INSTALLING
JUMBO TEX®
THIS GUIDE APPLIES TO ALL GRADES OF JUMBO TEX AND HYDRO TEX™

Fortifiber Building Systems Group® provides this guide to assist installers by demonstrating an efficient and effective method for installing **Jumbo Tex** and the **Jumbo Tex** hybrid product **Hydro Tex** in common residential and light commercial settings. The back of this document has details regarding integrating these products with window flashing.

Compliance with the building code and proper installation are critical in reducing potential water leakage points. It is the responsibility of the architect or builder to ensure that these standards are met.
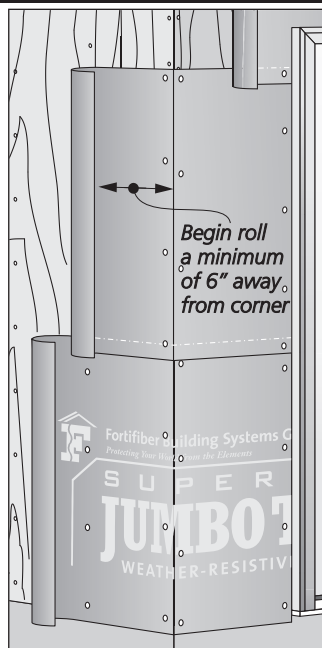
This guide applies to the following:

- *Super Jumbo Tex 60 minute*
  40" x 240 and 324 sq. ft. rolls
- *Two-Ply Super Jumbo Tex 60 minute*
  40" x 162 sq. ft. rolls
- *Jumbo Tex*
  40" x 324 and 500 sq. ft. rolls
- *Two-Ply Jumbo Tex*
  40" x 162 and 250 sq. ft. rolls
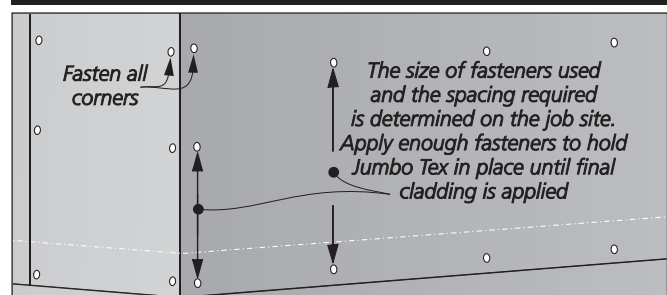- *Hydro Tex*
  40" x 162 sq. ft. rolls

1 INSTALLING JUMBO TEX

*Install **Jumbo Tex** directly to studs or over an approved exterior sheathing. (When using **HydroTex**, install black side out.) Starting at the bottom of one end of the wall, place the **Jumbo Tex** roll horizontally (overlapping the corner by a minimum of 6") and roll out the first course evenly, integrating with flashing at window and door openings. Place the membrane so that it is tight and flat. Apply enough fasteners to hold **Jumbo Tex** in place until the final wall cladding is installed.*

Begin roll a minimum of 6" away from corner

2 FASTENING

Fasten all corners

The size of fasteners used and the spacing required is determined on the job site. Apply enough fasteners to hold Jumbo Tex in place until final cladding is applied
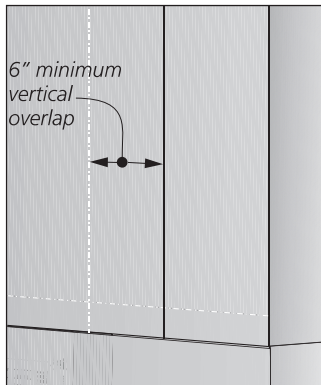
Under normal conditions, attaching **Jumbo Tex** with a quality exterior grade staple is acceptable. A higher grade of galvanized fastener, or large headed galvanized nail may be required in certain settings or weather conditions.

It is the responsibility of the architect, builder, or foreman to decide the type of exterior grade fastener that will best suit the job at hand and how many of these fasteners are required.
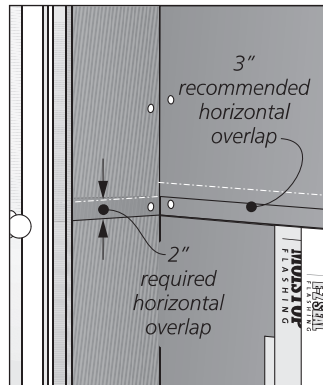
3 SEAM OVERLAPS

VERTICAL   HORIZONTAL

6" minimum vertical overlap

3" recommended horizontal overlap

2" required horizontal overlap

At vertical seams, apply a minimum 6" vertical overlap. When going around corners, make sure **Jumbo Tex** is pulled tightly and properly fastened.

Any succeeding course should be placed horizontally over the lower course in a weather-board fashion with a minimum horizontal overlap of 2" (3" is recommended).

4 JUMBO TEX® AND WINDOWS

Upper layers of Jumbo Tex covers jamb flashing

Tuck Jumbo Tex under sill window flashing
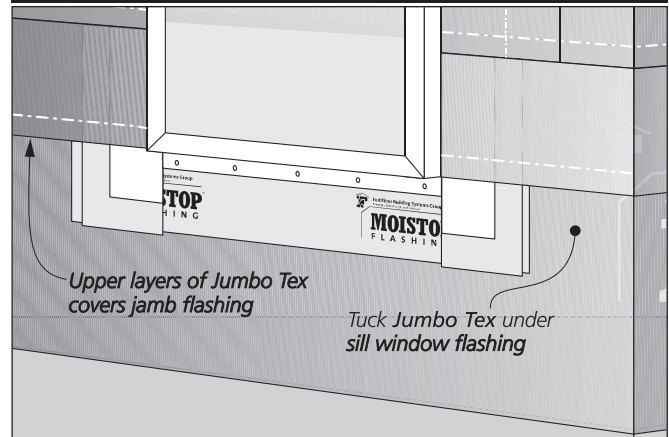
When a layer of **Jumbo Tex** first crosses the path of any window, it needs to be properly integrated with the window sill and jamb flashing for quality moisture management. To do this, tuck **Jumbo Tex** _under_ the sill and jamb flashing as shown above. The layers above this point can butt into the window jamb.

JUMBO TEX AND WINDOW FLASHING

Windows, window flashings, and weather barriers must be properly integrated in order to form a comprehensive moisture control system. The windows shown in this guide follow the "High Performance Two-Step" method of window flashing. A detailed guide for this method of flashing can be found at **www.fortifiber.com**.

Also, you can find other detailed instructions on how to integrate weather barriers and window flashings at the Fortifiber web site. Listed below are some of the common settings that you'll encounter when installing Jumbo Tex.

WHEN WEATHER-RESISTIVE BARRIER IS INSTALLED AFTER THE WINDOW
Use one of the following guides that apply:
Method A (self adhesive)
Method B (mechanically attached)
High Performance Two-Step

WHEN WEATHER-RESISTIVE BARRIER IS INSTALLED BEFORE THE WINDOW
Use the following guide:
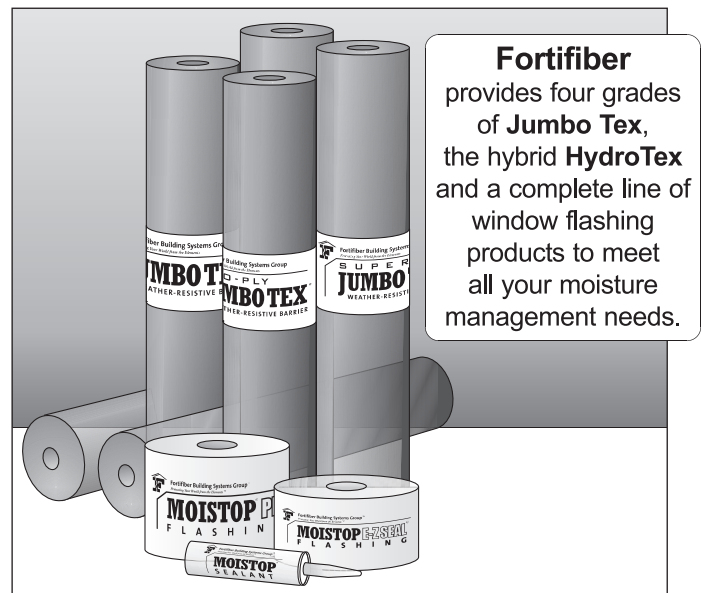**Method A1** (self adhesive)

WEATHER-RESISTIVE BARRIERS AND SPECIALTY WINDOWS
Use one of the following guides that apply:
Wood Window Sill Pan Flashing
Arched Window Flashing
Recessed Window Flashing

Fortifiber provides four grades of **Jumbo Tex**, the hybrid **HydroTex** and a complete line of window flashing products to meet all your moisture management needs.

Call 1-800-773-4777 Nationwide for Technical Assistance or visit our Web site at _www.fortifiber.com_

Limitations: Product should be covered as soon as possible. Inspect product to insure it is free of any protrusions or damage which may detract from the weather-resistive barrier integrity. Holes, tears or punctures should be sealed with Moistop® Sealant or Fortifiber Sheathing Tape. This product is not recommended for horizontal, roofing or below grade applications.

Fortifiber Building Systems Group ®

Protecting Your World from the Elements®

NATIONAL SALES OFFICE – Fernley, NV

(09/16/15)

INSTALLING WATER-RESISTIVE BARRIERS & FLASHING

IN A TWO-LAYER STUCCO APPLICATION

Fortifiber Building Systems Group® provides this guide to assist installers by demonstrating a two-layer installation of water-resistive barriers for stucco applications as required by the 2012 International Building Code. This installation guide provides an efficient and effective method for installing water-resistive barriers in common residential and light commercial settings. The back of this document has details regarding integrating these products with window flashing.

This two-layer installation differs from a two-ply installation in that each layer is installed individually, where the inner layer is integrated with flashing to provide a continuous drainage plane. The outer layer serves to separate and protect the inner layer from the stucco.
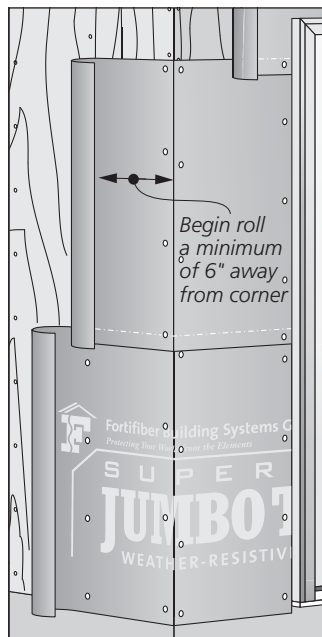
Compliance with the building code and proper installation are critical in reducing potential water leakage points. It is the responsibility of the architect or builder to ensure that these standards are met.

This guide applies to **Jumbo Tex**®, **Super Jumbo Tex**® **60 Minute**, **Two-Ply Jumbo Tex**®, **Two-Ply Super Jumbo Tex**®, **PlyDry**® and **WeatherSmart**®.
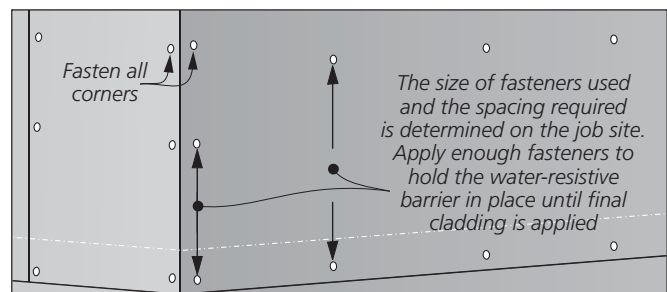

1 INSTALLING WRB

Following installation of windows and flashing, install water-resistive barrier over an approved exterior sheathing. Starting at the bottom of one end of the wall, place the water-resistive barrier roll horizontally (overlapping the corner by a minimum of 6") and roll out the first course evenly, integrating with flashing at window and door openings. Place the membrane so that it is tight and flat. Apply enough fasteners to hold the water-resistive barrier in place until the final wall cladding is installed.

Begin roll a minimum of 6" away from corner

2 FASTENING

Fasten all corners

The size of fasteners used and the spacing required is determined on the job site. Apply enough fasteners to hold the water-resistive barrier in place until final cladding is applied
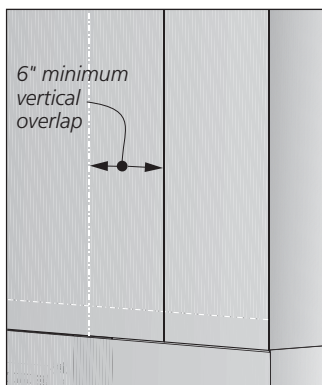
Under normal conditions, attaching the water-resistive barrier with a quality exterior grade staple is acceptable. A higher grade of galvanized fastener, or large headed galvanized nail may be required in certain settings or weather conditions.

It is the responsibility of the architect, builder, or foreman to decide the type of exterior grade fastener that will best suit the job at hand and how many of these fasteners are required.
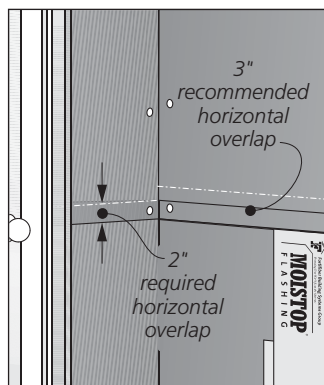
3   SEAM OVERLAPS

VERTICAL   HORIZONTAL

6" minimum vertical overlap

3" recommended horizontal overlap
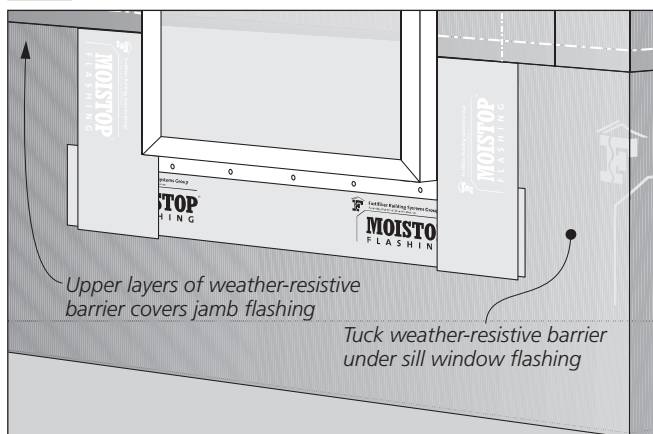
2" required horizontal overlap

At vertical seams, apply a minimum 6" vertical overlap. When going around corners, make sure the water-resistive barrier is pulled tightly and properly fastened.

Any succeeding course should be placed horizontally over the lower course in a weather-board fashion with a minimum horizontal overlap of 2" (3" is recommended)

4   WRB AND WINDOWS

Upper layers of weather-resistive barrier covers jamb flashing

Tuck weather-resistive barrier under sill window flashing

When a course of the water-resistive barrier first crosses the path of any window, it needs to be properly integrated with the window sill and jamb flashing for quality moisture management. To do this, tuck water-resistive barrier under the sill and jamb flashing as shown above. The courses above this point can butt into the window jamb.

5   INSTALL JUMBO TEX

The outer layer of **Jumbo Tex** is installed over the window flashing
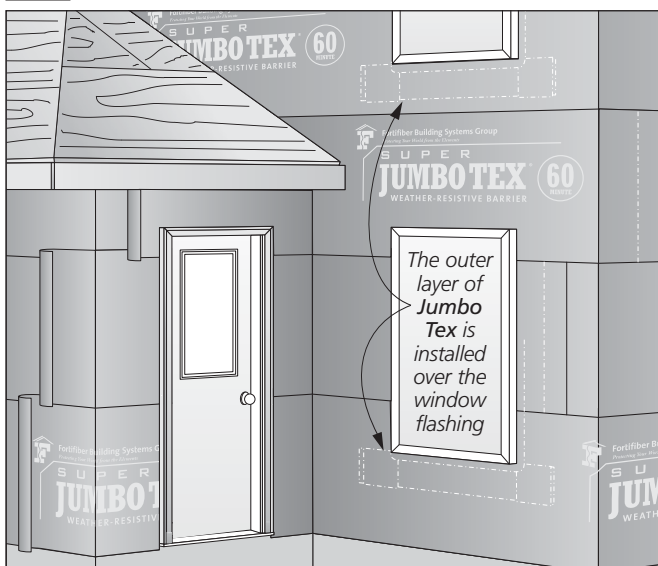
An outer layer of **Jumbo Tex** is now installed over the first water-resistive barrier layer in weather-board fashion, following the same requirements for overlaps and fasteners. However, this layer is not integrated with the window flashing, but is instead installed over the integrated flashing and first water-resistive barrier.

WRB AND FLASHING

Windows, window flashings, and weather barriers must be properly integrated in order to form a comprehensive moisture control system. The windows shown in this guide follow the "Method B" manner of window flashing. A detailed guide for this method of flashing can be found at **www.fortifiber.com**.

Also, you can find other detailed instructions on how to integrate water-resistive barriers and window flashings at the Fortifiber web site. Listed below are some of the common settings that you'll encounter when installing a water-resistive barrier.

WHEN WATER-RESISTIVE BARRIER IS INSTALLED AFTER THE WINDOW
Use one of the following guides that apply.
Method A (self adhesive)
Method B (mechanically attached)
High Performance Two-Step

WHEN WATER-RESISTIVE BARRIER IS INSTALLED BEFORE THE WINDOW
Use the following guide:
Method A1 (self adhesive)

Call 1-800-773-4777 Nationwide for Technical Assistance or visit our Web site at
www.fortifiber.com

Limitations: Product should be covered as soon as possible. Inspect product to insure it is free of any protrusions or damage which may detract from the weather-resistive barrier integrity. Holes, tears or punctures should be sealed with Moistop® Sealant or Fortifiber Sheathing Tape. This product is not recommended for horizontal, roofing or below grade applications.

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NATIONAL SALES OFFICE – Fernley, NV

(11/6/13)

INSTALLING
# FORTIFIBER® HOUSEWRAPS
INCLUDING WEATHERSMART® & PLYDRY®

Fortifiber Building Systems Group® provides this guide to assist builders by demonstrating an efficient and effective method for installing **Fortifiber's** housewraps in residential and light commercial buildings. The back of this document has details integrating housewrap with window flashing.

Compliance with the local building code and proper installation are critical in reducing potential water intrusion. It is the responsibility of the architect or builder to ensure that these standards are met.

Fortifiber housewraps are available in a variety of widths and lengths to meet your needs. The following **Fortifiber Building Systems Group** products are needed for a quality installation:

- **Fortifiber Sheathing Tape**
  1.875" x 165' rolls
- **Moistop® Sealant (Exceeds AAMA Standards)**
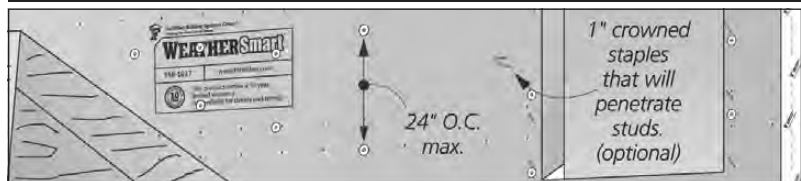- **Any Fortifiber Window Flashing Product**
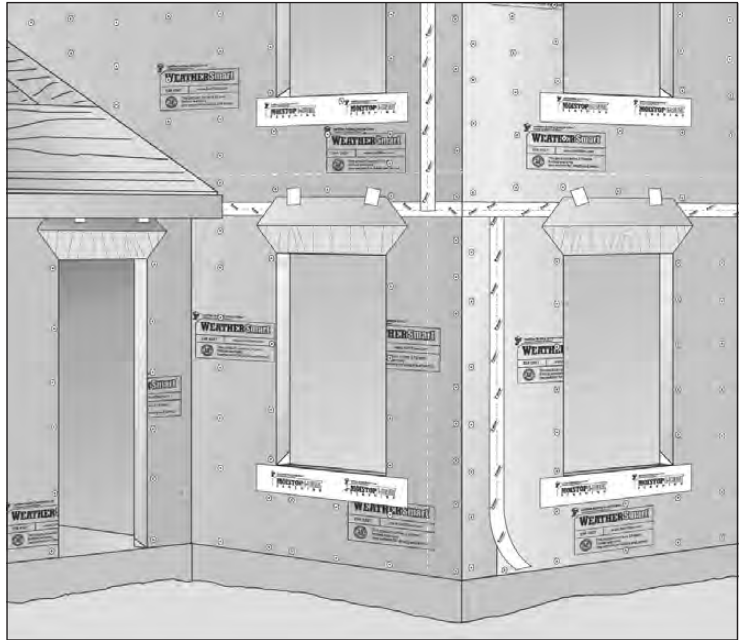
1 INSTALLING HOUSEWRAP

Install housewrap over an approved exterior sheathing. Starting at the bottom of one end of the wall, place the housewrap roll horizontally and roll out the first course evenly, covering rough window and door openings. When starting at a corner, overlap by a minimum of 12". Attach the membrane so that it is tight and flat. Fasten housewrap securely to the exterior wall with appropriate fasteners **(Step 2)**.
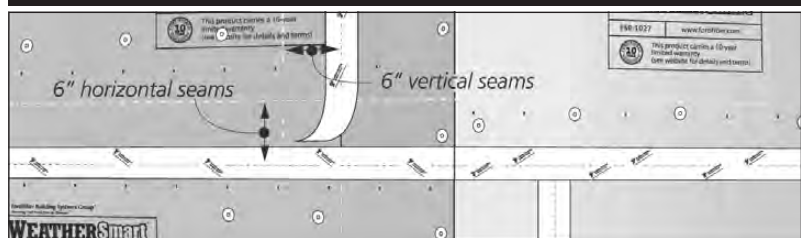

Overlap corners by a minimum of 12 "

2 FASTENING

24" O.C. max.

1" crowned staples that will penetrate studs. (optional)

Fortifiber recommends using fasteners with 1" plastic caps, or using 1" crown staples that penetrate the studs, to attach housewrap so that it is taut and flat. The proper spacing for these fasteners is 24" on center, maximum. Closer spacing may be required based on site conditions.

3 OVERLAP AND TAPE SEAM
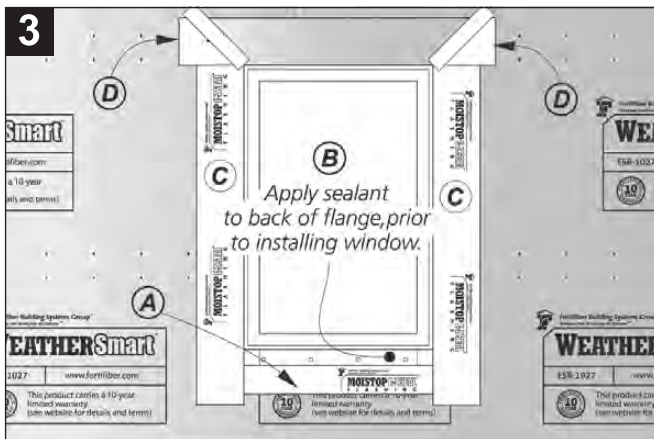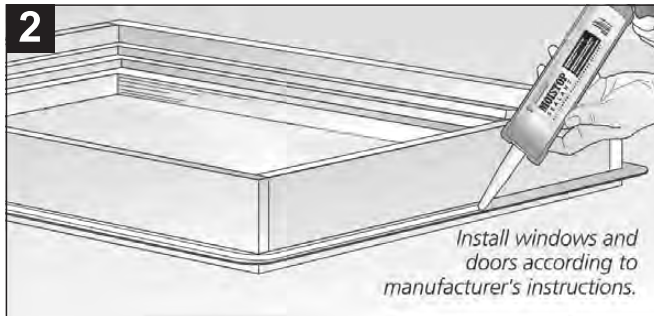

6" horizontal seams

6" vertical seams

At vertical seams, apply a minimum of 6" vertical overlap. When going around corners, make sure housewrap is pulled tightly and properly fastened. Any succeeding course should be placed horizontally over the lower course in a weather-board fashion with a minimum horizontal overlap of 6". It is recommended to tape all vertical seams with **Fortifiber Sheathing Tape**; all seams must be taped to achieve an air barrier install; consult your design professional where necessary.

HOUSEWRAP AND WINDOW FLASHING
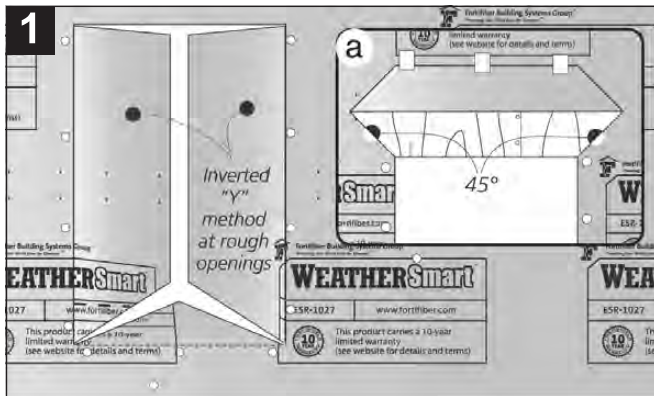
At the rough opening, cut housewrap in an inverted "Y" fashion, and then fasten with the methods described in **Step 2**. To allow for head flashing integration, make a 45° cut in housewrap as shown above in **detail a**. Ensure that any protrusions in the wall assembly including windows, doors, vents, hose bibs and electrical boxes are flashed and integrated properly into housewrap.

Install windows and doors according to manufacturer's instructions.

Apply sealant to back of flange, prior to installing window.

To integrate windows and doors properly into housewrap, follow these steps: **A)** Install the window flashing on the sill flush with the rough opening. **B)** Apply a $^3/_8$" bead of **Moistop Sealant** to the back side of the window flange and secure the window in place. **C)** After the window is set, apply flashing to both jambs. **D)** Install the head flashing and re-integrate the head flap with **Fortifiber Sheathing Tape**.

At Fortifiber.com you can find other detailed instructions on how to integrate weather-resistive barriers and window flashings. Listed below are some of the situations that you'll encounter when installing housewrap. For detailed instructions on each of these methods, visit our web site at **www.fortifiber.com**

WHEN HOUSEWRAP IS INSTALLED BEFORE THE WINDOW:
Use the following guide
Method A1 *(self adhesive)*

WHEN HOUSEWRAP IS INSTALLED AFTER THE WINDOW:
Use one of the following guides that apply.
Method A *(self adhesive)*
Method B *(mechanically attached)*
High Performance System

HOUSEWRAP AND SPECIALTY WINDOWS:
Use one of the following guides that apply.
Window and Door Flashing
(Installing Wood Windows and Doors with integral brick mold)
Arched Window Flashing

*Note: Always consult local building codes and window manufacturer's instructions for flashing details. The schematic on this page is method "A1" for self-adhesive flashing. For details concerning this flashing method and alternate flashing methods please call (800) 773-4777 or visit www.fortifiber.com. Direct exposure of sealant to the adhesive side of **FortiFlash®** can be detrimental if the amount of sealant exceeds what is specified. Please follow these recommendations regarding location and amount of sealant to be used. Fortifiber strongly recommends against the practice of using a "knockdown bead of sealant" or "buttering the flange" with sealant, because this amount of sealant is excessive and unnecessary.

Limitations: Fortifiber housewrap should be covered within 120 days. Inspect product to insure it is free of any protrusions or damage which may detract from the weather-resistive barrier integrity. Holes, tears or punctures should be sealed with **Moistop Sealant** or **Fortifiber Sheathing Tape**. This product is not recommended for horizontal, roofing or below grade applications. Fortifiber strongly recommends the use of a **Two-Ply Jumbo Tex** product or two layers of a single **Jumbo Tex** product when used with a three-coat stucco system. Ensure that a layer of **Super Jumbo Tex 60 Minute** is used to separate housewrap and Portland cement stucco or mortar used in masonry veneer walls.

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(5/7/15)

Call 1-800-773-4777 Nationwide for Technical Assistance or visit our Web site at *www.fortifiber.com*

INSTALLING
WEATHERSMART® DRAINABLE
AFTER WINDOW INSTALLATION

Fortifiber Building Systems Group® provides this guide to assist installers by demonstrating an efficient and effective method for installing **WeatherSmart® Drainable** in common residential and light commercial settings. The back of this document has details regarding integrating these products with window flashing.

Compliance with the building code and proper installation are critical in reducing potential water leakage points. It is the responsibility of the architect or builder to ensure that these standards are met.

The following Fortifiber products are needed for a quality installation:

- **WeatherSmart Drainable**
- **Moistop® Sealant**
  (Exceeds AAMA Standards)
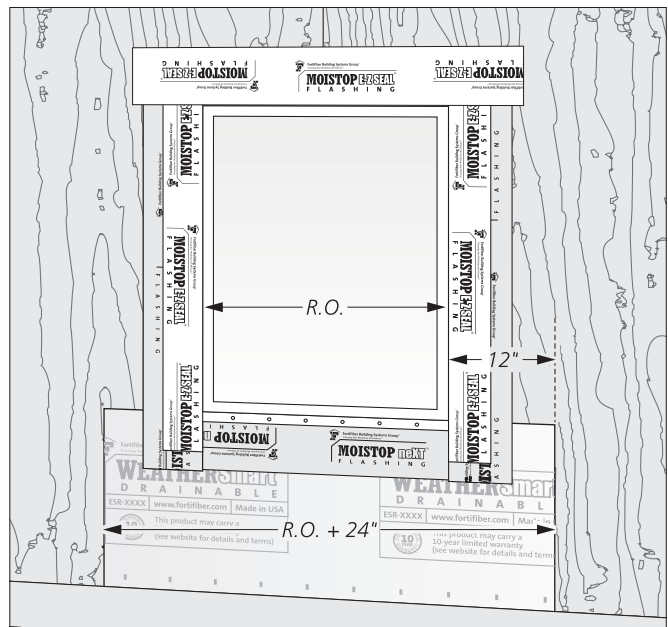- **Any Fortifiber Window**
  Flashing Product

1	INSTALL WINDOWS
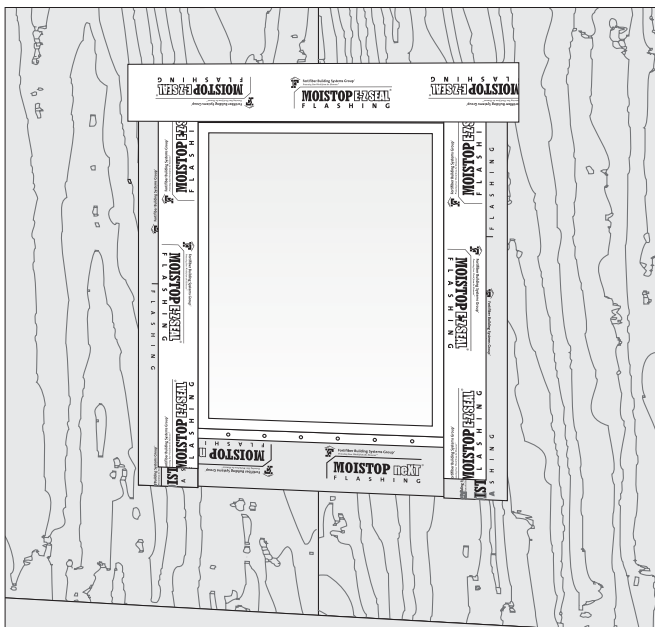
Flash and install windows following Method A, Method B, High Performance or Recessed Windows installation recommendations.

2	WRB STRIP BELOW

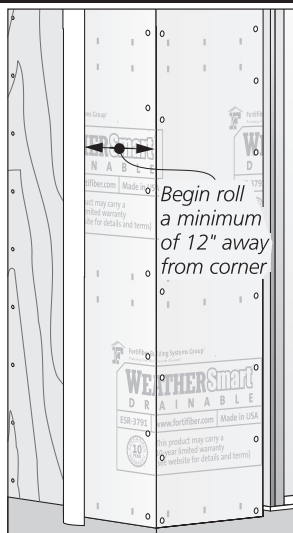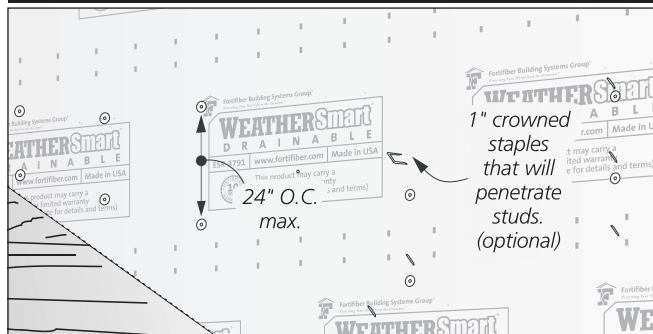*Install **WeatherSmart Drainable** beneath each flashed window, with weather-resistive barrier tucked behind sill flashing and extending 12" beyond window opening.*

3   INSTALLING WRB

Install **WeatherSmart Drainable** over an approved exterior sheathing. Starting at the bottom of one end of the wall, place the **WeatherSmart Drainable** roll horizontally (overlapping the corner by a minimum of 12") and roll out the first course evenly, wrapping over the installed windows and doors. Place the membrane so that it is tight and flat.

Begin roll a minimum of 12" away from corner.

4   FASTENING

1" crowned staples that will penetrate studs. (optional)

24" O.C. max.

Fortifiber recommends using fasteners with 1" plastic caps, or using 1" crown staples that penetrate the studs, to attach **WeatherSmart Drainable** so that it is taut and flat. The proper spacing for these fasteners is 24" on center, maximum. Closer spacing may be required based on site conditions.
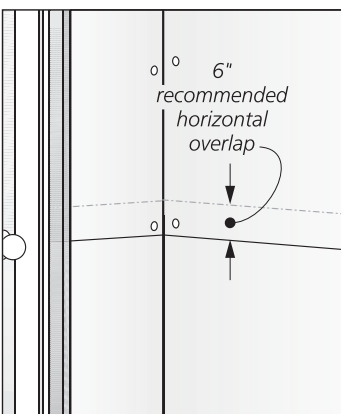
5   SEAM OVERLAPS

VERTICAL   HORIZONTAL

12" minimum vertical overlap

*6" recommended horizontal overlap*
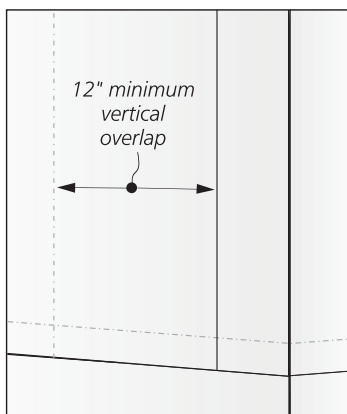
At vertical seams, apply a minimum 12" vertical overlap. When going around corners, make sure **WeatherSmart Drainable** is pulled tightly and properly fastened.

Any succeeding course should be placed horizontally over the lower course in a weather-board fashion with a minimum horizontal overlap of 6".

6   WRB AND WINDOWS

Cut WRB at head and jambs. Continue cut to bottom of course.
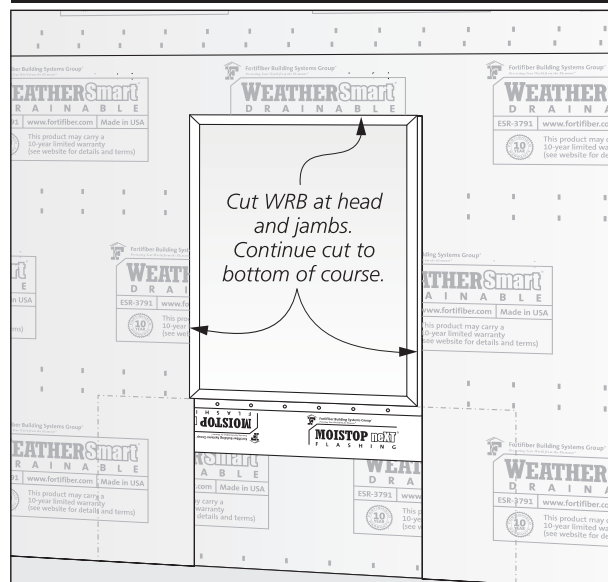
At windows, cut weather-resistive barrier at head and jambs, extending to bottom of course.

WEATHERSMART DRAINABLE AND WINDOWS

Windows, window flashings, and weather barriers must be properly integrated in order to form a comprehensive moisture control system. The windows shown in this guide follow the "High Performance Two-Step" method of window flashing. A detailed guide for this method of flashing can be found at *www.fortifiber.com*.

Also, you can find other detailed instructions on how to integrate weather barriers and window flashings at the Fortifiber web site.

Call 1-800-773-4777 Nationwide for Technical Assistance or visit our Web site at *www.fortifiber.com*

Limitations: WeatherSmart Drainable should be covered with 120 days. Inspect product to ensure it is free of any protrusions or damage which may detract from the weather-resistive barrier integrity. Holes, tears or punctures should be sealed with **Moistop Sealant** or **Fortifiber Sheathing Tape.** This product is not recommended for horizontal, roofing or below grade applications. Ensure that a layer of **Super Jumbo Tex 60 Minute** is used to separate **WeatherSmart Drainable** and Portland cement stucco or mortar used in masonry veneer walls.

Fortifiber Building Systems Group®

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Fortifiber Building Systems Group® provides this guide to assist builders by demonstrating an efficient and effective method for installing **Fortifiber's WeatherSmart Commercial** weather-resistive barrier in commercial applications.

Compliance with the local building code and proper installation are critical in reducing potential water intrusion. It is the responsibility of the architect or builder to ensure that these standards are met.

WeatherSmart Commercial is available in two convenient sizes to meet your needs: 10' x 125 lineal feet and 5' x 200 lineal feet. The following **Fortifiber Building Systems Group** products are needed for a quality installation:

- **Fortifiber Commercial Tape**
  3" x 165' rolls
- **Moistop® Sealant**
- **Any Fortifiber Window Flashing Product –**
  FortiFlash® Commercial or FortiFlash® Butyl
 **are recommended.**
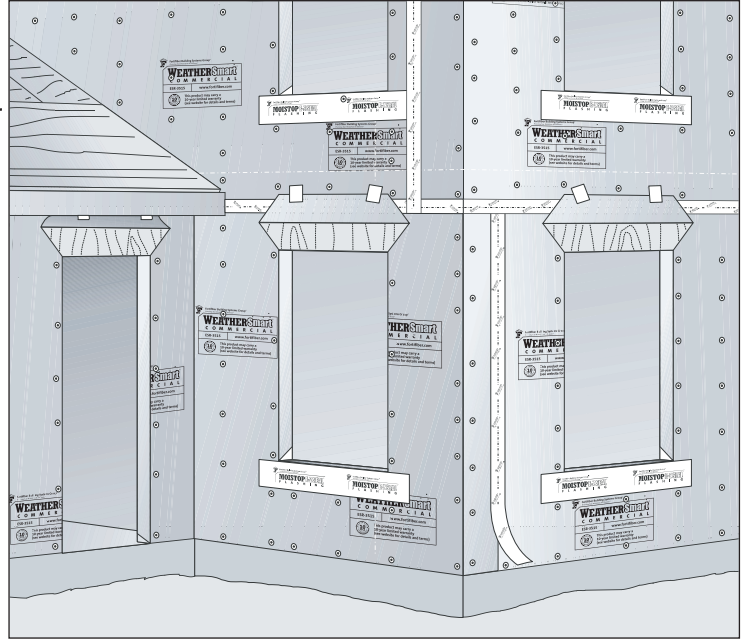
1   INSTALLING WRB

Install weather-resistive barrier over an approved exterior sheathing. Starting at the bottom of one end of the wall, place the weather-resistive barrier roll horizontally and roll out the first course evenly, covering rough window and door openings. When starting at a corner, overlap by a minimum of 12". Attach the membrane so that it is tight and flat. Fasten material securely to the exterior wall with appropriate fasteners **(Step 2)**.
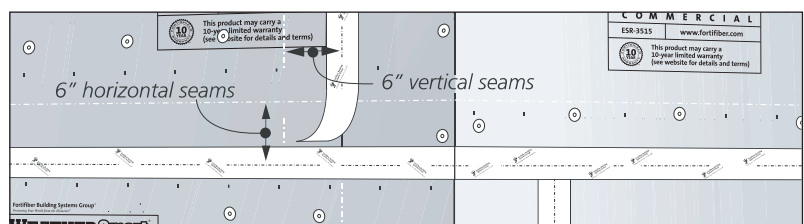
Overlap corners by a minimum of 12"

2   FASTENING

Guide marks printed at 8" o.c.
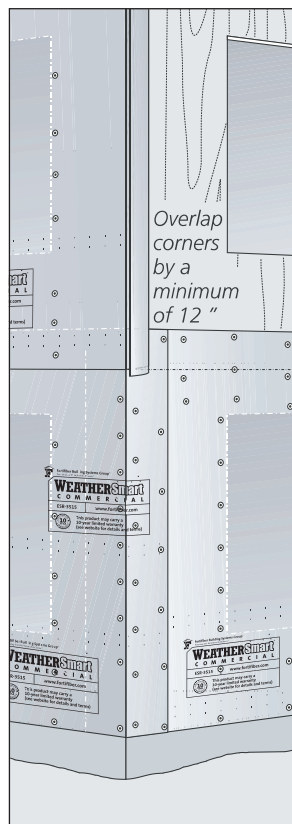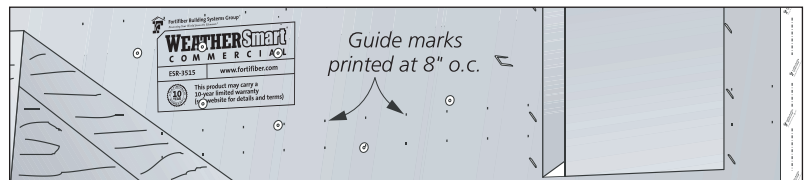
Install corrosion resistant fasteners as needed to attach **WeatherSmart Commercial** taut and flat until it can be covered by the final exterior cladding. The fastener type and spacing will vary depending on exposure conditions and the substrate. When installing over gypsum based sheathing, the fasteners need to be installed into the studs or backing.

3   OVERLAP AND TAPE SEAM

6" horizontal seams   *6" vertical seams*

At vertical seams, apply a minimum of 6" vertical overlap. When going around corners, make sure the material is pulled tightly and properly fastened. Any succeeding course should be placed horizontally over the lower course in a weather-board fashion with a minimum horizontal overlap of 6". It is recommended to tape all vertical seams with **Fortifiber Commercial Tape**; all seams must be taped to achieve an air barrier install; consult your design professional where necessary.
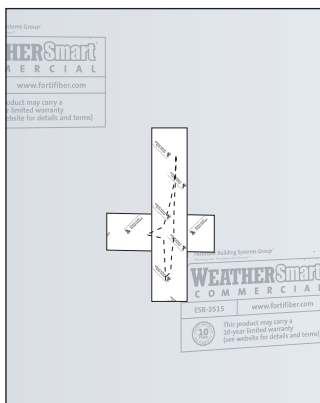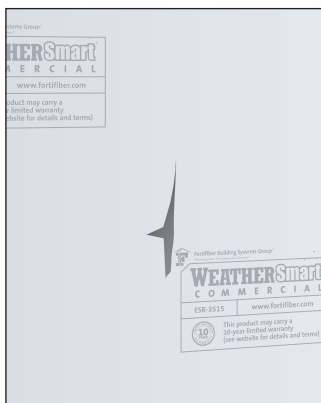
*Small tears may be repaired using **Fortifiber Commercial Tape** or **FortiFlash®**, **FortiFlash Commercial** or **FortiFlash Butyl** flashing.*
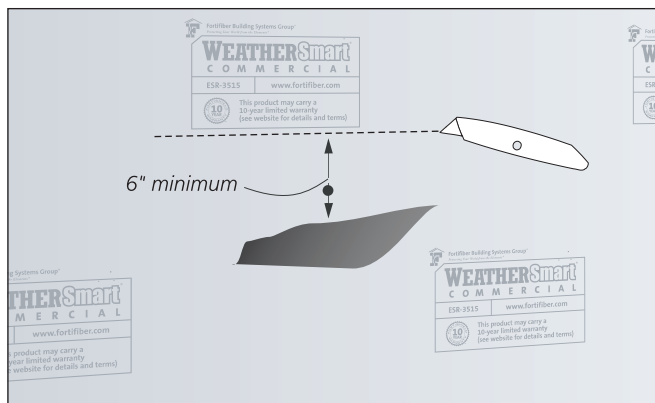
*Larger tears can be repaired by cutting a patch of **WeatherSmart Commercial** at least 12" wider and 18" taller than the tear to be patched. First, cut a slit in the weather-resistive barrier 6" above the tear, wide enough to accommodate the patch.*

Slip the patch into the slot extending it 6" behind the weather-resistive barrier.

*Tape the patch to the weather-resistive barrier in weatherboard fashion, starting at the bottom, then sides, then top using **Fortifibe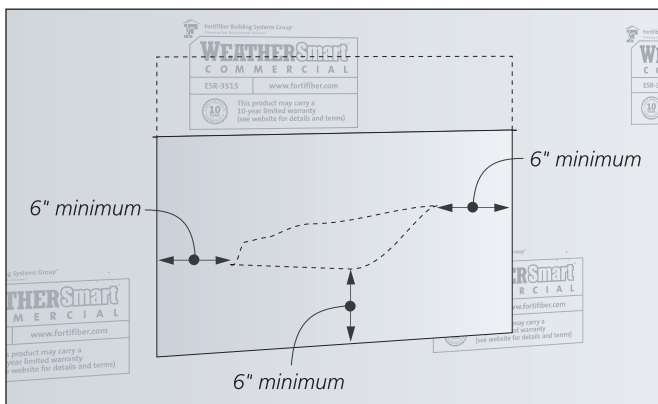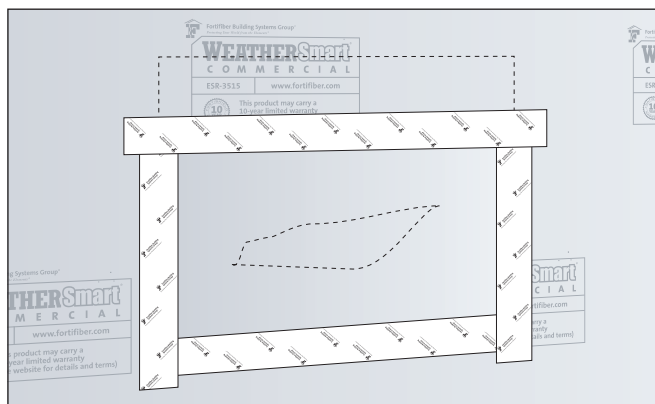r Commercial Tape**. The tape on the sides should extend beyond the bottom piece a minimum of 1", and the tape at the top should extend beyond the side tape pieces by a minimum of 1".*

5   USE WITH STUCCO
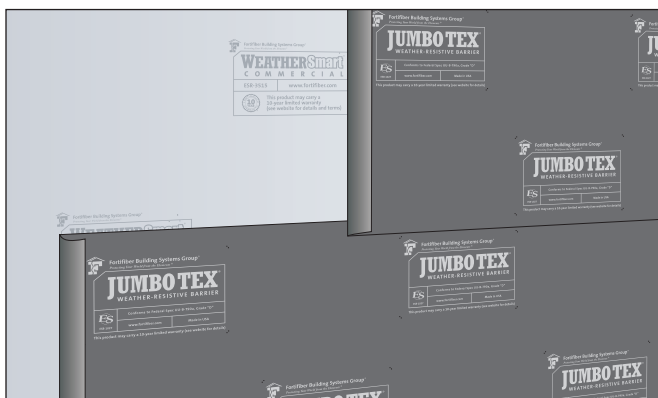
*When stucco cladding is to be used, the **WeatherSmart Commercial** should be covered with a layer of **Jumbo Tex®** or **60 Minute Super Jumbo Tex® Grade D** asphalt-saturated building paper.*

Limitations: Product should be covered within 12 months. To ensure maximum exposure time, store unused product in an area not exposed to sunlight. Inspect product to insure it is free of any protrusions or damage which may detract from the weather-resistive barrier integrity. Holes, tears or punctures should be sealed with **Moistop® Sealant** or **Fortifiber Commercial Tape**. This product is not recommended for horizontal, roofing or below grade applications. Ensure that a layer of **Super Jumbo Tex 60** minute is used to separate **WeatherSmart Commercial** and Portland cement stucco or mortar used in masonry veneer walls.

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WeatherSmart® Air Barrier Installation Guide

> The intent of this document is to provide a guide for the installation of WeatherSmart as both a Weather Resistive Barrier (W.R.B.) and an Air Barrier Material (A.B.M.) in residential and light commercial construction. It is not meant to be a comprehensive procedure for an Air Barrier System. The purpose is to identify critical interfaces that need to be addressed when a membrane material is installed on residential and light commercial walls as one element of an Air Barrier System.

REFERENCE INFORMATION

DEFINITIONS:

AIR BARRIER ACCESSORY – products designated to maintain air tightness between air barrier materials, air barrier assemblies and air barrier components, to fasten them to the structure of the building, or both (e.g., sealants, tapes, backer rods, transition membranes, fasteners, strapping, primers).

AIR BARRIER ASSEMBLY – the combination of air barrier materials and air barrier accessories that are designated and designed within the environmental separator to act as a continuous barrier to the movement of air through the environmental separator.

AIR BARRIER COMPONENT – pre-manufactured elements such as windows, doors and service elements that are installed in the environmental separator.

AIR BARRIER MATERIAL (A.B.M.) – a building material that is designed and constructed to provide the primary resistance to airflow through an air barrier assembly.

AIR BARRIER MEMBRANE – Polymeric housewraps that qualify, liquid applied barriers or self adhesive air barriers.

AIR BARRIER SYSTEM – the combination of air barrier assemblies and air barrier components, connected by air barrier accessories that are designed to provide a continuous barrier to the movement of air through an environmental separator.

SELF-ADHESIVE MEMBRANE (S.A.M.) – also known as self-adhesive flashing such as FortiFlash®, FortiFlash® 40 or FortiFlash® Butyl.

WEATHER RESISTIVE BARRIER (W.R.B) – A barrier material that protects the wall system from water damage – while allowing moisture vapor to escape. Some W.R.B.s also can act as an air barrier.

GENERAL INSTALLATION INSTRUCTIONS

Air barrier membranes, such as WeatherSmart Housewrap/Air Barrier, are only one element of a total air barrier system. As such, the placement of the air barrier membrane in the building envelope must be determined prior to construction to insure that it is installed in the proper position and integrated properly to all air barrier components and accessories in the envelope.

Because the various elements of the air barrier system are typically installed by multiple trades it is essential that the contractor take the lead in coordinating all installation activities. A pre-construction meeting with all parties involved is highly critical. The contractor can then ensure that the intent of constructing the building enclosure with a continuous air barrier system to control air leakage into, or out of, the conditioned space is achieved.

To be most effective, air barriers should be installed in an integrated sequence during wall construction BEFORE windows and doors are placed and with particular attention to sequencing with step flashings and kick out flashings. If the air barrier membrane is installed AFTER windows and doors are placed, the perimeter of all openings must be air sealed – while still providing drainage for windows and doors, especially at sill locations. To seal use Fortifiber® Sheathing Tape, FortiFlash, FortiFlash 40, Fortiflash Butyl, or a bead of Moistop® Sealant under the air barrier membrane.

AIR BARRIER MEMBRANE INSTALLATION SEQUENCE

STEP 1 – FOUNDATION / FLOOR RIM JOIST CONNECTION

This connection must be sealed as part of the air barrier system by either wrapping the bottom of the wall, sealing the membrane to the foundation or other method. For the wrapping met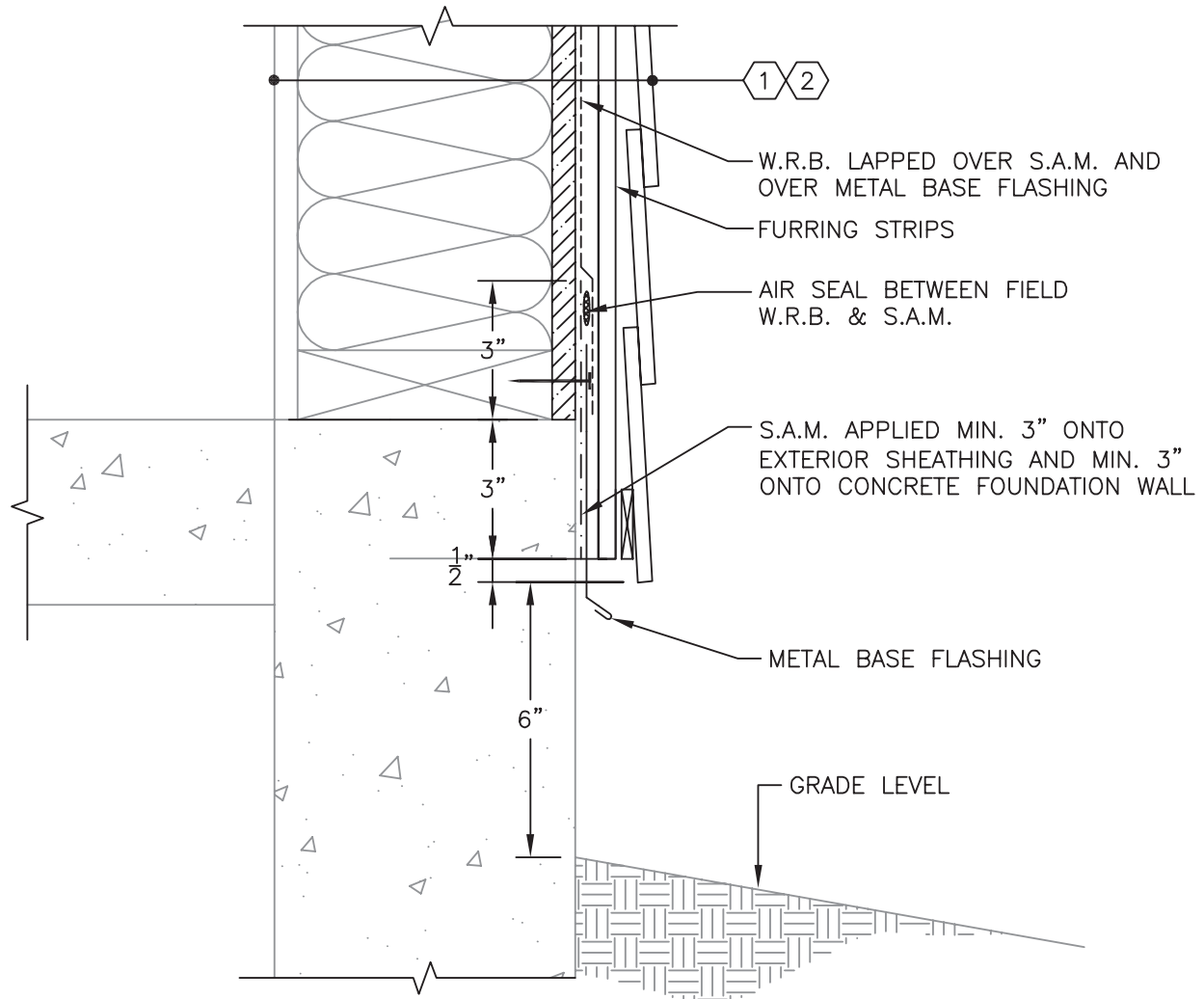hod install WeatherSmart on the sill gasket and foundation wall using 20" (508 mm) wide rolls. Attach WeatherSmart onto the inside wall to hold it in place. Build the floor structure and wrap WeatherSmart up and around the floor rim joist as shown below. WeatherSmart must be shingled over flashing and properly taped to allow drainage of any liquid water that penetrates the cladding. The architect is responsible for detailing how both air barrier and drainage performance are to occur simultaneously. (See Drawing 1 below)
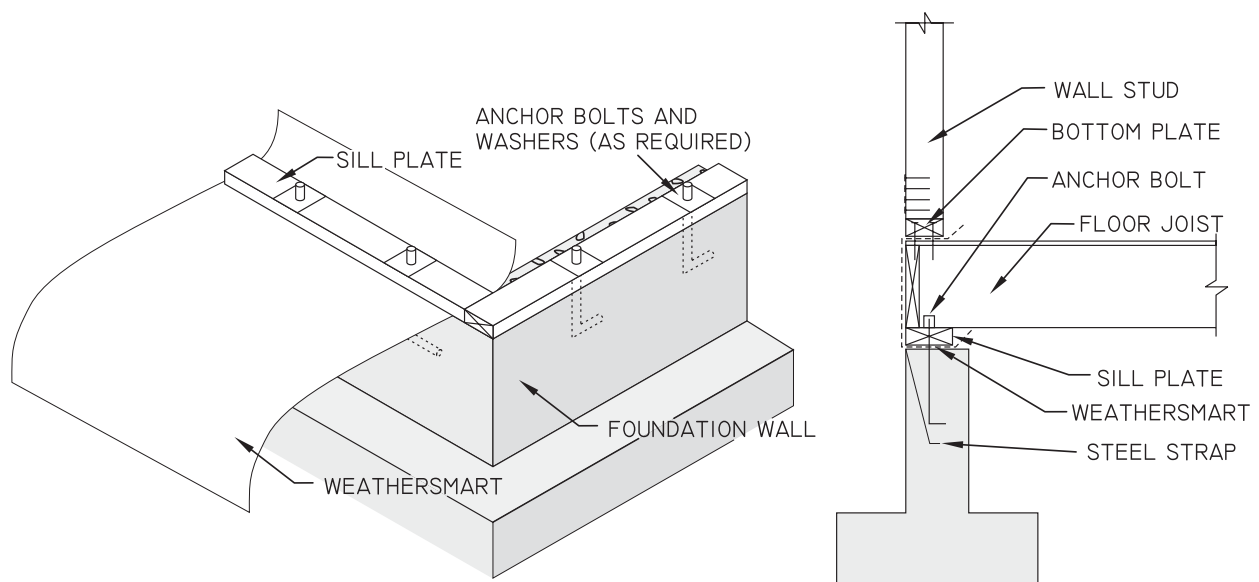
Drawing 1

For the sealing method, appropriate self-adhesive membrane (S.A.M.), mastic or sealant can be used to seal the bottom edge of the air barrier membrane directly to the foundation. The S.A.M., mastic or sealant adheres to the bottom edge of the membrane, bridges the critical sheathing/rim joist/foundation interface and adheres to the concrete below the rim joist forming an air tight seal. Typically a primer will be needed on the concrete surface for S.A.M. to attain proper adhesion. Mastics and sealants may not need a primer if designed for application to concrete. Follow the manufacturer's instructions in either case. (See Drawing 2 on following page)

		① ②

W.R.B. LAPPED OVER S.A.M. AND OVER METAL BASE FLASHING

FURRING STRIPS

AIR SEAL BETWEEN FIELD W.R.B. & S.A.M.

3"

S.A.M. APPLIED MIN. 3" ONTO EXTERIOR SHEATHING AND MIN. 3" ONTO CONCRETE FOUNDATION WALL

3"

$\frac{1}{2}$"

METAL BASE FLASHING

6"

GRADE LEVEL

Drawing 2

STEP 2 – START THE FIRST COURSE

As with all building wraps, start wrapping at the bottom of one end of the wall overlapping the corner by a minimum of 12" (305 mm), place the membrane roll horizontally and roll out the first course evenly. To ensure proper shingling with the wrapped rim joist method, the bottom edge of the membrane should extend over the sill wrap by at least 6" (152 mm) and sealed using Fortifiber Sheathing Tape. When sealing to the foundation wall extend the membrane at least 2" (51 mm) below the sill plate and seal to the concrete with an appropriate S.A.M., sealant, or mastic. For slab on grade foundations extend the membrane to the bottom of the sill plate and seal it to the concrete with an appropriate below grade S.A.M., sealant, or mastic. For stucco exteriors, integrate the membrane with the weep screed to form a continuous air seal while maintaining proper drainage. The architect is responsible for detailing how both air barrier and drainage performance are to occur simultaneously.

AIR BARRIER MEMBRANE INSTALLATION SEQUENCE

STEP 3 – WRAP THE FIRST COURSE

Continue to wrap the perimeter of the building covering rough openings or pre-installed windows and doors. Overlap the starting point vertically by 6" (152 mm) to 12" (305 mm). Stud marks are printed on WeatherSmart at 8" (203 mm) intervals to aid in alignment with the studs. (See Step 5 – Attaching the Membrane)

STEP 4 – WRAP ADDITIONAL COURSES

To wrap a second course repeat step 2 with a horizontal overlap of at least 6" (152 mm) over the first course. To start using a new roll of WeatherSmart a vertical overlap of at least 6" (152 mm) is required. Repeat for additional courses using the 6" (152 mm) overlaps in both directions. To provide for proper water shedding, work from the bottom of the wall up, using the weatherboard methodology.

STEP 5 – ATTACHING THE MEMBRANE

As with all air barriers, WeatherSmart can be secured to the exterior sheathing by either of the following methods.

Method 1: Continuous furring strips installed vertically along stud lines to reduce the risk of failures.

Method 2: Cap-nails installed along stud lines with a nailing pattern sufficient to prevent damage to the membrane from wind during construction. Suggested spacing is 16" (406 mm) O.C. for normal wind loads and 8" (203 mm) O.C. for wind loads greater than 60 mph (97 kph). Additional cap-nails should be installed to support WeatherSmart bridging across any opening in the sheathing board.

Brick ties can be substituted for cap-nails in masonry veneer construction.

Note: *Do not fasten closer than 9" (229 mm) at the head of a rough opening.*

STEP 6 – INTEGRATION OF WINDOW AND DOOR FLASHING

As mentioned in Step 3, rough openings or pre-installed windows and doors are covered by the air barrier membrane during installation. The flashing must now be integrated into the Air Barrier System.

The following table is a guide to choosing the proper flashing installation method for various installation sequences and additional details needed for air barrier performance:
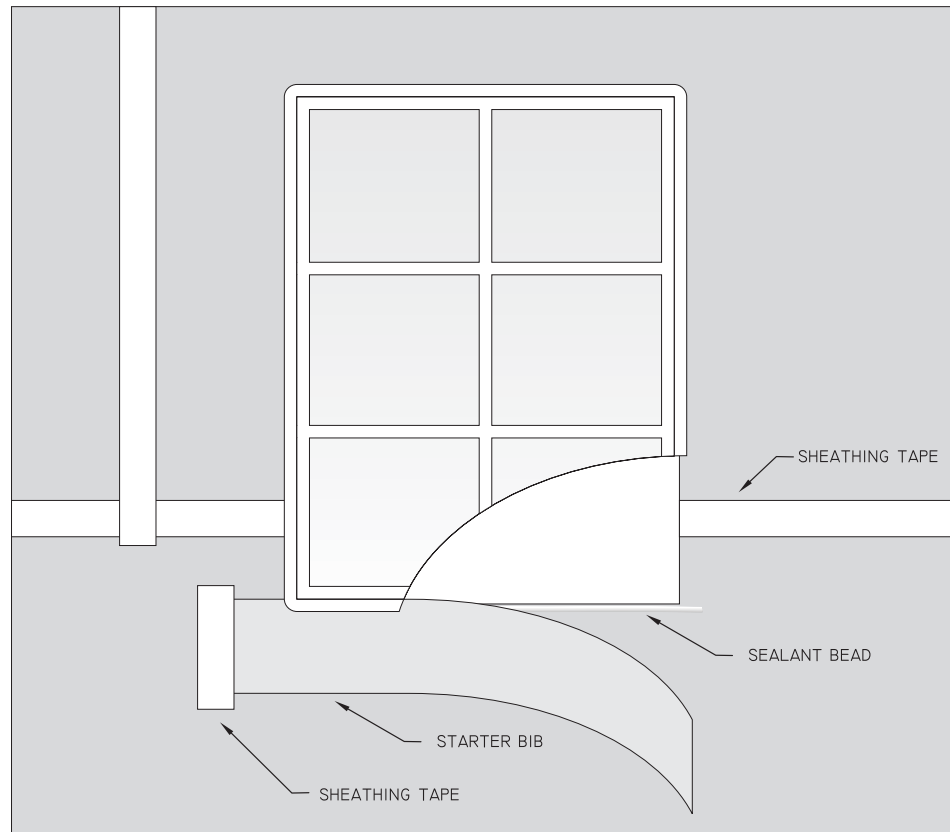
AIR BARRIER MEMBRANE INSTALLED BEFORE WINDOWS AND DOORS

Type of Window or Door	Recommended Flashing Type	Additional Details
Flanged	Self-Adhesive	Non-Sill pan: Apply a continuous bead of sealant to all flanges of the perimeter. For Sill pans: Ensure air sealing at back dam and full perimeter with sill pans.
Non-flanged/Brick Mold	Self-Adhesive - Head & Sill Mechanical or S.A.M. - Jambs	Non-sill pan: When a sill starter bib is used under S.A.M. apply a bead of sealant under the top edge to prevent air leakage. Apply a bead of sealant under all mechanically attached flashing at the perimeter of the rough opening. For sill pans: Use sealant or S.A.M. to prevent air leakage under the sill pan. Ensure that air sealing is provided at the back dam and full perimeter, and that drainage is promoted at the front of the pan.

AIR BARRIER MEMBRANE INSTALLED AFTER WINDOWS AND DOORS

Type of Window or Door	Recommended Flashing Type	Additional Details
Flanged	Self-Adhesive	Tuck the air barrier membrane under the starter bib at the sill. • For mechanically attached bibs apply sealant in an inverted U pattern and tape at the jamb sides.
	Mechanical	(See Drawing 3 on following page) • For a self-adhesive bib a split release liner is needed for a 2-step installation sequence. For barrier flashing systems apply sealant to the underside of the flange on the entire
	Self Adhesive - Head & Sill Mechanical or S.A.M. - Jambs	perimeter of the window. For sill pans ensure that air sealing is provided at the back dam and full perimeter, and that drainage is allowed at the front.
Non-flanged/Brick Mold	Self Adhesive - Head & Sill Mechanical or S.A.M. - Jambs	Apply an additional bead of sealant under the top edge of the starter bib.

SHEATHING TAPE

SEALANT BEAD

STARTER BIB

SHEATHING TAPE

Drawing 3

STEP 7 – TAPING OF SEAMS

All vertical and horizontal seams shall be taped with approved sheathing tape. Taping all vertical and horizontal seams is part of the requirement. Tape must be applied in weatherboard fashion, from bottom to top.
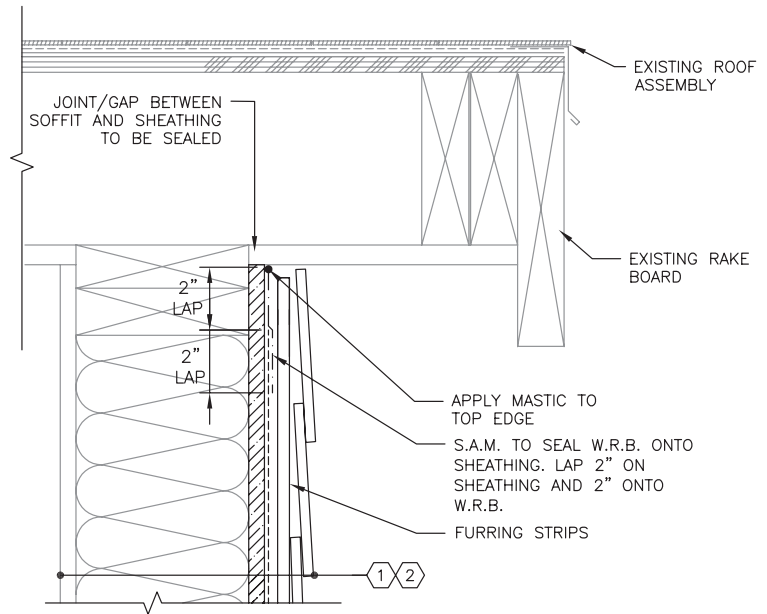
Top of Wall Connection - Sloped Roof

This is the most common discontinuity in residential air barrier construction.

Option I: Seal at top plate. (Drawing 4)
- A common practice is to seal the air barrier membrane to the exterior sheathing at the level of the top plate.
- Note location of the S.A.M. with a minimum of a 2" (51 mm) lap onto the membrane and the sheathing.
- Use mastic along the top edge of the self-adhesive flashing as added protection against water and air intrusion.

JOINT/GAP BETWEEN SOFFIT AND SHEATHING TO BE SEALED

EXISTING ROOF ASSEMBLY

EXISTING RAKE BOARD

2" LAP

2" LAP

APPLY MASTIC TO TOP EDGE

S.A.M. TO SEAL W.R.B. ONTO SHEATHING. LAP 2" ON SHEATHING AND 2" ONTO W.R.B.

FURRING STRIPS

Drawing 4

Option II: Membrane overlap and seal to interior and wall membranes. (Drawing 5)
- To ensure continuity of the air barrier membrane, install WeatherSmart as shown in the drawing.
- Overlap the ceiling and wall air barrier membranes and seal with a continuous strip of sheathing tape or self-adhesive membrane.
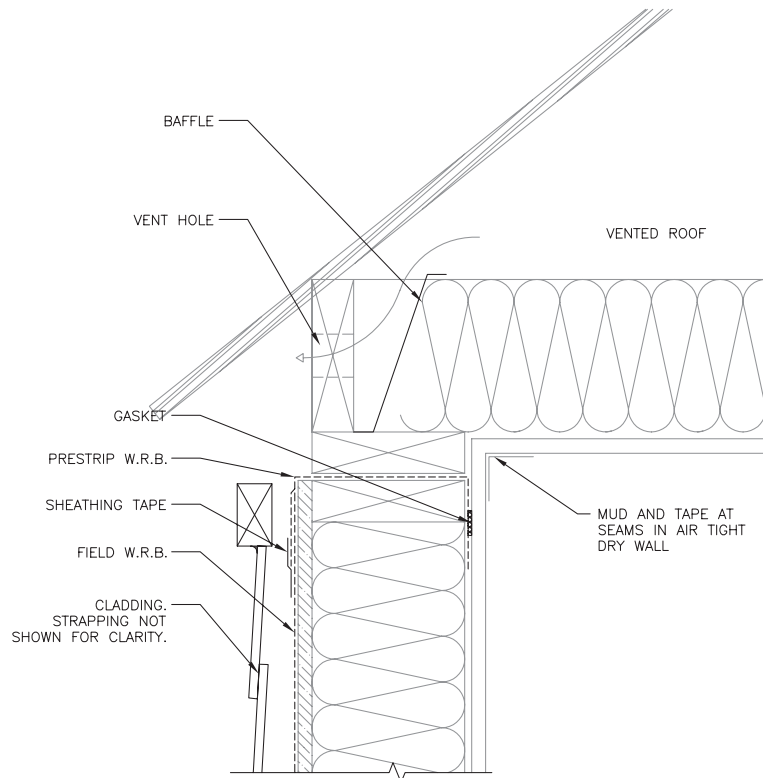
Option III: Vented attics – Integrate wall membrane to air tight drywall ceiling or air tight spray foam. (See Drawing 6 on following page)

BAFFLE

VENT HOLE

VENTED ROOF

GASKET

PRESTRIP W.R.B.

SHEATHING TAPE

FIELD W.R.B.

CLADDING. STRAPPING NOT SHOWN FOR CLARITY.

MUD AND TAPE AT SEAMS IN AIR TIGHT DRY WALL

Drawing 5

FIELD W.R.B. LAP OVER FLASHING

AIR SEAL

CLADDING. STRAPPING NOT SHOWN FOR CLARITY

ANCHOR CLIP

W.R.B. PRE-STRIP

SHEATHING TAPE

ROOF SHEATHING. ROOFING NOT SHOWN FOR CLARITY

VENTED ATTIC

GASKETS

W.R.B. PRE-STRIP

CONTINUOUS WOOD BLOCKING

AIR TIGHT DRYWALL

W.R.B.

CLADDING. STRAPPING NOT SHOWN FOR CLARITY

Drawing 6

Knee-wall

Coordination of roof and knee-wall construction is important to ensure continuity of the air barrier.
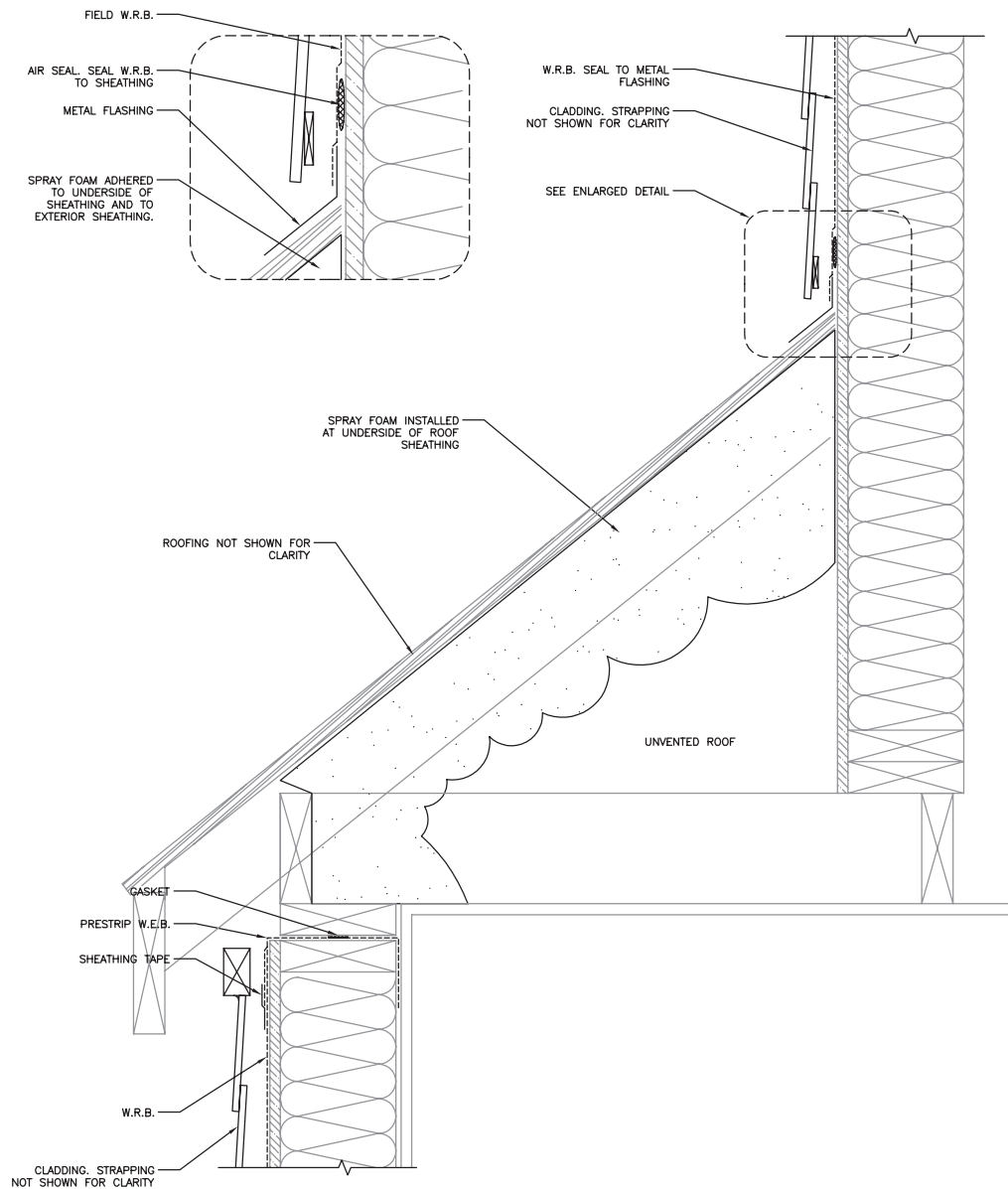
Option I: Support and fasten WeatherSmart over lower floor ceiling area. Tape all seams.

Option II: Integrate with airtight drywall .

Option III: Integrate with spray foam. (Drawing 7)

Drawing 7

Cantilever Floor (Drawing 8)

Wrap WeatherSmart under and up the cantilever floor and fold the WeatherSmart up the sides of the cantilever wall a minimum of 6" (150 mm). Tape all corners and seams. Use proper shingling by ensuring that the top layer of the air barrier goes over the bottom layer by a minimum of 6" (150 mm).

Properly insulate the floor joist cavities to provide airtightness. Recommendation is spray foam or rigid foam with edges sealed with spray foam or compatible sealant.

Note: *Get the inside corner as tight as possible using a piece of lumber 1x4 (25 x 100 mm) or similar.*
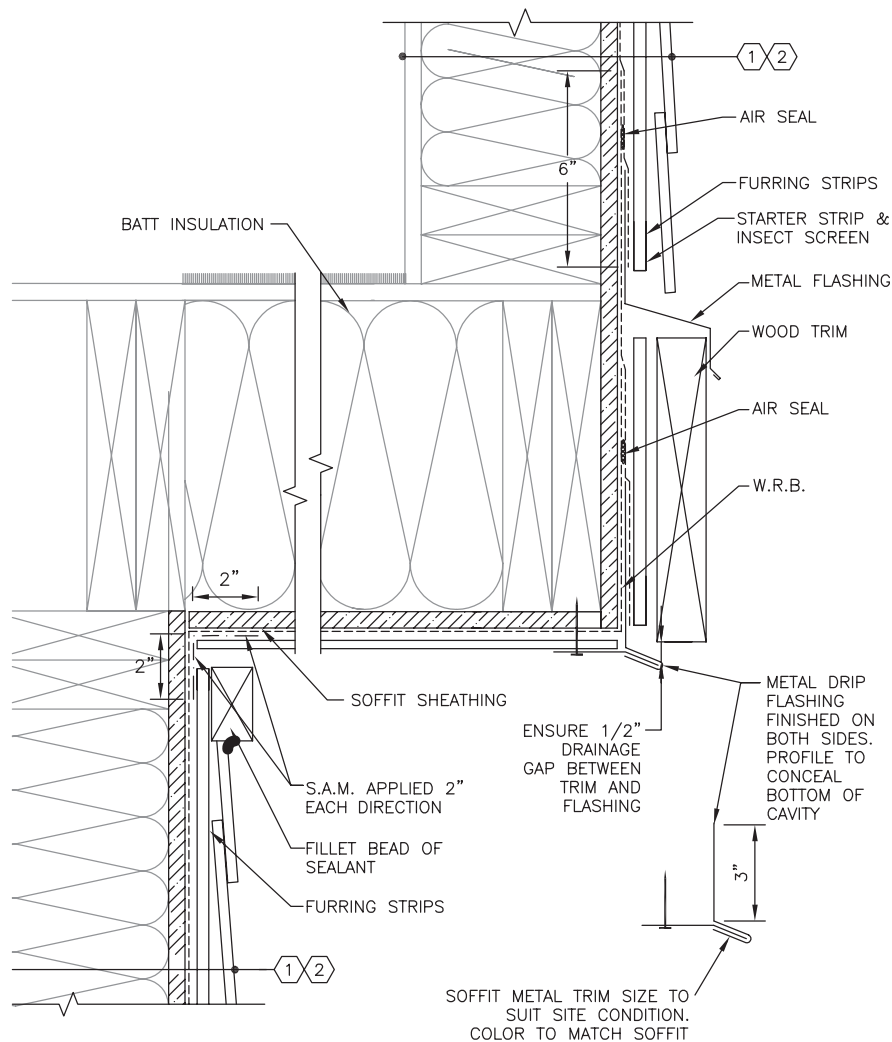
Drawing 8

Roof-Wall Interface - Low Slope (Drawing 9)

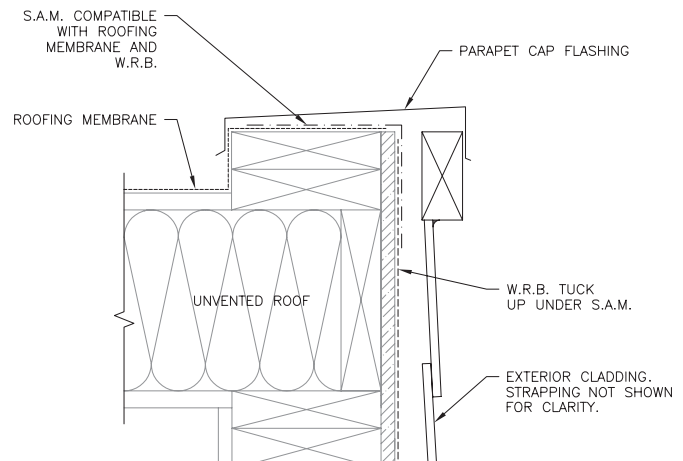Lap WeatherSmart over all flashing at roof-wall interfaces and adhere WeatherSmart to the flashing with sheathing tape or one of Fortifiber's S.A.M. products. Ensure that the WeatherSmart and tape or flashing is protected by cladding.

To prevent creating a reversed lap at the parapet; where feasible, lap the roof membrane flashing over the W.R.B./A.B.M.

S.A.M. COMPATIBLE WITH ROOFING MEMBRANE AND W.R.B.

PARAPET CAP FLASHING

ROOFING MEMBRANE

UNVENTED ROOF

W.R.B. TUCK UP UNDER S.A.M.

EXTERIOR CLADDING. STRAPPING NOT SHOWN FOR CLARITY.

S.A.M. COMPATIBLE WITH ROOFING MEMBRANE AND W.R.B.

ROOFING MEMBRANE

PARAPET CAP FLASHING

VENTED ROOF

W.R.B. STRIP. TUCK UP UNDER S.A.M.

EXTERIOR CLADDING. STRAPPING NOT SHOWN FOR CLARITY.

W.R.B. PRE-STRIP

GASKET

LAP W.R.B. STRIP OVER FIELD W.R.B.

SHEATHING TAPE

FOR VENTED ROOF, USE AIR TIGHT WALL APPROACH.
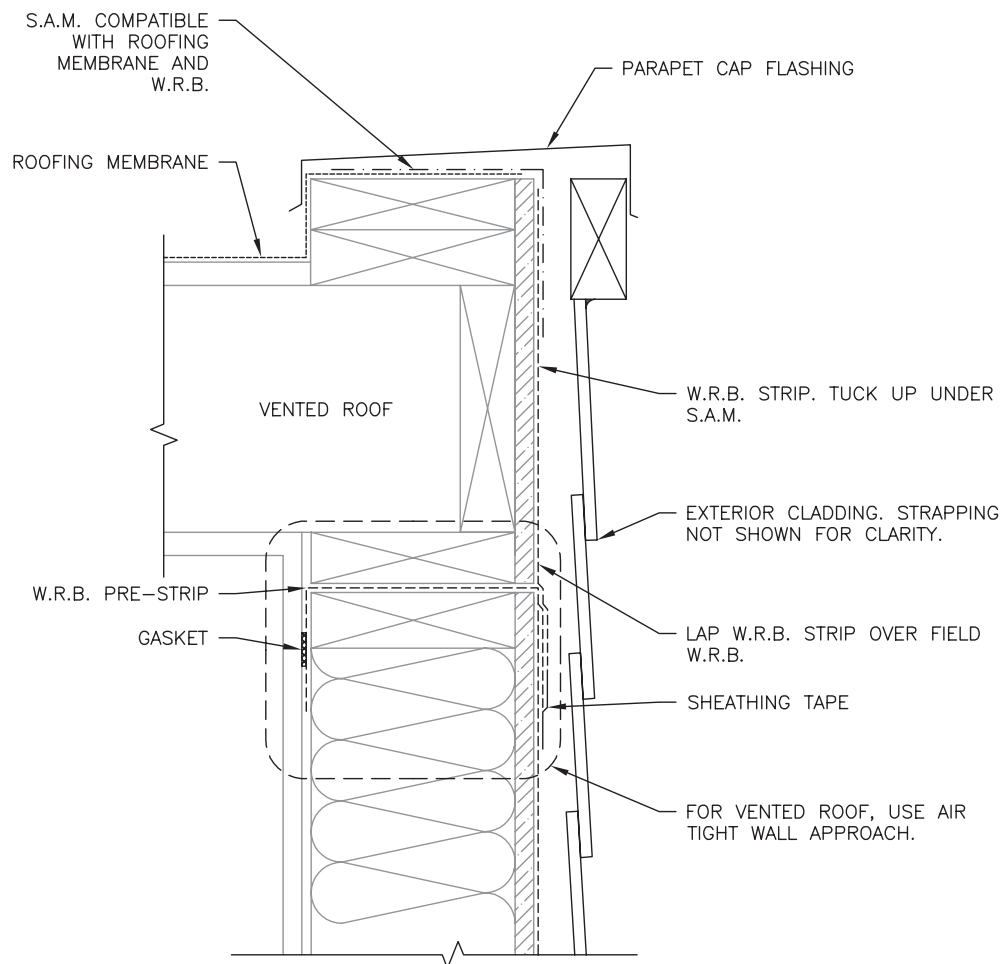
Drawing 9

Penetrations

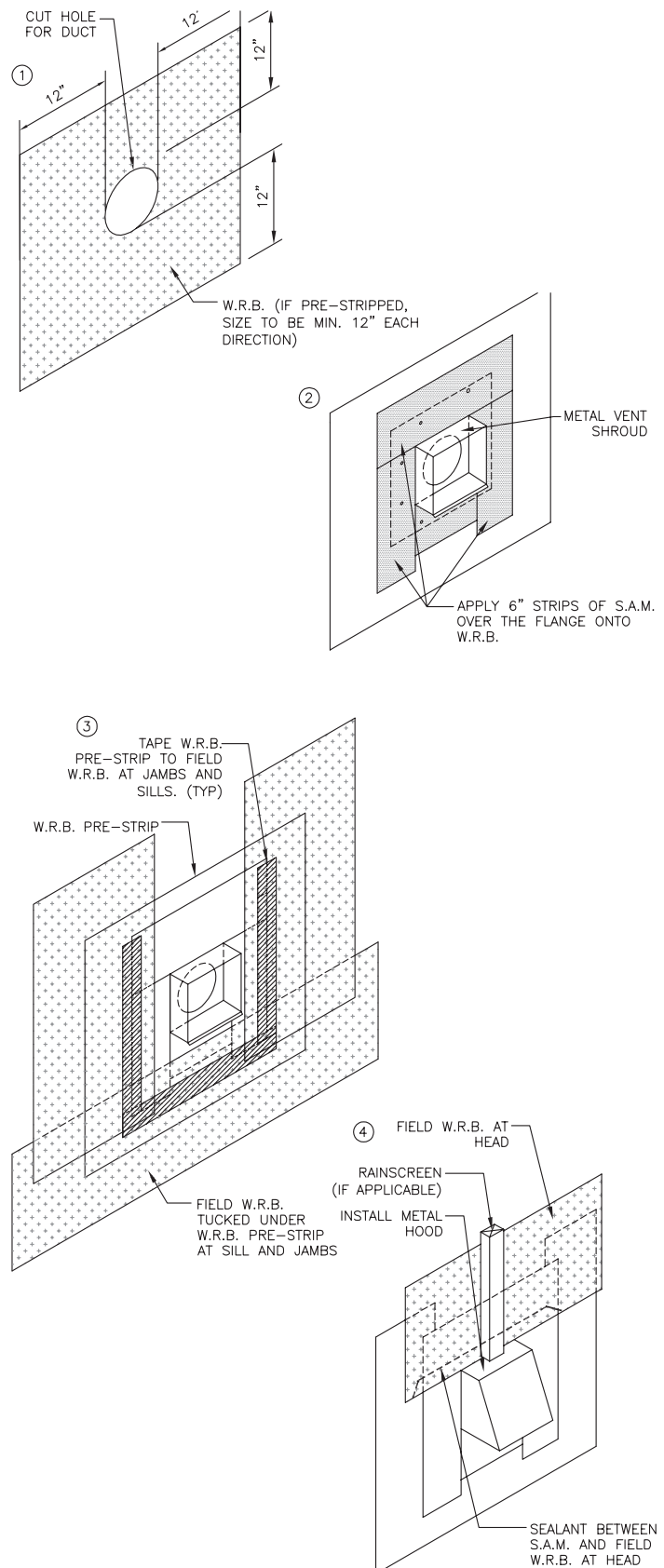There are multiple penetrations in exterior walls due to dryer vents, bathroom exhaust fans, exterior electrical outlets, exterior lights, gas lines, etc. All of these "holes" need to be sealed to attain the performance of the air barrier system.
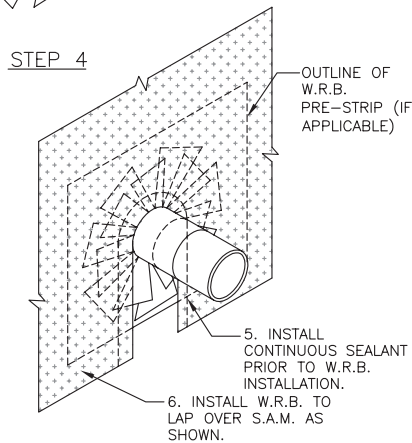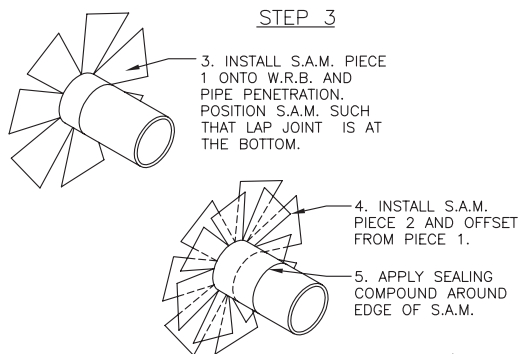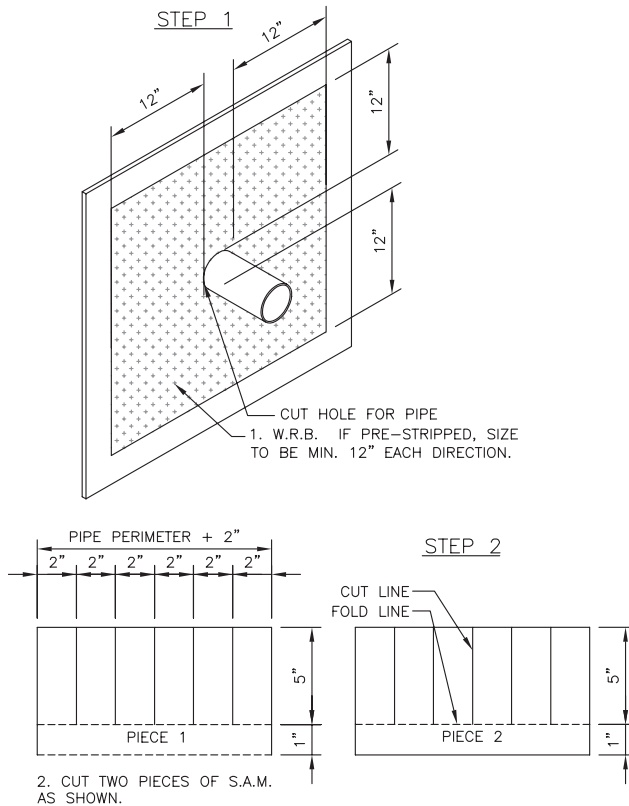
To seal the WeatherSmart around all electrical, HVAC, plumbing or other penetrations:

1. Fill open gaps with low expansion foam sealant.
2. After the foam sealant has hardened, trim off any excess material.
3. Flash around the penetration with an approved sealant, Fortifiber's S.A.M. products or preformed accessories made for this purpose.
    a. When using tape or flashing start at the bottom of each penetration.
    b. After the first layer, apply sealant over the slit in the flashing.
    c. Shingle another layer of flashing over the bottom layers for proper drainage.
4. Apply the weather-resistive barrier over the flashed penetration.

Products with flanges should be integrated into the air barrier system using Fortifiber's S.A.M. products. Follow shingle lapping procedures and sequencing as in a window installation.

① CUT HOLE FOR DUCT
12"
12"
12"
12"
W.R.B. (IF PRE—STRIPPED, SIZE TO BE MIN. 12" EACH DIRECTION)

② METAL VENT SHROUD
APPLY 6" STRIPS OF S.A.M. OVER THE FLANGE ONTO W.R.B.

③ TAPE W.R.B. PRE—STRIP TO FIELD W.R.B. AT JAMBS AND SILLS. (TYP)
W.R.B. PRE—STRIP
FIELD W.R.B. TUCKED UNDER W.R.B. PRE—STRIP AT SILL AND JAMBS

④ FIELD W.R.B. AT HEAD
RAINSCREEN (IF APPLICABLE)
INSTALL METAL HOOD
SEALANT BETWEEN S.A.M. AND FIELD W.R.B. AT HEAD

STEP 1

12" 12" 12" 12"

CUT HOLE FOR PIPE
1. W.R.B. IF PRE-STRIPPED, SIZE
TO BE MIN. 12" EACH DIRECTION.

PIPE PERIMETER + 2"

2" 2" 2" 2" 2" 2"

5"

PIECE 1

1"

STEP 2

CUT LINE
FOLD LINE

5"

PIECE 2

1"

2. CUT TWO PIECES OF S.A.M.
AS SHOWN.

STEP 3

3. INSTALL S.A.M. PIECE
1 ONTO W.R.B. AND
PIPE PENETRATION.
POSITION S.A.M. SUCH
THAT LAP JOINT IS AT
THE BOTTOM.

4. INSTALL S.A.M.
PIECE 2 AND OFFSET
FROM PIECE 1.

5. APPLY SEALING
COMPOUND AROUND
EDGE OF S.A.M.

STEP 4

OUTLINE OF
W.R.B.
PRE-STRIP (IF
APPLICABLE)

5. INSTALL
CONTINUOUS SEALANT
PRIOR TO W.R.B.
INSTALLATION.

6. INSTALL W.R.B. TO
LAP OVER S.A.M. AS
SHOWN.

STEP 1

12" 12"

12"

12"

①
②
③

1. W.R.B. IF PRE-STRIPPED, SIZE TO BE MIN. 12"
   EACH DIRECTION. CUT HOLE FOR WIRE.
2. SEAL WIRE PENETRATION WITH SEALING COMPOUND
3. INSTALL ELECTRICAL BOX OR EXTENSION. SHIM
   BACK OF BOX TO SUIT DRAINED CAVITY
   ASSEMBLY.

STEP 2

3" 3"

3"

④
⑤

4. APPLY S.A.M. AT TOP AND SIDES OF
   ELECTRICAL BOX AND EXTEND ONTO
   W.R.B. IN SHINGLE-LIKE FASHION. SEAL
   ALL PINHOLES WITH S.A.M. PATCHES
5. SEAL ALL S.A.M. EDGES, TYP.

STEP 3
(STEP 3 APPLICABLE
ONLY WITH W.R.B.
PRE-STRIPPING
OPTION)

⑦
⑥
⑧

W.R.B. PRE-STRIP
(IF APPLICABLE)

6. FIELD W.R.B. UNDER W.R.B. PRE-STRIP AT SILL
7. FIELD W.R.B. AT JAMBS UNDER PRE-STRIP
8. TAPE W.R.B. PRE-STRIP TO FIELD W.R.B. @
   SILL AND JAMBS

STEP 4

⑨
⑩

9. SEALANT BETWEEN FIELD W.R.B AND S.A.M.
   AT HEAD
10. FIELD W.R.B. AT HEAD OVER PRE-STRIP

<u>Handling Tears and Holes</u>

During the course of installing the air barrier, minor tears may occur that must be repaired. Tears can easily be repaired with approved sheathing tape or one of Fortifiber's S.A.M. products.

Larger holes (greater than 1" or 25 mm) may require a cut piece of WeatherSmart to cover the hole. Use methods that maintain proper shingling of layers that form the patch.

1. Make a cut 2" (50 mm) above the hole and extending a minimum of 2" (50 mm) on each side of the hole.

2. Measure and cut a piece of WeatherSmart as a patch large enough to cover the hole. Tuck the WeatherSmart patch into the cut. Tape along the perimeter by starting at bottom of the patch, shingling the side tapes over the bottom tape and ending with a top tape covering the cut and shingled over the side tapes.

APPENDIX A

The Air Barrier Association of America (ABAA) provides useful information in defining the critical elements of an Air Barrier System. See http://www.airbarrier.org/resistive/specifications_e.php

ABAA Master Specification Section – 01410 offers the following guidance.

1. The Air Barrier System shall have the following characteristics:
   a. It must be continuous, with all joints sealed.
   b. It must be structurally supported to withstand positive and negative air pressures applied to the building enclosure.
   c. Connection shall be made between:
      1) Foundation and walls.
      2) Walls and windows and/or doors.
      3) Different wall systems.
      4) Wall and roof.
      5) Wall and roof over unconditioned space.
      6) Walls, floor and roof across construction, control and expansion joints.
      7) Walls, floors and roof to utility, pipe and duct penetrations.
      In addition:
      8) Balcony decks and decks over living spaces.
      9) Soffits at cantilevered floors.

2. Air Barrier Penetrations: All penetrations of the air barrier and paths of air infiltration / exfiltration shall be sealed.

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