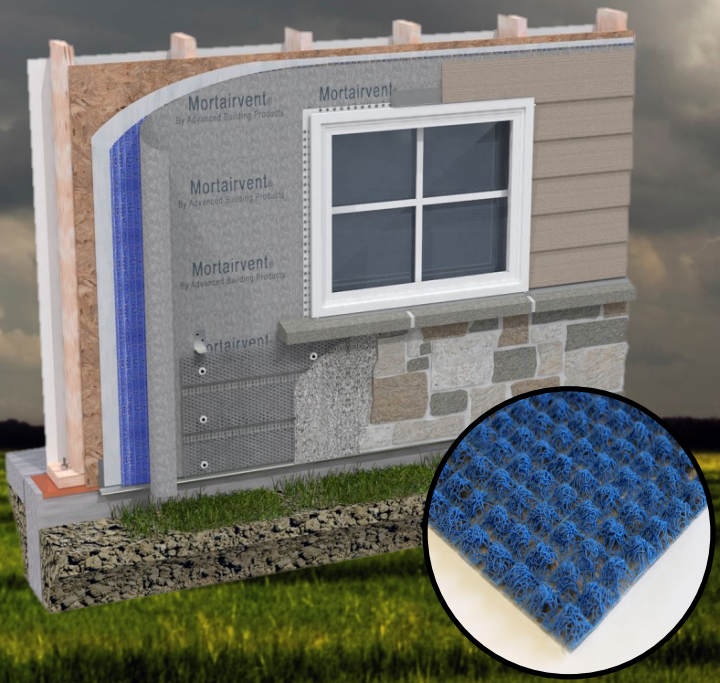
mortairvent®

Advanced Rain Screen Solutions

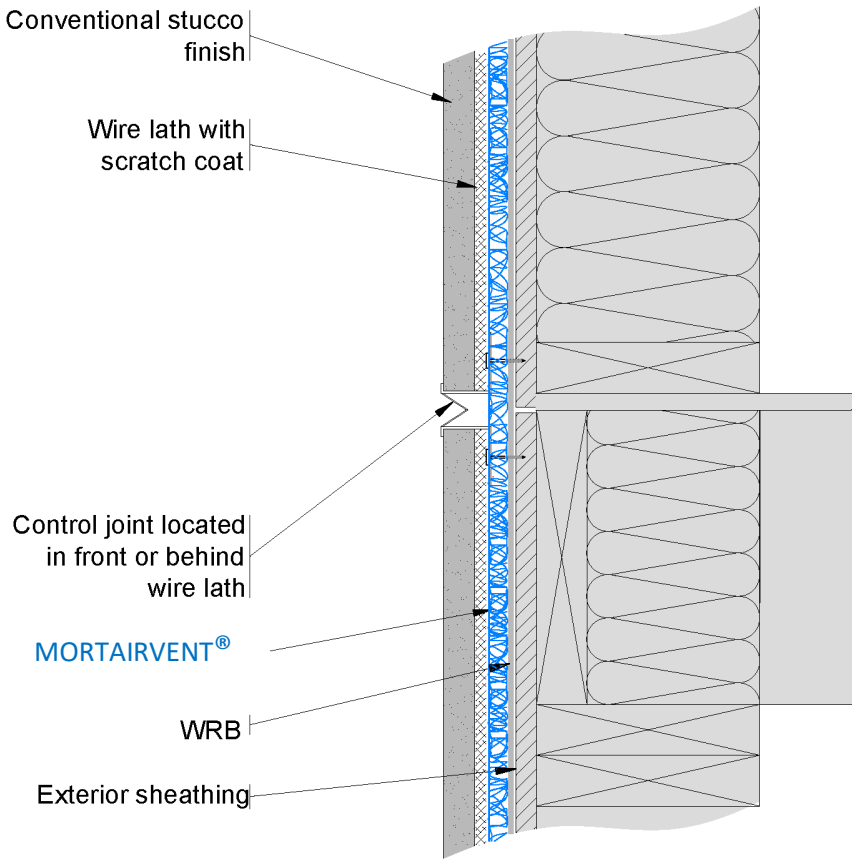
*The Clear Choice™*

# 2021 ENGINEERED RAINSCREEN PRODUCT INSTALLATION GUIDE




ADVANCEDBUILDINGPRODUCTS.COM

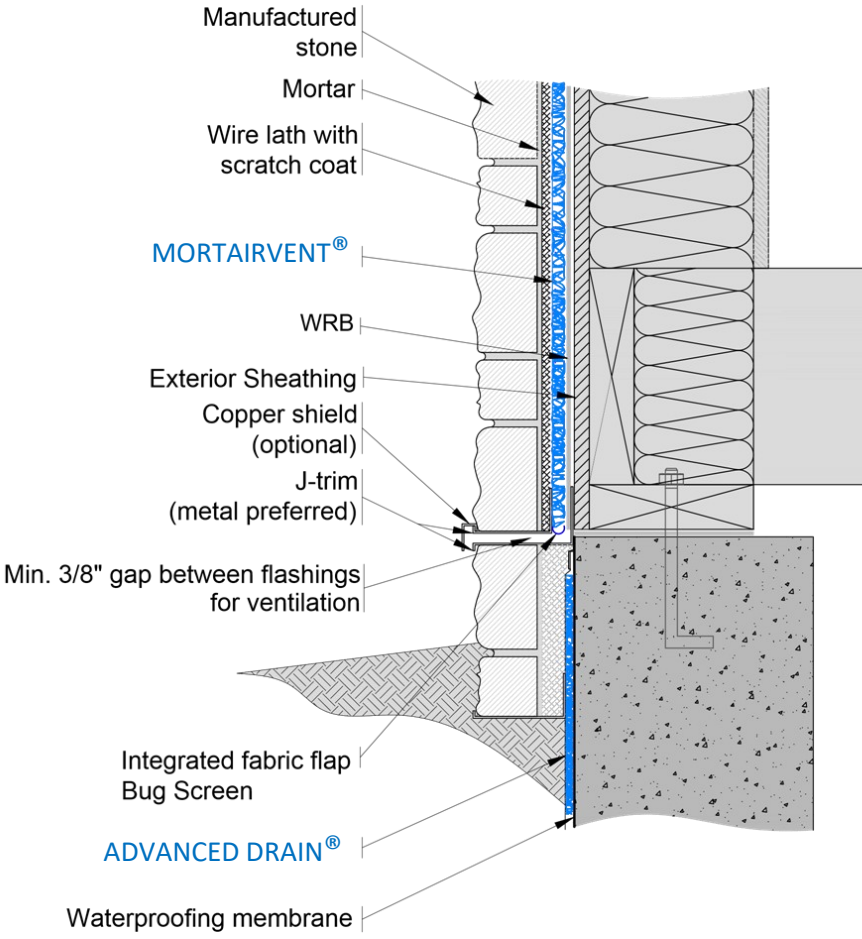
# Control Joint for Stucco Applications



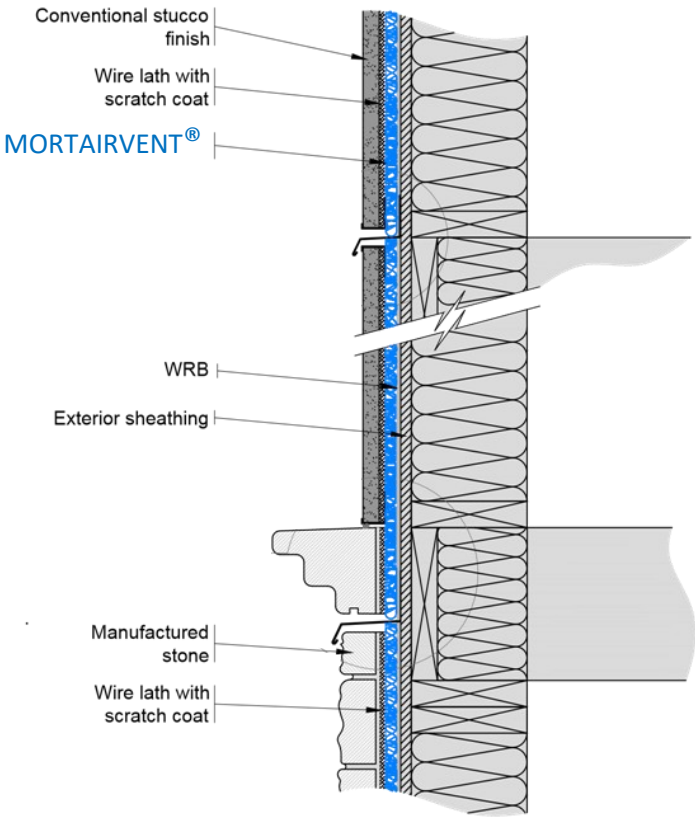

## INSTALLATION INSTRUCTIONS

- Apply a weather resistant barrier over sidewall sheathing. Note: some regions may require two layers of weather resistant barrier. Check local codes for more information.
- Install Mortairvent® after windows and doors have been properly installed and flashed. Starting at the base of the wall unroll Mortairvent® from right to left with the fabric flap at the bottom, the three-dimensional (blue) polymer matrix against the weather resistant barrier and the fabric facing the exterior of the building. Staple or nail every three square feet. If the channels are installed horizontally, due to cutting and patching, Mortairvent® will perform as intended.
- On the first (bottom) course only, unfold the fabric flap and tuck it between the (blue) polymer matrix and the weather resistant barrier to create an insect screen.
- On intermediate courses, butt blue polymer material together tightly without overlapping. Pull fabric flap over previous course (shingle style) and staple.
- On top course, invert the roll and unroll left to right with the fabric flap at the top. Unfold the fabric flap and tuck it between the (blue) matrix and the weather resistant barrier to create an insect screen.
- Trim top of course on non-flap side to adjust for height.
- Apply siding over Mortairvent® using manufacturer's recommended fasteners and spacing.

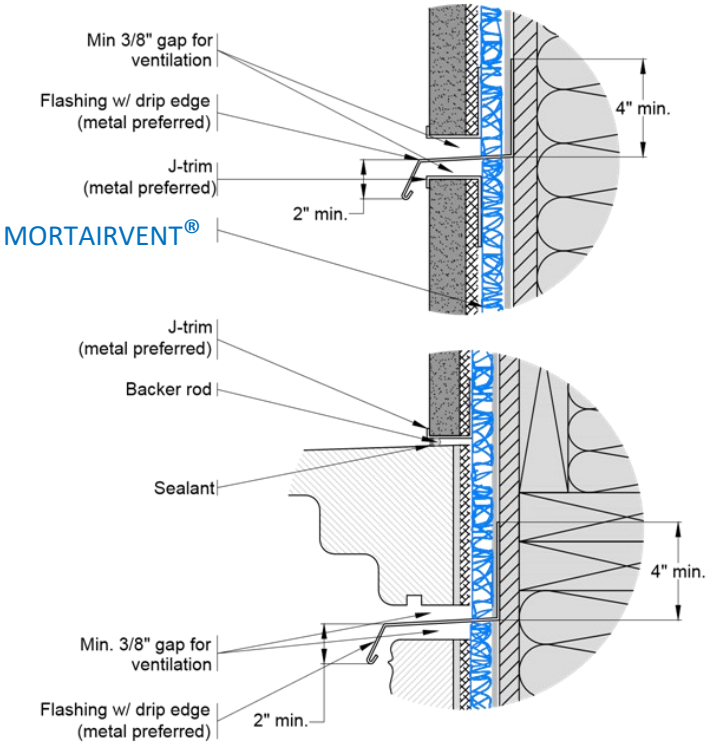
# Manufactured Stone with Below Grade



# Stucco to Stucco and Manufactured Stone to Stucco Transition

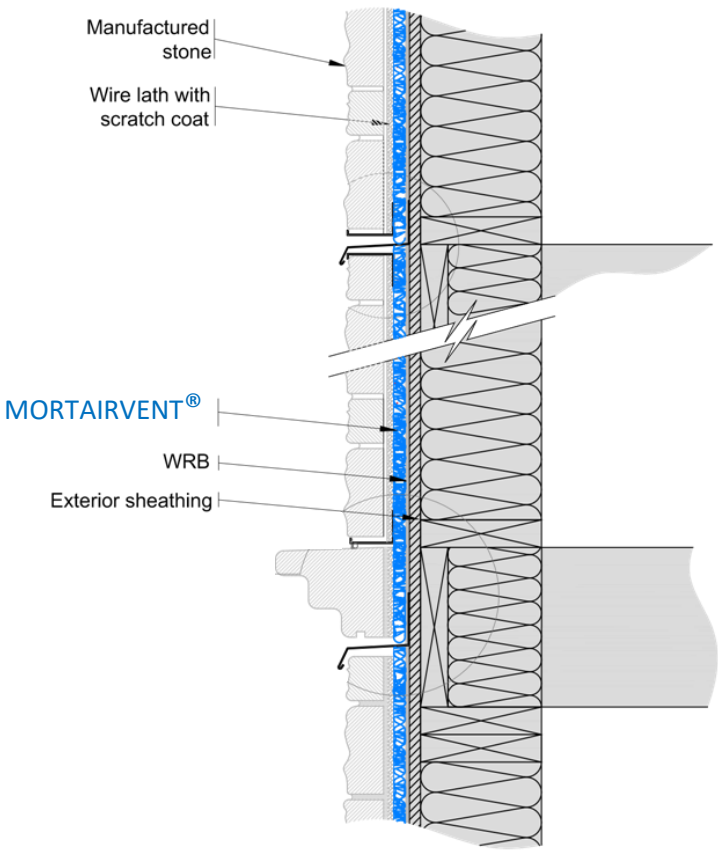



STUCCO TO STUCCO
TYPICAL TRANSITION

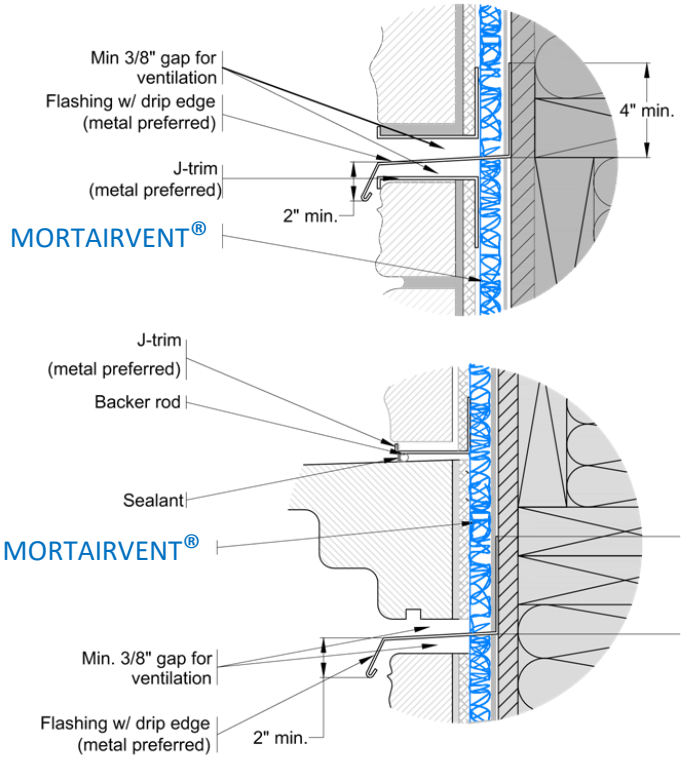



MANUFACTURED STONE TO
STUCCO TYPICAL TRANSITION

# Manufactured Stone Transition

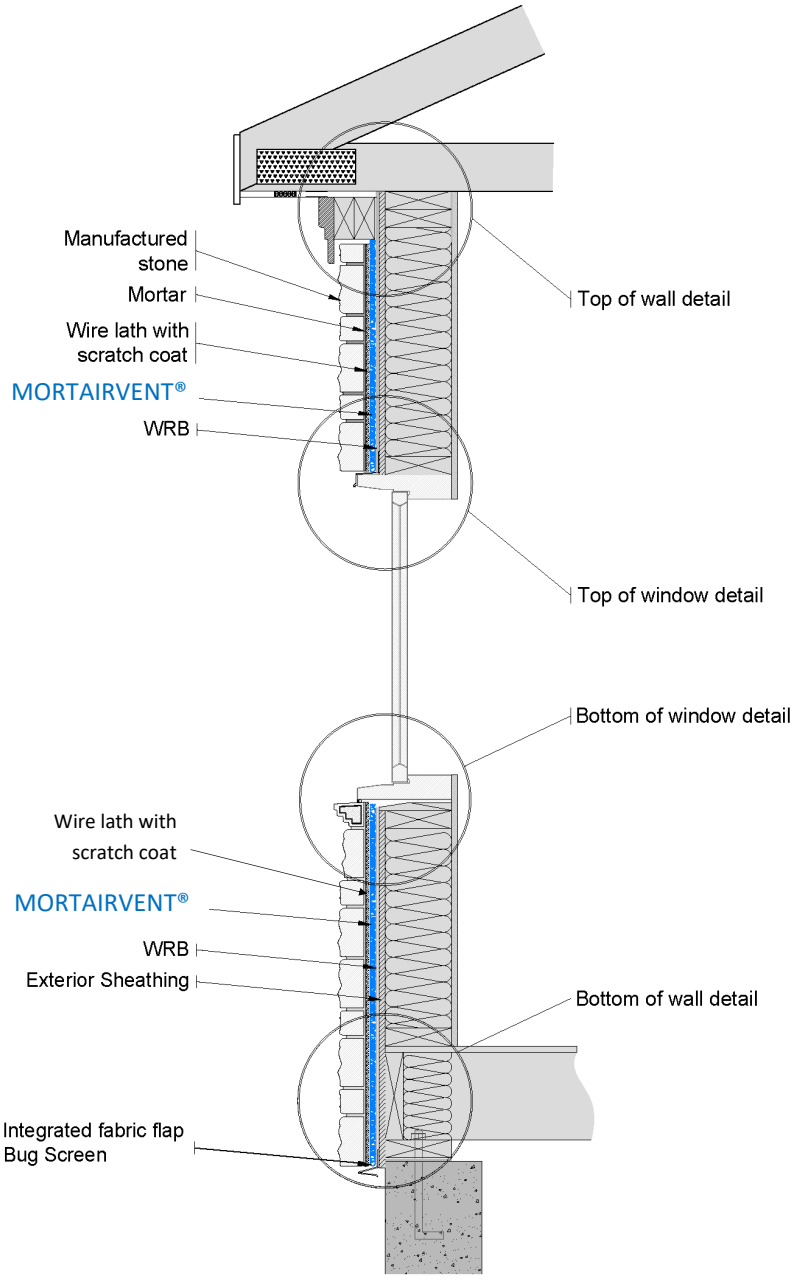



MANUFACTURED STONE TO MANUFACTURED STONE TYPICAL TRANSITION

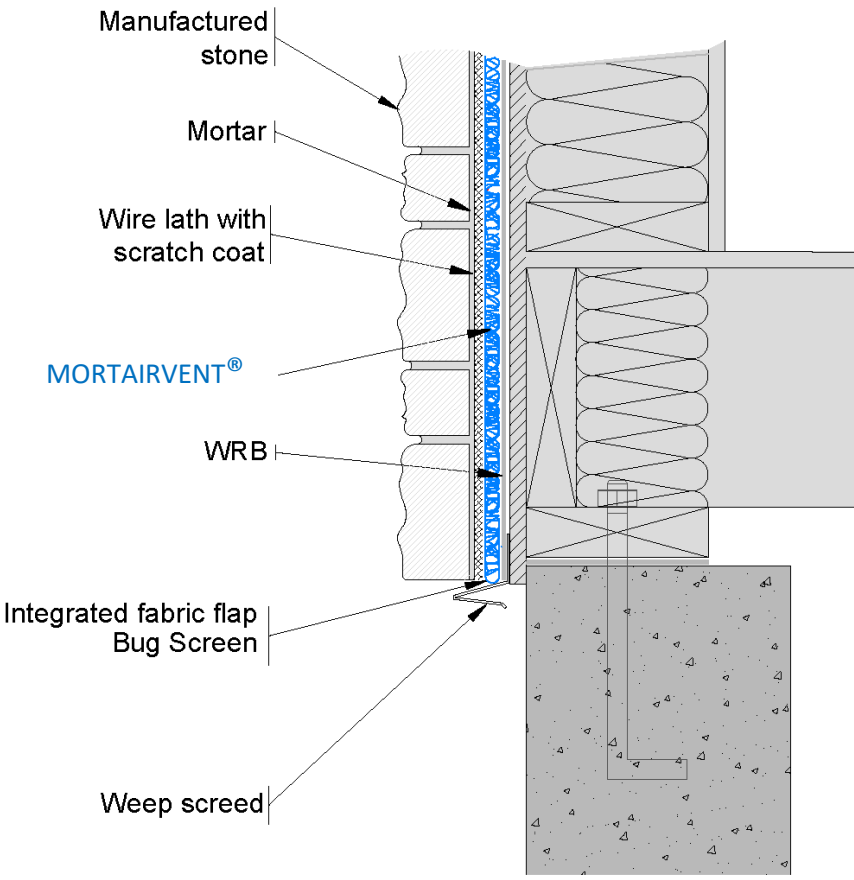


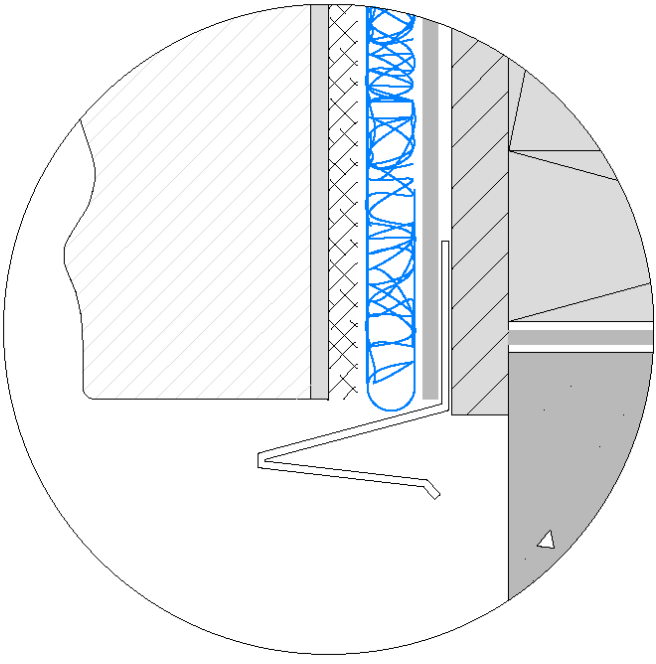

MANUFACTURED STONE TO MANUFACTURED STONE TYPICAL TRANSITION

# Rainscreen with Manufactured Stone Transition



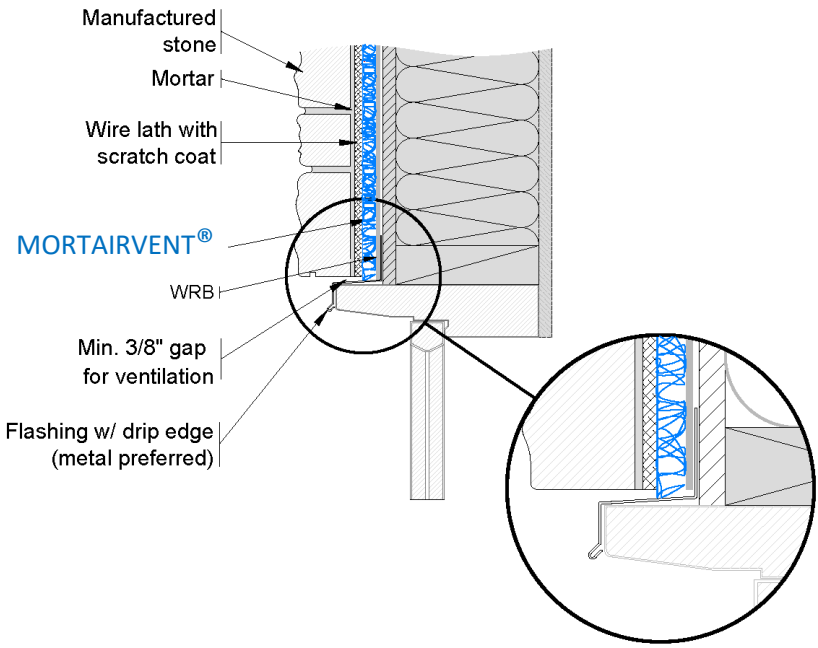
# Rainscreen with Manufactured Stone
# Bottom of the Wall Weep Screed



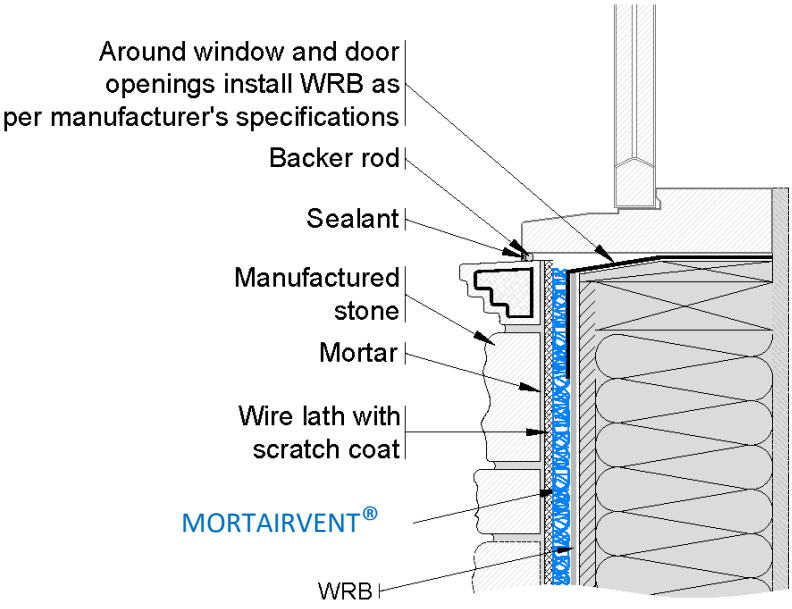



# Rainscreen with Manufactured Stone
# Window Details

## TOP OF WINDOW DETAIL

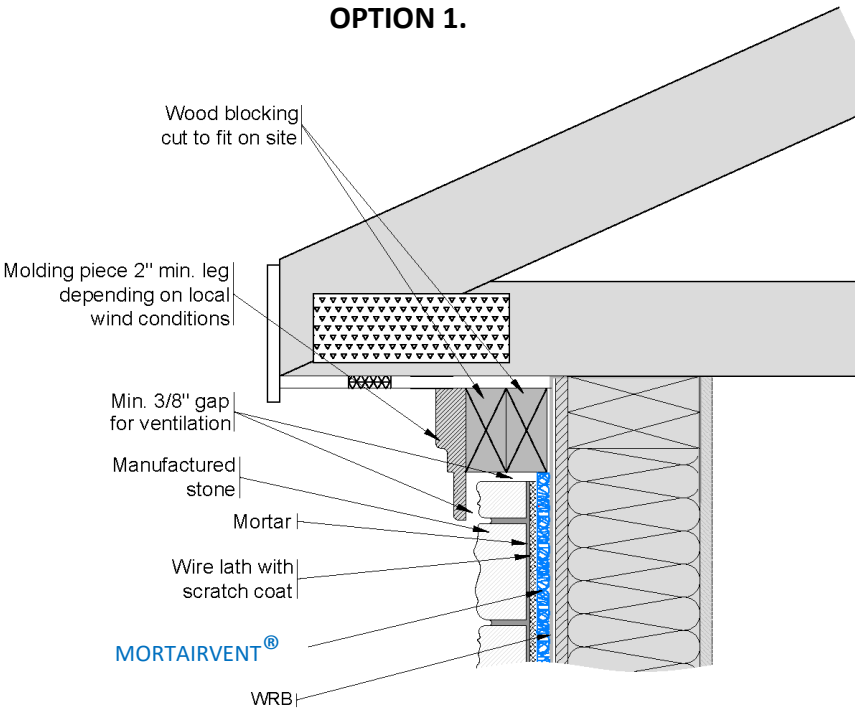


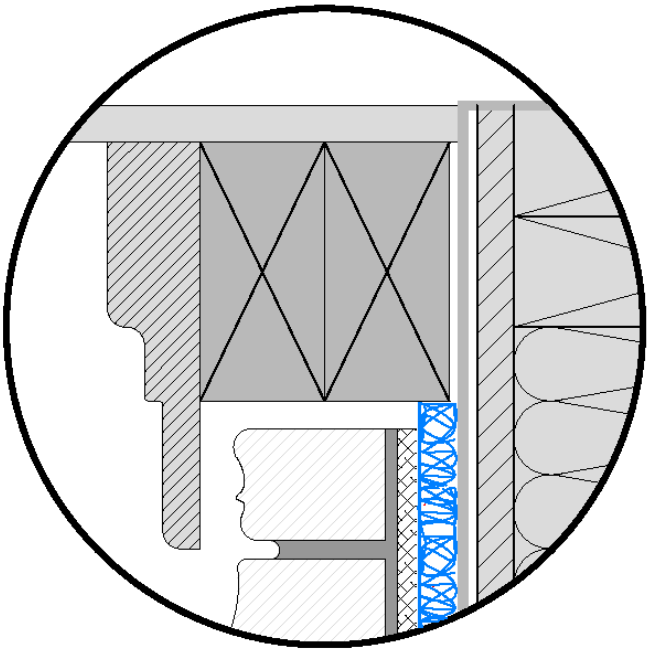

## BOTTOM OF WINDOW DETAIL



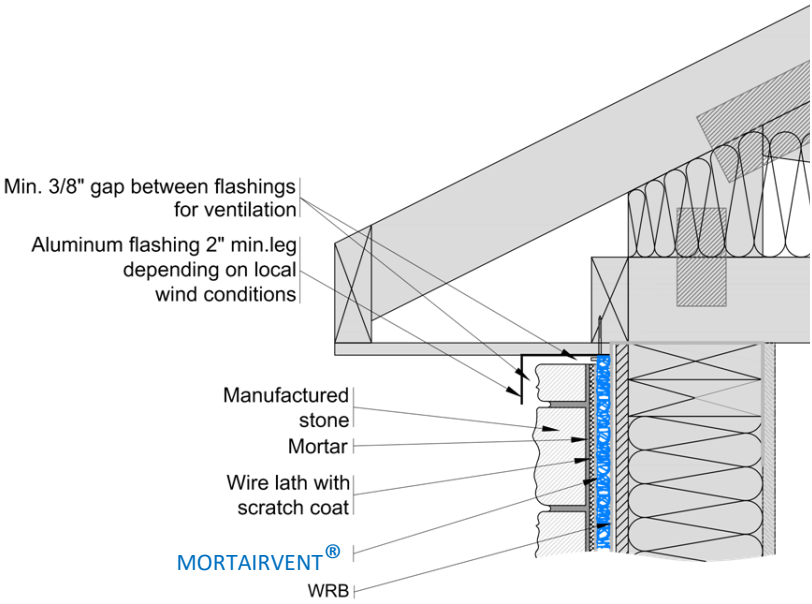
# Rainscreen with Manufactured Stone
# Top of Wall Option 1

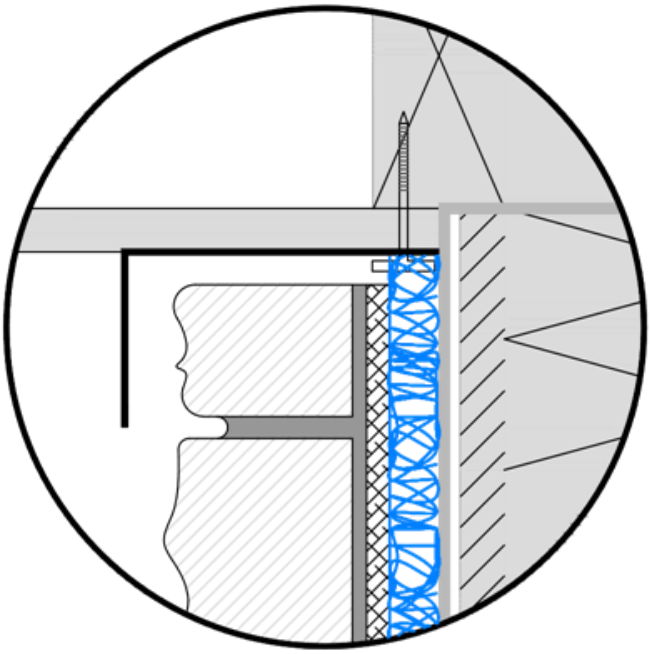
## OPTION 1.



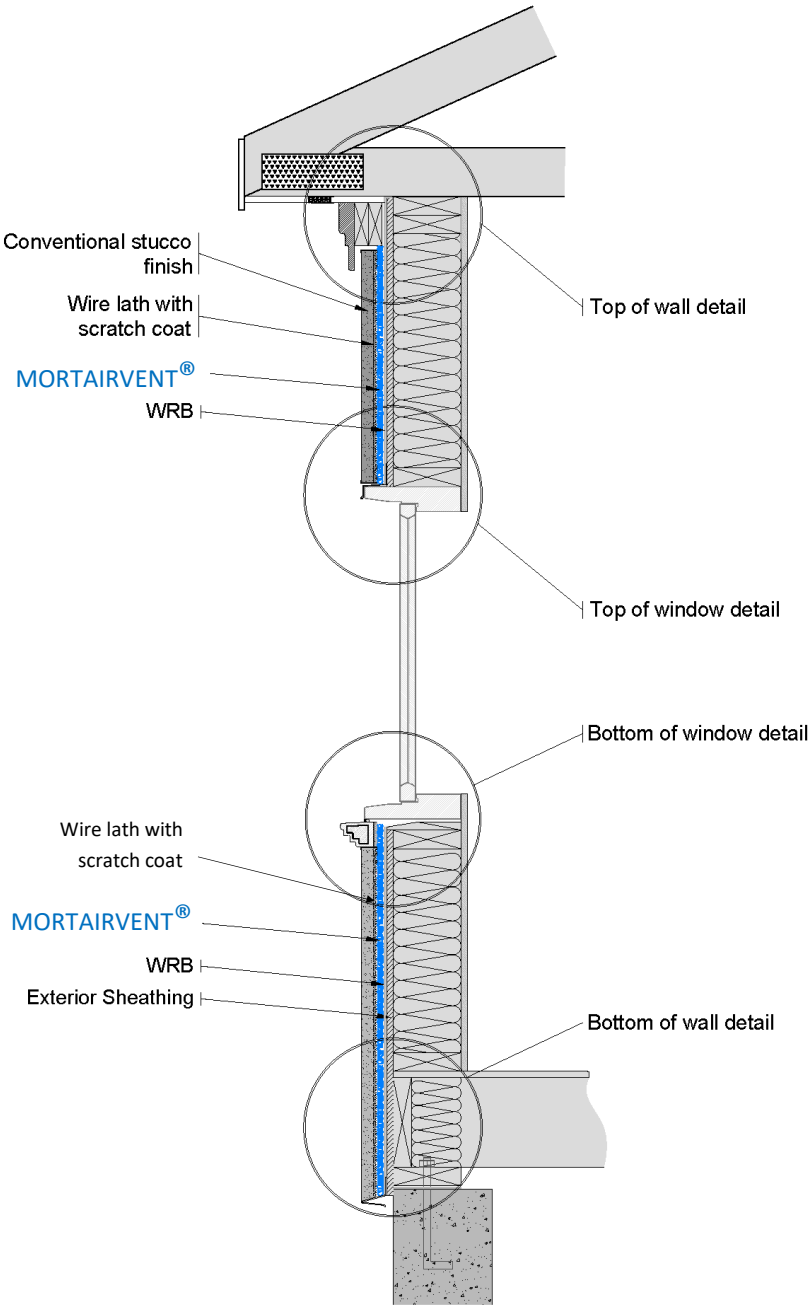



## OPTION 2. “L” Flashing



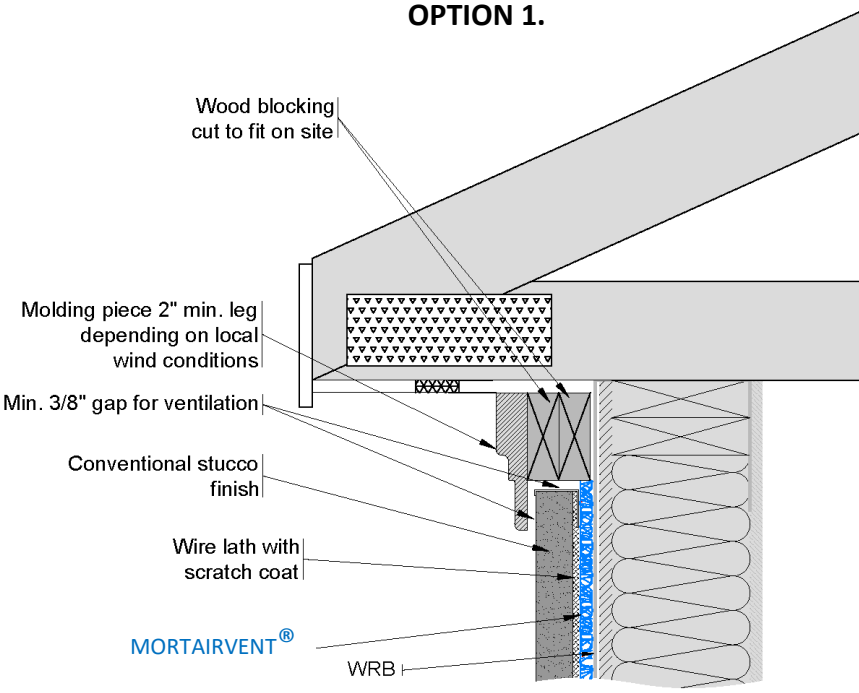



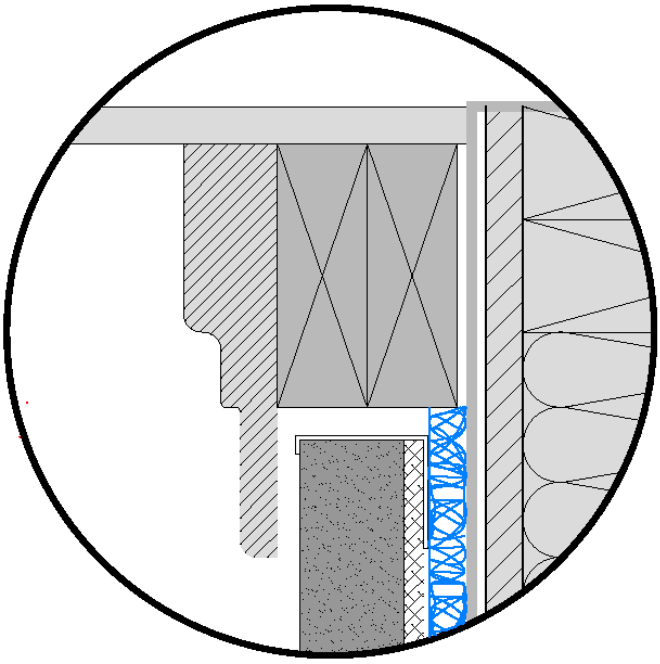
# Rainscreen with Conventional Stucco



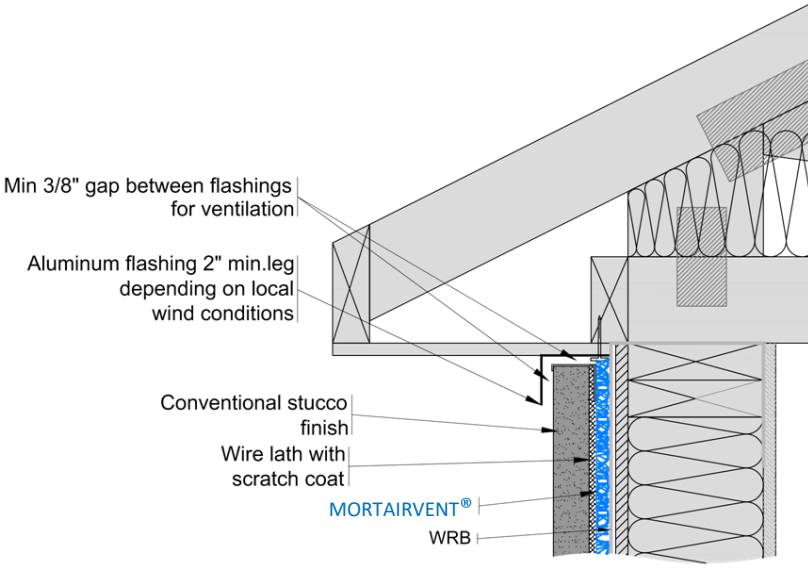
# Rainscreen with Conventional Stucco
# Top of Wall Detail Option 1

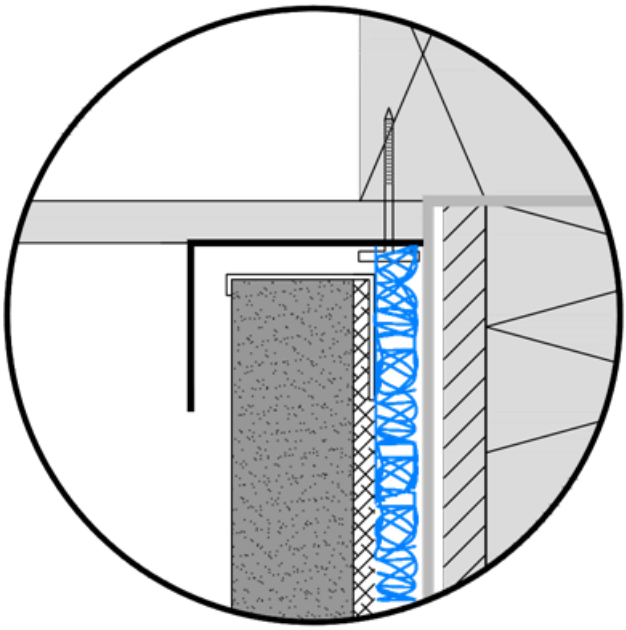
## OPTION 1.



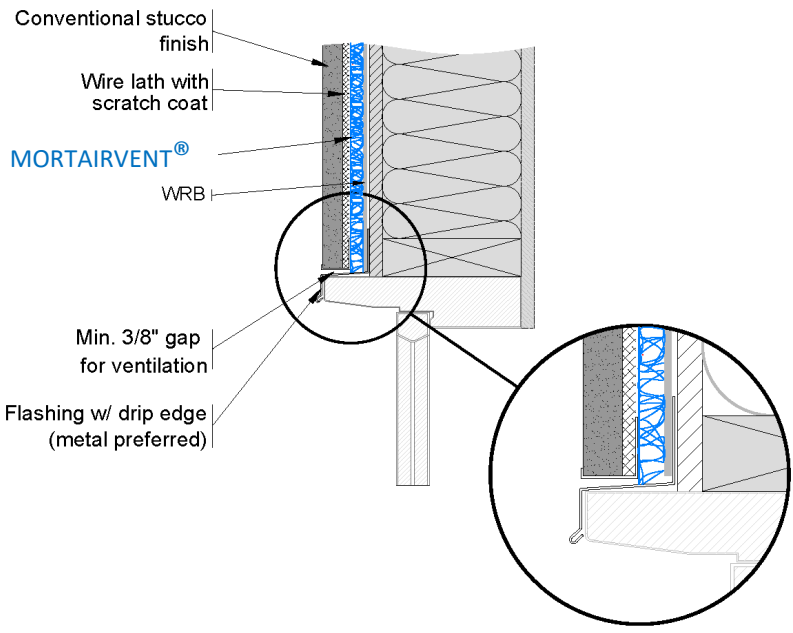
## OPTION 2. “L” Flashing



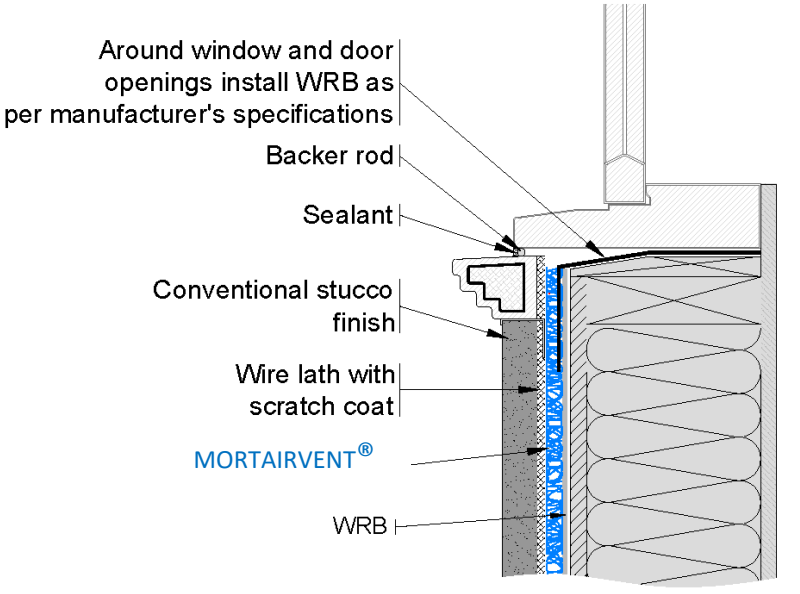



# Rainscreen with Conventional Stucco
# Window Details

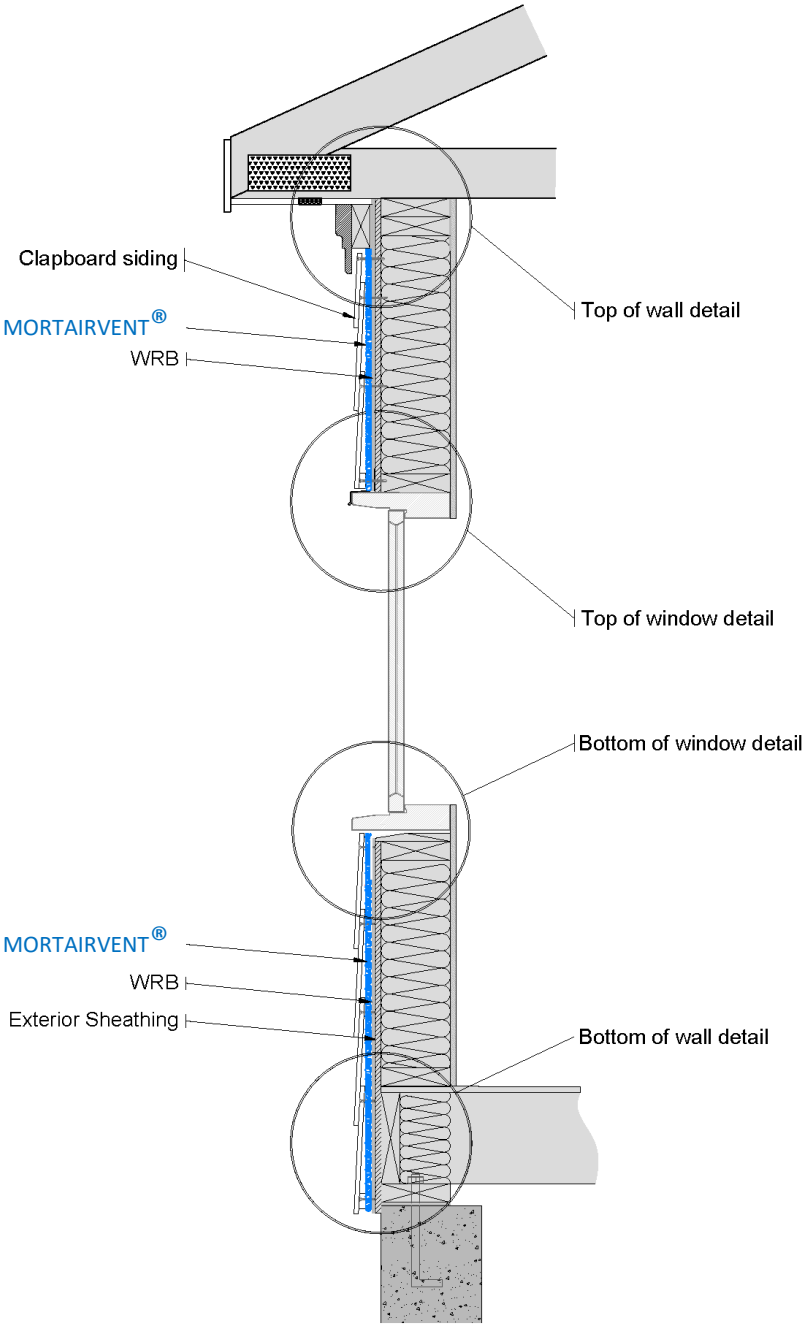
## TOP OF WINDOW DETAIL



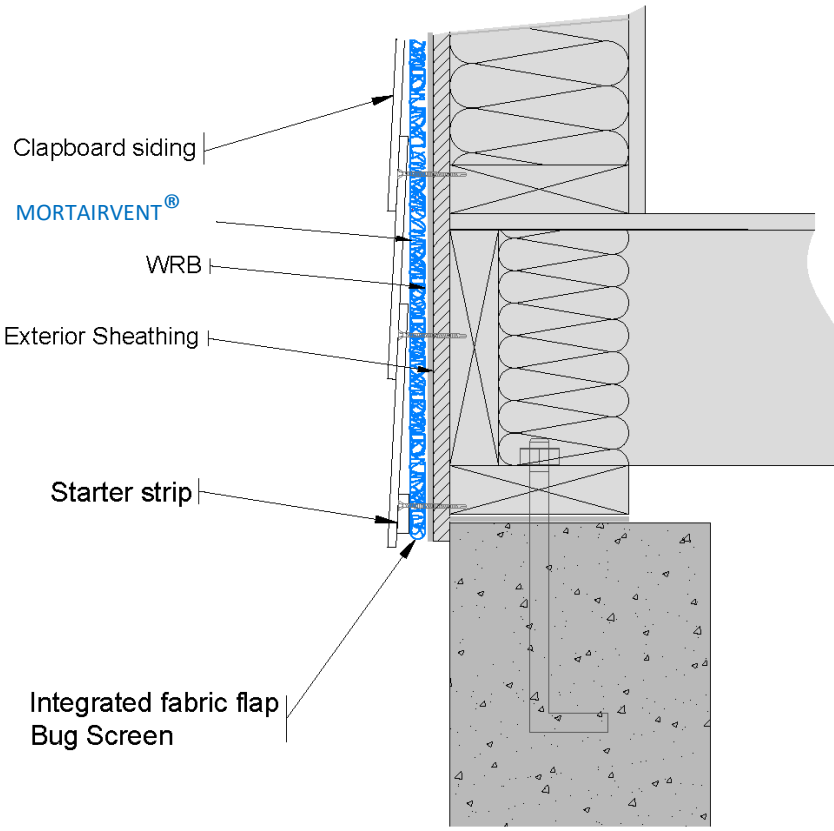

## BOTTOM OF WINDOW DETAIL

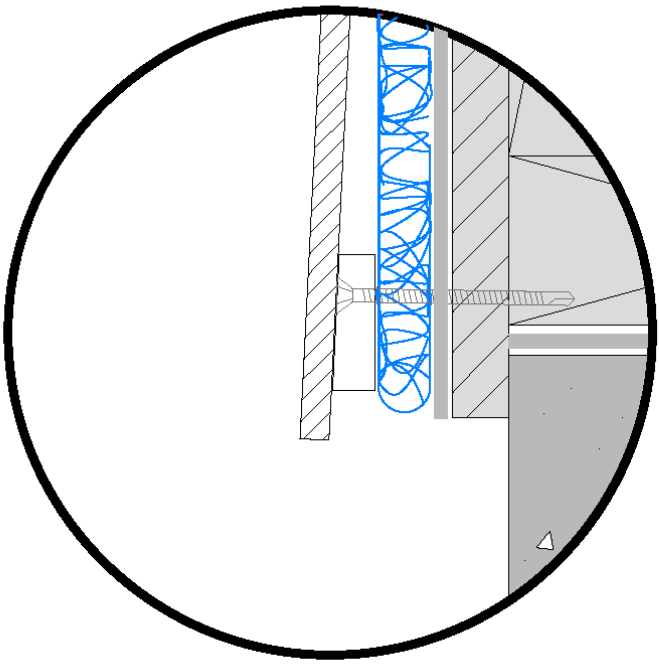


# Rainscreen with Clapboard Siding



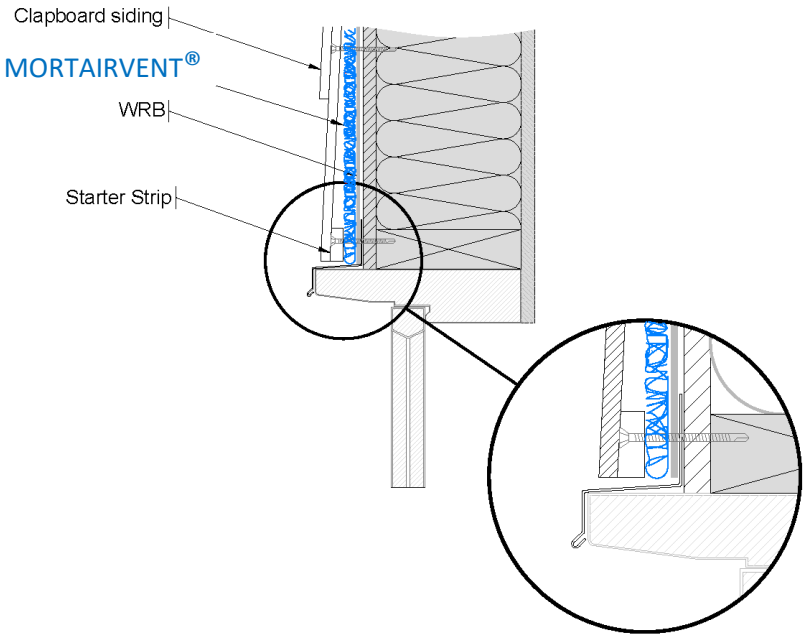
# Rainscreen with Clapboard Siding
# Bottom Wall Detail



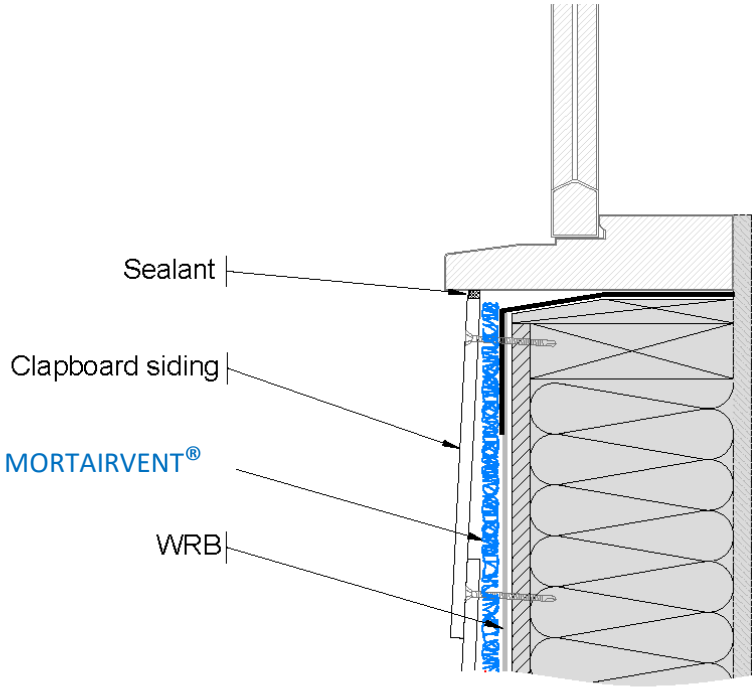



# Rainscreen with Clapboard Siding
# Window Details

## TOP OF WINDOW DETAIL

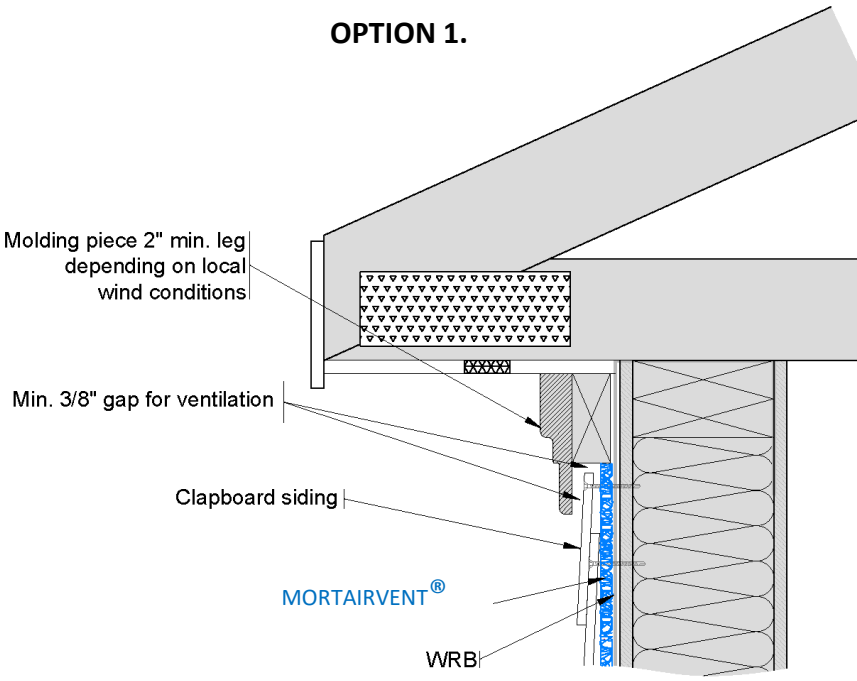


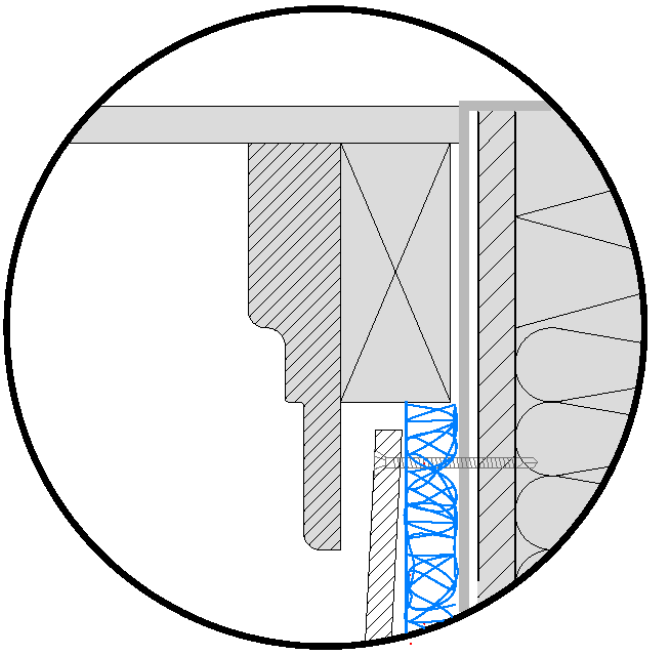

## BOTTOM OF WINDOW DETAIL



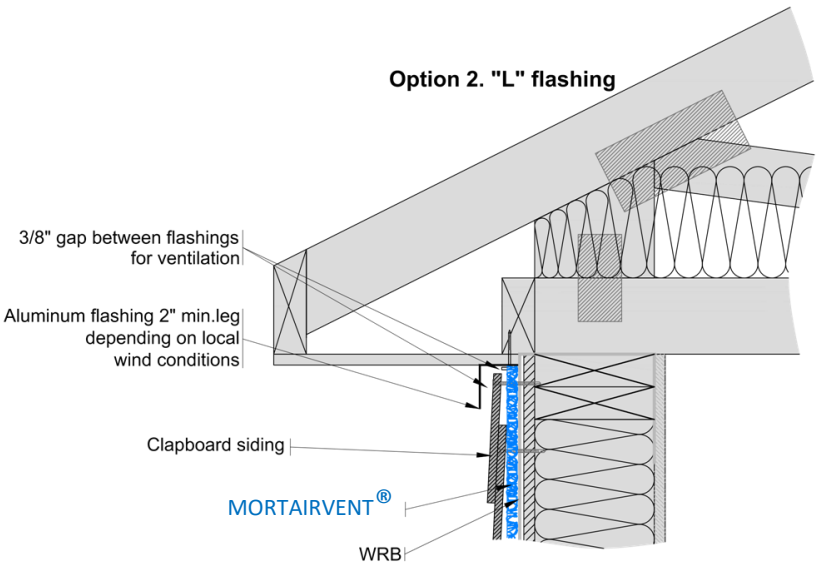
# Rainscreen with Clapboard Siding
# Top of Wall Detail Option 1

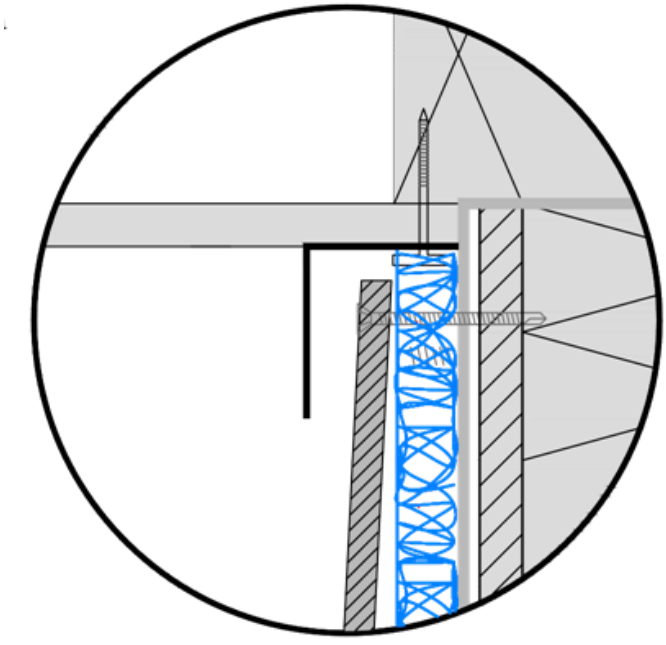
## OPTION 1.



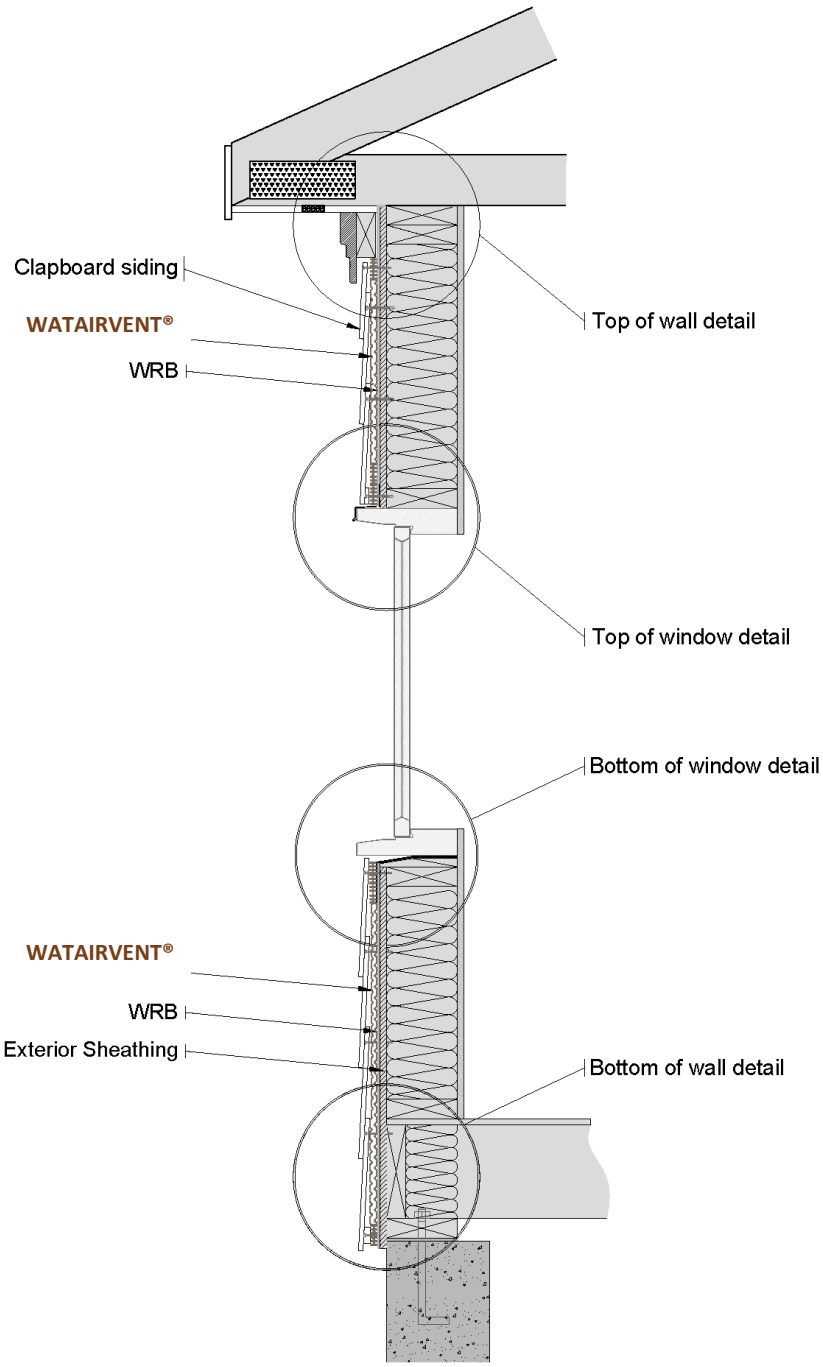



# Rainscreen with Clapboard Siding
# Top of Wall Detail Option 2

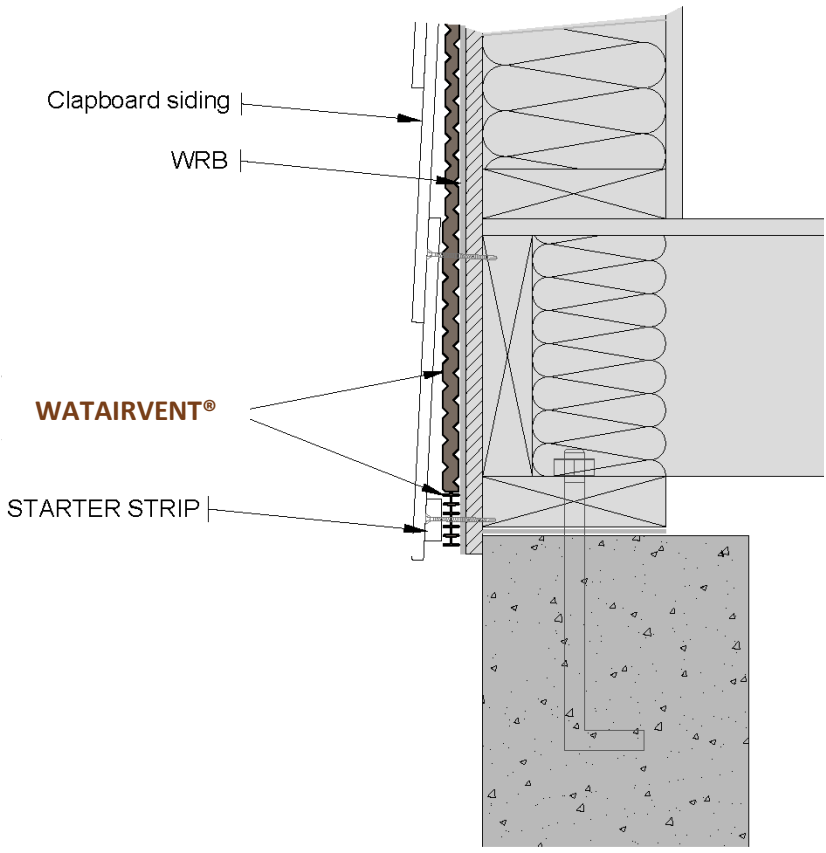


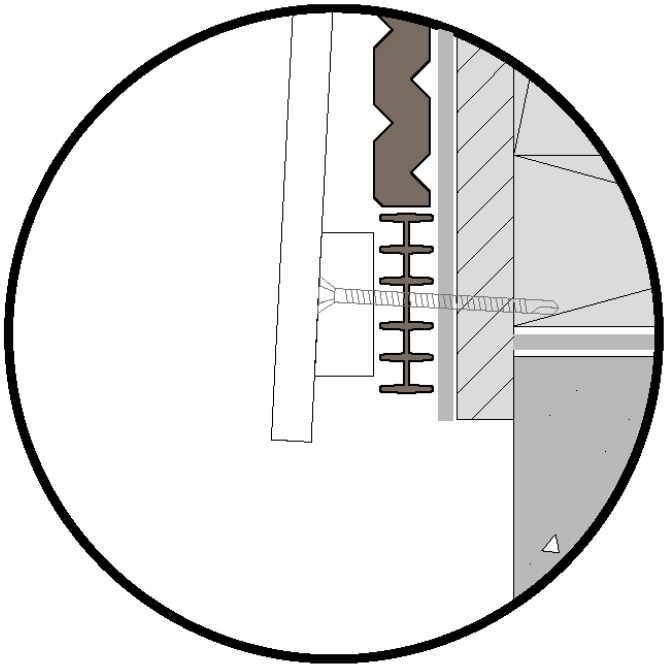



# Clapboard Siding and Furring Strips



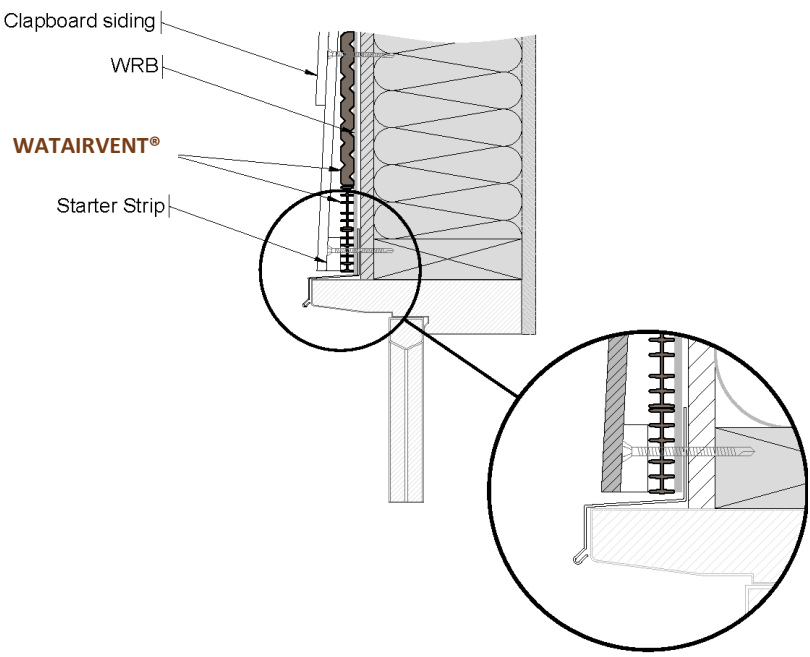
# Clapboard Siding and Furring Strip
# Bottom Wall Detail



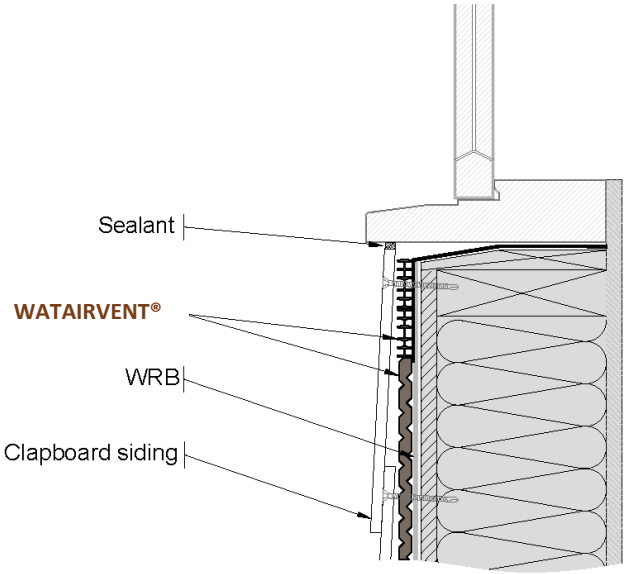



# Clapboard Siding and Furring Strip
# Window Details

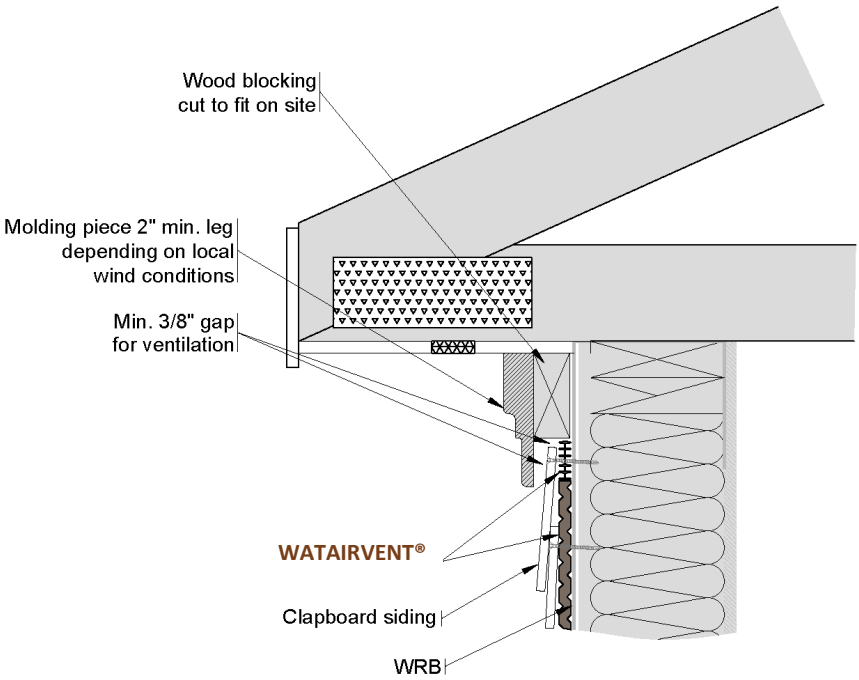
## TOP OF WINDOW DETAIL

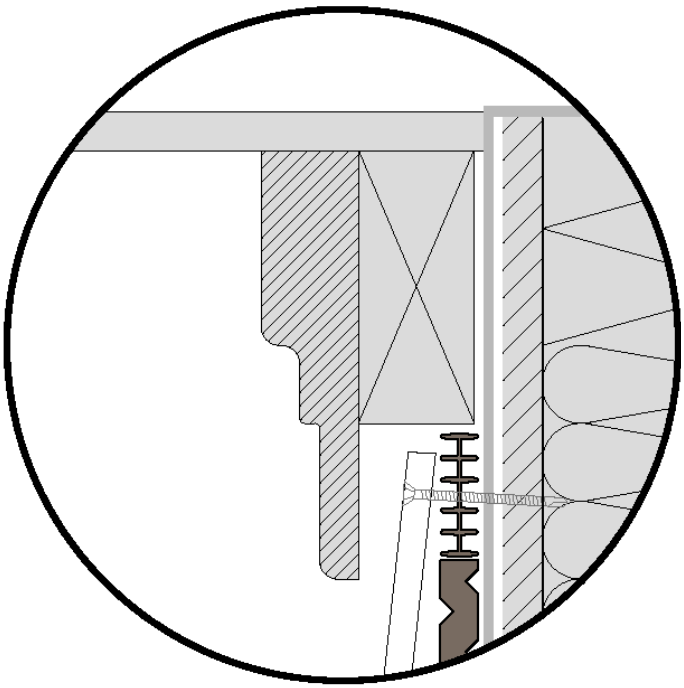



## BOTTOM OF WINDOW DETAIL



# Clapboard Siding and Furring Strip
# Top of Wall



# Product Data: Mortairvent

mortairvent®

Advanced Rain Screen Solutions

*The Clear Choice™*

Suggested Applications:

- Wood Sidings
- Stone & Masonry Veneers
- Stucco
- Fiber Cement Board Siding
- EIFS Systems

## Core Design

1. Polypropylene core mesh with cornrow, waffle or random configuration which is spun and heat welded into entangled geomatrix. This creates the pressure-equalized airspace between the structural envelope and exterior cladding.
2. Filter fabric, which is laminated to the outside of the core mesh in order to block mortar droppings and restrict mortar from entering airspace, maintains uniformity throughout the entangled net channels during installation, and creates an integral bug screen at the base and top of the wall.

## Understanding the Rainscreen concept

Allowing moisture to Drain, Not Remain®. This is the concept behind engineered drainage & ventilation mats. Eighty-one percent of all claddings used in construction today are absorptive claddings, which means at least 81% of all walls run the risk of damage resulting from moisture intrusion.

Entangled net products, such as Mortairvent®, or batten strips, such as Watairvent® Furring Strips, create a gap between the cladding and weather resistant barrier. This gap neutralizes the air pressure differences between the exterior of the cladding and the interior of the wall. Unlike other wall systems that are designed to “drain the rain”, rainscreen walls control the amount of moisture that can actually enter the wall. Drainage, along with convective ventilation working 24/7, keeps the wall system safe from lingering moisture intrusion that can result in costly restoration work.

| PHYSICAL DATA | Mortairvent® 201 | Mortairvent® 202 | Mortairvent® 203 |
|---|---|---|---|
| Core Material | Polypropylene (cornrow) | Polypropylene (cornrow) | Polypropylene (waffle) |
| Thickness | 0.125 in. (3mm) | 0.25 in. (6 mm) | .40 in. (10 mm) |
| Roll Length | 61.5 ft. (18.75 m) | 61.5 ft. (18.75 m) | 40 ft. (12.19 m) |
| Roll Width | 39 in. (99.06 cm) | 39 in. (99.06 cm) | 39 in. (99.06 cm) |
| Roll Weight | 12 lbs. (5.44 kg) | 14 lbs. (6.35 kg) | 16 lbs. (7.26 kg) |
| Coverage Area | 200 sq. ft. (18.58 $m^2$) | 200 sq. ft. (18.58 $m^2$) | 130 sq. ft. (12.08 $m^2$) |
| Rolls Per Pallet | 24 | 18 | 18 |

# Product Data: Watairvent Furring Strips

WATAIRVENT® FURRING STRIP

Suggested Applications:

- Clapboard Siding
- Cedar Shakes
- Composite Siding

**Core Design**

1. Solid core for structural stability.
2. Vertical channels for proper drainage and ventilation from the backside of the cladding to the front side of the sheathing.
3. Horizontal channels allow for cross ventilation.

**Why Watairvent® Furring Strips?**

When building with clapboard siding, a wooden batten or furring strip is often used to create a capillary break. The concept is solid; however, there are issues with the design and material used in wood furring strips.

- Wood is an absorptive material, which can lead to rotting and provide a food source for mold. Watairvent Furring Strips are manufactured from a mold resistant non-absorptive composite material.
- The surface area of the wood furring strips covers an average of 44% (front and back) of the walls surface area, which means 44% of that surface area can trap moisture.
- The surface area contact between the furring strip and backside of the cladding can allow ghosting on the outside of the cladding. The dual channel design that Watairvent Furring Strips have reduces surface area contact by 86% when compared to traditional wooden furring strips.
- Wood furring strips allow minimal cross ventilation. Watairvent Furring Strips are manufactured with dual vertical and horizontal channels on the front and backside of the furring strip. This allows for dual drainage and cross ventilation.

| PHYSICAL DATA | Watairvent Furring Strip (White) | Watairvent Furring Strip (Black) ** For Open Joint Cladding* |
|---|---|---|
| Core Material | Polypropylene Plastic | Polypropylene Plastic |
| Thickness | .375 | .375 |
| Piece Length | 8’ | 8’ |
| Piece Width | 1.75” | 1.75” |
| Pieces / Box | 50 | 50 |
| Boxes / Pallet | 36 | 36 |

# Frequently Asked Questions

- How does moisture penetrate a wall system in the first place?

Driving rain, the force of gravity, wind pressure, condensation, but two of the most major reasons are capillary movement and solar drive. With capillary movement, it's important to know that the smaller the fissure or crack, the greater the drawing power. This is an issue due to the many small cracks that can form in a wall system over time. Solar drive is when the heat from the sun on the exterior cladding pushes moisture deeper into the wall system.

- What are the different practices for moisture defense? Which is best?

Good—One layer of 60 minute or equivalent weather resistant barrier.

Better— One layer of drainable house wrap.

Best—One layer of WRB and a layer of a drainage and ventilation mat.

- Are Rainscreens and Drainable House Wraps the same?

Despite the misconception, no. 1) Drainable House Wraps typically have a 1mm void, and although this is better than a standard house wrap, it will not drain as efficiently as a 6mm Rainscreen and isn't a large enough gap to create a capillary break for positive airflow and ventilation. 2) Engineered Rainscreen products are one SKU for multiple siding applications, while Drainable House Wraps should not be used with masonry applications. The protrusions will get clogged when installed behind stucco, manufactured stone, brick, or other masonry claddings. 3) Engineered Rainscreen products, like Mortairvent®, are tested to the ASTM E-2925 standard. Drainable House Wraps do not meet ASTM E-2925 testing standards, and therefore shouldn't take the place of a Rainscreen!

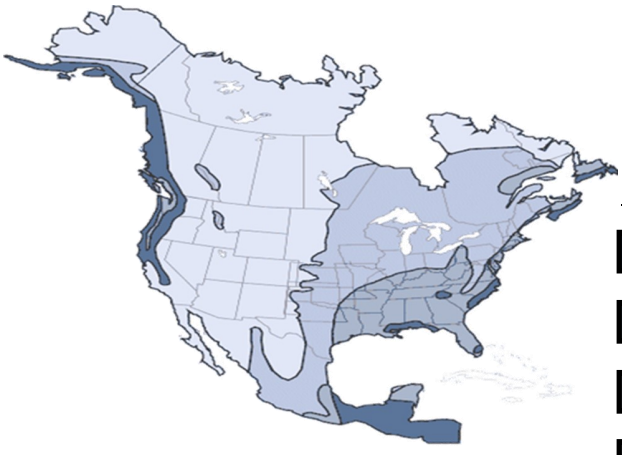
- Are Watairvent Furring Strips structural?

No.

## Where do you need to use a rainscreen product?

According to Building Science Professionals, geographic areas receiving 20” of annual rainfall should have walls designed with a capillary break. As you can see, this encapsulates every state when you also take average annual rainfall, snowfall and wind-driven moisture into account.

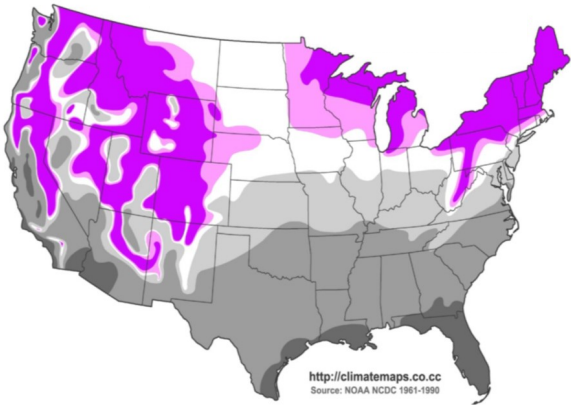
**Average Annual Rainfall (in.)**



Exposure

- Extreme — Over 60”
- High — 40” - 60”
- Moderate — 20” - 40”
- Low — Under 20”

**Average Annual Snowfall (in.)**




- 48”+
- 36”
- 24”
- 12”
- .1”
- 0”

**Wind Zones**


- ZONE 1 (130 mph)
- ZONE 2 (160 mph)
- ZONE 3 (200 mph)
- ZONE 4 (250 mph)

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