

**READ FIRST**

1. If installing in high wind conditions take health and safety precautions.
2. Do not tape tears. Install a patch under tear. Shingle patch down to next horizontal overlap and extend 12" beyond sides of tear.
3. Wall and roof substrates should be dry, free of frost, loose nails and dirt. Water resistance may be adversely affected by building site chemicals (i.e. surfactants).
4. Cover WallShield/WrapShield with primary wall covering within 9 months of installation (1 month for open-jointed cladding applications).
5. Cover RoofShield with primary roof covering within 6 months of installation
6. During RoofShield installation, prevent rainwater runoff draining from upper roofs to lower roofs (overhangs/eaves/valleys).
7. Limit heavy foot traffic on RoofShield.
8. RoofShield is not recommended for use on slopes 2:12 and below and should not be covered by asphalt shingles.

**TOOLS & MATERIALS**

- Box Cutter
- Tape Measure
- Fasteners
- Tools for nails/screws
- VaproTape Double-Sided\*
- VaproTape Single-Sided\*
- VaproTape UV Black
- VaproTape "AB" (Air Barrier)
- VaproAdhesive\*
- VaproBatten
- VaproVentStrip
- \*Per application/installation instructions



**ROOFSHIELD® Roof Underlayment**

**ROOF UNDERLAYMENT FASTENERS**

**For Wood Sheathing Substrate**

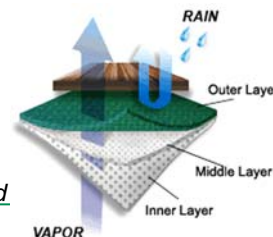
Galvanized/stainless steel nails, screws or staples (for spec see ICC ESR – 1368 downloadable at [www.vaproshield.com](http://www.vaproshield.com)).

**For Metal Girts or Deck Substrate**

Pancake head self-drilling screws with gasket and/or VaproAdhesive sprayed at 2" wide.

**For Rigid Insulation Substrate**

Use nails/screws with roofing plates as recommended by insulation manufacturer.



RoofShield

**STEP 1 – BEGIN FLASHING PENETRATIONS**

1. Cut a piece of RoofShield to act as a "skirt" around counter-flashed penetrations i.e. ducts/housings or pipes. Distance from penetration to edge of underlayment "skirt" minimum (min.) 12".
2. Make four cuts to form a star shape and place over penetration snugly.
3. Extend "ears" of material up penetration and seal with VaproTape Single-Sided.
4. Tape top edge of "skirt" to roof using VaproTape Single-Sided. Do not tape bottom edge.

**STEP 2 – ATTACH ROOF UNDERLAYMENT**

1. In climates conducive to ice damming, install peel and stick along eaves and valleys as per UBC/IBC.
2. Along valley, hip and ridge lay a single layer of RoofShield vertically. Fasten at 12" on center
3. At valleys and hips ensure vertical overlap at minimum 18" on center both sides.
4. At ridge ensure horizontal overlap at minimum 12" on center both sides.
5. Starting at lowest eaves, unroll RoofShield horizontally across roof (overlap peel and stick minimum 4").
6. Extend 4" over gable ends and fasten onto fascia board at 12" on center
7. Fasten at top and bottom of roll width. Distance from edge of underlayment to center of fasteners maximum 2".
8. Fasten at maximum 2' 0" on center
9. Shingle next layers of RoofShield ensuring minimum 4" horizontal laps and minimum 6" vertical laps. Best practice: 12" horizontal and 12" vertical laps taped with VaproTape Single-Sided at vertical laps.
10. Extend RoofShield up vertical abutments. Cover with metal flashing.
11. For delayed installation of roof covering, determine fasteners and reduced fastener spacing for wind exposure (i.e. cap nails).

**STEP 3 – FINISH FLASHING PENETRATIONS**

1. Ensure RoofShield layer is slipped under bottom edge of RoofShield "skirt" and shingled down over taped top edge.
2. Seal top and sides with VaproTape Double-Sided.
3. Ensure whole "skirt" assembly is flashed appropriately with metal.

**STEP 4 – INSTALL ROOF COVERING**

1. Cedar shingles/Slate – nail directly through RoofShield into sheathing.
2. Metal – per metal roof system installation requirements.
3. Clay Tile – fasten/hang on battens and counter battens.



### WALLSHIELD™ Water Resistive Barrier

### WRAPSHIELD™ & Black WRAPSHIELD Water Resistive Barriers & Air Barriers

#### WATER RESISTIVE BARRIER FASTENERS

##### For Wood Sheathing/Exterior Gypsum Substrate

Galvanized/stainless steel nails, screws or staples (for spec see ICC ESR – 1916 downloadable at [www.vaproshield.com](http://www.vaproshield.com)) or brick veneer anchors.

##### For Metal Girts

VaproAdhesive sprayed at 2" wide and/or pancake head self-drilling screws with gasket/washer.

##### For Concrete Substrate

Spot attach with VaproAdhesive 2" wide at 18" on center Mechanically attach per cladding manufacturers instructions.

##### For Masonry Substrate

Wall ties/mechanical fasteners as per building code requirements.

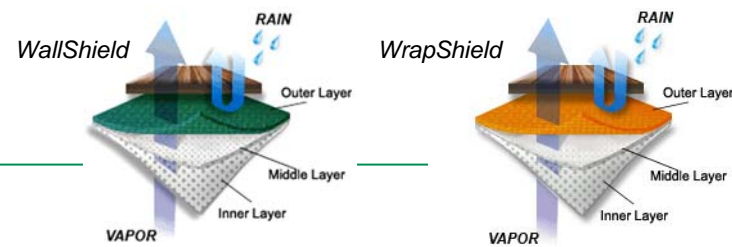
#### AIR BARRIER FASTENERS

##### For Wood Sheathing/Exterior Gypsum Substrate

Galvanized/stainless steel cap nails with caps at minimum of 1" diameter, screws with washers at minimum 1" diameter (for spec see ICC ESR – 1916 at [www.vaproshield.com](http://www.vaproshield.com)) or brick veneer anchors.

##### For Metal Girts

VaproAdhesive sprayed at 2" wide and/or pancake head self-drilling screws with gasket/washer.



#### WATER RESISTIVE BARRIER APPLICATIONS

##### STEP 1 – BEGIN FLASHING PENETRATIONS

1. Cut a piece of WallShield/WrapShield to act as a "skirt" around counterflashed penetrations i.e. ducts/housings or pipes. Distance from penetration to edge of barrier "skirt" minimum 12".
2. Make four cuts to form a star shape and place over penetration snugly.
3. Extend "ears" of material along vertical penetration and seal with VaproTape Single-Sided.
4. Tape top edge of "skirt" to wall using VaproTape Single-Sided. Do not tape bottom edge.

##### STEP 2 – ATTACH WATER RESISTIVE/AIR BARRIER

1. Starting at base of wall, unroll WallShield/WrapShield horizontally across wall. Best Practice: place a continuous bead of non-skinning butyl sealant or butyl tape on foundation wall and seal WallShield/WrapShield to it.
2. Extend 6" over starting corner.
3. Fasten at top and bottom or roll width with 2" from edge of WallShield/WrapShield to center of fasteners.
4. Fasten at maximum 2' 0" on center
5. Shingle next layers of WallShield/WrapShield ensuring minimum 6" horizontal and minimum 12" vertical laps. Ensure minimum 6" horizontal and minimum 6" vertical laps if taped with VaproTape Single-Sided at vertical laps. Do not place vertical laps above windows.
6. For delayed installation of siding/masonry determine fasteners and reduced fastener spacing for wind exposure (i.e. cap nails).

##### STEP 3 – FINISH FLASHING PENETRATIONS

1. Ensure WallShield/WrapShield is slipped under bottom edge of penetration "skirt" and shingled over taped top edge.
2. Seal top and sides with VaproTape Double-Sided.
3. Ensure whole "skirt" assembly is flashed appropriately with metal.

##### STEP 4 – INSTALL SIDING/MASONRY

1. Cladding boards – per cladding system installation requirements. For information on use of Black WrapShield in open joint applications refer to Page 2 or [www.vaproshield.com](http://www.vaproshield.com).
2. Masonry – wall ties/mechanical fasteners/veneer anchors as per building code requirements.

#### AIR BARRIER APPLICATIONS

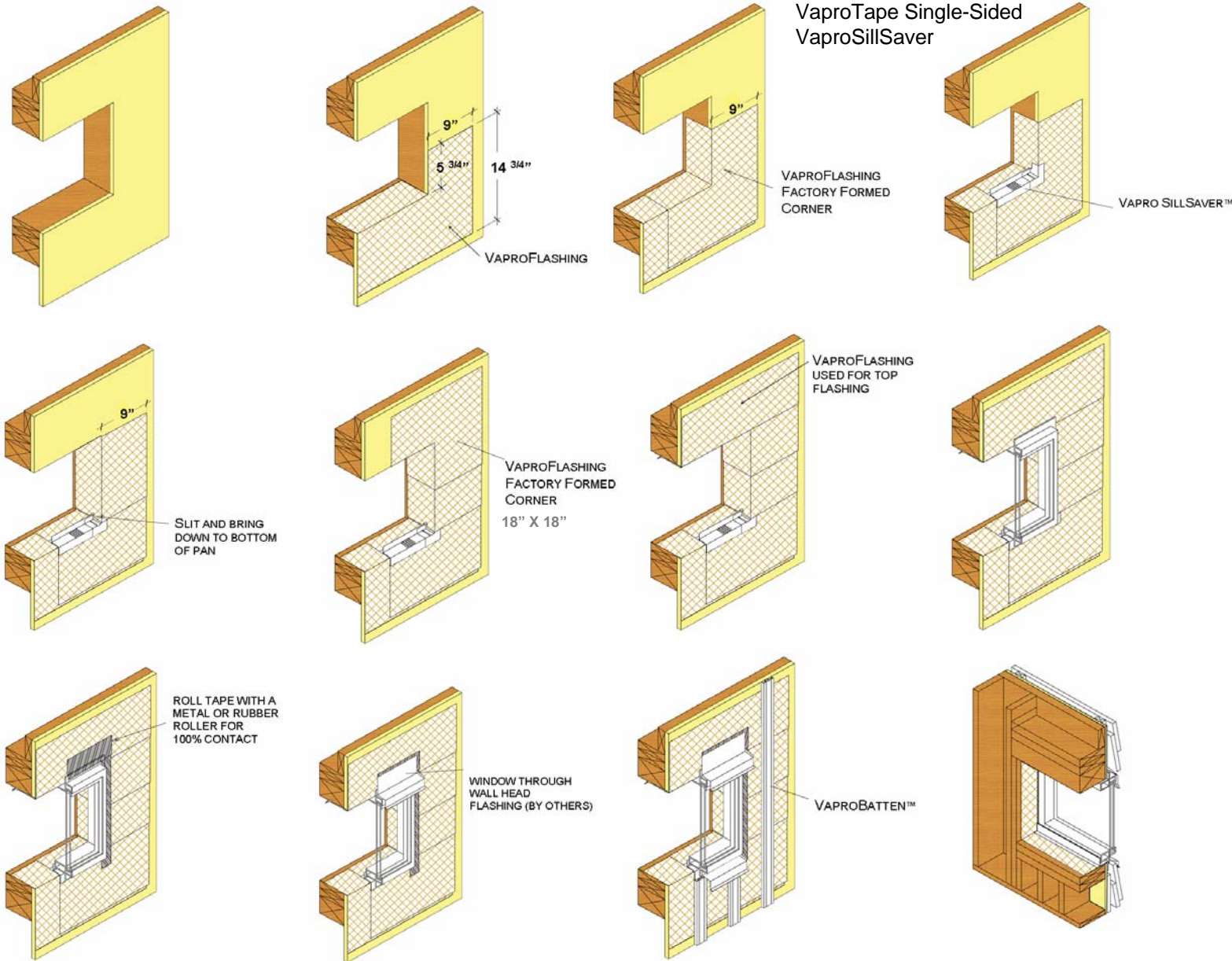
1. Install WrapShield between sill plate and foundation gasket and seal to foundation wall with a bead of non-skinning butyl or butyl tape (VaproTape Double-Sided).
2. Method A: Flash penetrations and install WrapShield according to water resistive barrier installation instructions but increase fasteners to maximum 6" on vertical and maximum 16" on horizontal. Increase fasteners where air barrier bridges openings in sheathing board. Method B: Install continuous furring strips vertically along stud lines, vertical fasteners at 12". Best Practice: fasteners at maximum 6" on vertical and maximum 16" on horizontal.
3. Tape all vertical and horizontal laps using VaproTape "AB" (air barrier) or VaproTape Single-Sided.
4. Overlap WrapShield and ceiling air barrier and seal with VaproTape Single-Sided.

**VAPROFLASHING™** Water Resistive Barrier

**NAIL FLANGE WINDOW (USING WALLSHIELD OR WRAPSHIELD)**

**MATERIALS**

- VaproFlashing
- VaproFlashing Factory Formed Corners
- VaproBatten
- VaproTape Single-Sided
- VaproSillSaver™



*For air barrier system refer to AIR BARRIER APPLICATIONS on Page 1  
For commercial window installation tips, refer to [www.vaproshield.com](http://www.vaproshield.com)*

**VAPROTAPE™** Guidelines (not "AB" Tape)

1. Keep roll at room temperature (68° F +) before use.
2. Apply to a clean dry surface only. If surface has moisture or frost, dry prior to application. If surface is below 50° F:
  1. Heat the surface with a hot air gun and/or
  2. Heat the tape to a warmer temperature (comfortable to the touch) and/or
  3. Wait for the surface to warm up naturally
3. Peel off approximately 4" of release liner (protective film).
4. Apply to surface, covering the seam.
5. Roll with metal or rubber roller for full adhesive contact.

## VAPROSHIELD Open Joint Rain Screen Systems

### RAIN SCREEN DESIGN

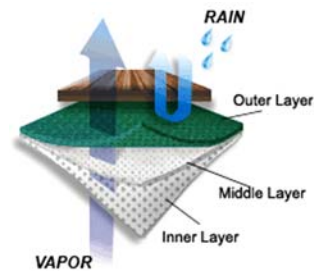
A multiple-element approach to control water penetration into exterior walls

1. First line of defense manages the driving forces of weather
2. Second line of defense designed to intercept all water passing through first line of defense and allowing it to drain to the exterior

### VAPROSHIELD BEST PRACTICES

1. Ensure minimum 1/2" batten depth (cavity plus cladding thickness) in rain screen system. Cladding must have a batten between it and water resistive barrier/air barrier
2. At open joint, cover exposed VaproBatten with VaproTape UV Black (see Image C)
3. Include through-wall metal flashing at each floor level in walls exceeding two stories

WallShield



WrapShield

