FACADES XI

WATERSHIELD ASSEMBLY

Air and Water Barrier
Application Handbook

1 INTRODUCTION

This application handbook only addresses the application and is intended for use by the applicator and not the designer.

Ensure the parts of the full assembly that may not be a part of the water resistive barrier are a part of your contract. If flashing and sealants are excluded from the water barrier installation, ensure that they are being installed by the general contractor.

This guide must be used in conjunction with the system specifications, product datasheets, system details, construction documents, and project details.

If the documents have contradictory information, contact FacadesXi before installing.

A full inspection checklist can be found at **www.facadesxi.com**

2 ASSEMBLY PRODUCTS

- Xi-WaterShield: Liquid applied air/water barrier
- Xi-WaterShield Joint Mesh: Fiberglass Mesh bonded to a non-woven textile. When embedded in Xi-WaterShield, it can span gaps and joints up to 1/4"
- Xi-WaterShield Flashing Membrane: Primer-Free peel and stick tape. The polyester fabric top layer provides an excellent bonding surface for Xi-WaterShield or Xi-Base
- Xi-FlashFill: Gunnable or Trowelable waterproofing sealant applied at 12 mils
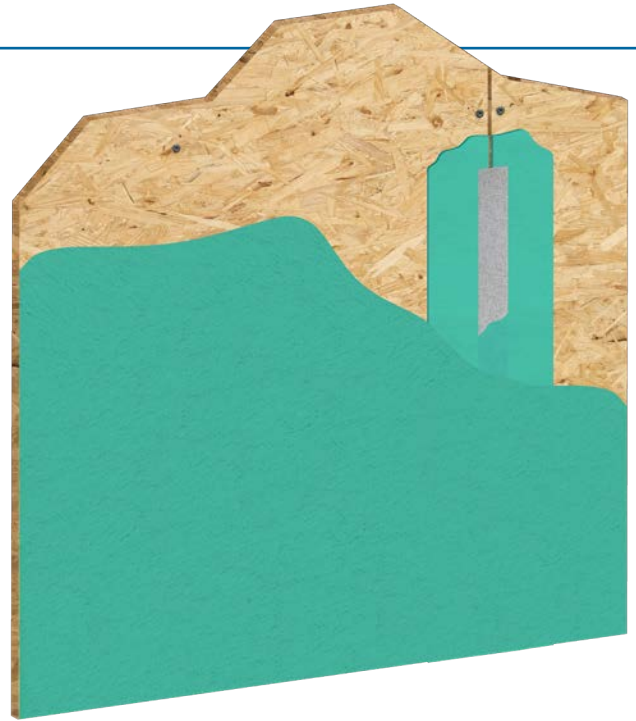
3 PRE-PROJECT INSTALLATION & VERIFICATION

3.1 Delivery/Storage/Handling
- Deliver FACADESXi materials in original unopened packages with labels intact.
- Protect FACADESXi materials during transportation and installation to avoid physical damage.

3.2 Pre-project considerations
Although outside of the scope of installation, the following items should be considered and brought to the attention of the general contractors and/or designer as applicable.

- Drainage/Flashing/Moisture/Air Protection.
- The system must be designed and installed to allow moisture to drain to the exterior per the International Building Codes.
- Design flashing to direct water to the exterior, including above window and door heads, window and door sills, at roof/wall intersections, decks, floor lines, high to low wall intersections, at the base of the wall, and where required by code and in the project details.
- The use of vapor retarders on the interior side of the wall is typically only used in colder climates and is the decision of the designer.
- The project details must contain air barrier continuity transitions to other wall components, including all penetrations and wall connections when an air barrier is required. FXI, the adjoining material manufacturer and the architect must approve the air seal designs.

3.3 Project conditions
- Ambient and surface temperature must be above 40° F (4° C) during application and for 24 hours after application of FACADESXi materials.
- Provide supplementary heat/shading for installation, if necessary, to maintain a minimum or maximum allowable temperatures.
- Prevent uneven or excessive evaporation of moisture from base coat during dry, hot weather. Do not install coatings in temperatures above 100° F (37° C).
- Protect surrounding areas and adjacent surfaces from the application of materials.

3.4 Coordination and Scheduling
- A preconstruction meeting is recommended and should include the Manufacturer, the applicator, the owner, the coordinating material representative, and consultants before the installation of the materials.
- Coordinate and schedule installation of FACADESXi with related work; windows, doors, flashing, AC units, foundation waterproofing, roofing, trim, flashing, and joint sealers, to prevent water infiltration to ensure the drainage of the system.
- Protect sheathing per industry and/or sheathing manufacturer's instructions.
- Install penetrations such as ducts and pipes, and seal at the water barrier layer to create a continuous water and air barrier.

4.1 Allowable Substrates

- 1/2" minimum Exterior Glass mat gypsum Sheathing complying with ASTM C1177: DensGlass® sheathing, GlasRoc® sheathing Weather Defense® sheathing, eXP® sheathing
- 1/2" minimum Exterior fiber reinforced cement sheathing complying with ASTM C1325
- 1/2" minimum APA Exposure 1 or exterior plywood (Grade C/D or better)
- 1/2" minimum APA Exposure I OSB
- Unpainted CMU, Concrete, Brick
- Other substrates, or Painted as approved by FacadesXi
- Xi-WaterShield Xterior Insulation Sheathings
- Wood Framing
- Steel Framing and Flashing
- Aluminum
- PVC
- Stainless Steel
- Aluminum

Substrate Notes

- Concrete and Concrete Masonry must be cured for 28 days, and the alkalinity must be less than 10.
- Pressure-treated wood: Clean and test for adhesion.
- Raw gypsum board edges: When installing Xi-WaterShield/WaterShield Flashing Membrane and Xi-FlashFill on soffits or around corners, it is best to use the factory edge of gypsum products. WaterShield products (and most products) will not adhere to raw gypsum.
- Window fins, metal flashings, or other components: Test adhesion before application of any WaterShield Assembly product. If adhesion is weak, wipe with iso-propyl alcohol, allow to dry and re-test.

4.2 Substrate Examination

Unsatisfactory conditions shall be corrected before the installation of any FACADESXi System materials. The contractor must notify the general contractor and/or owner and/or architect of all discrepancies. Do not proceed with the water/air barrier or adhesive until conditions are resolved.

Verify the following:

- The substrate is allowable and code compliant and installed per the manufacturer or appropriate product installation instructions.
- The substrate is flat, and free of irregularities greater than 1/4 inches in 4 feet.
- Surfaces are free of mildew, dirt, efflorescent, oils, damage deterioration, or any foreign materials.
- Surfaces are free from excessive moisture; moisture content should be recorded before the installation of the water barrier materials. Plywood and OSB moisture content must not exceed 19%.
- Painted/loose/damaged substrates have the paint removed by water/sandblasting and damage repaired so that 90% of the virgin substrate is exposed and adhesion tested before installation. Contact FACADESXi Technical Department when applying over-painted/damaged substrates.

4.3 Flashing Examination

Although not a part of the WaterShield Assembly, flashings and sealants are elements of all exterior wall assemblies and must be designed, integrated, and installed, in conjunction with the wall cladding to create an air and water-resistant assembly and a means for drainage of incidental moisture from within the system.

If Flashings are considered a part of the Water/Air barrier installation:

- Install flashings per project details.
- All rough openings, penetrations, balconies, and decks must be flashed following the project details and, in a matter, to prevent water penetration.
- Head, jamb, and sills of all openings must be flashed and sealed in conjunction with the water /air barrier per project details to create positive drainage.
- Roof Flashing and Kick out Flashing must be installed per industry guidelines and project details.

Products not supplied by FacadesXi must be installed per manufacturers' installation instructions and the applicable building code.

5.1 Mixing
All Mixing instructions must follow the most up-to-date product datasheet.

5.2 Xi-WaterShield Transitions and Terminations
- See WaterShield Assembly details for additional specific detail information.
- Coordinate installation with all flashing, terminations, roofing, accessories, windows, and other adjacent water barrier materials to provide an air/watertight assembly.
- Xi-WaterShield works in conjunction with approved and tested WaterShield accessory products to create a monolithic water and air barrier assembly.
- Ensure the surface is clean, dry, and free of any contaminants and is firmly rolled to ensure full adhesion.
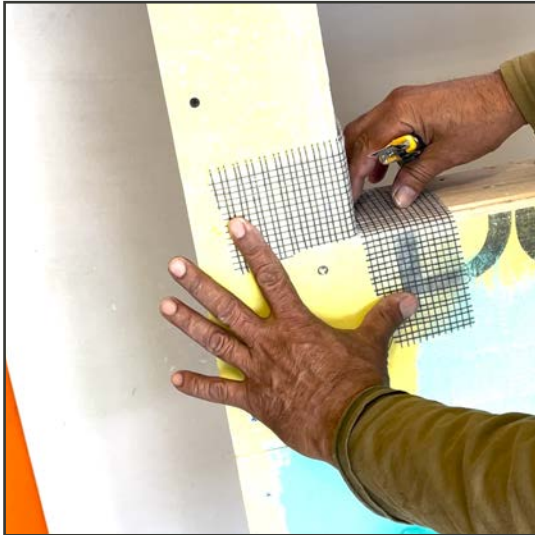
5.2.1 Fastener Heads
Spot each fastener head with a small amount of Xi-WaterShield.

5.2.2 Sheathing Joints / Inside & Outside Corners
(see page 6)
Joint Less than 1/4" wide:
    Option 1: Xi-WaterShield/Xi-WaterShield Mesh
    Option 2: Xi-FlashFill Application

Joints from 1/4"–1" wide:
    Xi-FlashFill Application with Backer Rod
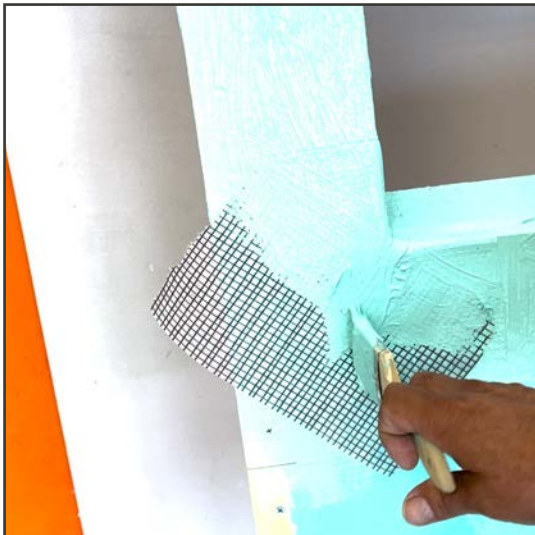
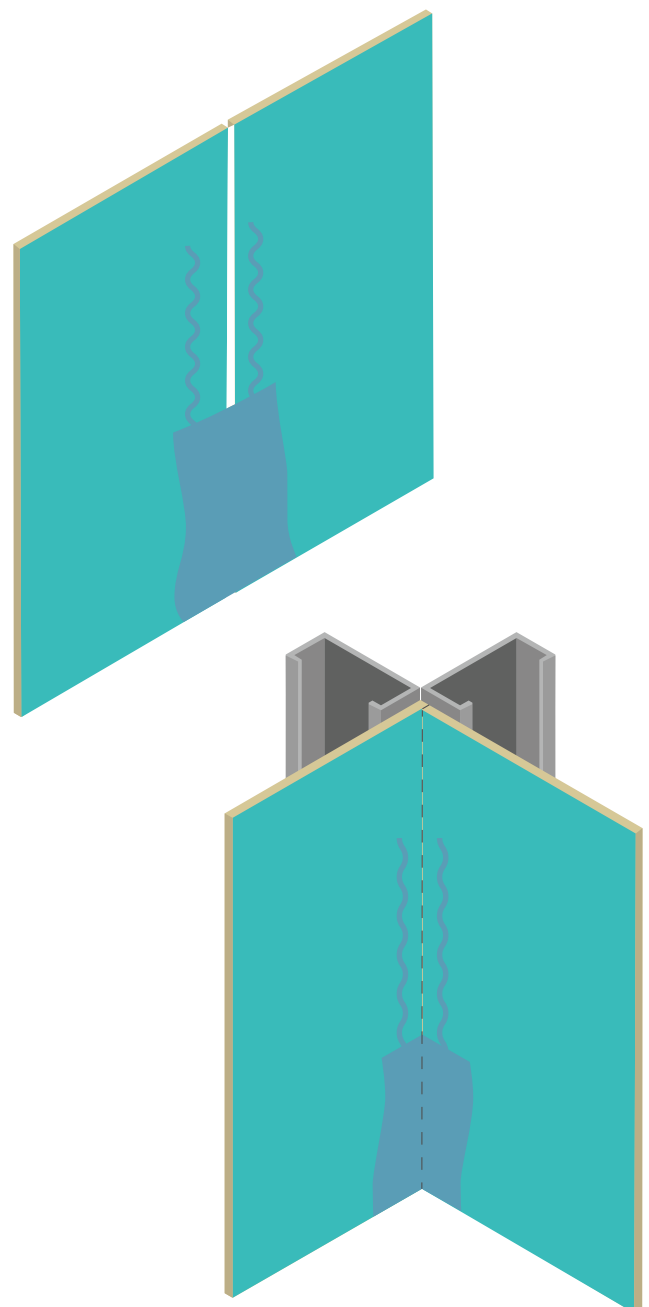## Xi-WaterShield / Xi-WaterShield Mesh Application

1. Apply Xi-WaterShield on either side of the joint, edge, or gap so that approximately 2 inches of material are on either side.
2. While the material is still wet, embed the Xi-WaterShield Joint Mesh centered over the area to be treated and embed with a trowel into place completely covering it so that there are no holes or gaps. A roller/brush may be necessary to get complete coverage.
3. Allow to dry for a minimum of 2 hours or until dry to the touch before applying Xi-WaterShield to the field of the wall.
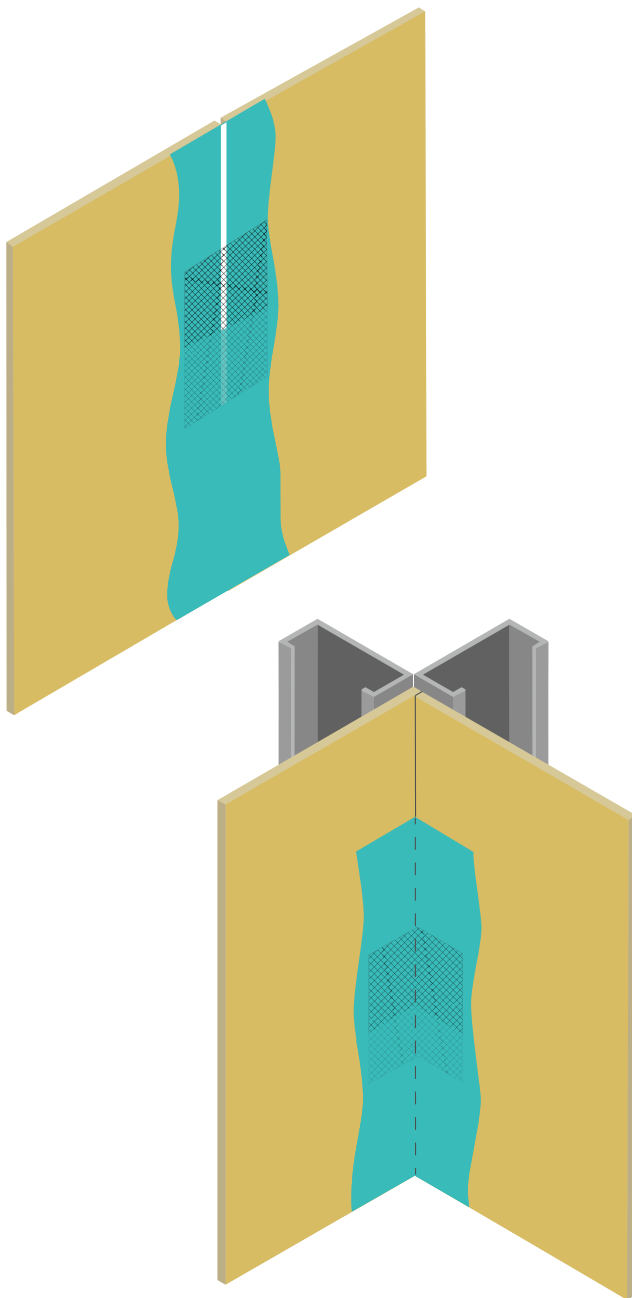
Xi-FlashFill Application

1. Joint widths 1/4"–1": Install backer rod into the joint before installing Xi-FlashFill (not shown).
2. Using a caulking gun, apply on either side of the sheathing joint.
3. Use a dry joint knife or trowel to spread 1" beyond the seam on each side to a thickness of 12-15 mils.

Do not use soapy water or solvent to help with the tooling process to slick the surface profile. Allow to skin before installing other waterproofing or air barrier components.

5.2.3 Treatment around Rough Openings
Xi-WaterShield details must be used in conjunction with these installation instructions.

Option 1
**Xi-WaterShield / Xi-WaterShield Mesh Application**

1. Cut Xi-WaterShield Joint Mesh into strips of 4 inches.

2. Install Xi-WaterShield into each inside rough opening corner and onto the face of the sheathing.

3. Cut the strip lengthwise approximately half way to create a split as shown. Embed one of the 4" joint mesh pieces from the inside stud and out onto the sheathing. Center the mesh 2" to the inside and 2" onto the sheathing. Repeat for all 4 corners.

4. Coat the sheathing face with Xi-WaterShield at the corners and embed 4" strips of Xi-WaterShield Mesh in a Butterfly (perpendicular) application. Repeat for all 4 corners.

5. Cut the mesh to be installed on the 4 edges between the rough opening and the sheathing. This application may require 6 inches or 9 inches wide Xi-WaterShield Joint Mesh.

6. Coat the inside of the rough opening and onto the face of the sheathing 2 inches minimum with Xi-WaterShield and embed strips of Xi-WaterShield Mesh centered over the edges.

7. While the Xi-WaterShield is still wet, embed the Xi-WaterShield Joint Mesh centered over the area to be treated and embed with a trowel or roller completely covering it so that there are no holes or gaps. A roller/brush may be necessary to get complete coverage.

8. Allow to dry for a minimum of 2 hours or until dry to the touch before applying Xi-WaterShield to the field of the wall.
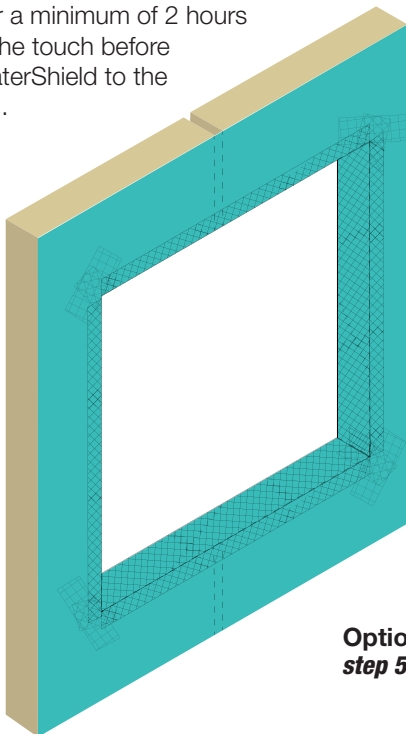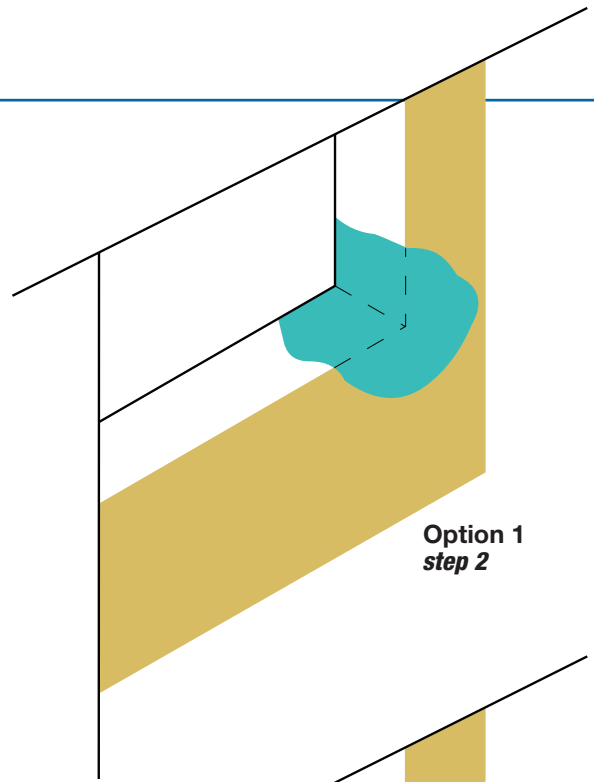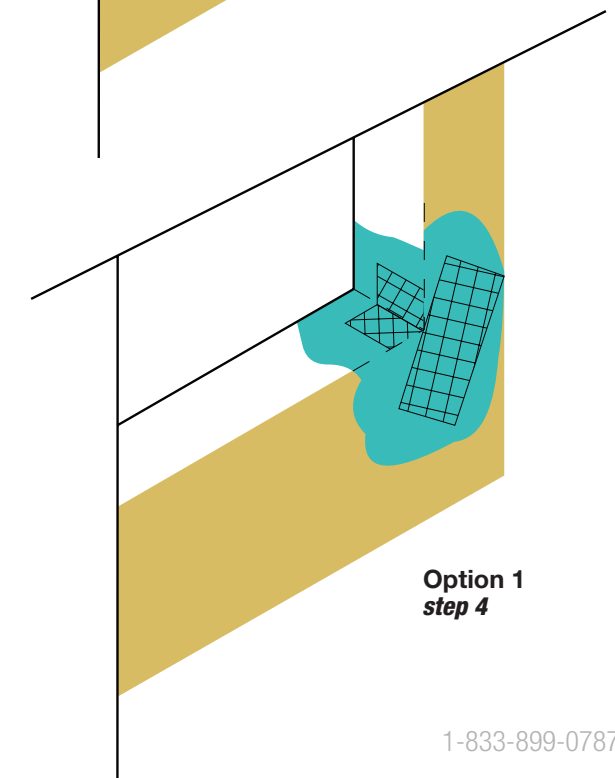
Option 1
step 2
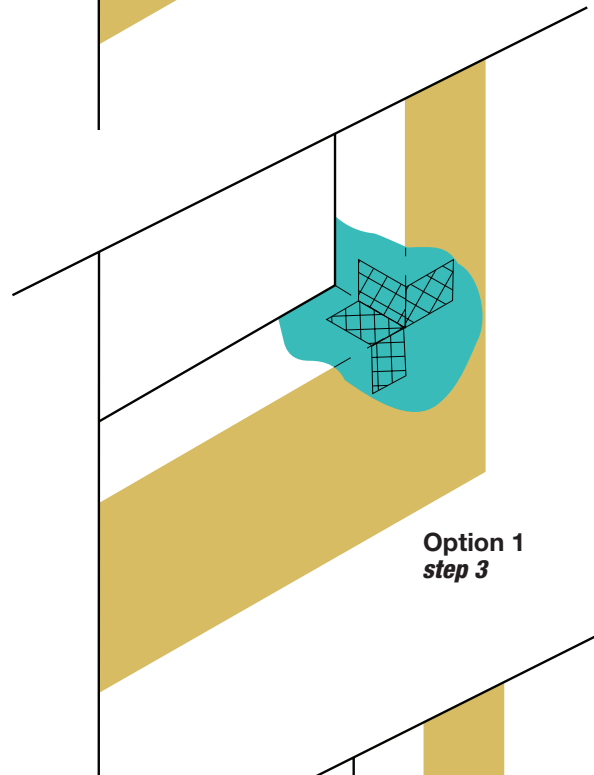
Option 1
step 3

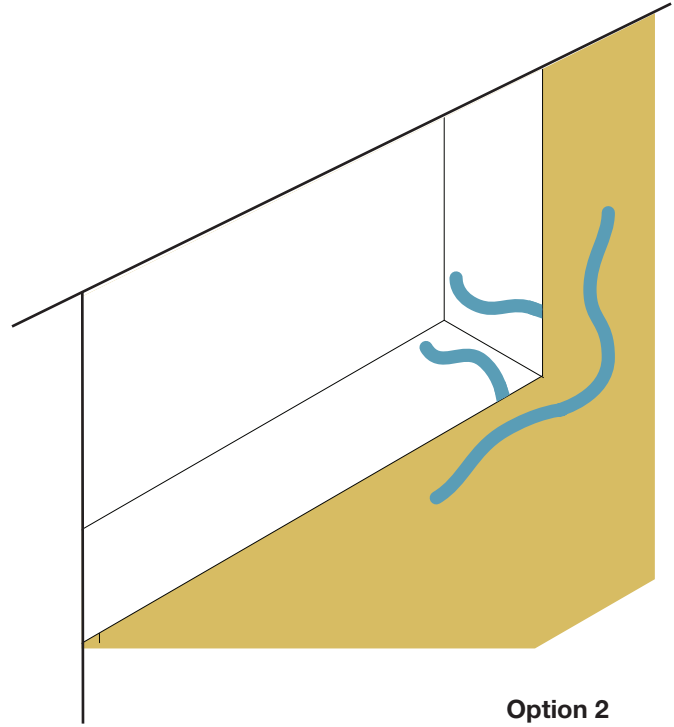**Option 1**
step 4

Option 1
step 5-8

5.2.3 Continued
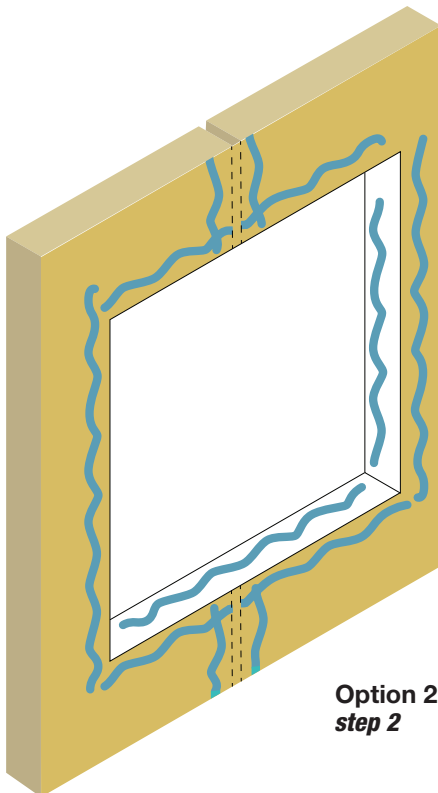
Option 2
Xi-FlashFill Application

1. Apply a bead of Xi-FlashFill in each corner of the rough opening and at the sheathing-to-stud transition, then strike the material smooth with a dry tool.

2. Apply Xi-FlashFill into the rough opening and approximately 4" onto the vertical wall around the rough opening. Spread evenly with a dry tool to create a 12–15 mil thick, monolithic, pinhole-free flashing surface.

3. Allow treated surfaces to skin before installing windows, doors, and Xi-WaterShield (Xi-WaterShield may be installed first, always ensuring positive drainage).
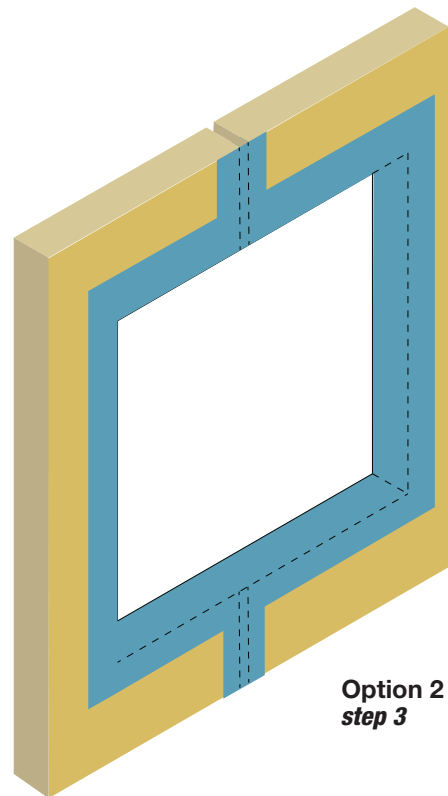
Application Notes:
- Joint widths up to 1/4": No Backer Rod Required.
- Joint widths 1/4"–1" inch: Install backer rod into the joint before installing Xi-FlashFill.
- Raw gypsum board edges must be treated with a primer—contact FXI Technical Department.
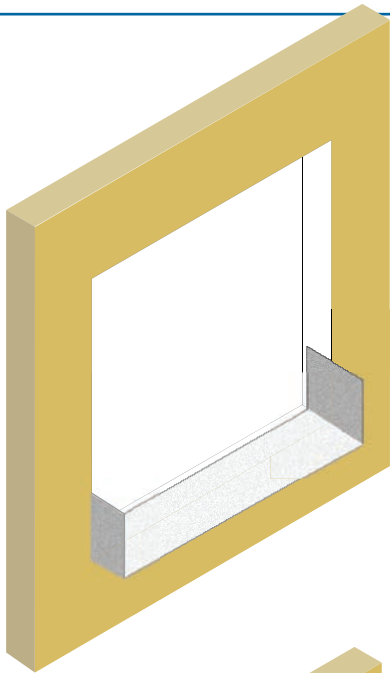- Xi-WaterShield may be applied before or after Xi-FlashFill.
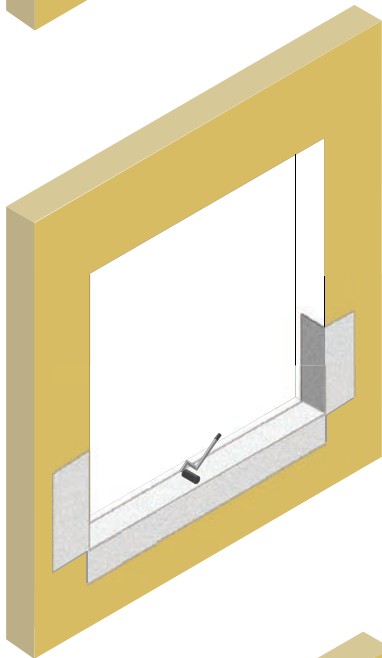

Option 2
step 1

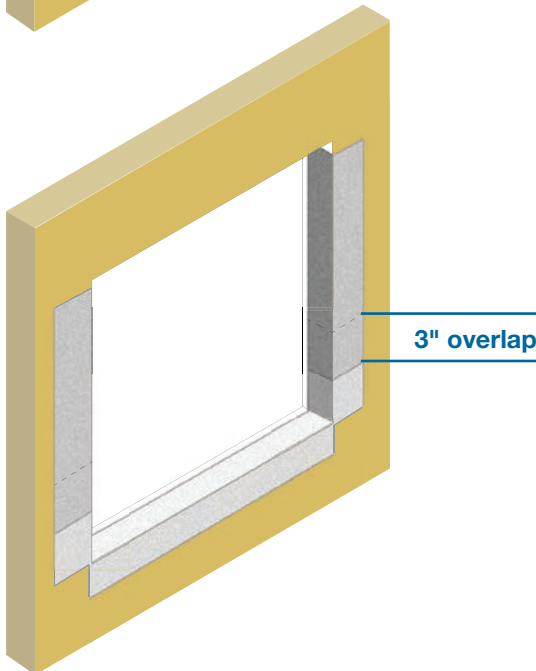

Option 2
step 2

Option 2
step 3

Option 3
step 2

Option 3
**step 3-4**

3" overlap

Option 3
step 5

Option 3
Xi-WaterShield Flashing Membrane
If using a water-resistive barrier paper, follow that manufacturer's installation instructions for sequencing with Xi-WaterShield Flashing Membrane.

1. Cut the Xi-WaterShield Flashing Membrane the length of the rough opening sill plus 8 inches.

2. Remove half of the release liner and adhere it into the rough opening sill.
   » *See Project details for installation depth into the rough opening.*

3. Cut the Membrane at the corners as shown and fold down onto the sheathing.

4. Continue to stick and remove release paper and roll into the wall with a J roller or hand roller and ensure there are no wrinkles, creases, or bubbles. If blisters occur, they can be slit with a utility knife and the membrane pressed flat with a roller. Ensure no voids or holes are present. Repair as necessary.

5. Using the same method as above, adhere Xi-WaterShield Flashing Membrane to the jambs and lap 3" over the top of the sill flashing membrane.

6. Adhere a 4th piece of Xi-WaterShield Flashing Membrane at the window head.

7. Cut and install 4" strips at the corners as shown to cover any gaps in coverage.

NOTE: Xi-WaterShield may be applied before or after Flashing Membrane
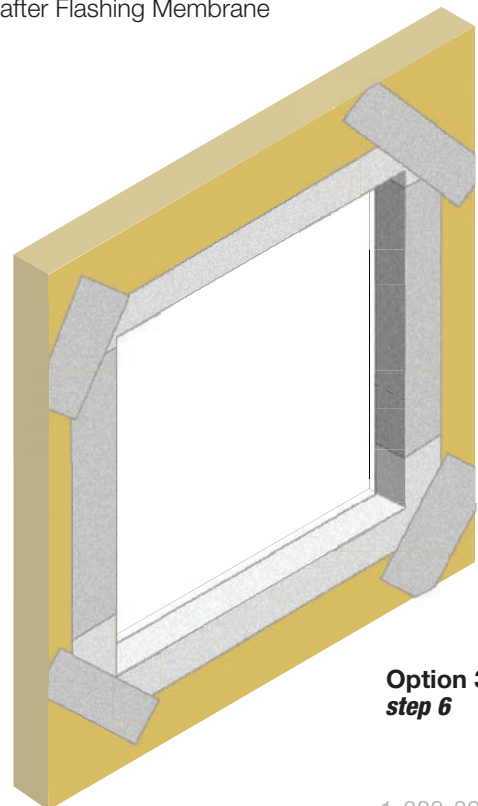
Option 3
step 6

5.2.4 Application over Flashings, Fins, casing beads

NOTE: In order to have full wall coverage, the Xi-WaterShield should be applied before flashings, tracks, etc.

Option 1
Xi-WaterShield / Xi-WaterShield Mesh Application

1. Apply Xi-WaterShield onto the flashing, starter track, or penetrating material and approximately 2 inches onto the surrounding sheathing.

2. While the material is still wet, embed the Xi-WaterShield Joint Mesh centered over the area to be treated and embed with trowel/brush or roll into place completely covering it so that there are no holes or gaps.

3. Allow to dry for a minimum of 2 hours and/or until dry to the touch before applying Xi-WaterShield to the field of the wall.

Options 2
### Xi-FlashFill Application

1. Apply using a caulking gun and spread with a DRY joint knife, trowel, or spatula.

2. Install a 3/8" bead of Xi-FlashFill at the top leg of the flashing /casing bead and strike with a dry joint tool to create a waterproof connection and positive drainage.

3. While wet, spread evenly over the transition and strike smooth with a dry tool. Allow to skin before installing other waterproofing or air barrier components.
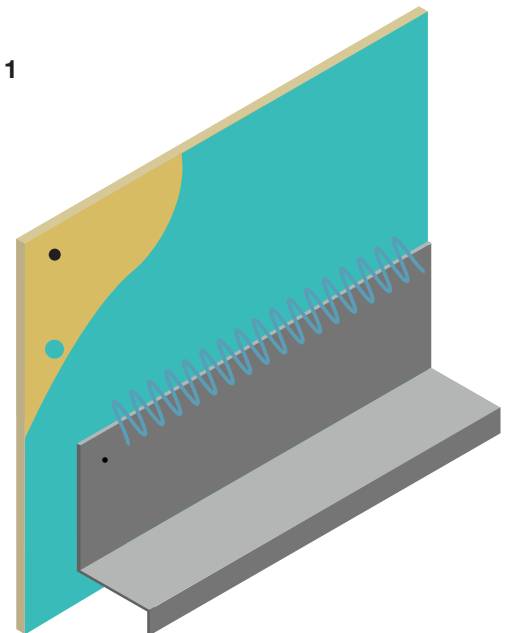
Option 3
Xi-WaterShield Flashing Membrane

1. Cut the Xi-WaterShield Flashing Membrane to length.

2. Remove half of the release liner and adhere onto the sheathing.

3. Continue to stick and remove release paper and lap onto the transition piece (flashing, fin, penetration) so that it is even on both sides.

4. Roll the flashing membrane into place with a J roller or hand roller and ensure there are no wrinkles, creases, or bubbles.
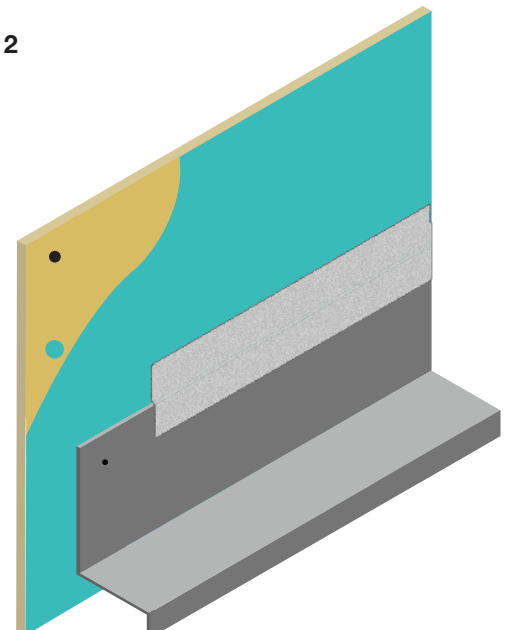
Window Nail Fins
If it is required to set the fins in sealant, ensure that the sealant does not push out onto the surface as they may inhibit the bond of the EIF Systems and/or Xi-WaterShield.
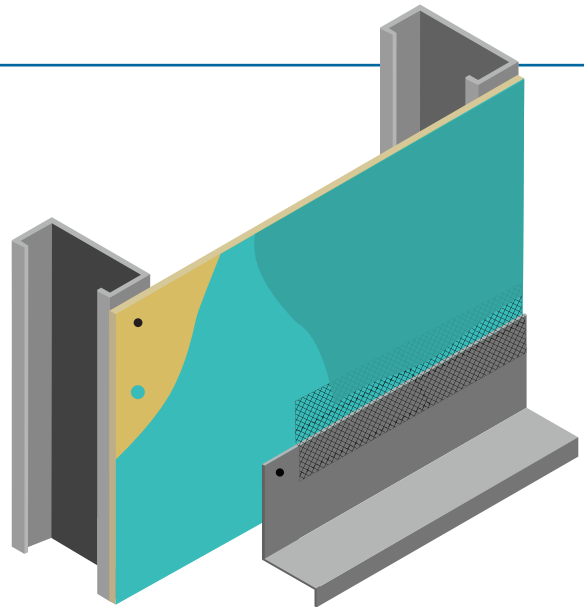
Option 1
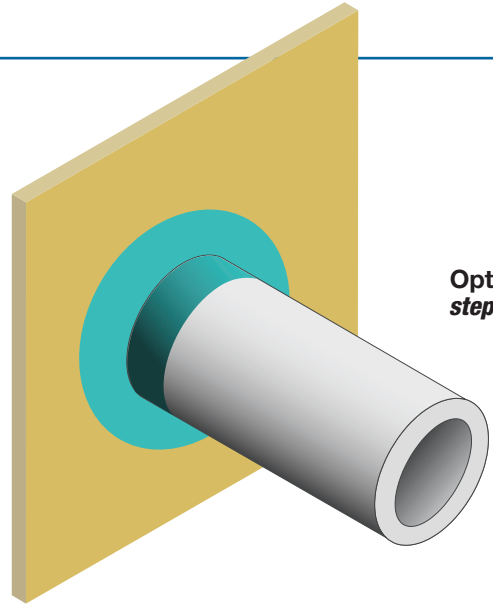
Option 2

Option 3

5.2.5 Pipes

Option 1
Xi-WaterShield / Xi-WaterShield Mesh Application

1. Cut the Xi-WaterShield Joint Mesh to size so that it lays onto the sheathing a min. of 2 inches in all directions.

2. At the center of the fabric, cut 2 X's creating a "hole" in the middle.

3. Coat the pipe and area surrounding the pipe with Xi-WaterShield.

4. Slide the mesh over the pipe with the cut triangle-shaped pieces extending onto the pipe.

5. Wrap a 1" strip of Xi-WaterShield Joint Mesh around the pipe and cover the "cuts edges" and embed in more Xi-WaterShield.
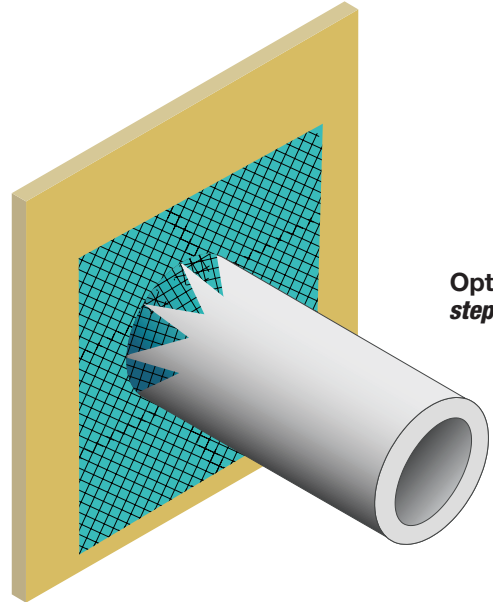
NOTE: Xi-WaterShield can be installed on the wall before or after the penetration is treated.
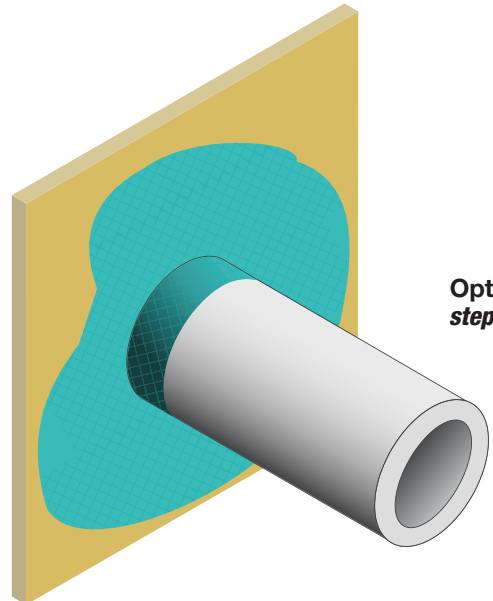
Options 2
Xi-FlashFill Application

1. If there are gaps around the penetration between 1/4"–1", install Backer Rod between the pipe and the sheathing.

2. Apply a thick bead of Xi-FlashFill around the pipe.

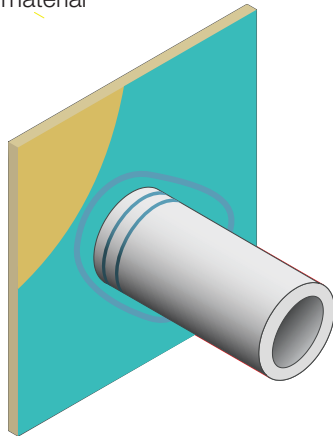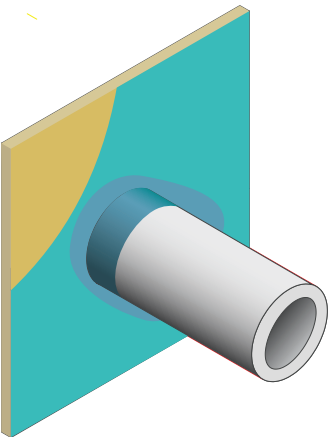**3.** Using a spatula, smooth the material around the pipe.

Option 1
step 3

Option 1
step 4

Option 2
*step 2*

Option 1
step 5

Option 2
step 3

5.2.6 Ducts/Large Penetrations

Option 1
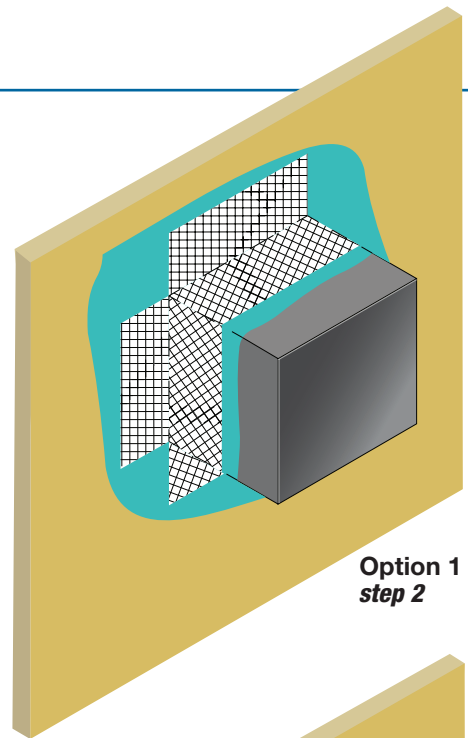**Xi-WaterShield / Xi-WaterShield Mesh Application**

1. Cut the Xi-WaterShield Joint Mesh to a length so that it will wrap around the duct/penetration and will lay onto the sheathing at a min. of 2 inches in all directions.

2. Coat the penetration and surrounding area with Xi-WaterShield and wrap the cut mesh around it.

3. Cut 4 butterfly pieces for the corners and embed into wet Xi-WaterShield at each corner to cover any gaps in the mesh.

Option 1
step 2

WIDTH OF DUCT

— — — **Fold Line**

——— **Cut Line**
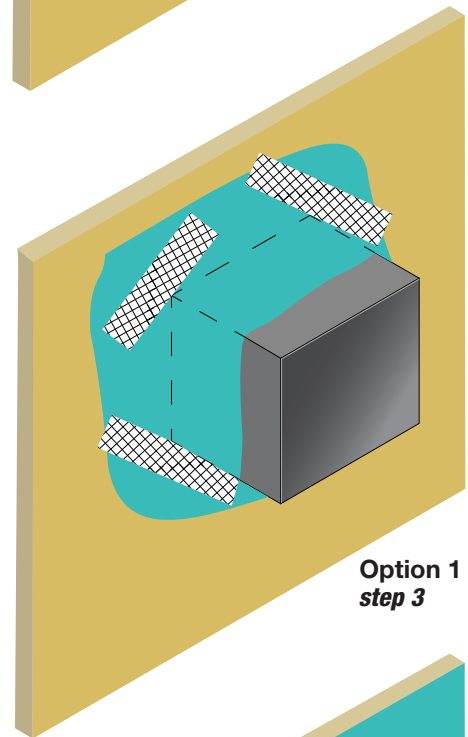
2"
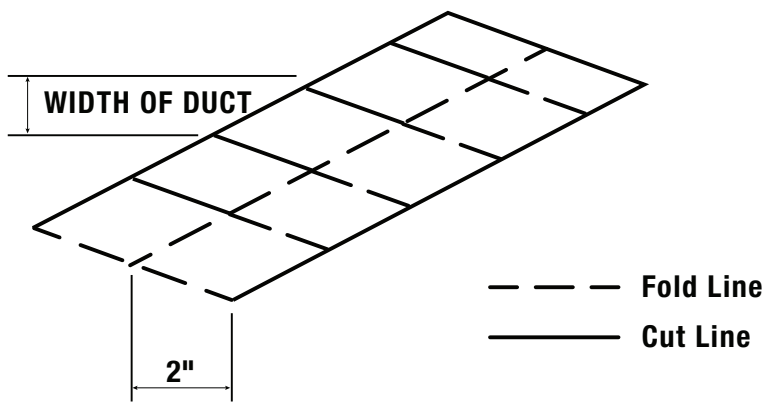
Option 1
step 1

Option 1
step 3
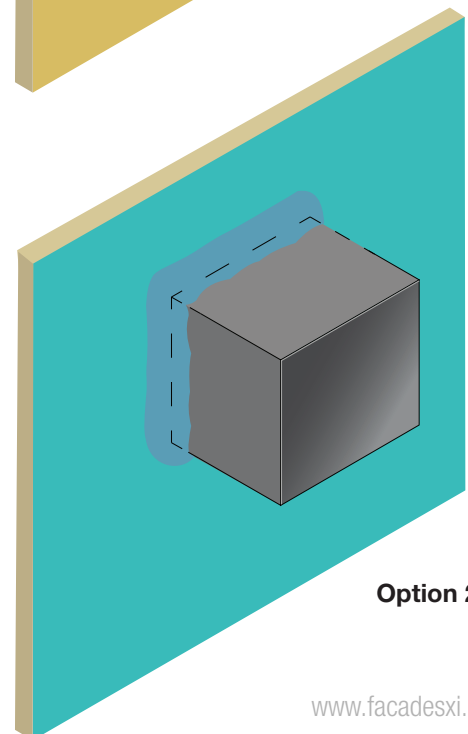
Options 2
Xi-FlashFill Application

1. Install backer rod between the penetration and the sheathing.

2. Apply a thick bead of Xi-FlashFill around the penetration and using a spatula, smooth the material around the duct.

Option 2

5.2.7 Transition between Water Resistive Barriers

When there is a transition between Xi-WaterShield, Xi-FlashFill, Xi-WaterShield Flashing Membrane, and non-FacadesXi materials, consult FacadesXi Technical Services. The adhesion between products is not always known and testing may be necessary.

Xi-FlashFill may have incompatibility with some asphaltic materials or butyl adhesives. Always test first.

5.2.8 System Expansion Joints

Xi-WaterShield Flashing Membrane may be applied before or after Xi-WaterShield Water& Air Barrier Coating.

Options 1
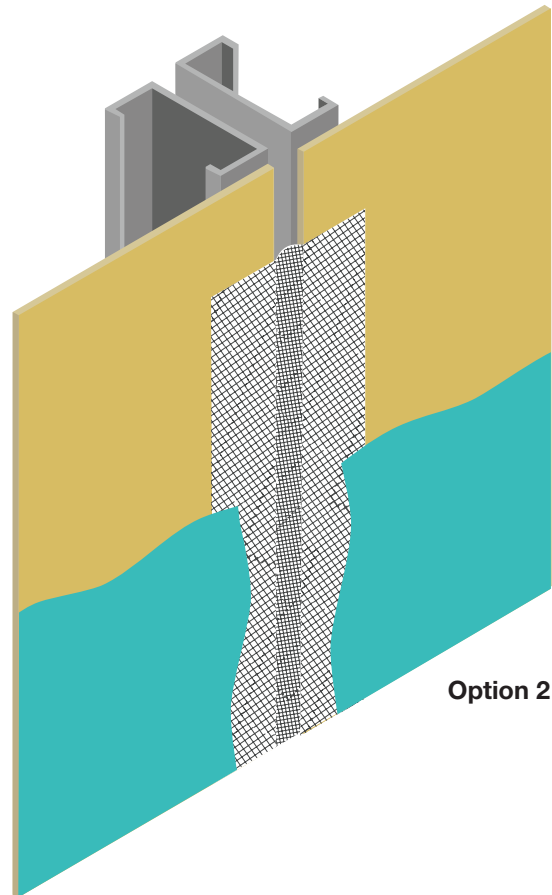### Xi-FlashFill Application

1. The expansion joint must be less than 1" wide and the backer rod may not leave any gap over 1/4" wide for this application.

2. Install backer rod into the joint before installing Xi-FlashFill.

3. Apply a bead of Xi-FlashFill using a professional caulking gun on either side of the expansion joints and strike smooth with a DRY tool. Do not use soapy water or solvent to help with the tooling process or to slick the surface profile.

4. Allow to skin before installing other waterproofing or air barrier components.
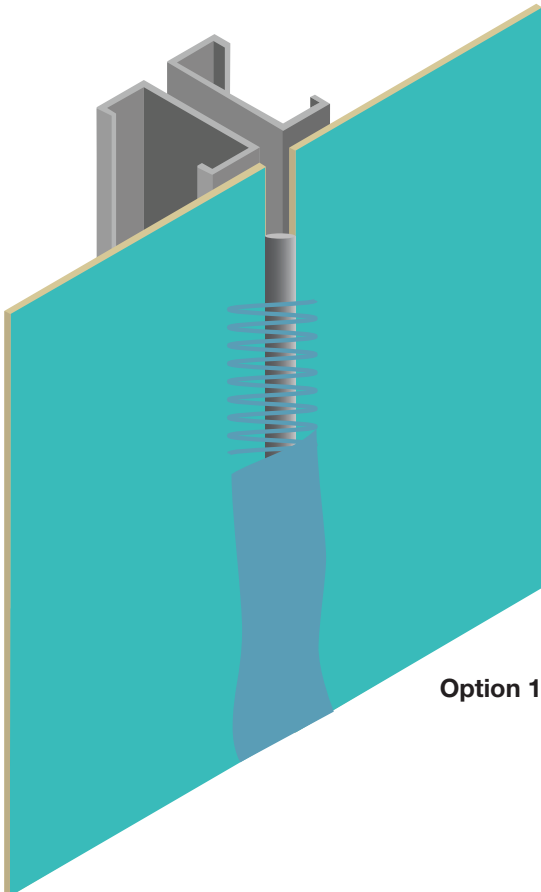
Option 2
Xi-WaterShield Flashing Membrane

1. Remove a small portion of the release liner and apply it to the substrate. Continue on one side of the joint and remove the release liner as you firmly roll into place using a "J" roller or hand roller to smooth out any wrinkles, air bubbles or creases.

2. The Flashing Membrane should be recessed into the joint at a minimum of 1/4" to allow for joint movement without disrupting the adhesion of the Membrane.

3. Where the Membrane laps, each lap should be a minimum of 6" and should be firmly rolled to ensure adequate adhesion.

4. A layer of Xi-WaterShield should then be applied over the edges of the Flashing Tape.

Option 2

Option 1

After application of Xi-FlashFill and Xi-WaterShield, flashings, and sealants, additional Xi-FlashFill or Xi-WaterShield should be used to treat any area, crack, gap, etc. to make a monolithic water and air barrier.

5.3 Xi-WaterShield Field Application:

The wet mil will be approximately 10–12 wet mils. Wet mil thickness should be measured with a wet film gauge.

Roller Application: 1/2"–3/4" nap will work best for single coat coverage; however, other naps are acceptable as long as the mil thickness is consistent.

Sprayer: Test equipment for exact tip and spray rate before application. The material should spray at a rate to achieve correct mil thickness.

5.3.1 OSB/Plywood:

- Plywood/OSB surface may create imperfections in the Xi-WaterShield due to the porosity and nature of the sheathing; therefore, typically 2 coats will probably be necessary.
- After the first coat has dried, the Xi-WaterShield must be re-applied in any areas that are not completely covered.

5.3.2 CMU:

- CMU is generally porous and will require more Xi-WaterShield than other substrates.
- The surface may be skimmed out with Xi-Base or Xi-VersaBase and allowed to dry to create a less porous and smoother substrate.
- Apply 2 coats, allowing the first coat to fully dry. It may require back rolling with a 3/4" nap roller for complete coverage without pinholes.

5.3.3 Xi-WaterShield Installation Completion

1. Weatherproof all penetrations at the Xi-WaterShield layer. The wall should be watertight before installation of the insulation boards.
2. Before installation of the cladding, ensure that the Xi-WaterShield has not been damaged and does not have any holes or gaps.
3. Protect the wall assembly during installation from water intrusion until the exterior wall is in place.

NOTE: Xi-WaterShield is UV Stable; however, it should not be left exposed for more than 6 months.

5.3.4 Installation Notes under different claddings

EIFS: If Xi-WaterShield is left exposed for more than 30 days, the surface must be cleaned of dirt and other contaminants that would prevent adhesion of the insulation board, and adhesion checked.

Stucco/Masonry Veneer Claddings: A slip sheet must be installed over the Xi-WaterShield to prevent adhesion of the plaster to the Xi-WaterShield.

All screws and attachments must be attached to the framing. If a fastener is accidentally installed and does not penetrate a framing member, leave the fastener in place and seal with WaterShield transition materials.

Metal Panel Cladding: The WaterShield service temperature maximum is 180° F. If the metal panel will create a temperature greater than that, an alternative material should be chosen.

Thank you for the use of FacadesXi Materials and Systems. We are here to help. Please call or email us if you have any questions or need any assistance.

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