

# Vertibreak<sup>®</sup>

RAINSCREEN INSULATION



## Installation Guidelines

# The Vertibreak® Wall System: Installation Guidelines

## Rainscreen Insulation for New or Retrofit Construction Applications

Vertibreak® rainscreen insulation is an expanded polystyrene (EPS) exterior wall insulation panel system that provides both insulation and an air/drainage rainscreen cavity in one product, eliminating the need in many cases for the use of furring strips as your rainscreen cavity. 2'x4' (610mm x 1220mm), 4'x4', or 4'x8' panels are recommended for application on above grade walls only. These installation guidelines consider wood framed (including wood sheathing) walls specifically, in combination with batt insulation within the wood stud cavity (2x4 or 2x6 framing).

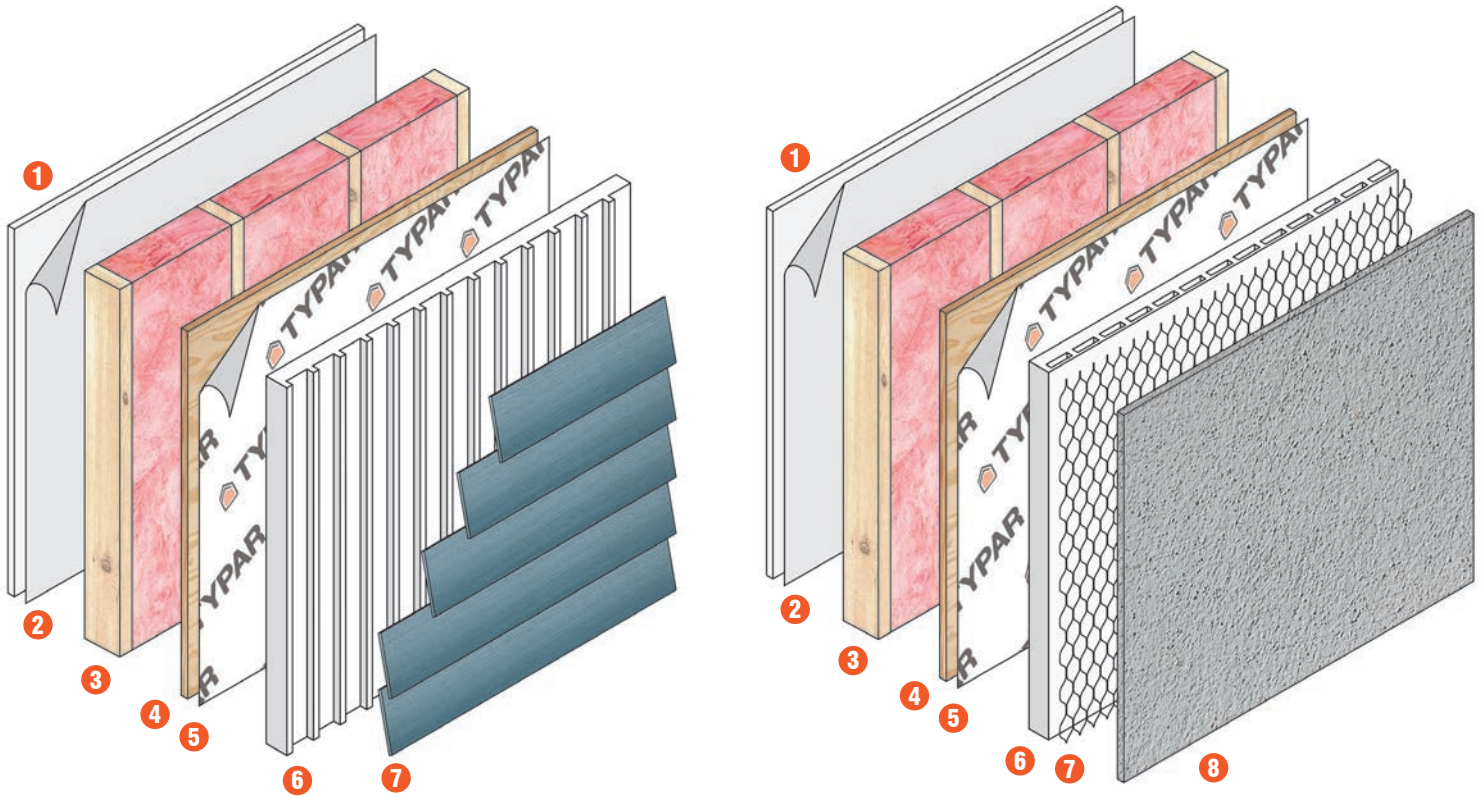
Vertibreak® provides a drainable, continuous insulation panel which not only contributes to the energy efficiency of the wall expected from an exterior insulation and to the durability of the wall system expected from a rainscreen cavity, but it also reduces thermal bridging through the studs, resulting in a superior thermal performance to the building envelope when compared to many traditional wall systems.

Vertibreak® comes in various thicknesses including Vertibreak® 4 (1 3/4"), Vertibreak® 6 (1 15/16" total thickness), as well as Vertibreak® VC (2 11/16"). For stucco and lightweight thin veneer stone applications, Vertibreak® 4-S, 6-S, and VC-S come with an exterior 'sacrificial layer' covering the front of the insulation in order to block stucco and mortar from filling the cavity.

### Table of Contents:

Basic wall assembly diagram .....	Page 3
How to attach the insulation panels to the sheathing .....	Page 4
Recommended Fasteners .....	Page 5
Installation around window opening .....	Page 7
Installation around door openings .....	Page 9
Installation around penetrations – hosebib, wall vent, lighting fixture .....	Page 10

# Basic Wall Assembly Diagram



## Interior to exterior

- ① Gypsum wallboard
- ② Polyethylene (may be optional)
- ③ 2x4 or 2x6 stud wall with insulation
- ④ Sheathing (plywood or OSB)
- ⑤ Sheathing membrane (eg Typar®)
- ⑥ Vertibreak® Rainscreen Insulation (4, 6 or VC)
- ⑦ Cladding

### Using Cladding Type:

Fibre Cement Siding  
Wood & Composite Siding  
Fibre Cement & Wood Shingles  
Vinyl & Metal Cladding

## Interior to exterior

- ① Gypsum wallboard
- ② Polyethylene (may be optional)
- ③ 2x4 or 2x6 stud wall with insulation
- ④ Sheathing (plywood or OSB)
- ⑤ Sheathing membrane (eg Typar®)
- ⑥ Vertibreak® Rainscreen Insulation (4-S, 6-S or VC-S)
- ⑦ Lath
- ⑧ Cladding

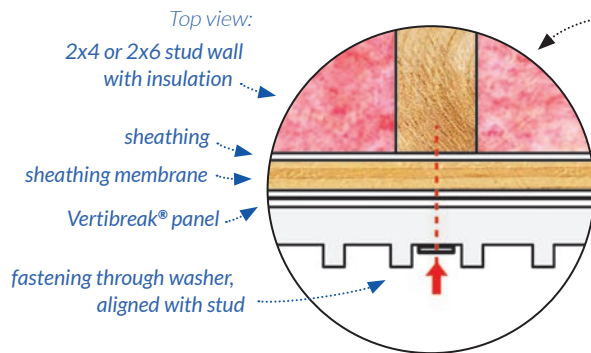
### Using Cladding Type:

Stucco  
Manufactured Stone

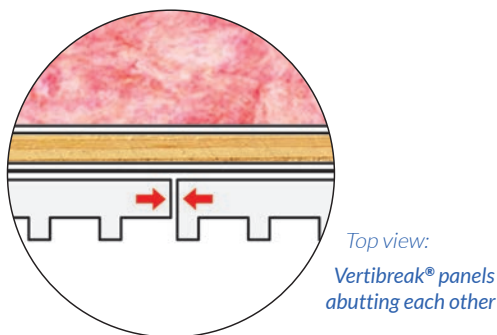
## Attaching the Insulation Panels to Sheathing

Vertibreak® should be installed outboard of the sheathing and weather resistive barrier (WRB) / housewrap. For non-stucco-and/or stone applications, Vertibreak® is fastened between the ridges of the product, through to the framing (sheathing and studs) using the recommended fasteners, with washers a minimum of 1" diameter, and fastener embedment of a minimum of 1" into the framing. (Refer to Figure 1.) The recommended minimum grid spacing for the washers in the field is 16" x 24". (Refer to Figure 2.)

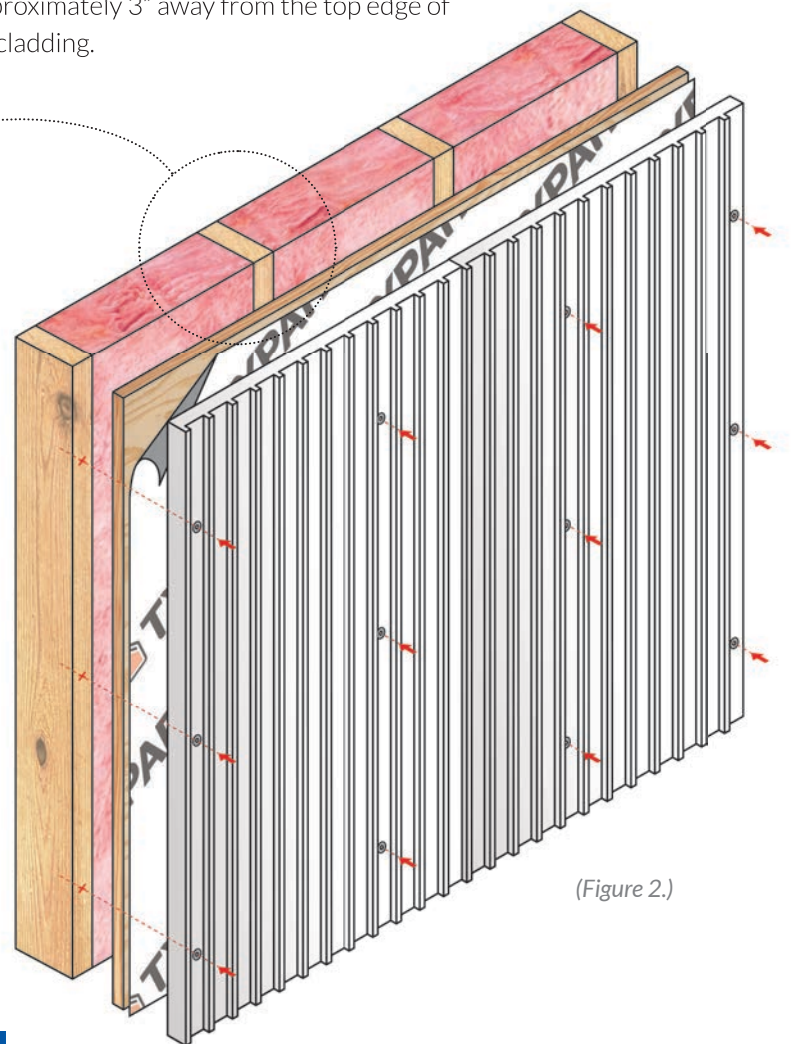
For fibre cement plank siding, fasten washers approximately 3" away from the top edge of siding to allow for unobstructed fastening of the cladding.



(Figure 1.)



(Figure 3.)



### Rainscreen channels alignment

The rainscreen channels should only be oriented vertically. Each Vertibreak® panel should tightly abutt the adjacent board, with the open edge of one Vertibreak® panel abutting tight to the vertical channel edge of the next Vertibreak® panel. (Refer to Figure 3.) Vertical joints should be made at wood stud locations where possible. Cut and fit Vertibreak® tight to penetrations or to any interruptions to the insulation plane.

## Recommended Fasteners

### Recommended fastening of Vertibreak® Panels

#### **VERTIBREAK® 4, 6, AND VC (used with siding and standard claddings)**

Vertibreak® should be attached to the framing members using roofing nails or wood screws. Use the Vertibreak® washer and screw (or equivalent) to fasten Vertibreak® to the framing. Although not required, typically the washers can be fastened within the grooves of the Vertibreak® product. This differs for the Vertibreak® “S” products as described below.

Fastener length must be sufficient to accommodate the insulation thickness, and proper penetration into the framing. The minimum fastener embedment for the fastener into the framing is 1”.

#### **VERTIBREAK® 4-S, 6-S, AND VC-S (used with stucco and manufactured stone)**

As Vertibreak® 4-S, 6-S, and VC-S all have a sacrificial layer outboard of the rainscreen cavity, we recommend the use of a washer fastened flush to the outside of the sacrificial layer but through and into the stud with 1” embedment. For these applications, prior to the installation of the stucco wire or lath, temporary fastening of the Vertibreak to the sheathing with a roofing nail, foam-friendly sealant, fewer washers or other temporary means may be used. The stucco wire or lath may then be secured afterwards to the stud as described for long-term attachment. Note that temporary fastening should be sufficient enough to keep the Vertibreak insulation from blowing off the wall during unexpected winds.

#### **Recommended washer for fastening all Vertibreak® panels:**

- 1) Vertibreak® Plastic CI (Continuous Insulation) washers
- 2) Vertibreak® metal washers

### Recommended fasteners for cladding attachment

Refer to the siding manufacturer, relevant industry association, and applicable building code in your area for the recommended fastener and fastening requirements of the cladding.

#### **FIBRE CEMENT SIDING**

For standard fibre cement siding applications where pneumatic fastening is required, we recommend the use of Vertibreak® Nails (or equivalent) for Vertibreak® 4 and Vertibreak® 6 which allow for adequate penetration into the framing (based on most common walls as described in the ‘Zone Calculation’ chart in the Vertibreak® literature). Be sure to take into account fastener length and embedment for fibre cement products with a thickness greater than 5/16” (4” or longer screws may be required).

Vertibreak® VC’s greater thickness and current lack of appropriate pneumatic fastening system requires the fibre cement to be fastened through to the framing with a minimum 4.5” screw.

## Recommended fasteners for cladding attachment continued...

### Recommended nails and screws for fiber cement with Vertibreak®:

- 1) Vertibreak® Nails (3.5") or equivalent  
Full specifications at [www.vertibreak.com/files/Fibre\\_Cement\\_Nail\\_Spec.pdf](http://www.vertibreak.com/files/Fibre_Cement_Nail_Spec.pdf)
- 2) Robertson Green Magnigard coated wood screws (10 x 4", 10 x 5", 10 x 6")  
- supplied by Wm. P. Somerville Ltd. 604 298 3622

## STUCCO AND MANUFACTURED STONE

### Fastening the wire/lath:

For standard ¾" 3-coat stucco systems ovetop of Vertibreak® 4-S or 6-S, we recommend the use of min. 1" diameter washers ovetop of stucco wire or diamond lathe screwed through to framing with screws. Repair areas where the sacrificial layer has been significantly damaged with a stucco compatible tape or fabric.

### Recommended screws and washers to fasten stucco lath to Vertibreak®:

- 1) Robertson Green Magnigard coated wood screws (10x4", 10x5", 10x6")  
- Supplied by Wm. P. Somervilled Ltd. 604 298 3622
- 2) Vertibreak® metal washers

### Recommended fastening patterns for Vertibreak® "S" applications:

- a) Minimum 6" vertical fastening of lath/wire and all fastening at minimum per building code
- b) Stud spacing to be no greater than 16" on centre - studs greater than 24" would require ¾" furring for attachment of lath
- c) Minimum 4 ½" to 5" hot-dipped galvanized screw fastened to stud where possible for lath attachment
- d) Max. cladding weight used with Vertibreak "S" to be 10 psf

## WOOD SIDING, SHINGLES AND SHAKES

For standard wood shingles and shake applications we recommend the use of a "splitless" ring shank siding nail. These have thin shanks and blunt points to reduce splitting. A minimum 1 ¼" penetration into the framing is recommended by WRCLA.

Refer to: <http://www.realcedar.com/wpcontent/uploads/2013/12/HowToInstallSiding.pdf> for further instructions.

### Recommended nail for wood shingle and shake with Vertibreak®:

- 3.5" or 4" splitless wood siding nails. Vertibreak® Cedar Nails may also be available in your area. Consult your dealer to inquire.

# Installation Around Window Opening

## Window preparation

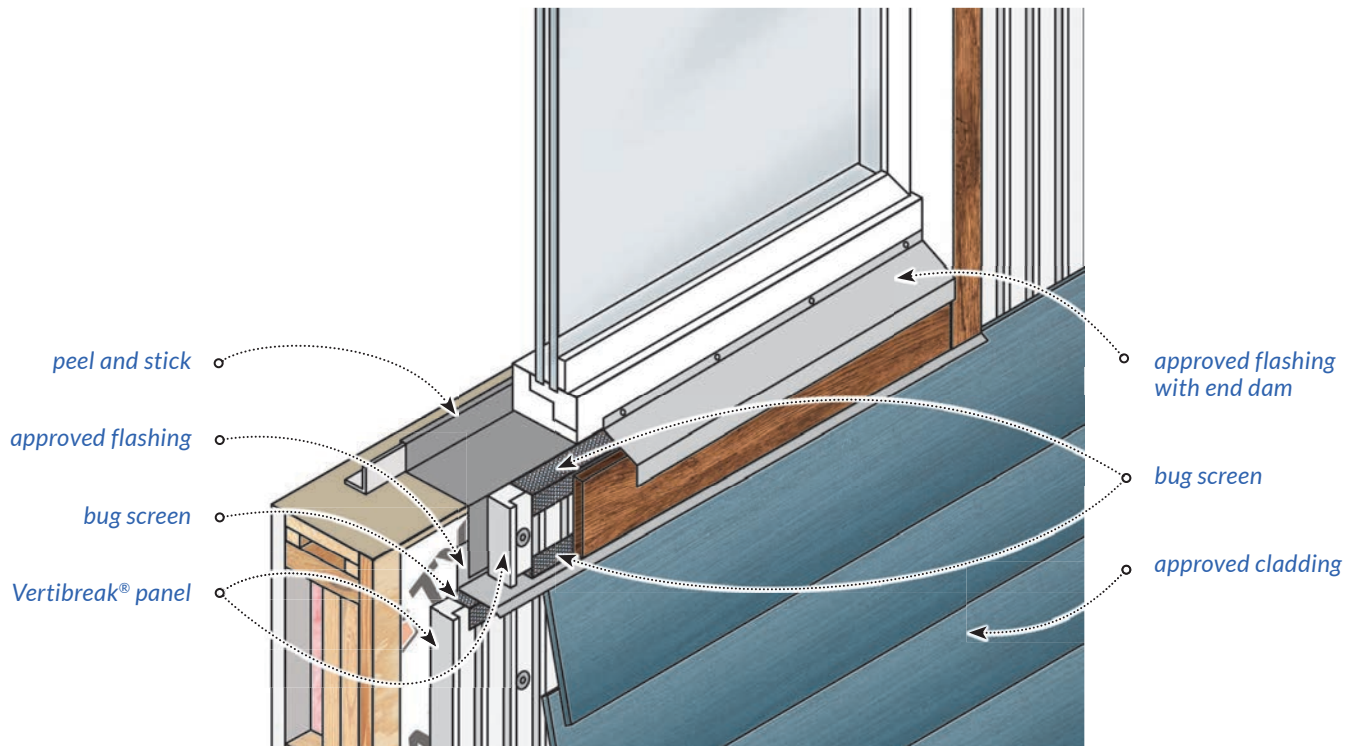
The air and/or water resistive barrier (WRB/housewrap) should be located at the sheathing interface behind Vertibreak®, and there should be continuity of these critical barriers to the window assembly.

Install the window sub-sill membrane in conformance to standard industry installation practices, making sure that it is integrated with your weather resistive barrier under the sill (ie: Typar HouseWrap). (Refer to Figure 4.)

Install the weather resistive barrier at the jambs and head of the window rough opening, with positive shingling over the sub-sill membrane.

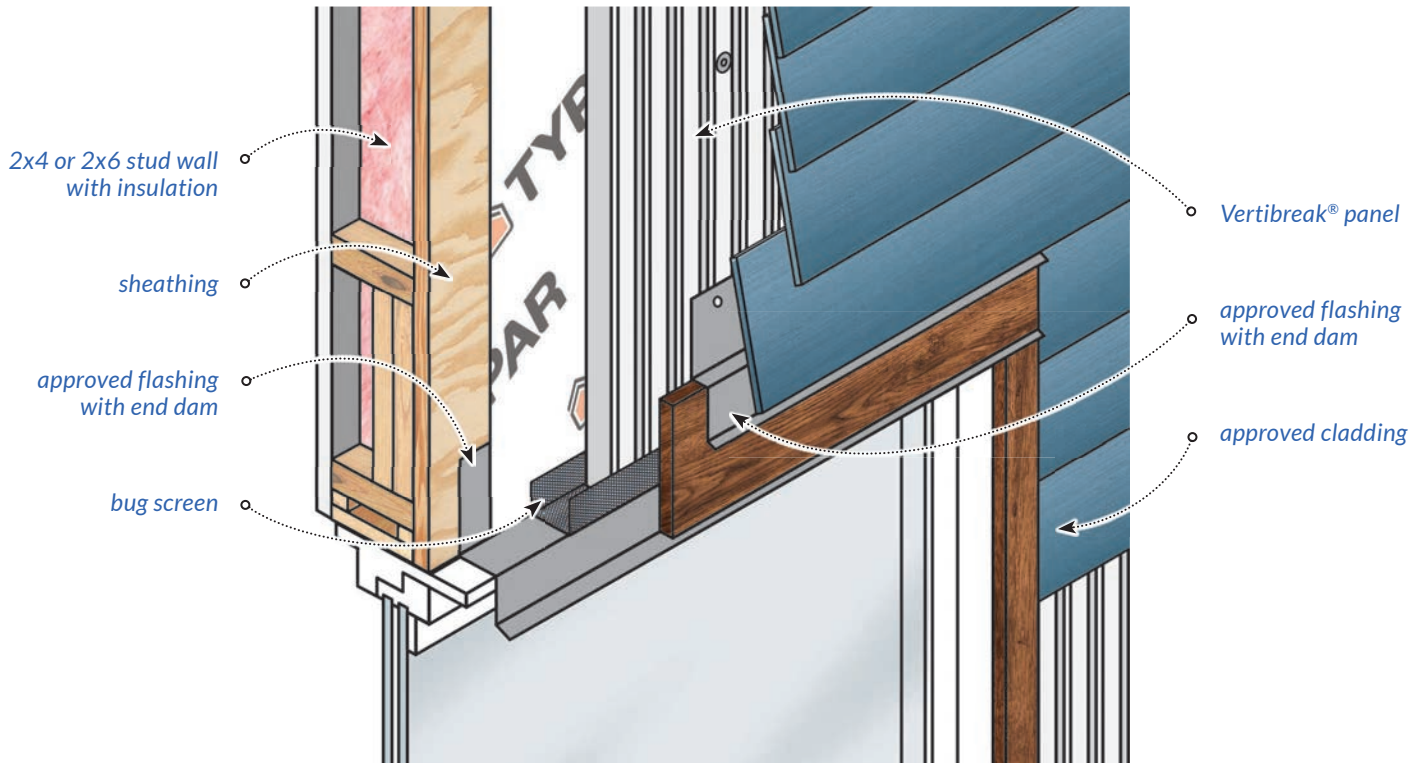
Install the metal head flashing and seal the leading edges with sheathing tape. Always ensure that the weather resistive barrier at the head positively shingles over the metal head flashing. (Refer to Figure 5.)

As best practice, the sill flashing should direct any water to the exterior surface of Vertibreak®. (Refer to Figure 4.)



(Figure 4.)

## Installation around window opening continued...



(Figure 5.)

## Window Install

Install and structurally attach the window as per the manufacturer's specifications. The Vertibreak® rainscreen insulation panel is installed tight to the window assembly. If the face of the Vertibreak® wall panel sits proud of the window, the exterior of the window is trimmed out with a jamb, head and sill extension. Install the bug screen, window trim board, and cladding afterwards.

*Note: Refer to the window manufacturer's installation guidelines, construction details and shop drawings if applicable. Always ensure that there's continuity of the critical barrier system (WRB, air barrier, vapour barrier, thermal barrier, and water shedding surface) using mock-ups for typical conditions.*



## Installation Around Door Openings

### Door preparation

Follow the door installation sequence as per normal construction practices in conformance with your local building code.

Install sill flashing and provide sheathing membrane around the jambs and header in accordance with applicable construction details. Ensure positive shingling of the different layers of membrane.

Install the head flashing over the door and the sub-sill prefinished metal flashing at the base.

### Door install

Install door into opening as per manufacturer's specifications.

Install Vertibreak® tight around the door opening and proceed to install the bug screen, door trim board and cladding after.

*Note: Refer to the door manufacturer's installation guidelines, construction details and shop drawings if applicable. Always ensure that there's continuity of the critical barrier system (WRB, air barrier, vapour barrier, thermal barrier, and water shedding surface) using mock-ups for typical conditions.*

# Installation Around Penetrations - Hosebib, Wall Vent, Lighting

## Penetration preparation

Pre-strip the wood sheathing with sheathing membrane where the penetration will sit.

## Penetration install

Provide a proper seal around the penetration at the sheathing and cladding interface using sealant.

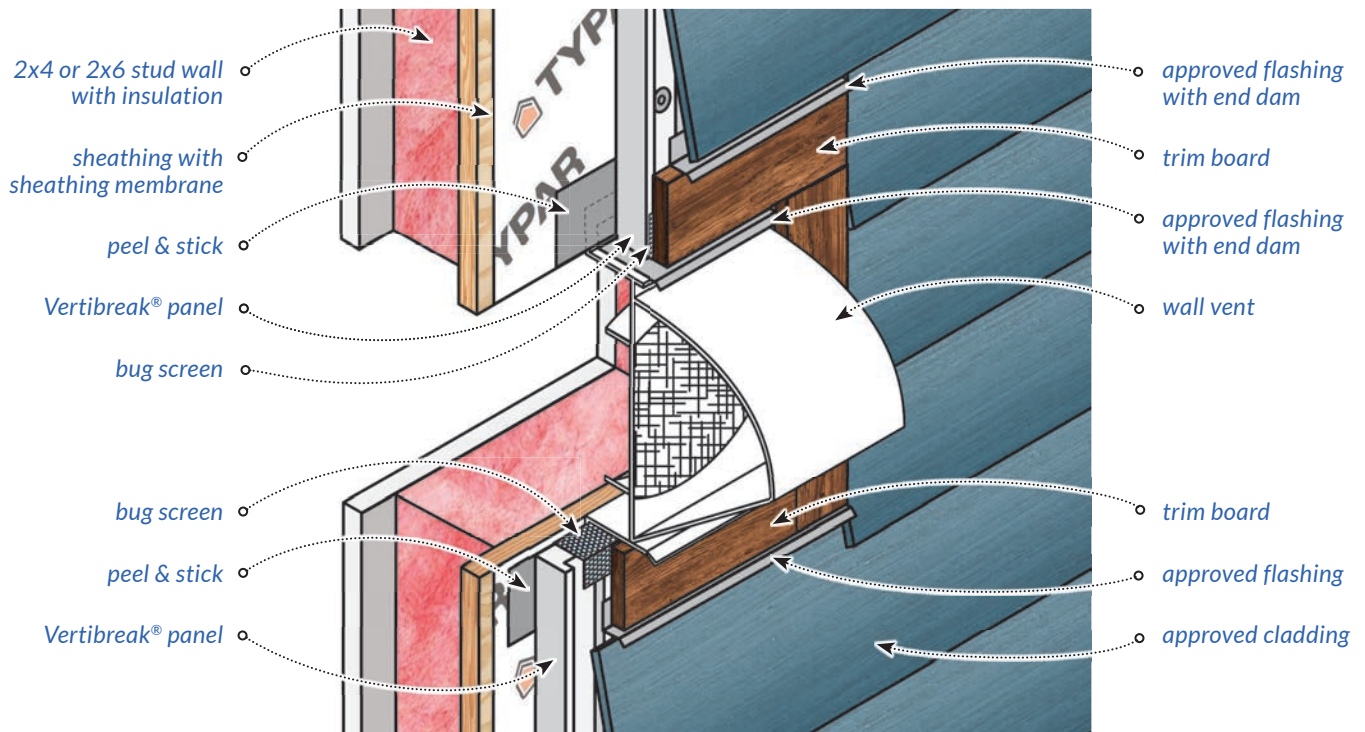
The use of a pre-molded one piece cap with an extended base to compensate for the rainscreen and insulation cavity depth between the sheathing and cladding is recommended. This pre-molded cap flange is fastened at the sheathing interface and extends proud of the insulation.

If the flange sits outboard of the insulation, fasten through the insulation at the channels to the framing when possible. Wood blocks or an insulation insert may be used to provide a fastening base if required.

Install a head and sill flashing around the penetration, in accordance to applicable construction details.

Ensure a tight fit of Vertibreak® around the penetration, and proceed to install the bugscreen, trim boards and cladding after. (Refer to Figure 6.)

Provide a proper seal around the penetration at the sheathing and cladding interface using an approved sealant.



(Figure 6.)