



## R-ETRO System and Moisture Control

The R-ETRO System offers more drying and drainage capacity than the amount of water to ever likely be present, either from wind-driven rain infiltration or pressure-driven vapor. In all cases, obvious gaps between or around Plus Panels should be sealed with spray foam to insure the integrity of the system.

Control of moisture is one of the most important issues in building design. Moisture stored within a building envelope can promote undesirable effects like mold and decay if there is sufficient moisture present and the building components are susceptible to water damage. The R-ETRO System can be a key component in the strategy to control moisture in an existing building.

### Cladding:

The primary defense against wind-driven rain on a building is the exterior cladding. The cladding may be a trowel coating, a panel product, or lapped siding and may be made from cementitious materials, plastic, wood, or fiber cement. Any of these products, when properly applied, serve as an effective barrier against wind-driven moisture intrusion. The R-ETRO System is specifically designed to accept any of these common exterior treatments. Ties are intentionally recessed below the foam surface to allow the application of coatings like stucco and acrylic finish systems. Tie flanges can be used as points of attachment for screws driven through panel products like fiber cement sheet siding. Fastening Strip panels are available for instances where lapped siding requires a continuous fastening pattern of 6 inches or less.

### Water Resistant Layer:

In addition to supporting the exterior cladding barrier, the R-ETRO System itself serves to resist moisture. The expanded polystyrene (EPS) that makes up the Plus panels has very little ability to absorb, transmit, and store water. In fact, the permeability of closed-cell EPS is so low that it can be considered a vapor barrier like polyethylene sheeting or some barrier rated paints. Consequently, even if water gets past the exterior cladding, the R-ETRO System EPS will not absorb any significant amount of water. Additionally, Plus Panels have been proven to be a completely unsustainable environment for mold or mildew, offering no organic food source and insufficient water to promote growth.

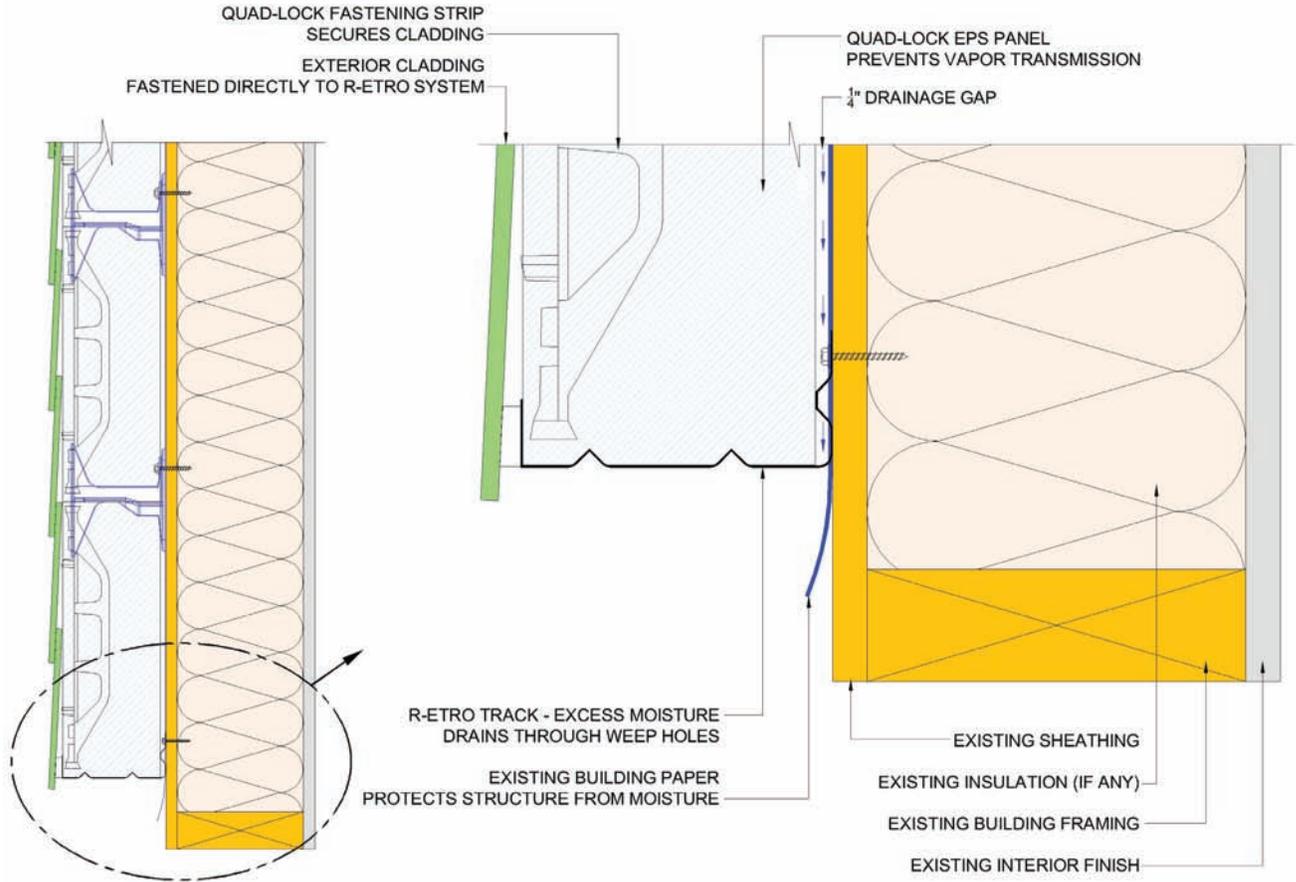
### Drainage Layer:

Another common strategy used by building envelope designers is a concealed drainage layer. This is a small (even fractions of an inch) gap located inside the cladding through which water may gravity-feed to the bottom of the structure and be drained away. This is a very common feature of buildings with brick or other masonry facades. The R-ETRO Ties by their design hold the Plus Panels  $\frac{1}{4}$ " [4mm] away from the supporting surface and form a perfect drainage layer. Any accumulated water escapes the R-ETRO Track at the bottom of the structure through weep holes in the track. Water from the face of the building is directed away by a built-in drip-ledge featured in the R-ETRO Track. In the case of existing wood structures, building codes require installation of building paper prior to installing the R-ETRO System. This impermeable layer insures that water does not come into contact with wood, even if moving downward through the  $\frac{1}{4}$ " [4mm] drainage cavity.

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### Vapor:

Existing buildings, especially those designed many years ago, are often prone to allow air and water vapor through inherently leaky walls. This is particularly true of wood framed structures. During renovation of such structures, a vapor barrier should be installed on the appropriate side of the building to minimize potential 'vapor drive' through walls. Airborne water vapor can then be removed through a properly sized ventilation system. However, if vapor drive should occur, the R-ETRO System installed on the outside of the existing building moves the point where condensation can happen (called "dew point") outside of the existing structure to inside the Plus Panel, which is well past the other layers that drain or diffuse moisture.



Find installation procedures in the R-ETRO System Product Manual available online at [www.r-etrol.com](http://www.r-etrol.com).