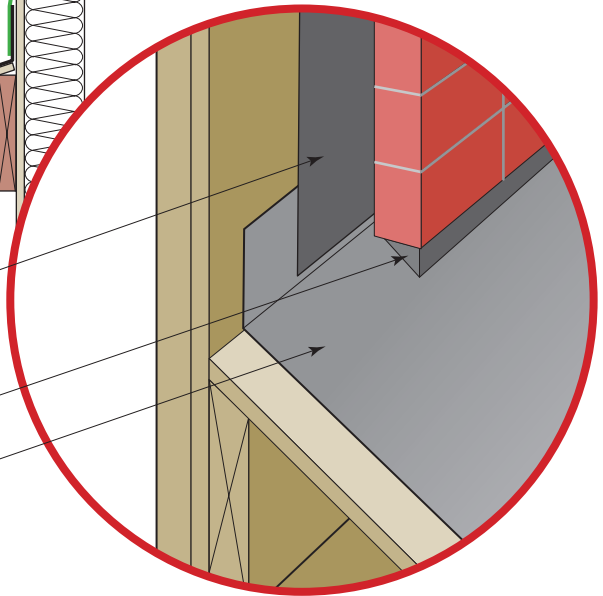
DRAINAGE PLANE BEHIND BRICK OVER BAY WINDOW OR SHED ROOF



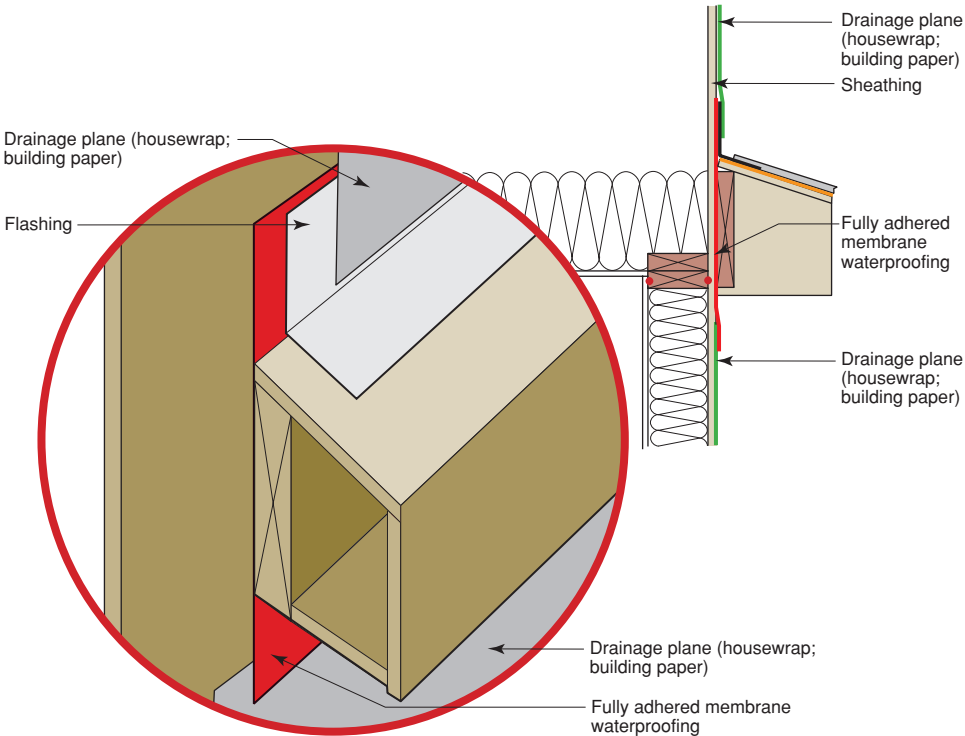
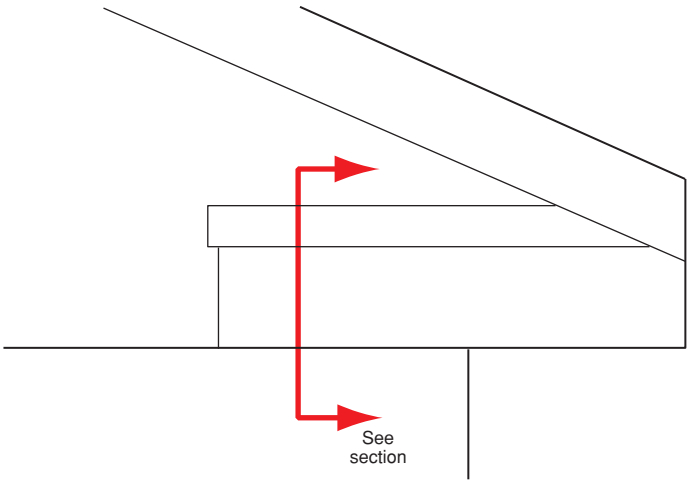
Drainage plane (housewrap; building paper)

Mortar bed

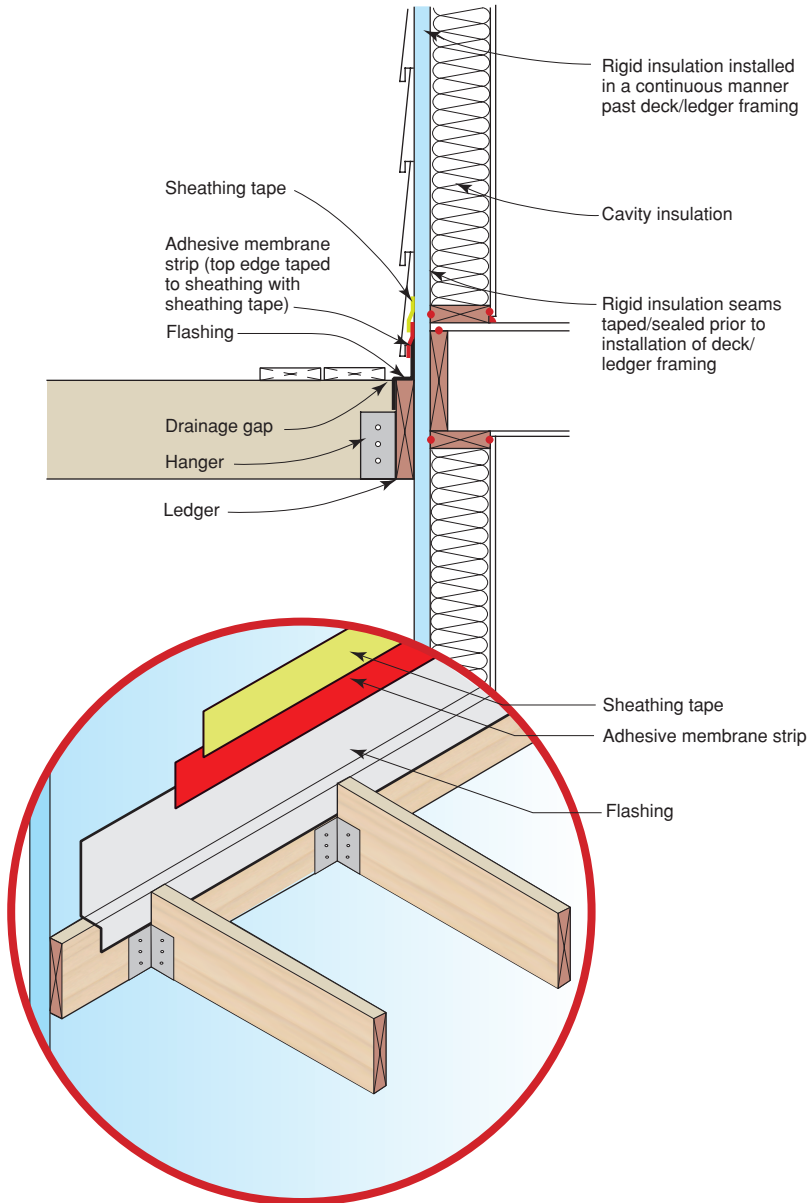
Fully adhered membrane waterproofing



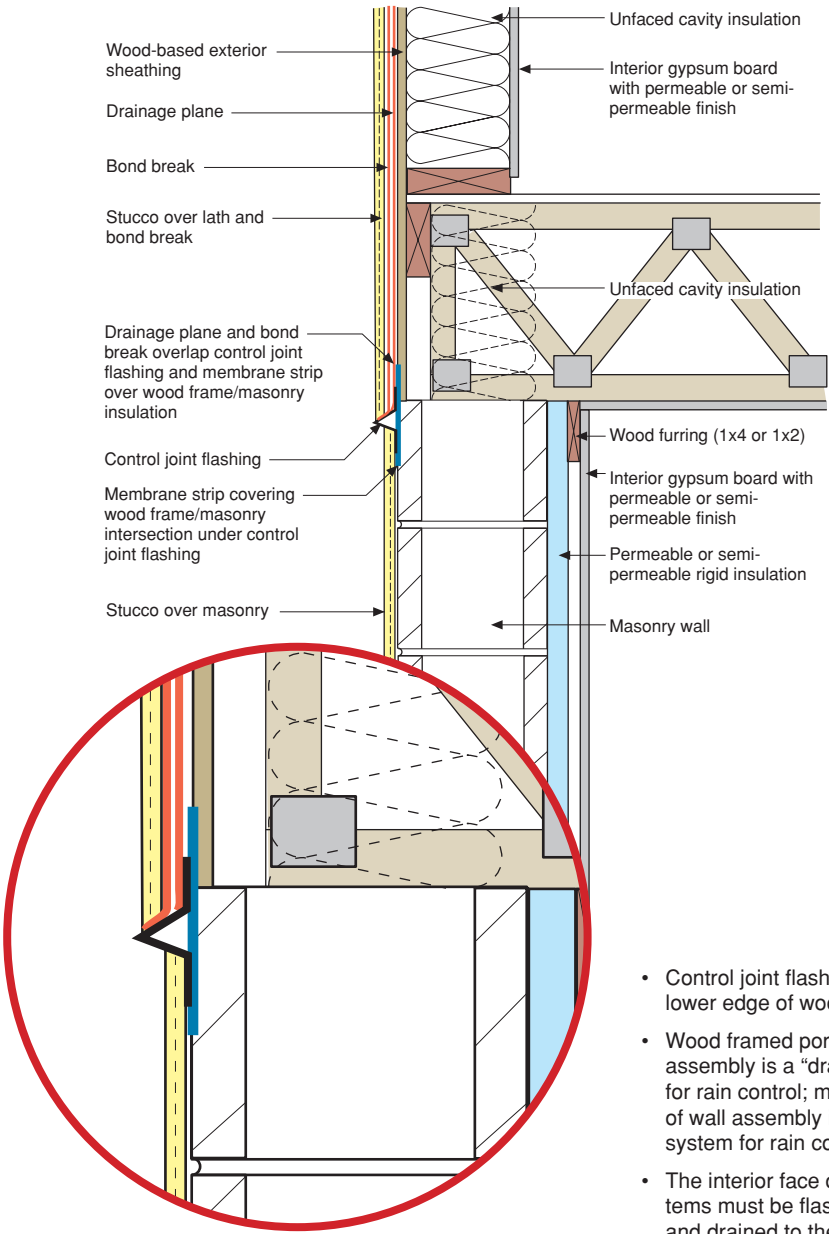
DRAINAGE PLANE BEHIND EYEBROW RETURN



FLASHING OVER DECK LEDGER

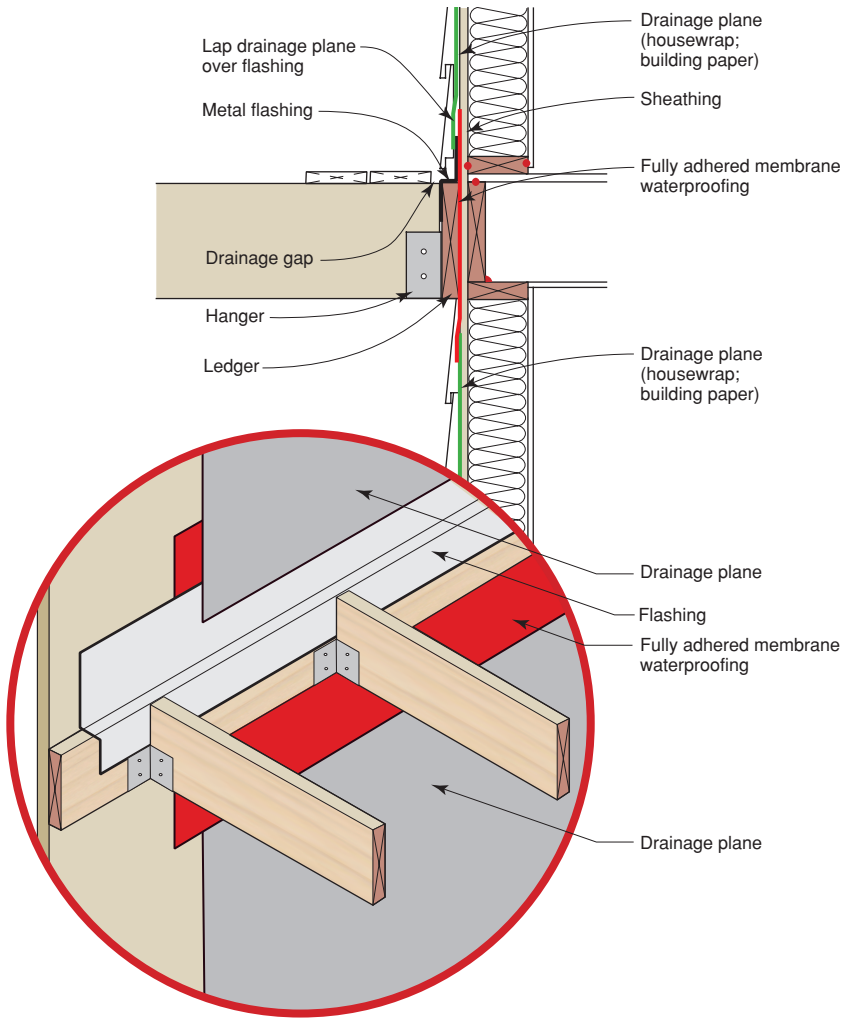


MASONRY WALL AND WOOD FRAMED WALL INTERSECTION WITH STUCCO



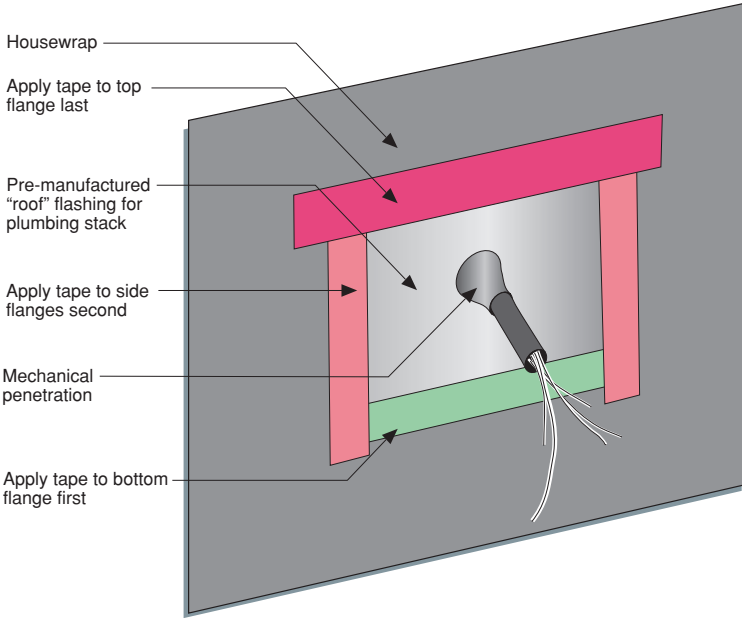
- Control joint flashing attached to lower edge of wood sheathing
- Wood framed portion of wall assembly is a “drained” system for rain control; masonry portion of wall assembly is a “barrier” system for rain control
- The interior face of the two systems must be flashed, weeped and drained to the exterior

DRAINAGE PLANE BEHIND DECK LEDGER

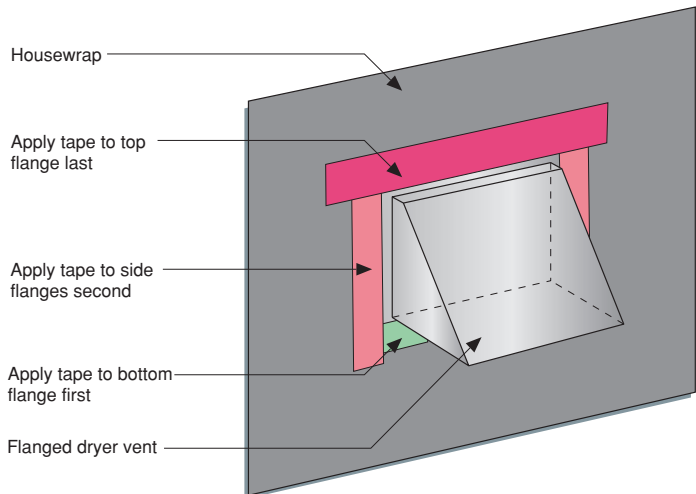


FLASHING OTHER PENETRATIONS

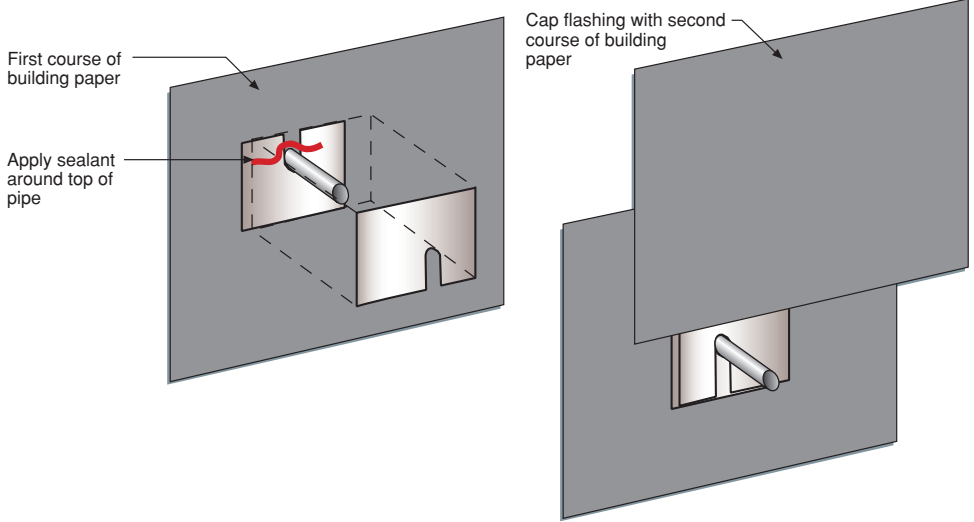
FLANGED MECHANICAL PENETRATION



FLANGED DRYER VENT



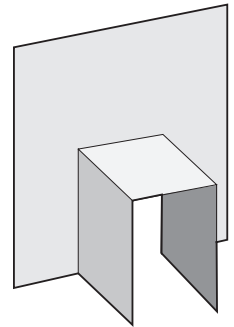
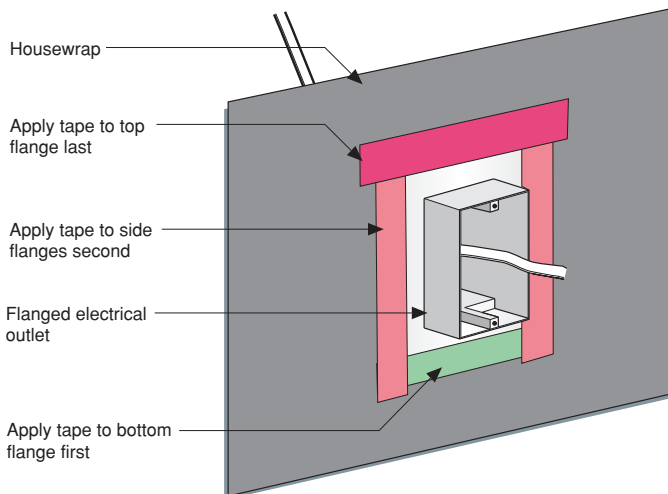
FLASHED PIPE PENETRATION



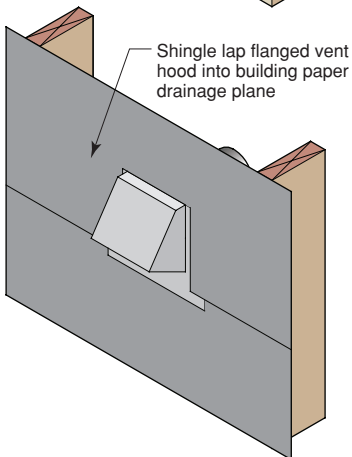
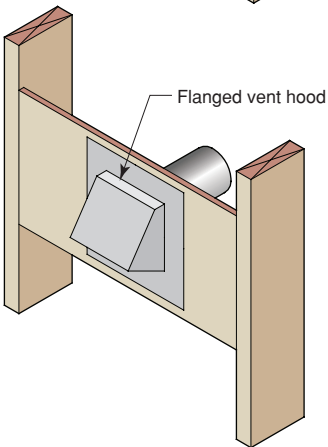
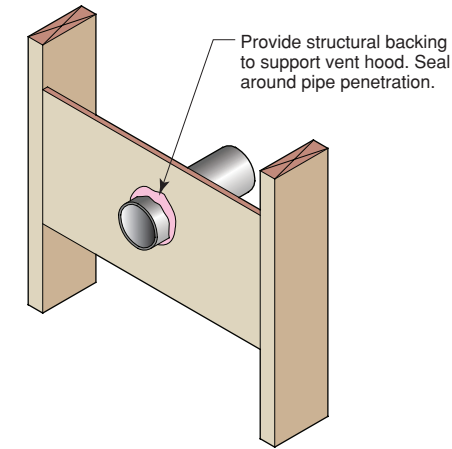
SADDLE FLASHING

- For railings
- For cantilever joists
- For beams penetrating walls

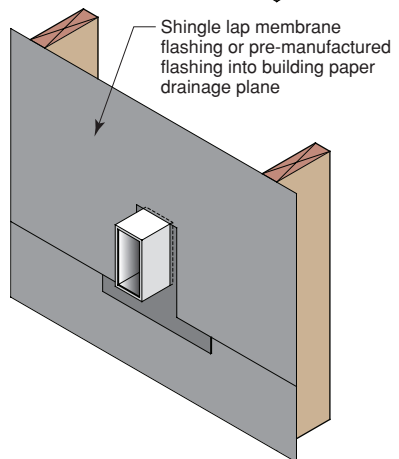
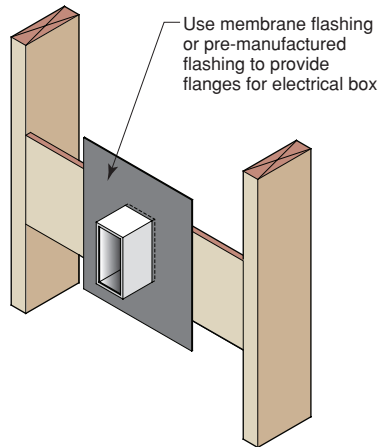
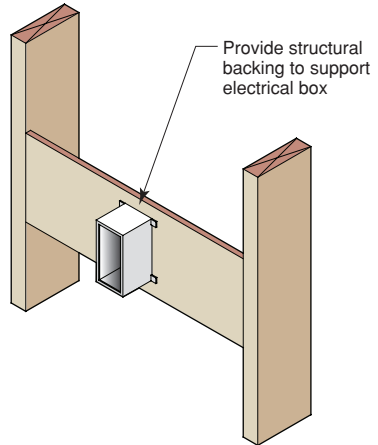
FLASHED ELECTRICAL OUTLET



VENT INSTALLATION WITH BUILDING PAPER OVER WOOD STUDS



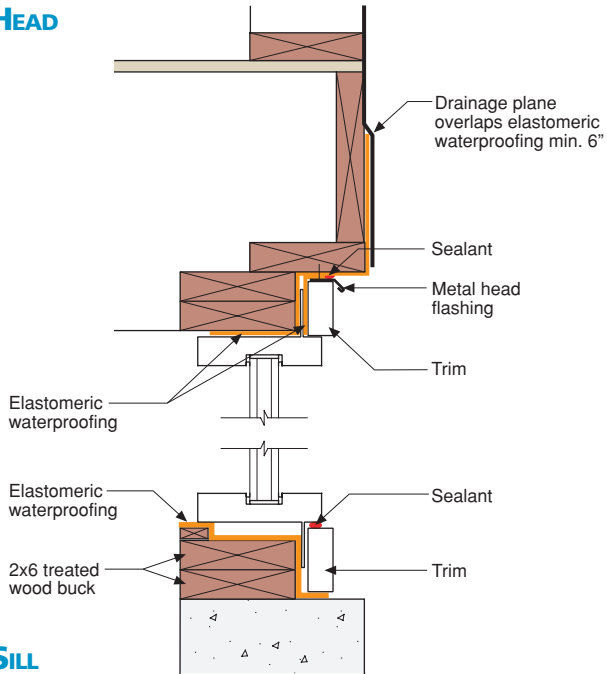
ELECTRICAL BOX INSTALLATION WITH BUILDING PAPER OVER WOOD STUDS



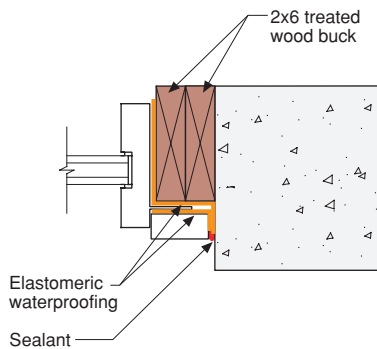
WINDOWS AND DOORS IN MASONRY BARRIER WALLS

WINDOW WITH WATERPROOFED WOOD BUCK IN BASEMENT CAST CONCRETE WALL

HEAD



SILL

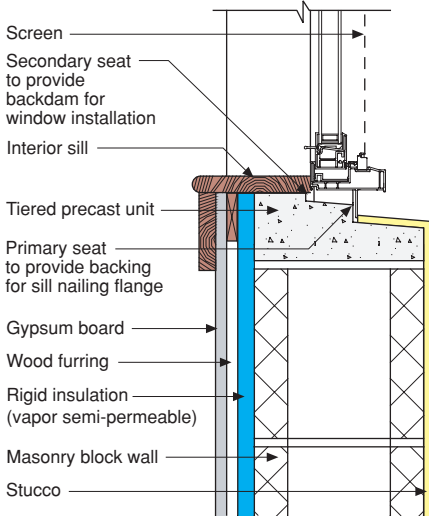


JAMB

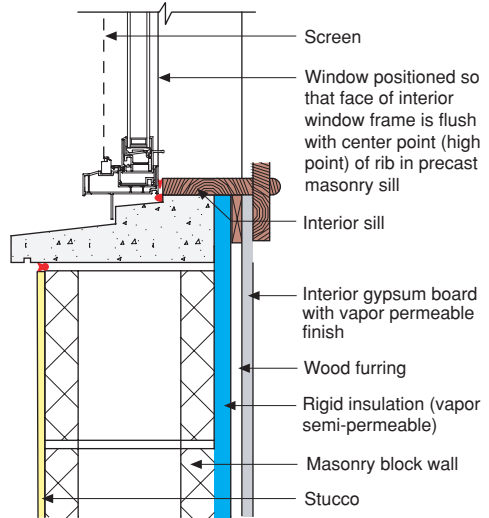


WINDOW SILL DRAINAGE DETAILS

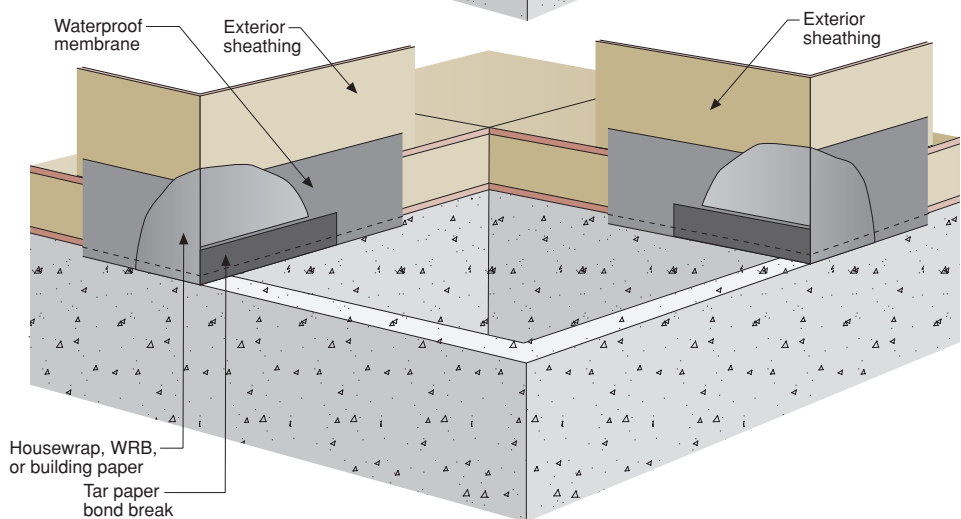
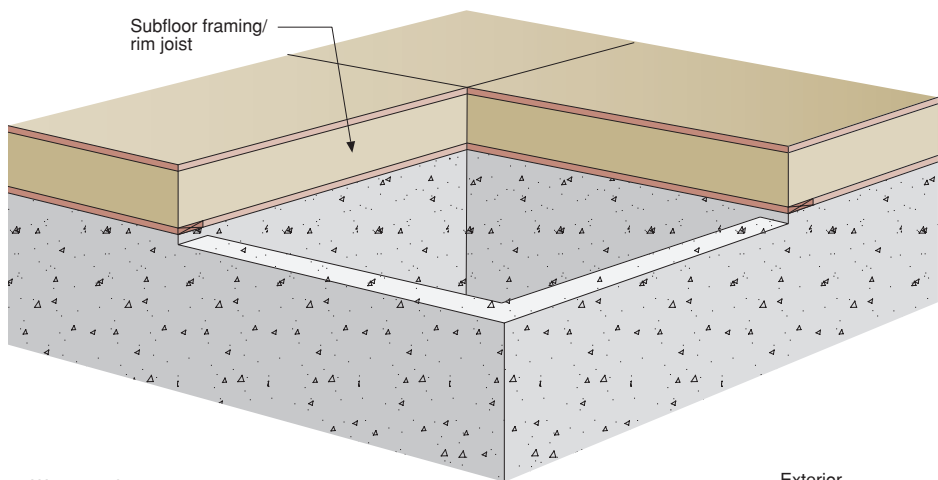
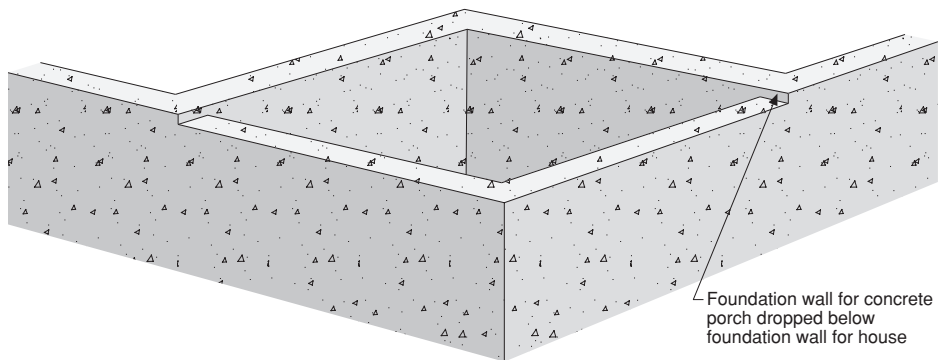
FLUSH PRECAST SILL



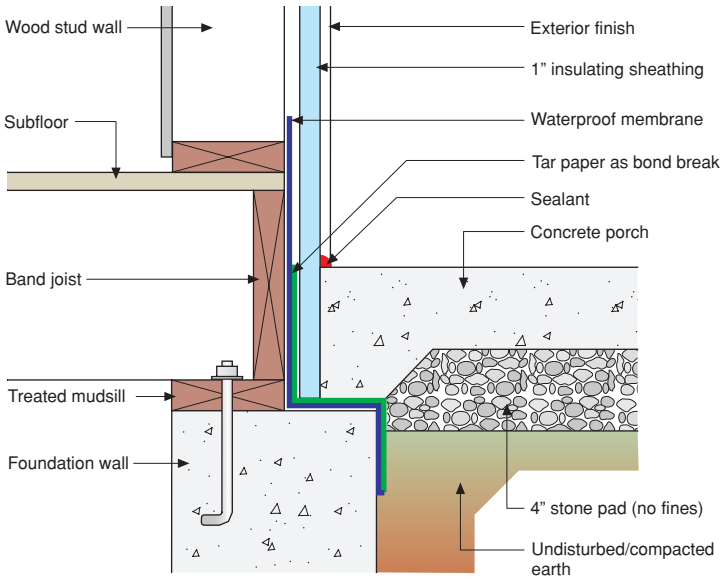
PROTRUDING PRECAST SILL



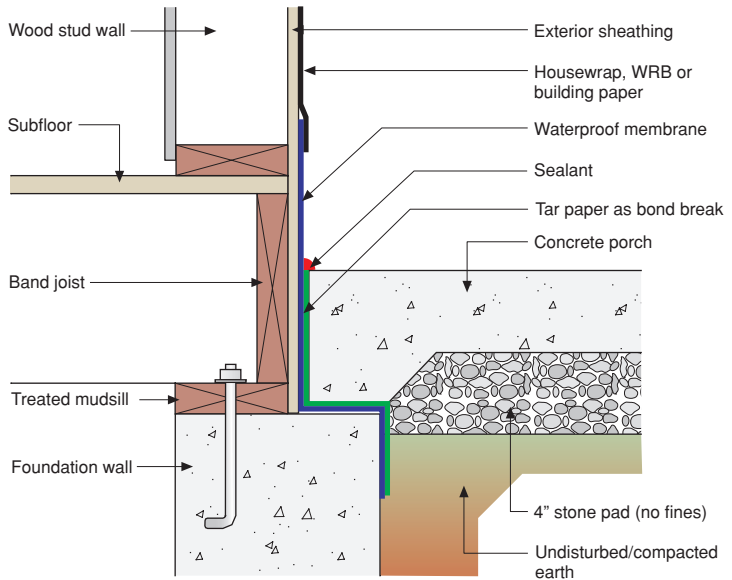
CONCRETE PORCH/FOUNDATION INTERSECTION



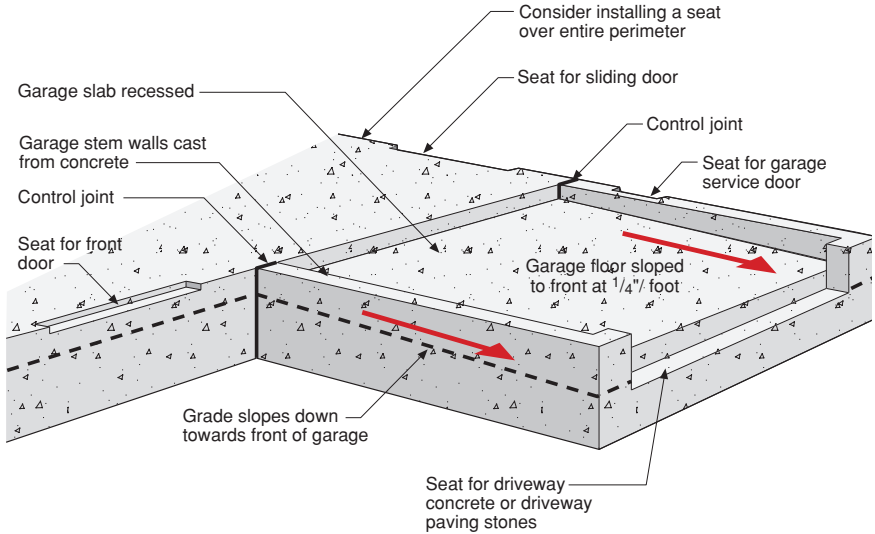
CONCRETE PORCH SLAB WITH INSULATING SHEATHING



CONCRETE PORCH SLAB WITH HOUSEWRAP

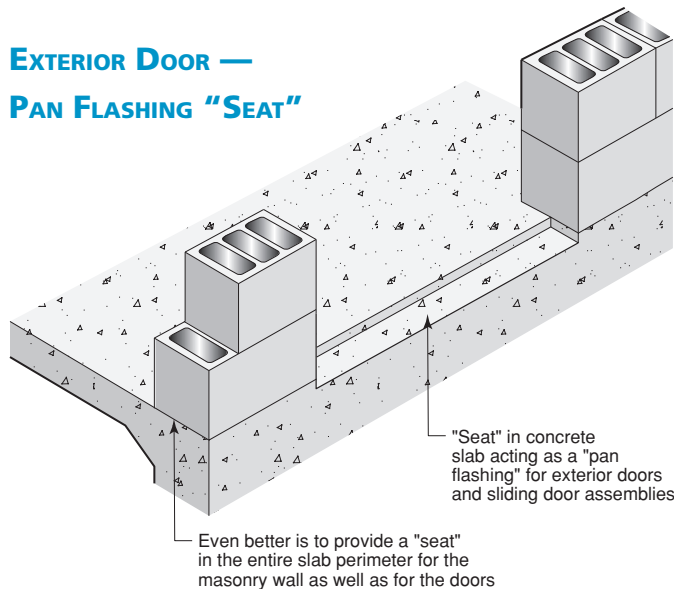


GARAGE SLABS



- Garage floor lower than main floor and slopes away from building
- Garage door area recessed to prevent water entry
- Entry doors recessed to prevent water entry
- Stem walls in garage cast from concrete, not constructed with masonry

EXTERIOR DOOR — PAN FLASHING "SEAT"



NOTES



