

AIRBOARD® AERO

Breathable Insulation + WRB



INSTALLATION GUIDE

October 2024

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1. INTRODUCTION

Airboard® AERO is high-performance breathable* insulation, plus water-resistive barrier (WRB)** when sealed, intended for continuous insulation applications. It provides the economy and durability of expanded polystyrene foam to easily meet and exceed new building codes and modern building science recommendations.

Airboard® AERO A100 combines graphite-enhanced expanded polystyrene (GPS) insulation with advanced, perforated facers for **outstanding, multi-function performance and fast installation.**

Serving as non-structural insulation, AERO is made from closed-cell foam that's infused with graphite particles to increase thermal resistance. The boards are available in a convenient range of thicknesses and laminated on both sides with reflective metallic facers. **Drying capacity** in exterior walls is maintained by perforating the laminated facers, allowing water vapour to pass through the boards*. At the same time, the laminated boards can serve as a **water-resistive barrier**** when adequately sealed and flashed, should liquid water enter the wall assembly from the exterior. Just like sheathing membranes, AERO can be both breathable* and a WRB!

Airboard® AERO with GPS cores provides insulation values of R-4.7 per inch or R_{SI} 0.815 per 25mm thickness, about 20% higher than standard white EPS and similar to extruded XPS insulation, but with NO loss of insulation value over time (a.k.a. "thermal drift").

TYPICAL USES

New or retrofit above-grade continuous insulation for

- Exterior wood-framed and steel-framed walls
- Precast, tilt-up, masonry or cast-in-place concrete walls
- Panelized wall systems

VALUE PROPOSITION

- Combines continuous insulation and WRB** steps while virtually eliminating the risk of condensation, rot and mold inside framed walls
- Allows thinner exterior insulation due to permanently high Insulation Value of R-4.7/in with ZERO thermal drift
- Reduces thermal bridging via studs and other wall framing members
- Controls moisture by allowing water-vapour to escape the wall*, further protecting the assembly from rot and mold
- Eliminates need for an additional Water-Resistive Barrier** when sealed and flashed at joints, penetrations, transitions
- Reflective facers can further boost the insulation value by acting like a **radiant heat barrier** next to a rainscreen / air space
- Laminated insulation boards reduce insulation breakage and waste on site
- Ideal for radius walls due to board flexibility
- Light-weight, pre-marked, multi-purpose boards are easy to handle, cut and install
- Safe, inert GPS contains no HFCs, CFCs, HCFCs, nor formaldehyde; AERO will not off-gas a few weeks or months after manufacture.
- Building Code compliant with third-party certified quality assurance



* **Airboard® AERO up to 2-1/8" [54mm] thick** has relatively high water-vapor permeance:
 Canada: Vapor permeance $\geq 60\text{ng/Pa}\cdot\text{s}\cdot\text{m}^2$ (i.e. not a vapour barrier) per ASTM E96 tests
 USA: Semi-Permeable Vapor Retarder (1-10 perm Class III), see [AERO webpage](#) for details

** **Water-Resistive Barrier (WRB)** for low-rise buildings:

- For Canadian Part 9 buildings, Airboard® AERO with all joints sealed qualifies as Second Plane of Protection behind cladding per NBC 9.27.3.4. "*Insulating Sheathing in lieu of Sheathing Membrane*".
- Board joints, penetrations and transitions must be adequately sealed and flashed, see [AERO webpage](#) for additional details

AVAILABILITY & TESTING

Airboard® AERO is available in the following dimensions and types:

- 4 ft. x 8 ft. board size
- Standard thicknesses of 5/8" (R-2.94), 1" (R-4.7), 1-1/16" (R-5), 1-1/2" (R-7.1), 2" (R-9.4), and 2-1/8" (R-10)
- Custom thicknesses from 5/8" to 6" with special order.
Note that thicknesses greater than 2-1/8" are a Class II vapor retarder (0.1-1 perm) in the USA and a vapour barrier in Canada.
- Expanded Polystyrene: Canadian Type 1 (per CAN/ULC-S701.1); and American Type I (per ASTM C578 with ICC-ES AC12) with Surface Burning Characteristics CAN/ULC-S102.2, ASTM E84 (UL 723)

PROTECTION DURING STORAGE, HANDLING AND INSTALLATION

CAUTION: Airboard® products are combustible and must not be exposed to excessive heat, sparks, open flames, or any other sources of ignition. A protective barrier or thermal barrier is required as specified in the appropriate building code. If stored/used in closed containers, confined, or low-lying areas, ensure adequate ventilation to prevent accumulation of flammable pentane vapours from freshly manufactured boards. Prevent inhalation of smoke, fumes or dust from burning or fabrication activities. GHS Classification: Non-Hazardous, see [SDS](#) Safety Data Sheet.

Airboard® AERO is packaged to provide UV protection for some time and minimize potential soiling during transport & storage. Additional protection measures are recommended as follows:

Handling

Handle packages and boards carefully to prevent damage to corners, edges and facers

Incompatibilities

Like most plastic products, Airboard® dissolves in hydrocarbons (e.g. fuels, oils, tar), organic solvents (e.g. acetone/ketones, benzene, paint thinner), ethers, esters, aldehydes and amines. Avoid strong oxidizers. Other examples of incompatible materials are concrete release agents and asphaltic sealant compounds. Also refer to chapter 6. [Compatible Products](#).

During Storage

- Secure packages against wind and animals including insects (store off the ground)
- Protect from prolonged direct or indirect solar exposure
- Cover with tarps to protect from weather or store indoors

During Installation

After Airboard® AERO is installed on the building and prior to covering it with exterior cladding, follow these recommendations to mitigate the effects of exposure to solar radiation:

- Cover Airboard® AERO if left exposed for more than 30 days.
- Mitigate reflected sunlight by removing or covering the source of reflection.
- Apply tape to joints, corners, transitions, penetrations etc. as soon as possible. Otherwise, protect those areas until tape can be applied.

REPAIR OF DAMAGED AERO BOARDS

Damaged Airboard® AERO can often be repaired and reused when ensuring to maintain AERO features like insulation and WRB characteristics.

Broken AERO boards can be repaired by fitting broken pieces tightly together and sealing joints on both sides of the board with the approved sheathing tape used across the project.

Small holes and cuts in AERO boards can be filled with PU sprayfoam and taped over with sheathing tape.

Larger holes should be repaired by cutting out a square that spans the hole, and replacing it with an undamaged square cut from surplus material. Tape seams on all sides of the square with sheathing tape - on both sides of the board.

WARRANTY

Airfoam Industries Ltd. offers a limited warranty for Airboard® AERO as part of its [Terms of Sale](#).

2. INSTALLATION

GETTING STARTED

Confirm Building Plans & Code Requirements

- Confirm project design requirements for insulation, moisture management and air tightness. Ensure that the proposed installation is in compliance with all applicable building codes.
- Airboard® AERO has relatively high water-vapor permeance up to 2-1/8" thickness*. Confirm whether or not an additional vapor barrier is required elsewhere in the wall assembly. In most projects/jurisdictions, a concrete or masonry wall or a separate vapor barrier (e.g. poly sheet) on framed walls serves as the air barrier – and only (framed) cavity walls require vapor barriers.

Tips

When properly installed, Airboard® AERO serves as both continuous insulation and water-resistive barrier** as part of your moisture management plan.

If an insulating vapor barrier is required, consider [Airboard® EPS or GPS Vapor Barrier](#) products with non-perforated facers.

- Airboard® AERO Insulation shall only be placed into an assembly where the moisture transport mechanisms are well understood and determined to be acceptable in accordance with applicable building codes or accepted engineering practice (e.g. current ASHRAE Handbook of Fundamentals).

Recommended Tools & Supplies

- Extendable utility knife or similar for cutting AERO
- Polyurethane (PU) spray foam, low-expansion type (for filling insulation gaps, board repairs, and temporary adhesion)
- Laminate/Tape Roller (J-roller)
- Tape Measure
- Hammer
- Drill with bits matched to screw types
- Straight Edge
- Permanent Markers

Sealing Tapes / Membranes

Approved Sheathing Tapes or membranes compatible with AERO's polypropylene & polyethylene facers should be at least 2-3/8" wide for WRB** applications.

Fasteners & Adhesives

Fasteners must be sufficiently corrosion-resistant for the project's environment. Choose appropriate **fastener lengths** according to the thickness of AERO insulation plus the minimum required embedment/penetration of the fasteners into/through the structural components (plus sheathing layer thickness where required); also add the thickness of strapping/furring for its fastener lengths.

- Wood screws with min. 1" (cap) washers
- For rainscreen strapping/furring: Screws w/ countersunk heads to attach strapping/furring through AERO to the wall
- For thinner AERO where stapling is permitted: Staples with min. 7/8" caps
- Where nailing is permitted: Ring shank nails with min. 1" (cap) washers
- For metal stud applications: Self-tapping screws with min. 1" (cap) washers
- For brick cladding: Brick ties, ideally those designed to work with foam sheathing, see chapter 6. [Compatible Products](#)
- If required, weather resistive construction glue [compatible with polypropylene and foamed polystyrene](#) e.g. Loctite® PL 300 or equivalent.

Tips

Instead of taping fastener penetrations, in many projects/locations an acceptable fastening AND sealing solution may be to use **cap screws, cap nails or cap staples which are designed to be self-sealing**. Check with your design professional, cap fastener provider and/or applicable building code.

Whenever possible, keep wood components dry to increase fastener pullout strengths and reduce other moisture issues.

Avoid removing any fasteners once installed because that would leave holes in the WRB that need to be sealed.

GENERAL INSTRUCTIONS & CONSIDERATIONS

Usually, the best time to install Airboard® AERO is:

- **AFTER** the roof sheathing, step flashings and kickout flashings have been installed
- **BEFORE** the windows and doors are installed

- Remove any obstacles from the wall that may interfere with the installation.
- Position Airboard® vertically or horizontally. For Airboard® AERO used as WRB** and for tall walls, vertical orientation is preferable and required in some jurisdictions.

Best Practice:

Install Airboard® AERO with the printed side exposed and photograph or retain bag-labels to allow product identification and traceability by building officials and others.

- **Secure Airboard® AERO** to the wall substrate or framing members with fasteners and/or with compatible adhesive. Substrate examples include concrete or masonry walls and plywood sheathing of sufficient thickness (see tips below), while framing members are wood or steel studs, headers, etc.
 - **Starting from bottoms of walls at corners**, temporarily tack the boards to the wall with an adequate number of fasteners with (cap) washers to resist temporary loads such as wind, see page 9. Later application of additional fasteners, rainscreen strapping and/or direct-applied cladding will fully secure Airboard® AERO. When required to center board joints on studs, Airboard® AERO at corners may need to be cut to the widths needed.
 - If furring/strapping will not be used over Airboard® AERO, glue or mechanically fasten the boards to the structure at spacing & embedment/penetration required by the applicable building codes or plan specifications, depending on the type of fastener, washer and substrate used.
- **Butt insulation boards as tightly together as possible**, leaving no gaps. If gaps are left between boards or adjacent components, seal them with PU spray foam or caulking with backer rod when needed.
- **Airboard® AERO used as WRB****: All board joints, tears/cuts in facers, penetrations, and transitions **must be adequately sealed** with approved sheathing tape or membrane of min. 2-3/8" width per the manufacturer's instructions **with flashing installed** as required by applicable building codes, plan specifications and/or best practices. Where **reverse laps** are of concern such as at horizontal seams, a sealing tape/membrane rated for reverse laps can be used, e.g. 3M™ 3015.

Tips:

1. Ensure compatibility of any other product (such as adhesives, tapes, coatings and finishes) with Airboard® AERO's Expanded Polystyrene and polypropylene & polyethylene facers, also see chapter 6. [Compatible Products](#).
2. Use the dotted lines printed on Airboard® AERO at 16" and 24" from edges (when installed vertically) to your advantage for locating studs. Printed dots at 2" spacing each way allow quick cutting.
3. In some regions and projects, min. 3/4" thick plywood sheathing over framing members can simplify the cladding process by eliminating the need to locate studs for attaching rainscreen strapping and/or cladding. Check applicable building codes to confirm if exterior finish may only be attached to the sheathing layer AND which sheathing products are allowed to be used in this manner. For retrofit projects: Remove existing cladding and assess what the sheathing layer is and whether it is permitted to hold fasteners for cladding in a code-compliant manner. Otherwise, all fasteners for strapping and/or cladding will have to be fastened through the insulation into studs / structural components.
4. Installing screws of rainscreen strapping at an upward angle of about 15 degrees increases the strength of the support system by benefiting from the truss action of fastener tension and insulation compression, rather than relying more on fastener bending resistance. Note that fasteners installed at an angle of 15-17° need to be 5% longer than those used horizontally to achieve the same embedment into the structure.



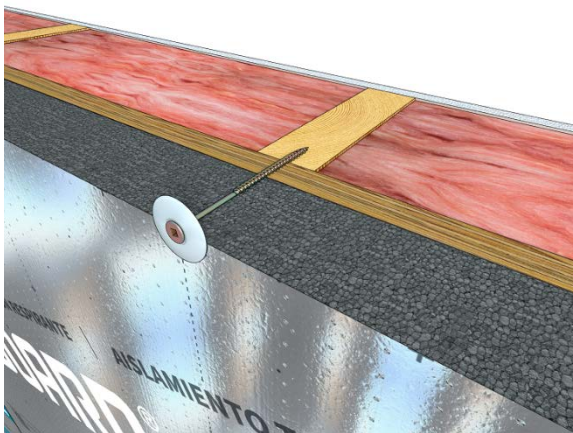
Fastener Specifications, Embedment, Spacing

Consult your building code, plan specifications or design professional for required fastener specifications and spacing for securing AERO, rainscreen strapping, brick ties, and cladding.

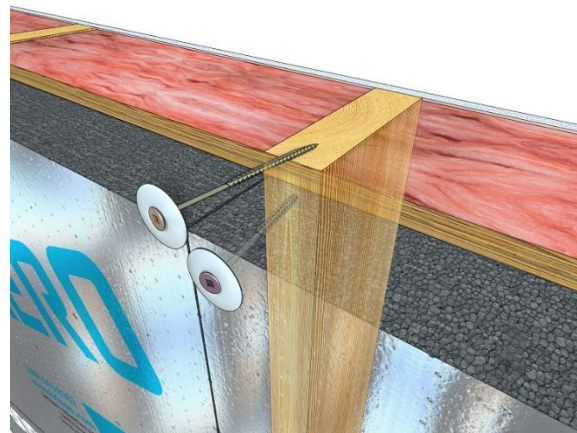
Embed fasteners as required in your jurisdiction or per plan specifications. In many jurisdictions the minimum embedment into wood studs is 3/4" for screws, 1" for nails (not counting tips of fasteners); and at least 1/4" penetration through structural sheathing layers approved for direct fastening.

Refer the fastener manufacturer's tables for allowable values for your specific fastening substrate and to [Fasteners & Adhesives](#) for fastener lengths.

- Where possible, **space fasteners about 3" from the edges** of Airboard® AERO, except around openings where 6" from jambs, sills/thresholds and 9" from heads of window/door rough openings are recommended.
- Where board joints coincide with studs to be fastened into, maintain a **minimum 3/4" spacing from board edges and angle the fasteners** into the studs, while also staggering the fasteners. Elsewhere place fasteners at the center of the framing members.



Normal connection at framing member



Board edge connection at framing member with angled, staggered fasteners

Withdrawal Strengths of Washers

Refer to your (cap) washer manufacturer's tables for details.

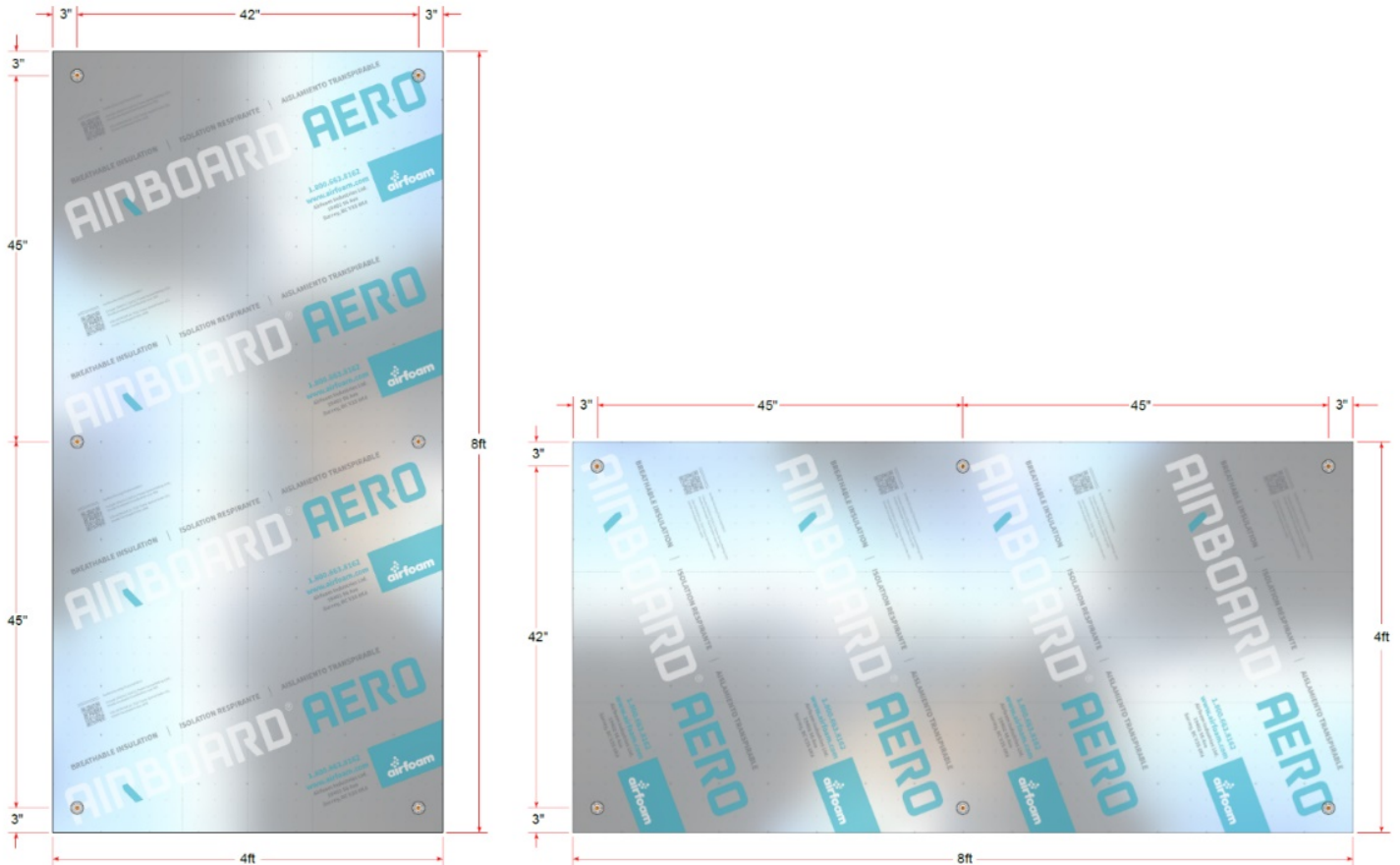
Some commonly available **Plastic Cap Washers** with 1" diameter were tested for pullout strengths (to resist negative wind pressures) and the max. allowable pullout loads were 5.6 lbs, based on the lowest observed ultimate loads with a factor of safety of 3. The tested plastic cap washers had the fastener pull through the washer.

Sturdier **Wind-Lock ULP-302 washers** with 1-3/4" diameter were also tested on 5/8" thick Airboard® AERO and their max. allowable pullout load was 14.3 lbs, based on the lowest observed ultimate loads with a factor of safety of 3.

Temporary Fastening Pattern

For temporarily fastening (“tacking”) Airboard® AERO to the structure, a suggested pattern is shown below assuming no excessive loads, such as from higher wind, are expected until AERO is fully secured.

Best Practice: Install rainscreen strapping, additional fasteners, or direct-applied cladding as soon as practically possible to fully secure Airboard® AERO to the structure. Refer to chapter 5. [Cladding Installation](#).



Final Fastening Patterns

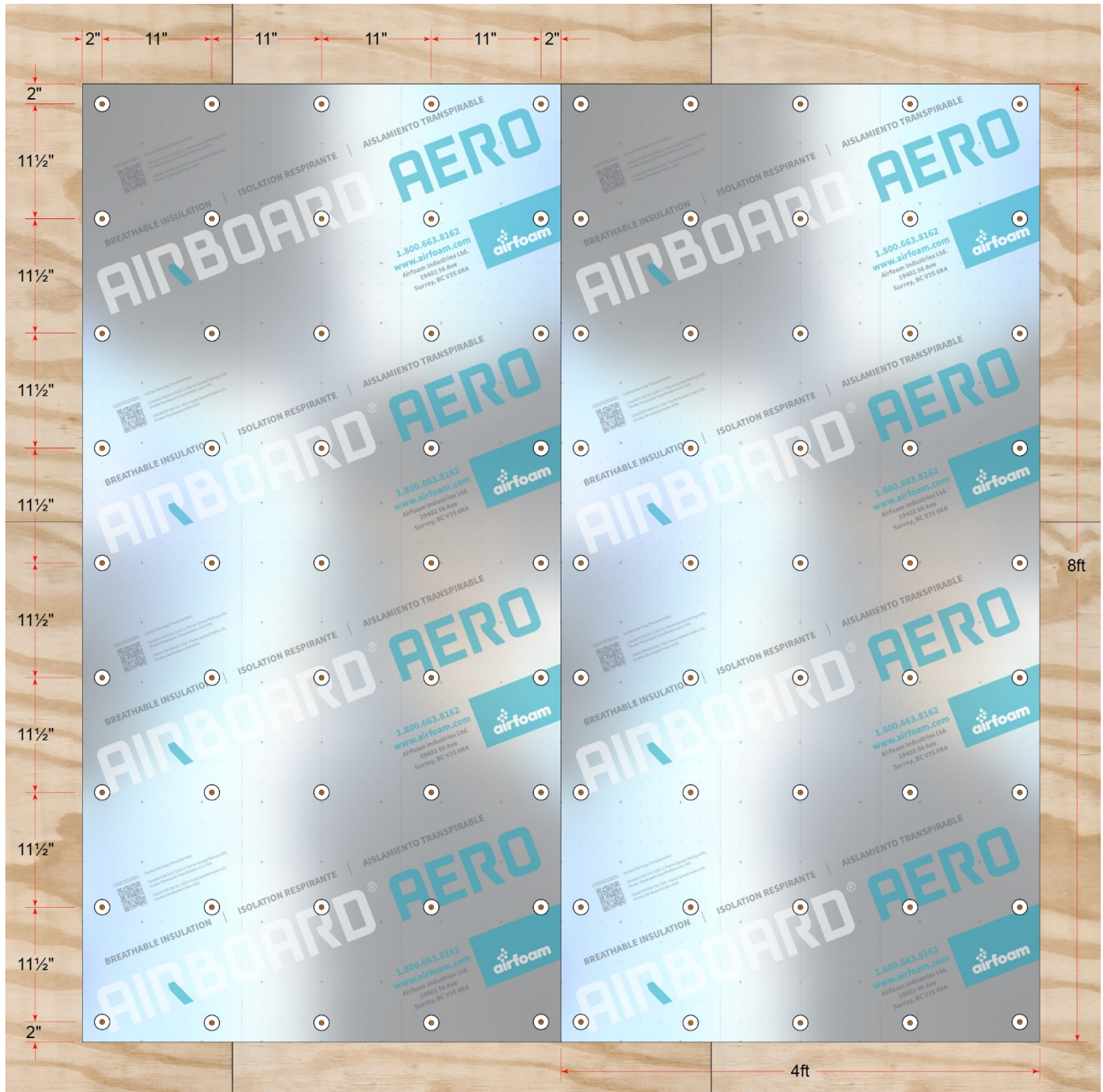
Note that rainscreen furring/strapping, direct-applied cladding, or brick ties with washers for insulation boards also secure AERO to the structure, so for those installations you **don't need to duplicate fasteners**. Rainscreen furring/strapping at max. 24" centers (fastened as required in your jurisdiction) usually won't need any additional fasteners to secure AERO.

When furring/strapping, direct-applied cladding or brick ties with washers for insulation boards will not be installed over AERO and **where codes or plans don't require tighter spacing for areas with higher wind- or other loads**, the following illustrate suggested fastening patterns to secure AERO to the structure:

With Plastic Cap Washers

For fasteners with min. 1" diameter plastic cap washers, a maximum spacing of 12" is recommended.

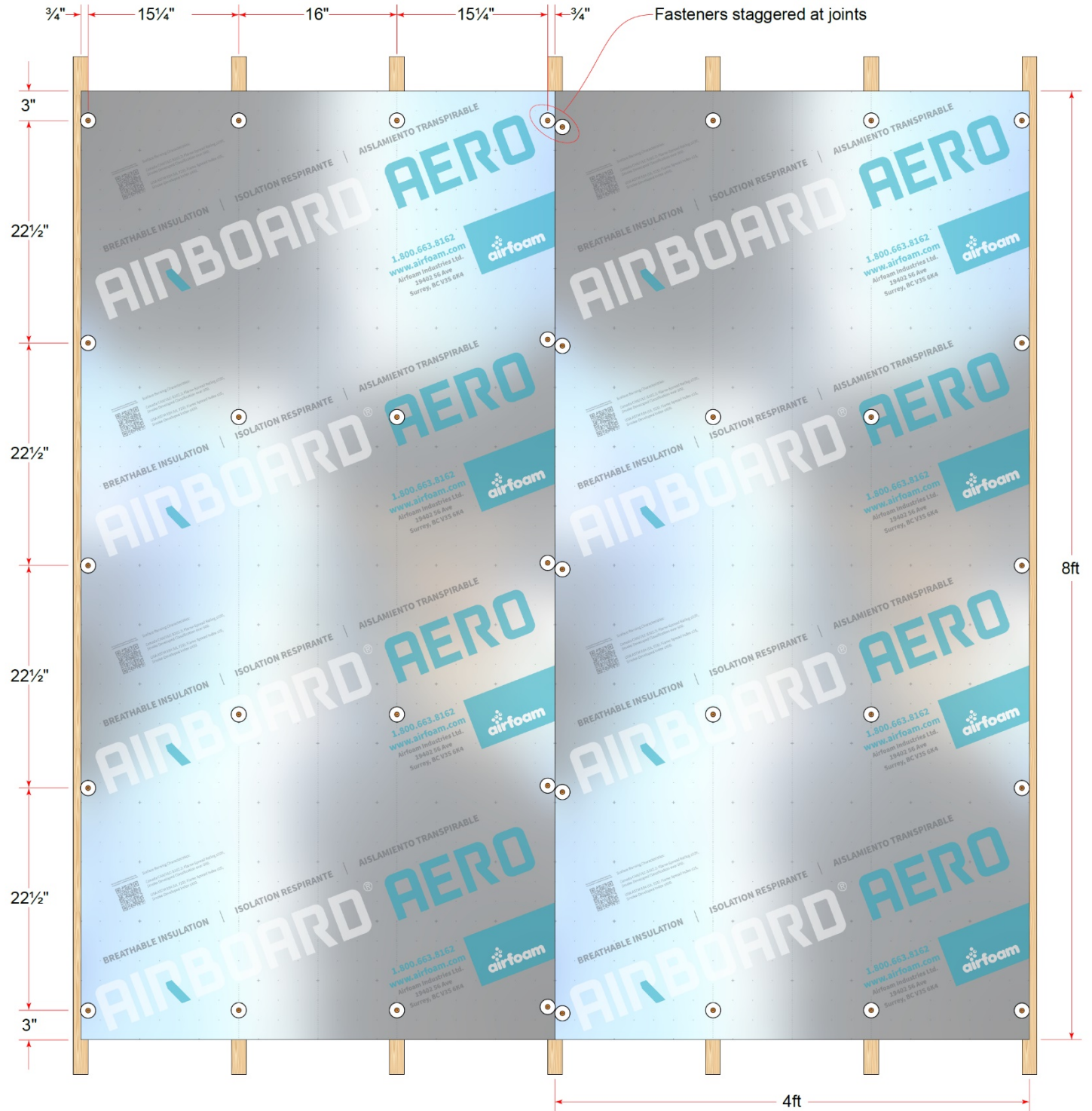
Most sheathing products provide sufficient backing for fastening AERO, providing flexibility in the fastening pattern and eliminating the need to fasten into framing members.



Notes: Fastening to sheathing shown. For open-stud assemblies, fasten into every stud while using the same number of fasteners (45) per board

With Screws or Ring-Shank Nails and Sturdy Washers

For fasteners with sturdy 1-3/4" diameter washers such as Wind-Lock ULP-302, along the edges a maximum spacing of 24" is recommended, and max. 36" spacing at the centers of boards.



Note: 16" stud spacing shown. For 24" stud spacing, increase horizontal fastener spacing to 24" while using the same number of fasteners (18) per board.



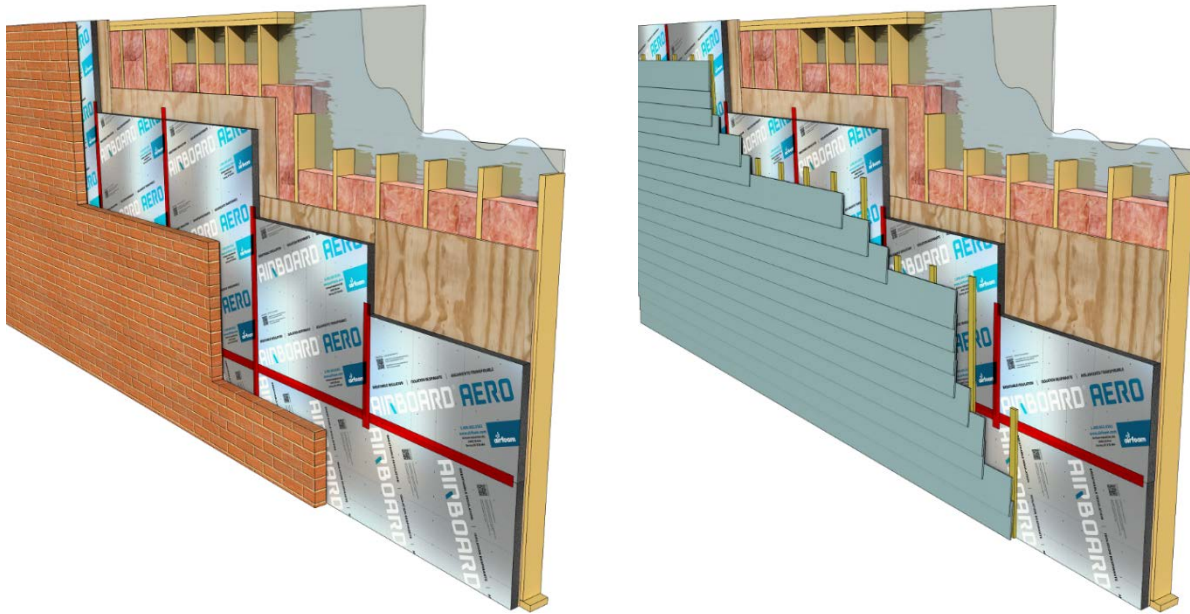
Installation on Wood-Framed Walls

Note: Airboard® AERO is a non-structural material so framed walls must be sheathed or braced per applicable building codes.

Follow the General Instructions above, below are supplemental for various types of walls.

Wood-framing with Sheathing

- Fasten into the studs or, if permissible, through the exterior plywood sheathing layer. Fasteners must meet embedment requirements.
- Brick ties must be fastened through sheathing and into framing members.
- Wherever possible, improve air tightness by staggering joints in Airboard® AERO away from the joints in the sheathing layer.

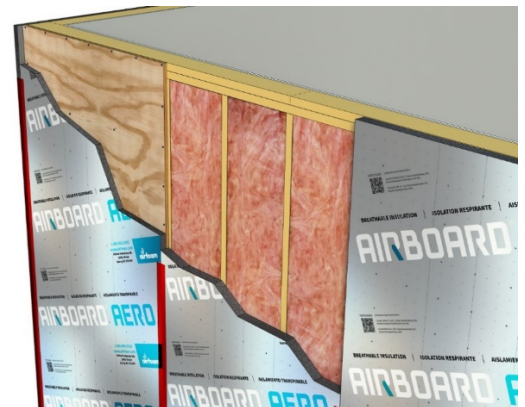
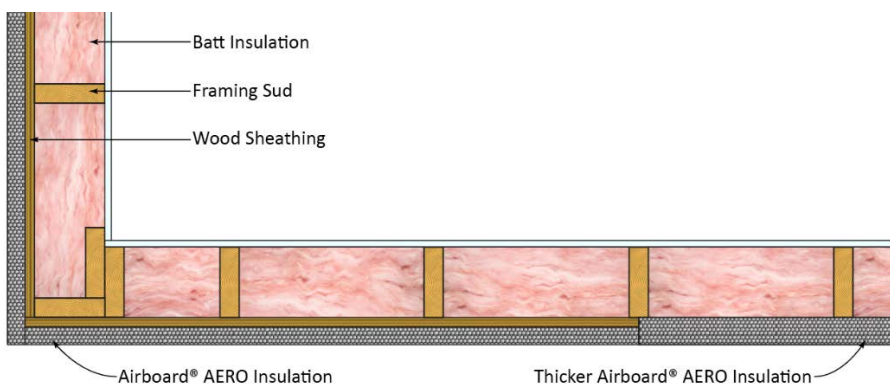


Wood-framing without sheathing (open-stud)

Note: An open-stud wall assembly will require lateral support such as bracing at corners and/or diagonal wind bracing. Confirm local building code requirements or consult the design professional.

- Airboard® AERO, rainscreen strapping, brick-ties are fastened directly to wood studs and other framing members in an open-stud wall. The fastening pattern should be at EACH STUD (16" or 24" spacing) horizontally, and decrease vertical spacing to match the numbers of fasteners per board per suggested [Final Fastening Patterns](#).
- Brick ties must be fastened into framing members.

Sheathing is sometimes used at corners as lateral support / bracing. Where present, use a thinner layer of Airboard® AERO there to keep the insulation layer flush across the entire wall surface. For example, corners braced with 1/2" thick sheathing should receive a 1" thick layer of Airboard® AERO, while the balance of the wall receives a 1-1/2" thick layer.



Installation on Steel-Framed Walls

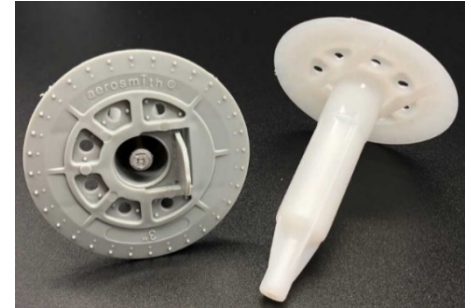
Follow the [General Instructions & Considerations](#) and supplemental information for wood-framed walls above, some additional points to consider for steel-framed walls are:

- Self-tapping screws must penetrate steel studs by at least 10mm [3/8"]
- Do not “over-torque” (spin) fasteners in metal studs. Replace any over-torqued fasteners and seal hole with sheathing tape

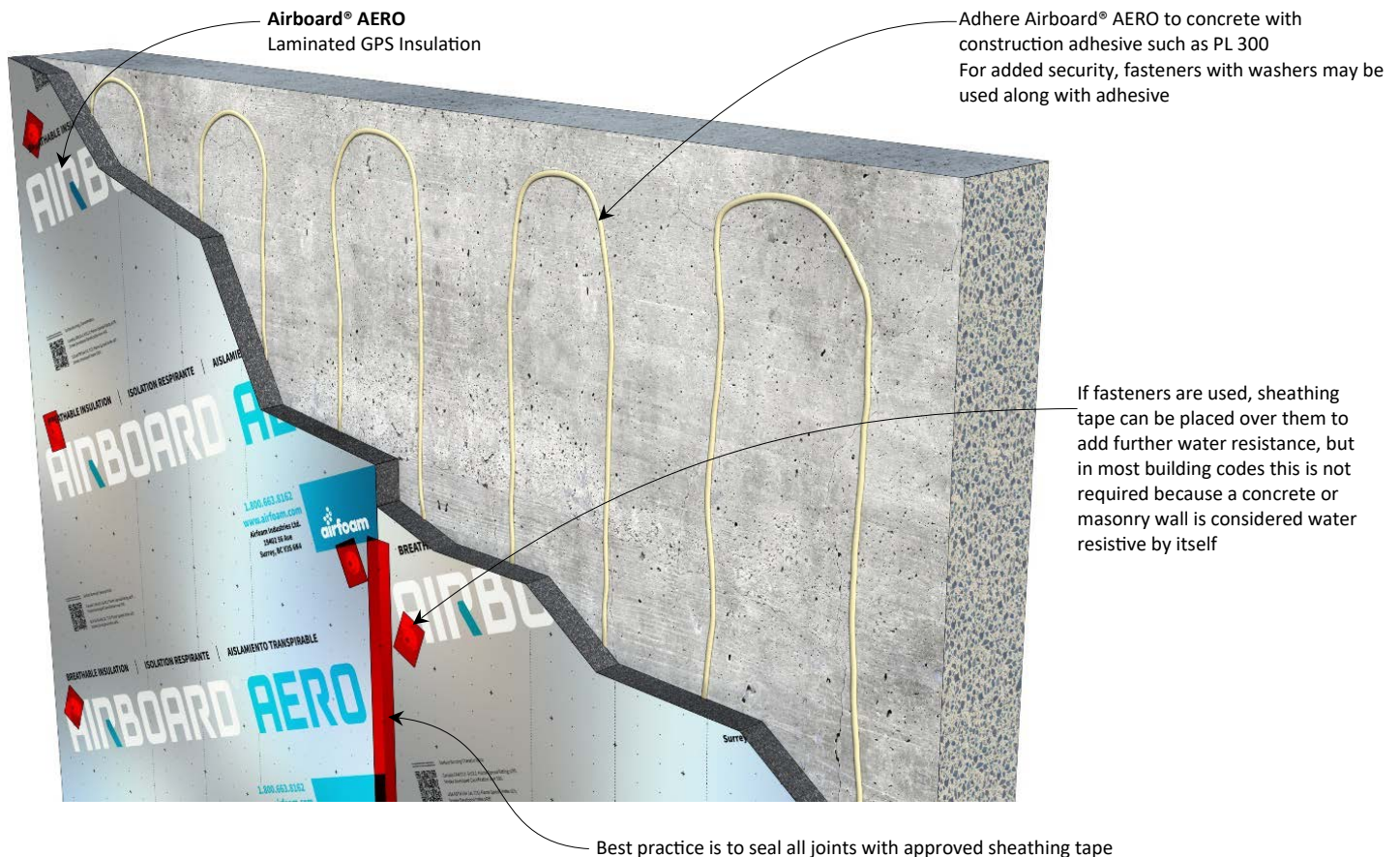
Installation on Concrete & Masonry Walls

Secure AERO insulation to concrete or masonry wall surfaces with mechanical fasteners or a combination of adhesive and mechanical fasteners. Use only “foam board compatible” adhesive.

Power-driven insulation fasteners can expedite the installation over large areas of concrete and masonry, such as from Ramset, Hilti, Aerosmith or equivalent.



Aerosmith Insulpin® shown



Prefabricated Wall Assemblies

Airboard® AERO post-installed on prefabricated (factory built) walls will largely follow the process for framed or concrete walls.

Airboard® AERO pre-installed on prefabricated walls should be carefully inspected upon arrival at site to detect & repair any damage, particularly to taped joints, facers, and at penetrations and openings. Stresses from handling, transportation, and installation of prefabricated walls with AERO installed may necessitate additional fasteners and/or adhesive to ensure optimum condition of the exterior insulation throughout the entire process.

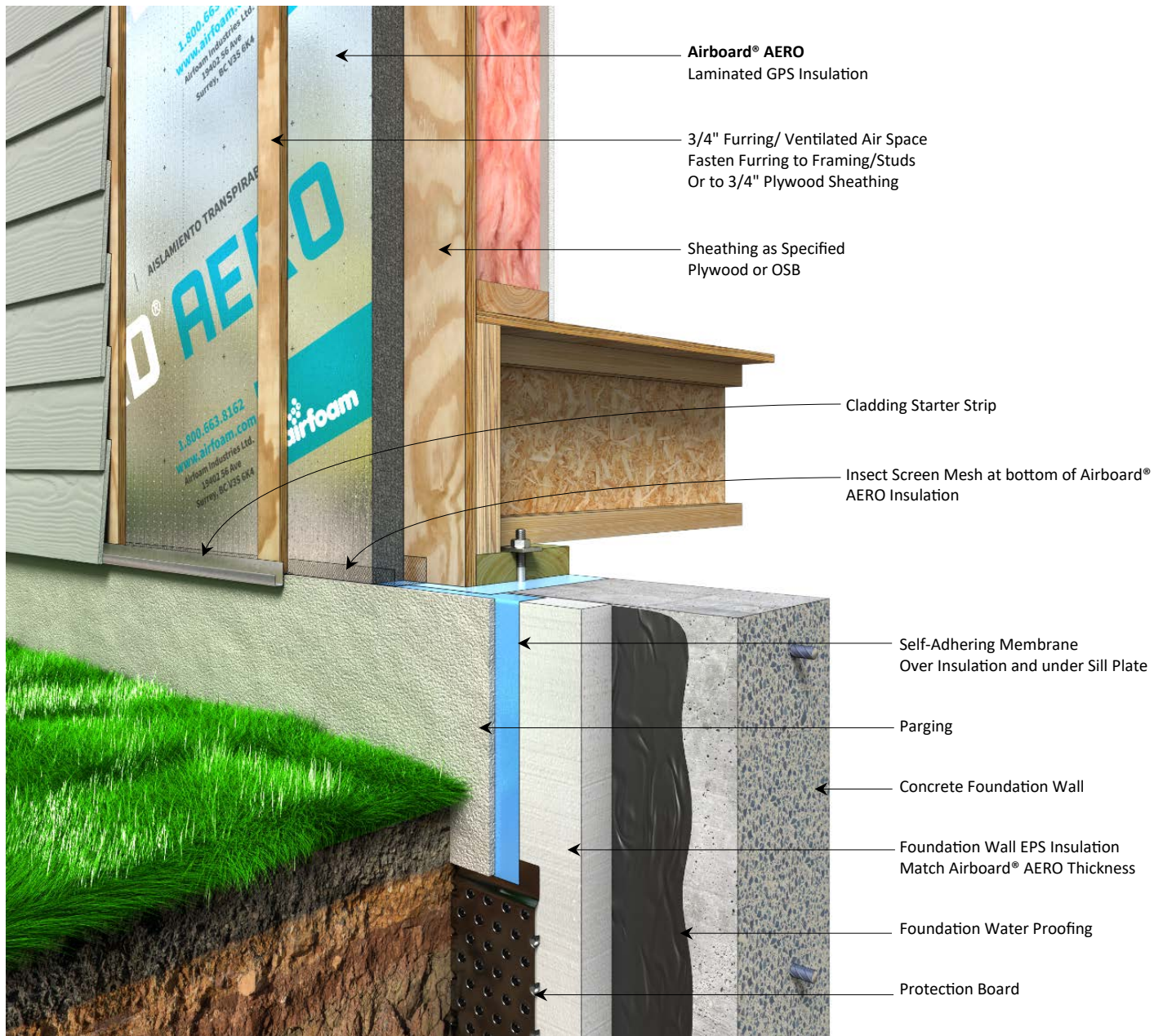
3. TRANSITIONS TO FOUNDATIONS & ROOFS

Foundation to Above-Grade Wall Transition

Continue AERO insulation down as far as possible (e.g. to the top of the concrete wall), maintaining minimum required clearance between ground level and exterior cladding.

Cover the bottom edge of AERO insulation with a bug screen where required.

Install flashing at any transition as required.



Wall to Roof Transition

For best insulation continuity, run Airboard® AERO insulation past the top of wall into the truss heels.

For vented attics, leave room at the top for adequate ventilation.



4. JOINTS, PENETRATIONS & OPENINGS

Important Note: Always ensure that Airboard® AERO and other components to be sealed are clean and dry before applying adhesives, self-adhered tapes or membranes.

SEALING JOINTS, FASTENERS AND PENETRATIONS

Butt Joints Between Boards

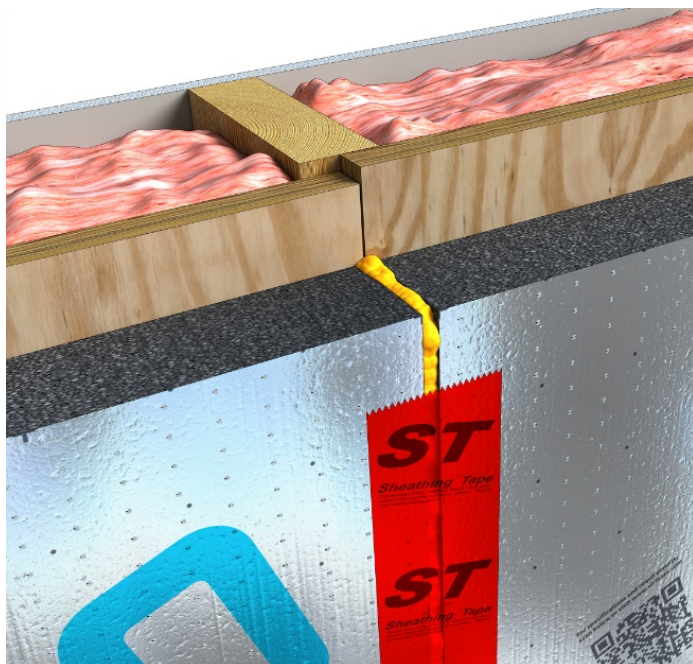
Continuity of the water-resistive barrier** MUST be maintained by adequately sealing all joints. Span across butt joints with minimum 2-3/8" wide approved sheathing tape, centering tape over the joint.

Follow tape/membrane manufacturer's instructions, especially regarding temperatures during application. Often, this is a range of 15F to 120F [-9C to 49C].

Use a "shingle" technique to promote water drainage. Start taping at the bottom and lap upper layers over lower layers.

NOTE: Where reverse lap is of concern such as at horizontal seams, a sealing tape/membrane rated for reverse laps can be used, e.g. 3M™ 3015.

Use a laminate/tape roller (J-roller) to ensure sufficient application of pressure to all sealed areas - and to remove bubbles / wrinkles from tape.



Center tape on joints (note board-gap sealed with spray foam)



J- roller

Screws, Nails, Staples and Brick Ties

Exposed fastener locations (without cap washers) must be sealed to maintain the water-resistive characteristics of the WRB**.

Tip

In many projects/locations an acceptable solution may be fastening that is done with **cap screws, cap nails or cap staples which are designed to be self-sealing**. Check with your design professional, cap fastener provider and/or applicable building code.

Otherwise, seal fastener penetrations with sheathing tape as shown.



Utility Penetrations

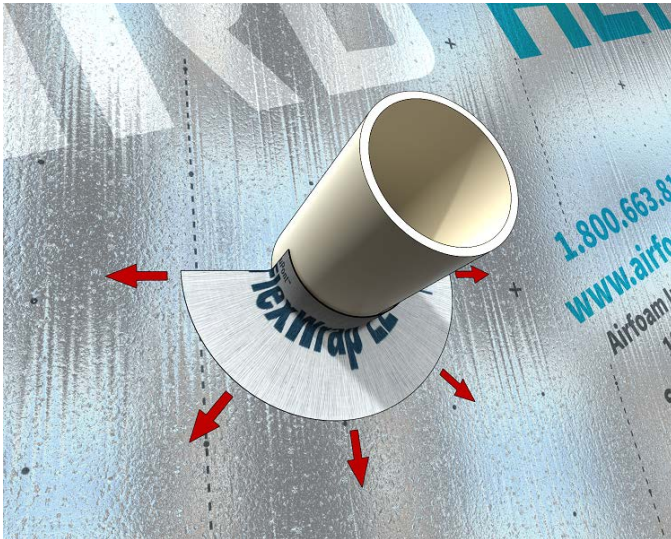
Penetrations for utilities through the exterior wall assembly must be sealed and flashed adequately to prevent water intrusion and reduce air exchanges **at the face of the AERO boards** (or separate sheathing membrane if used) in compliance with the applicable building code.

Shingle all flashing and tape layers from bottom to top to promote drainage of bulk (liquid) water.

For non-flanged penetrations, use approved flexible flashing membrane to contour the seal to the shape of the utility pipe or opening per membrane manufacturer's instructions.



Non-Flanged Products with LESS than 2" outside diameter



Step 1 – Install a piece of FlexWrap™ EZ with length being $\frac{1}{2}$ the circumference of the non-flanged product. Adhere onto bottom section and fan out onto face of AERO Insulation.

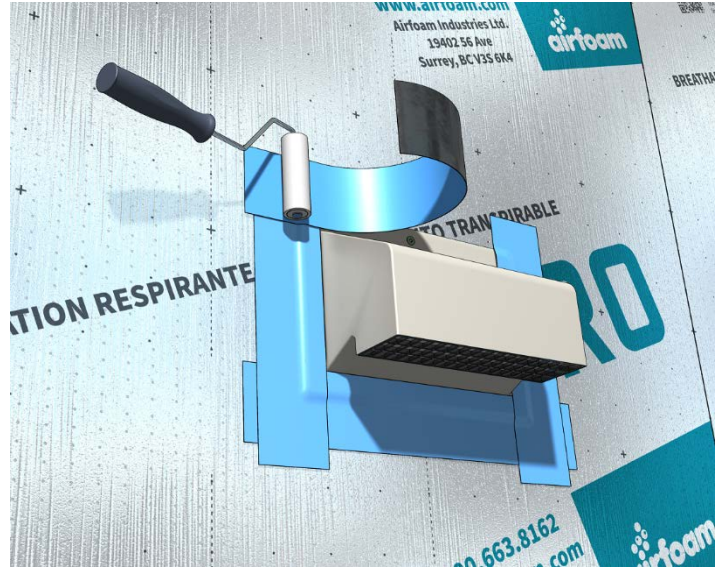


Step 2 - Install a second piece of FlexWrap™ EZ with length of the pipe circumference. Adhere onto top section and fan out onto face of wall with a minimum of 1" overlap of the edges of FlexWrap™ EZ below.

Flanged Products



Step 1 – Secure flanged product to structural components.



Step 2 - Install self-adhering flashing membrane starting at base. Install membrane to jamb legs, lapping over sill membrane as shown. Install head flashing to lap past the jamb leg flashing.



Step 3 - Install furring strips prior to cladding, trim installation

WINDOWS & DOORS

Windows and doors must be adequately sealed, flashed and connected to the water-resistive barrier** (WRB) plane provided by the Airboard® AERO (or sheathing membrane if used). Follow the window/door manufacturer's instructions, national and/or regional installation standards (e.g. CSA-A440 Window, door, and skylight installation), and applicable building codes.

The following steps are suggestions only. Individual details may differ depending on regional conditions, local codes/best practices and plan specifications.

Best Practices:

It is recommended that windows and doors installed with thicker exterior insulation layers maintain full support of framing (or other structural) members. If the glazing layer falls outside of the framing line, a jamb extension (or similar solution) can be installed and secured to the framing. Windows/doors are then supported by the jamb extension.

Avoid leaving wrinkles or bubbles in any flashing tape/membrane; Use a J-roller, also to ensure adequate pressure is applied to perfect the seal.

Spray foam should ONLY be used as window/door sealing method if it is recommended by the window/door manufacturer AND accepted by local building codes and best practices. It often is NOT recommended / accepted because windows/doors can get damaged by movements of the walls with the stresses transferred by the rigid spray foam.

Flanged Window Installation

Step 1

Double check rough opening for square, plumb and proper dimensions.

A space between the framing and window frame of 1/4" or greater is required. Check window manufacturer's recommendations.

Install a wood or metal back dam to prevent water ingress. (not shown) Alternatively, use a sloped sill plate to promote drainage.

Treat the sill and jambs with a primer and allow to dry prior to installing flashing tape/membrane.



Step 2

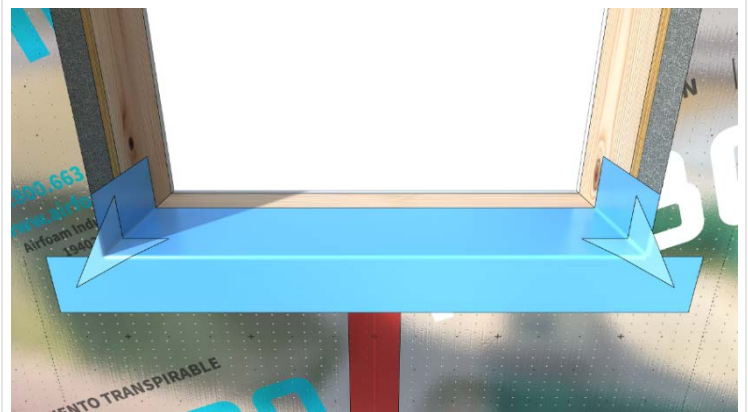
Using self-adhering flashing, creating a sill pan as shown.

Lap the membrane past the AERO insulation, sheathing layer and into the framing / sill area by a min. 4".

Extend the dam terminations up the jamb legs by min. 4".

Lap the membrane down over the face of the AERO by min. 4".

Create "butterfly" gussets (patches) with scrap membrane and seal the lower corners.



Step 3

Install self-adhering flashing membrane to jamb legs, lapping over sill membrane as shown.
Lap back into rough opening by min. 4".
Extend jamb flashing min. 4" above the head of the window opening.
Install head flashing to lap past the jamb leg flashing and extending back into door rough opening by min. 4".
Place appropriate thickness shims on sill membrane, secured with sealant. Re-check level across the shims.



Step 4

Install the flanged window per the manufacturer's instructions. Use ONLY recommended fasteners and spacing. Keep fasteners flush to the attachment fin.



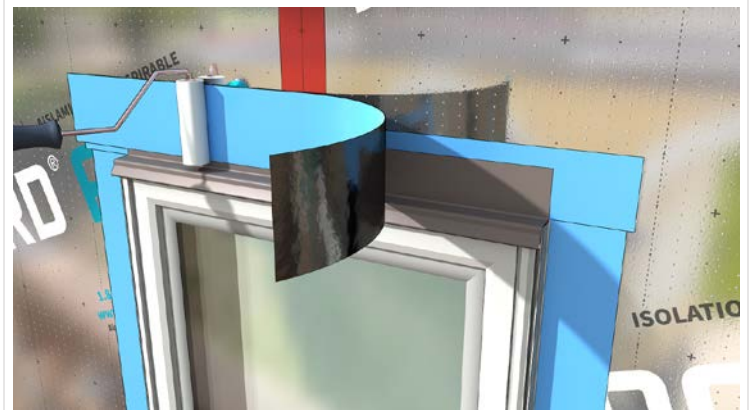
Step 5

Apply self-adhering flashing vertically at both sides of the window, extending over AERO insulation by min. 4 inches.
Apply head flashing membrane at top of window. Lap over side membrane strips by min. 2".



Step 6

Apply pre-formed metal flashing over the window head. Seal between window frame and underside of metal flashing.
Place an additional strip of membrane over the metal flashing. Extend past previous flashing layers at sides and up onto the AERO insulation as shown. Carefully roll into place with a J-roller. **A flashing membrane that is rated for a reverse lap (e.g. 3M 3015) is recommended for this application.**



Step 7

Strapping (furring) can now be installed to accommodate both cladding and window trim.

Install bug screens at bottom and top of strapping.

**Step 8**

Install window trim boards (if any)

Seal between window frame and trim boards

**Step 9**

Install cladding per manufacturer's instructions. Leave appropriate spaces to allow for expansion/contraction.

**Step 10**

Install foam backer rod at the interior face of the window. Recess backer rod just enough to allow an appropriate layer of sealant to be applied and tooled over the backer rod.



Step 11

Seal at interior between window frame and the flashed opening with a bead of adhesive caulking such as silicone. Form caulking to an “hourglass” shape with fingertip or plastic tool.

If exterior face is also sealed, leave open weep holes at the sill to permit drainage in the event of water ingress.

**Step 12**

Install spacers as required to support window casing.

Fasten casing to spacers

**Step 13**

Install window trim per architectural plan.



Non-flanged or Boxed-Frame Window Installation

Windows without flanged (box-framed or equal-leg windows) require the same basic preparation of the window rough opening shown in Steps 1 and 2 of the flanged window instructions.

Changes may be as follows:

- Install a metal back-dam at the sill
- Secure the window to the flashed window opening with the clip system supplied with the window manufacturer. Maintain the prescribed space between the opening and the window. Use temporary shims as necessary.
- Install metal head flashing in the same manner as a flanged window, placing a second layer of membrane over the top edge of the metal flashing and lapped up onto the Airboard® AERO. If a reverse lap is of concern, use a flashing membrane that is rated for reverse laps, such as 3M 3015 or equivalent.
- Seal the window to the flashed opening with backer rod and caulking on both the interior and/or exterior face of the window, leaving weep holes at the sill of the exterior seal.

Door Installation

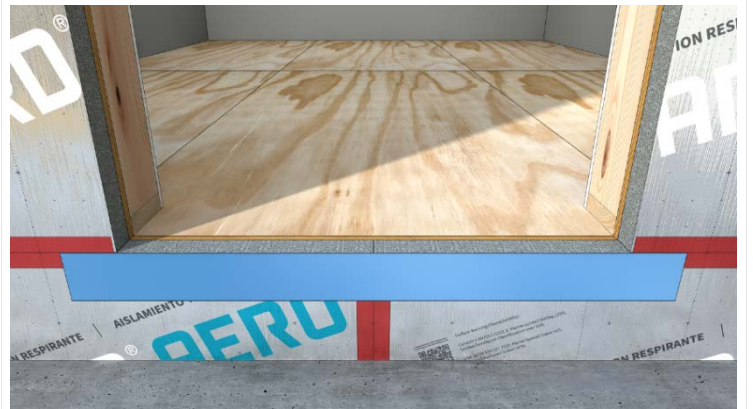
Step 1

Double check rough opening for square, plumb and proper dimensions.
 A space between the framing and door frame of 1/4" or greater is usually required. Check door manufacturer's recommendations.
 Treat the threshold and jambs with a primer and allow to dry prior to installing flashing tape/membrane.
 If possible use a sloped threshold plate to promote drainage to the exterior.



Step 2

After cleaning and drying the areas around the entire opening, apply self-adhered flashing membrane extending 4" horizontally beyond jambs and flush with the threshold.



Step 3

Install a pre-formed pan over the threshold area and lapping over previously installed flashing membrane.



Step 4

Install self-adhering flashing membrane to jamb legs, lapping over threshold pan and threshold membrane as shown. Lap back into door rough opening by min. 4".

Extend jamb flashing min. 4" above the head of door opening.

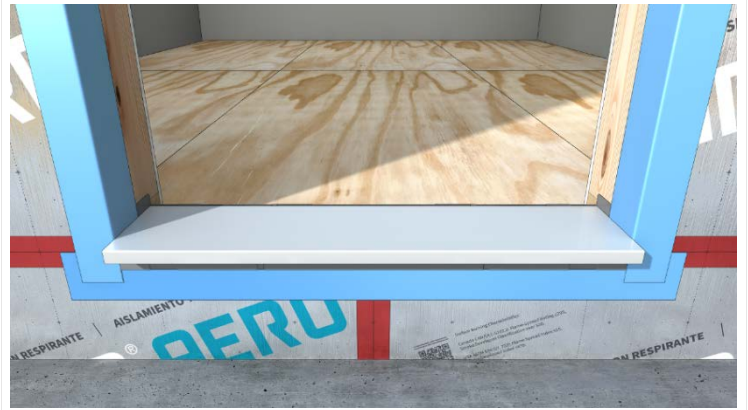


Step 5

Install head flashing to lap past the jamb leg flashing and extending back into door rough opening by min. 4".

**Step 6**

Install a sloped threshold to promote drainage away from the interior.

**Step 7**

Install the door per manufacturer's instructions.

Use ONLY recommended fasteners and spacing.

Seal the door frame at exterior face as recommended by the door manufacturer, such as with backer rod and caulking.

**Step 8**

Apply a pre-formed metal flashing over the door head. Seal between door frame and underside of metal flashing.

Place an additional strip of membrane over the metal flashing. Extend past previous flashing layers at sides and up onto the Airboard® AERO as shown. Carefully roll into place with a J-roller. **Use of a flashing membrane that is rated for a reverse "negative" lap (e.g. 3M 3015) is recommended for this application.**



Step 9

Install strapping (furring) to support door trim and (if specified) to provide both support of, and rainscreen drainage/ventilation behind cladding.

**Step 10**

Install top & bottom of wall terminations and cladding per manufacturers' instructions. Leave enough space to trim to allow for expansion/contraction of cladding.

Install exterior door and other trim per specifications.

**Step 11**

Seal interior door face with backer rod and caulking and/or as recommended by the door manufacturer.
Install interior trim.



5. CLADDING INSTALLATION

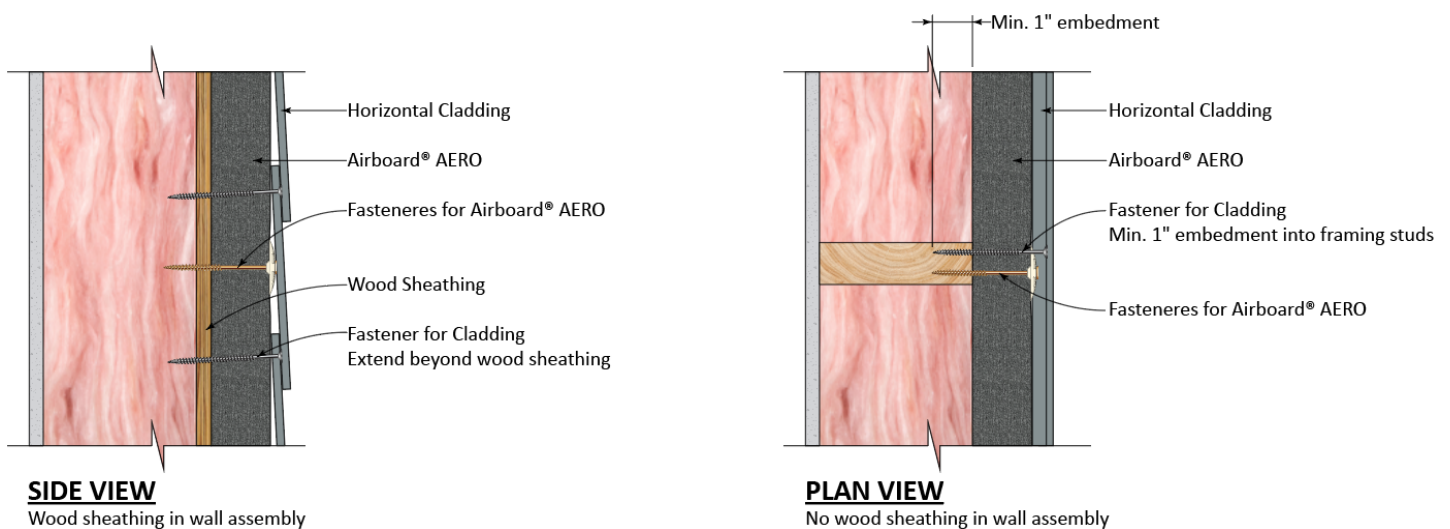
Important Notes: Ensure cladding warranty coverage by following the manufacturer's installation instructions.

If sheathing is used to support cladding it must comply with the applicable building code regarding thickness and composition to support all lateral, pull-out and other loads. Once confirmed, fasten cladding or strapping through AERO boards and through the sheathing layer. Fasteners must completely penetrate the sheathing layer, in many jurisdictions by at least ¼".

If the sheathing layer cannot be used to support cladding, fasten cladding or strapping through the AERO layer and into wood or steel studs or concrete/masonry walls.

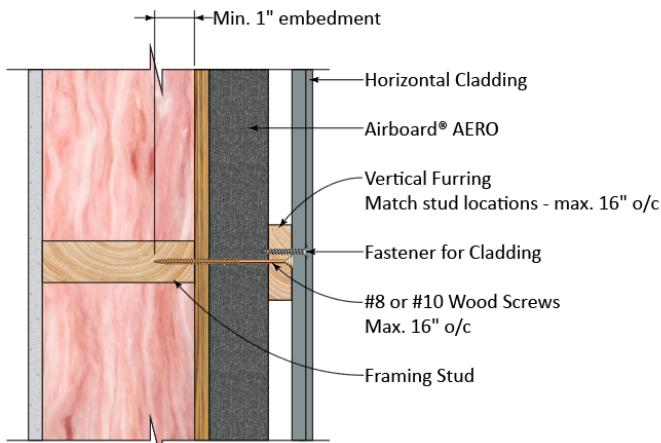
Direct-Applied Cladding (no strapping)

Fasteners used to directly apply cladding over AERO must be sufficiently long to penetrate the cladding, AERO insulation layer AND meet the minimum embedment required (OR sufficiently penetrate the sheathing layer when allowed by code and cladding manufacturer).

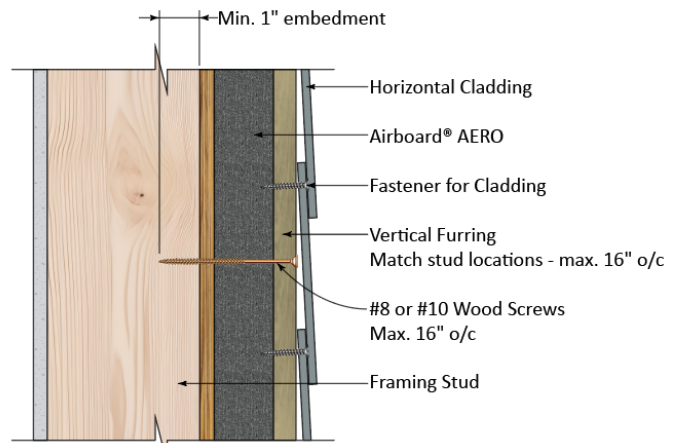


Horizontal or Sheet Cladding with Vertical Rainscreen Strapping

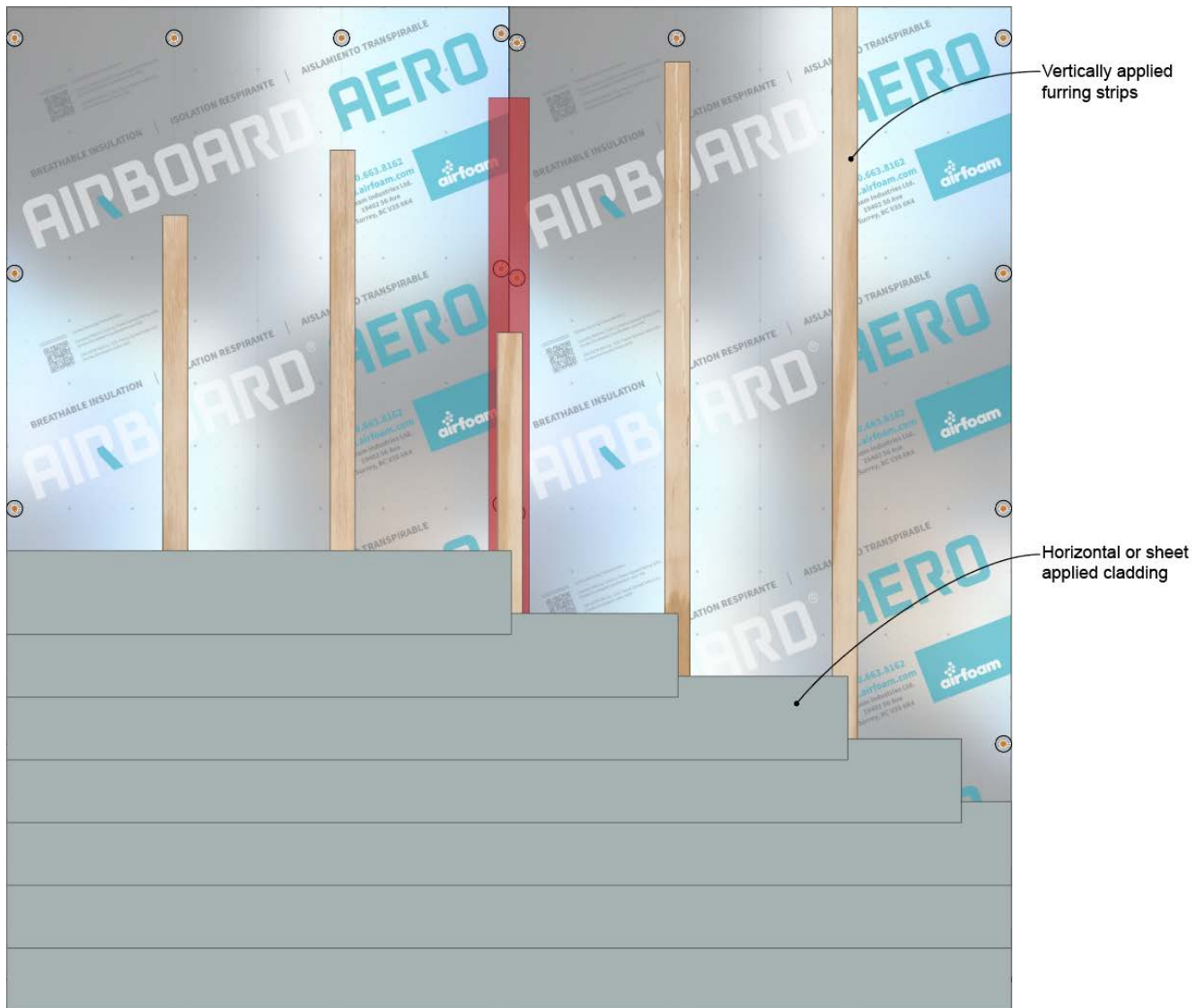
If the cladding layer is a sheet product or horizontally applied, finish securing the AERO insulation to the wall assembly with vertically positioned furring strips fastened into wood or metal studs, concrete/masonry walls, or into and through structural plywood sheathing if permissible.



PLAN VIEW
With vertical furring



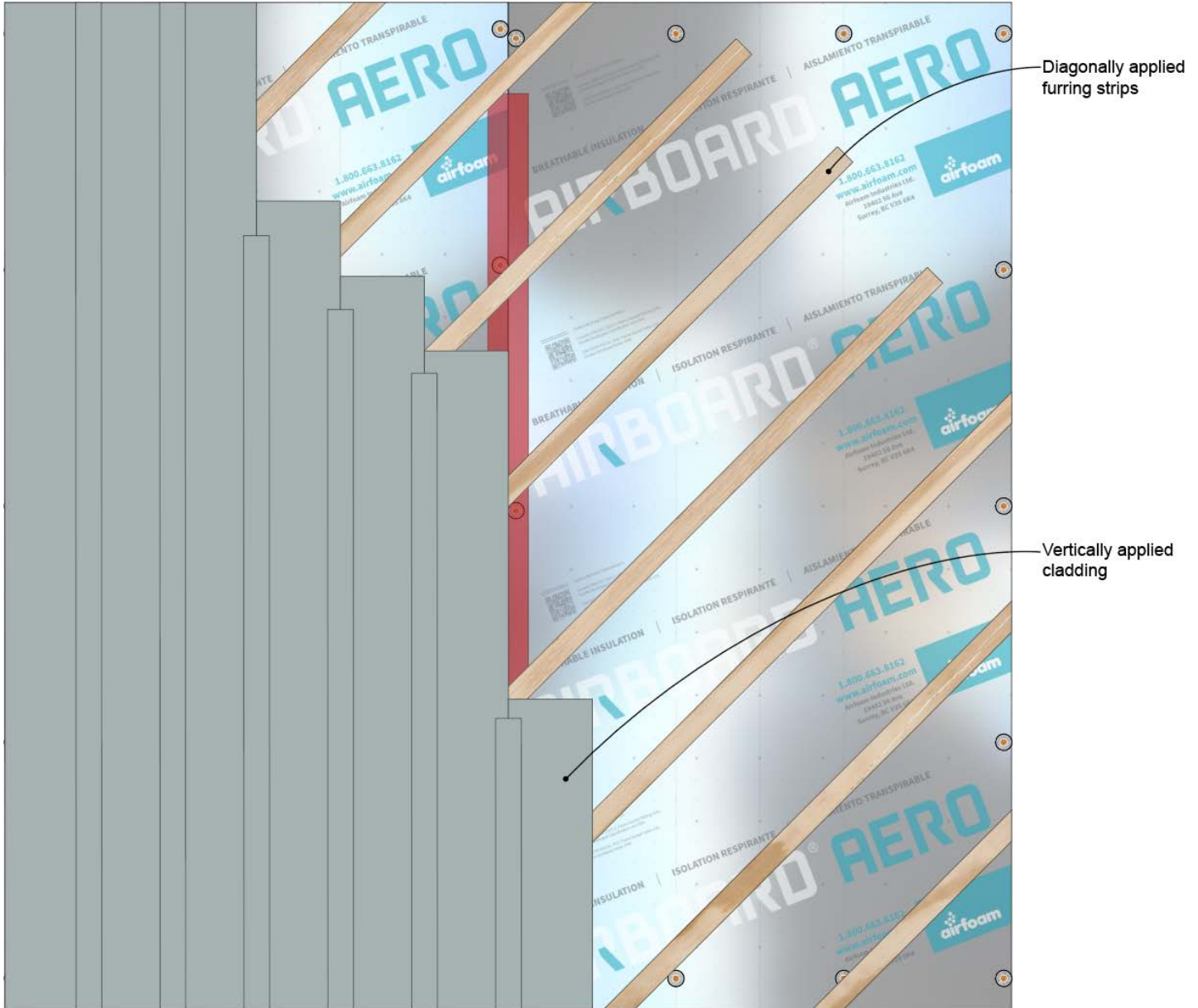
SIDE VIEW
At stud



Vertical Cladding with Diagonal Rainscreen Strapping

If the cladding material requires a vertical installation pattern, do not place furring strips horizontally as this will impede drainage behind the cladding layer.

For vertically installed claddings, place furring strips **at a 45 degree angle** and secure to the structure as required. This will promote drainage in the rain-screen layer as necessary.



Brick & Stone Cladding

Brick and stone cladding can be installed over AERO boards using the correct sequencing of materials and approved accessories. See next page for a few options for brick ties designed to work with foam sheathing.

Prior to placement of AERO boards, fasten sheathing into framing members as required. The example below shows exterior gypsum sheathing fastened to studs. Mark the center of each stud on the face of the sheathing for later reference.

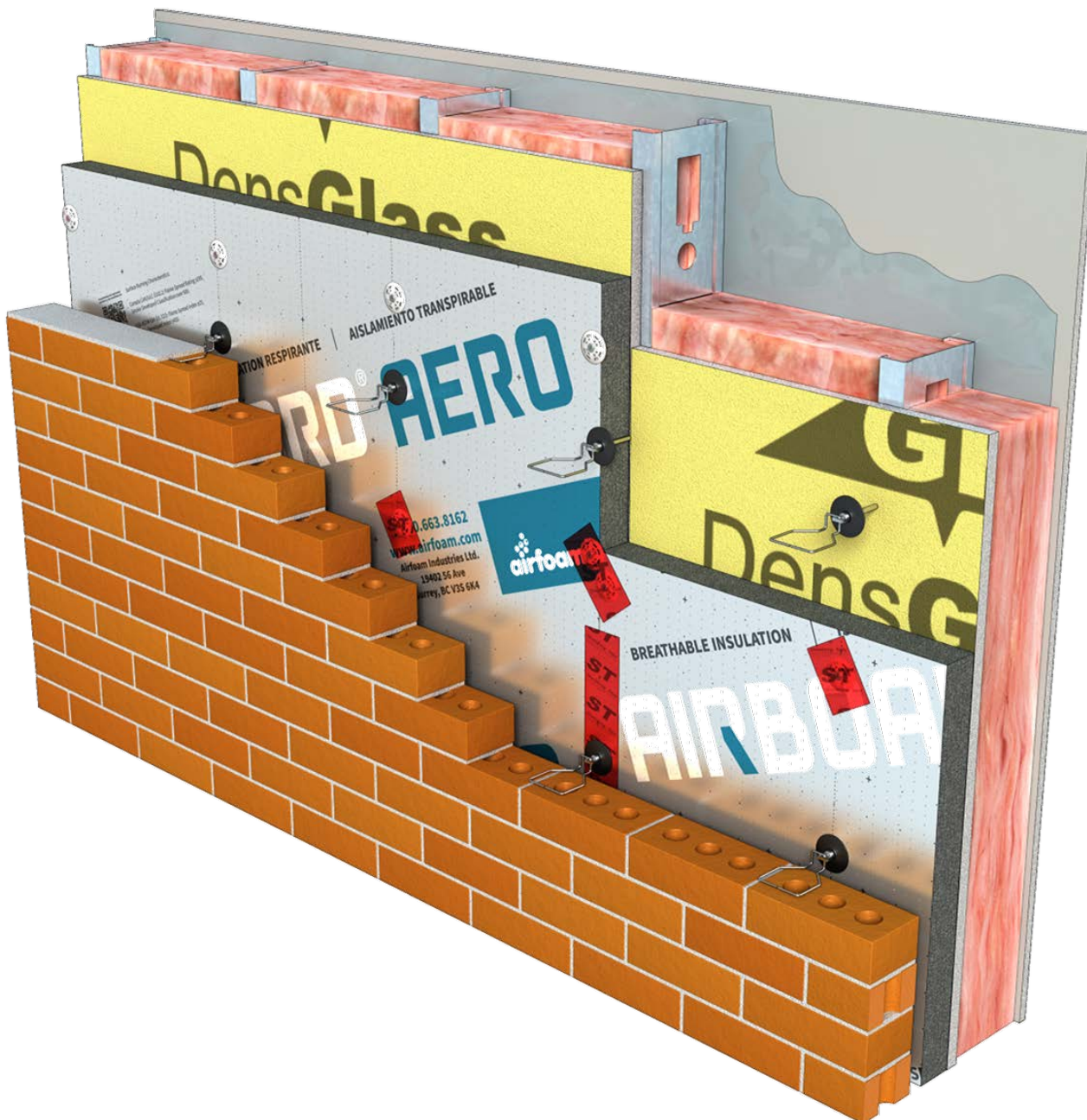
Using the layout marks on sheathing as a guide, fasten AERO insulation boards to the structural components. Use fastener spacing as required by plans and/or codes or as shown in chapter 2. [Final Fastening Patterns](#).

Again, note the layout of framing members on the face of the AERO boards, e.g. using the printed dotted lines on the AERO facer.

Seal joints (and fastener locations when required) on the AERO insulation with sheathing tape as shown in chapter 4. [Sealing Joints, Fasteners and Penetrations](#). As with other cladding types, properly installed AERO insulation can serve as the required WRB** (second plane of protection) behind brick.

Fasten specified brick ties through the AERO and sheathing into framing members or concrete/masonry walls according to the brick tie manufacturer's instructions. Use spacing as directed by the engineer of record, approved plans, or codes to support the brick cladding and all loads it must withstand.

Brick ties must be of sufficient length to allow for the prescribed depth of the drainage cavity per approved plans or building code.



6. COMPATIBLE PRODUCTS

A few compatible complimentary products for successful Airboard® AERO installation are listed below. These products include, but are not limited to:

Sheathing Tape

Any approved Sheathing Tape compatible with the polypropylene & polyethylene facers will work with Airboard® AERO. Tested for bulk water penetration on Airboard® AERO (modified AATCC 127):

- Tuck Tape® (Red) Sheathing Tape by Cantech
- Super Stick Building Tape® by Protecto Wrap®
- 3M™ 3015 Air and Vapor Barrier Membrane (also **rated for reverse laps**)

Self-Adhered Flashing

- Henry Blueskin® Butyl Flash
- Resisto® / Soprema® All-Weather Butyl Flashing Tape

Flexible Flashing

- DuPont™ FlexWrap™ EZ - Flexible Adhesive Tape

Washers

Plastic cap washers designed to seal at the fastener penetrations can be used when permissible, see chapter 2. [Fasteners & Adhesives](#)

Wind-Lock ULP-302 foam board washers

Adhesive

Ensure compatibility with EPS and polypropylene & polyethylene facers, e.g. Loctite® PL 300 Foamboard Adhesive.

Spray Foam

Polyurethane (PU) Spray Foam products will work well with Airboard® AERO. Low-expansion type spray foam is recommended.

- DOW EnerFoam Professional Foam Sealant
- LePage Tite Foam Gaps & Cracks Spray Foam Insulation Sealant
- Sika Boom® AS Sprayfoam #513478
- Wind-Lock® Foam2Foam Professional Foam Adhesive

Brick Ties

- X-Seal Anchor, Hohmann & Barnard, www.h-b.com
- Pos-i-Tie, Heckmann Building Products, www.heckmannbuildingprods.com
- Slotted Stud Tie, Fero Corp., www.ferocorp.com

7. SUPPORT

Airfoam can provide technical information and support to help address questions when using Airboard® AERO Insulation. Technical personnel are available to assist with your insulation project. For technical assistance, contact Airfoam at:

Online: www.airfoam.com/EPS-Insulation-Support.php

Phone: 1.800.663.8162 or +1.604.534.8626



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