



# ECOMAXci Wall Solution

## Installation Instructions

### **RMAX: A BETTER INSULATION SOLUTION**

Since 1978, Rmax has been manufacturing commercial, industrial and residential Polyiso insulation products and providing engineered solutions for enhanced energy efficiency. Our newest Rmax building solution for commercial steel stud buildings, featuring ECOMAXci continuous insulation, is just one more example of our industry leadership in action.

Combining our proven, popular thermal insulation board with our own branded tape and flashing – the ECOMAXci Wall Solution provides a ready-made answer to fire, air and water, in addition to thermal efficiency for exterior commercial wall designs. It is designed to reduce the time and labor required to enclose the building envelope. ECOMAXci is an approved component of the High Velocity Hurricane Zone system, R-Trac.

This document contains storage and installation instructions for the ECOMAXci Wall Solution and must be followed in order for Rmax warranties to be valid.

### **STORAGE REQUIREMENTS:**

- Rmax ECOMAXci boards are shipped in wrapped bundles, approximately 48 inch high. Rmax requires that insulation bundles be unloaded from trucks by a fork-lift truck or similar equipment with suitable forks to slide under bundles. Rolling or tumbling bundles off delivery trucks will damage the insulation and cause the Rmax warranties to become void.
- Insulation bundles shall be stored on pallets or other dunnage at least 4 inches above ground level. Dunnage supplied by Rmax for shipment of the insulation is not adequate for use in storage of the materials. Bundles placed directly on the ground may cause the Rmax warranties to become void.
- The wrapping materials used to ship the bundles are not adequate for weather protection at the job site. Additional coverage, such as tarps, should be added over the boards to keep them dry once offloaded from the delivery truck.

### **BEFORE YOU BEGIN:**

OSHA safety and construction guidelines shall be followed on the job site as well as local code requirements. The following need to be confirmed/completed before beginning the installation of the ECOMAXci Wall Solution.

- All building structural steel members have been erected. Exterior wall stud framing finished surfaces shall be clean and free of irregularities that will affect the placement or performance of the ECOMAXci Wall Solution, including, but not limited to, dirt, debris, miscellaneous fasteners or warped, defective or otherwise damaged framing.
- Exterior wall steel stud framing members shall be a minimum of 3 5/8 inch depth, minimum 20 gauge and spaced a maximum of 24 inches on center with lateral bracing every 4 feet vertically. **For the R-Trac HVHZ system**, refer to the Appendix for minimum stud gauges based on the required wind resistance design pressure. Refer to Florida

Product Approval (FL #16406) for additional system design requirements.

- Confirm that the metal exterior wall steel stud framing bottom and top track have been sealed per standard building practices to prevent air leakage at these locations.
- The design and construction of the exterior walls and supporting structure is the responsibility of the project architect, engineer, general contractor and the building owner. The structure must be designed to resist all live, dead, wind and construction loadings without excessive deflections as dictated by the governing building codes.

### **GETTING STARTED:**

The following components are necessary for the ECOMAXci Wall Solution: ECOMAXci, R-SEAL 3000 and R-SEAL 6000

### **COMPONENTS MUST BE TESTED TOGETHER TO PASS FIRE, AIR AND WATER SYSTEM TESTS. THEREFORE, SUBSTITUTION OF COMPONENTS IS NOT ALLOWED.**

- All of the materials need to be inspected for any damages that might have occurred during shipment. Do not install the ECOMAXci Wall Solution components if significantly damaged. Doing so will void Rmax warranties.
- Once all products have been inspected and accounted for, installation may begin. High quality products cannot take the place of poor quality installation. Rmax requires that only skilled, trained contractors familiar with the ECOMAXci Wall Solution and the various other components of the building envelope design system, be used to perform the required work.
- At no point between working days should the ECOMAXci be left partially fastened or sealed. All fastening, taping and flashing of a started section shall be completed and all exposed foam edges shall be sealed by R-SEAL 3000 before the work day ends.
- ECOMAXci Wall Solution should not be installed during adverse weather conditions, such as rain, sleet, snow or heavy winds.
- If insulation boards get wet, ensure they are fully air dried before installing, sealing or covering.

**WARNING:** DO NOT install or seal wet insulation boards within a wall assembly. Installation of wet insulation, tape, flashing or any other components within the wall assembly shall cause the Rmax warranties to become void.

For warranty information, refer to the Rmax "Sales Policy" and ECOMAXci Wall Solution Limited Warranty.

## STEP BY STEP INSTALLATION:

### 1. ECOMAXci Continuous Insulation Boards

- A. Only remove the wrap from the bundles that are to be installed that day. NOTE: Insulation boards are very light in nature and should be handled with care during windy days. Weigh down loose boards until they are securely attached to the structure, taking care not to damage or puncture the board.
- B. Do not block flashing, weeps or other drainage paths with insulation boards.
- C. Starting at an end wall condition, where possible, the insulation boards should be placed on the wall with the long dimension horizontal and level to the floor/slab. The insulation boards should be oriented with the Rmax Solutions shield facing the exterior side of the building.
- D. Continue installing ECOMAXci horizontally across the wall before starting a new row of panels. Each row of insulation should be staggered a minimum of one stud spacing to the row below. All boards must be tightly abutted together.
- E. The bottom edge of the lowest row of boards along each wall facade should be placed a minimum of 1 inch BFF (Below Finished Floor) where possible or reference the architectural plans. Reference Figure 6. The top edge of the highest row of boards along each wall facade should be placed at the top of the parapet or stud framing.
- F. At changes in wall directions (corners) the boards should snugly fit in an overlap. Reference Figure 3.
- G. Always use maximum board lengths to minimize the number of joints which reduces the linear footage of joint tape.
- H. Where insulation is cut to accommodate throughwall penetrations, voids and gapping should be minimized.
- I. Minor damages to the foil facing that occur during installation must be repaired using R-SEAL 3000. See step 3-G.
- J. Any damages to the foam core and major damages to the foil facing that occur during installation must be replaced by fully cutting out the damaged area. The removed piece should be large enough to span entire stud spacing to ensure new joints are backed by framing. A new piece of ECOMAXci board can be cut to fill the open area. This new piece shall be fastened and sealed similar to other insulation boards as outlined in this document.
- K. NOTE: ECOMAXci may be installed in multiple layers. Refer to Section 2.E. for fastening instructions.

### 2. Insulation Fasteners

- A. Fastener components shall include a minimum 2 inch diameter plastic plate/washer and self-taping steel screw. Rmax recommends using Rodenhouse Plasti-Grip® Thermal-Grip®ci Washers and Grip-Deck® galvanized self-drilling screws or equivalent, as determined by component manufacturer. **For the R-Trac HVHZ system**, 3 inch diameter Rmax washers are required in the field of the wall assembly for wind resistance design pressures above 40psf. (The standard 2 inch diameter washers may be used around fenestration and along the wall perimeter.)

- B. Plates/washers shall be snug and flush with the board surface. Plates/washers should never break the foil facing of the boards. Do not counter sink plates/washers.
- C. As shown in Figures 1 and 6, each insulation board shall be secured with a fastening pattern of 12 inches o.c. along the edge of each exterior wall facade and at the perimeter of each board where backed by framing. The pattern shall be 16 inch o.c. in the field along framing. For the **R-Trac HVHZ system**, refer to the Appendix for minimum stud gauges and fastening requirements in the field of the wall assembly along with corresponding wind resistance design pressures. (The standard 2 inch diameter washers at 12 inches o.c. may be used around fenestration and along the wall perimeter.)
- D. One fastener can be used to bridge a maximum of three adjacent board joints. **For the R-Trac HVHZ system**, one fastener can be used to bridge a maximum of two adjacent board joints.
- E. When utilizing multiple layers of ECOMAXci, the first layer need only be installed with enough fasteners to hold it in place, provided the exterior layer is completely fastened and sealed per these instructions by the end of the work day.

### 3. R-SEAL 3000 Tape

- A. 4 inch wide R-SEAL 3000 shall be used to seal all joints of adjacent insulation boards, as well as cover all insulation fasteners. It can also be used to repair minor damages to the foil facer of the ECOMAXci board. Refer to the R-SEAL 3000 data sheet for specific details on appropriate installation conditions. **For the R-Trac HVHZ system**, 5 inch wide R-SEAL 3000 shall be used to seal all joints of adjacent insulation boards, as well as cover all insulation fasteners anywhere 3 inch diameter washers are used. 2 inch diameter washers need to only be covered with 4 inch wide R-SEAL 3000.
- B. All surfaces to which the tape is to be applied should be free of moisture, oils, dust, dirt and other debris that could inhibit adhesion. Clean surfaces with a dry cloth as necessary.
- C. Center tape along joint and fastener locations.
- D. Do not allow the tape to form voids or buckle as it is applied. Once applied, the tape should be wiped firmly from the center out with a feathering tool or hand roller to smooth out wrinkles. The more pressure that is applied, the more surface contact will be reached, therefore, the greater the bond surface.
- E. Insulation Joints: The release liner should be removed 1-2 feet at a time and the adhesive face pressed firmly on the insulation facing. Apply tape in a shingle like fashion, working from bottom of the section up. In other words, first apply tape to the bottom horizontal joint, then both vertical joints and finally the top horizontal joint. A minimum of 4 inch overlap is required when connecting ends of tape segments. Reference Figures 1 and 6.
- F. Fasteners: Cut 4 inch by 4 inch square pieces at a minimum and apply on top of all insulation fasteners in the field or that are not fully covered by joint tape. Maintain a minimum 3/4 inch radial coverage beyond plastic washers. Reference Figure 2. **For the R-Trac HVHZ system**, use a minimum 5 inch by 5 inch square piece of tape anywhere 3 inch diameter washers are used.

- G. Minor Damages to Foil Facing: R-SEAL 3000 may be used to cover minor damages to the foil facing where the tape can extend a minimum of 2 inches radially beyond the damaged location.
- H. NOTE: In areas where R-SEAL 3000 and R-SEAL 6000 overlap, R-SEAL 3000 should always be applied first.

#### 4. R-SEAL 6000 Flashing

- A. 9 inch or 12 inch wide R-SEAL 6000 must be used to seal at corners, ceiling and floor transitions, windows, doors and other throughwall penetrations. Refer to the R-SEAL 6000 data sheet for specific details on appropriate installation conditions.
- B. All surfaces to which the flashing is to be applied should be free of moisture, oils, dust, dirt and other debris that could inhibit adhesion. Clean surfaces with a dry cloth as necessary.
- C. Flashing should always be installed in a shingle-like fashion, starting with the bottom and working up. In other words, first apply tape to the bottom horizontal joint, then both vertical joints and finally the top horizontal joint.
- D. Once attached, apply pressure along the entire surface of the flashing to create a good bond using a J-roller or firm hand pressure. Remove all wrinkles and bubbles by smoothing surface and repositioning as necessary. Use standard flashing practices.
- E. R-SEAL 6000 shall be used at board terminations including but not limited to: building foundations, slabs, shelf protrusions, roofing membranes or blocking, to seal the end joints where butyl rubber tape is compatible.
- F. Corners: Reference Figure 3 for flashing details.
- G. Windows: Reference Figure 4, 5, and 6 for flashing details.
- H. Throughwall Penetrations: Reference Figures 6, 7A, 7B, 8A, and 8B for flashing details of various throughwall penetration types and sizes.
- I. NOTE: In areas where R-SEAL 3000 and R-SEAL 6000 overlap, R-SEAL 3000 should always be applied first.

#### 5. Exterior Facade Penetrations

- A. When installing the exterior facade, care should be taken to minimize the damage to the insulation, tape, and flashing so as not to break the water and air seal provided by the ECOMAXci Wall Solution. Any damages beyond anchor penetrations must be repaired as detailed in this document.
- B. All anchors must be securely attached through the insulation directly to the steel framing. ECOMAXci Wall Solution is non-structural and must not be used to support any exterior cover materials.
- C. Vertical strap/wire exterior anchor penetration types requiring impalement, such as BLOK-LOK BL-607, are typically installed and in place before the placement of the ECOMAXci board. After impalement of the board, all areas affected by the penetrations on the face of the board shall be completely sealed with a one part moisture cure sealant, such as Henry HE925-BES or equivalent.

- D. Barrel style exterior anchor penetrations, such as Heckmann Building Products Pos-I-Tie®, should be installed only after all taping and flashing of the ECOMAXci has been completed. All areas affected by the penetration of the anchor shall be completely sealed with either a one part moisture cure sealant, such as Henry HE925-BES or equivalent, or a minimum 20 mil self-sealing membrane.

- E. For the R-Trac HVHZ system, R-SEAL 6000, or equivalent 20mil self-sealing flashing membrane, must be applied prior to penetrating the ECOMAXci with the exterior façade to maintain the water and air barrier.
- F. Additional exterior wall materials including, but not limited to facade penetrations, may be installed on the exposed face of the ECOMAXci boards only when all taping and flashing has been completed. The following must also be met when installing exterior anchors through the ECOMAXci Wall Solution:
  - The anchor surface must not penetrate or break the ECOMAXci board or facer at any time.
  - The anchor attachment shall only consist of structural screws back to the structural studs.
  - The installer uses common construction practices of maintaining water and air barriers by applying a piece of self-sealing flashing larger than the anchor's surface area on the board before penetrating with the structural screws.

#### 6. Expansion and Control Joints

- A. Insulation boards shall be cut to ensure all expansion and control joints align with a joint between insulation boards. At no time should an ECOMAXci insulation panel span an expansion or control joint.
- B. Fasteners CANNOT be used to bridge insulation boards at expansion or control joints.
- C. R-SEAL 6000 flashing should be used in lieu of R-SEAL 3000 tape at the insulation board joints behind expansion and control joints. Loop flashing along the entire wall surface and top of the boards to allow for movement.

#### COMMON PRACTICES

The following do not take the place of installation instructions contained within this document:

Gaps greater than 1/8 inch around insulation boards can be filled with polyurethane expansion spray foam, including, but not limited to, board joints, fenestration and throughwall penetrations. Similar spray foam, or other construction grade sealants, can also be used to provide additional sealing around any framing or structural members, especially at transitions.

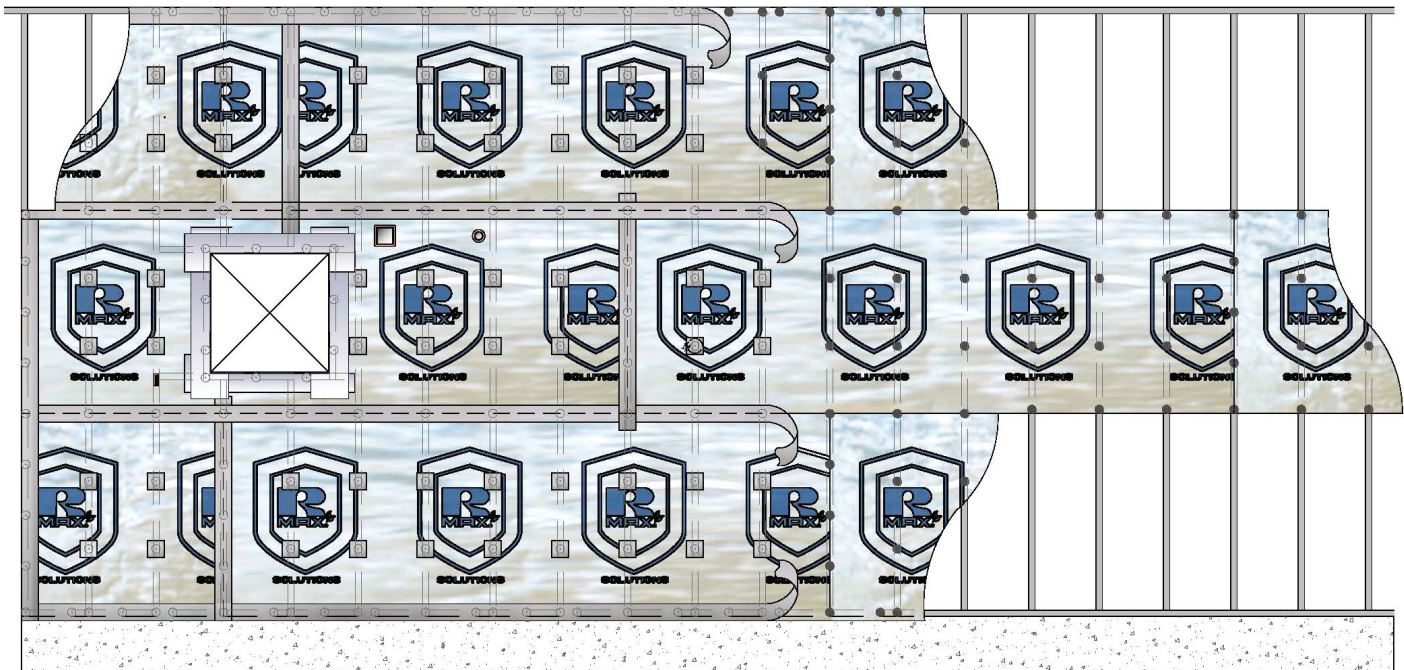


Figure 1



Figure 2

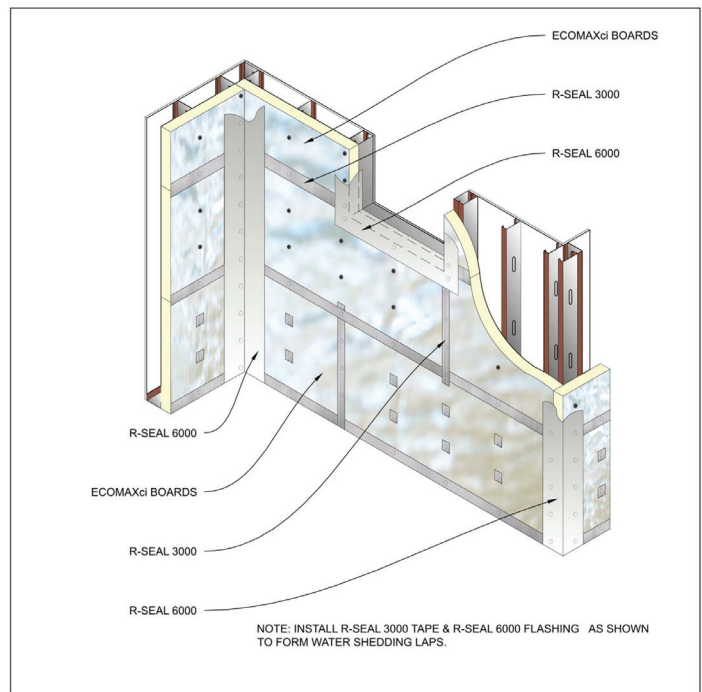


Figure 3

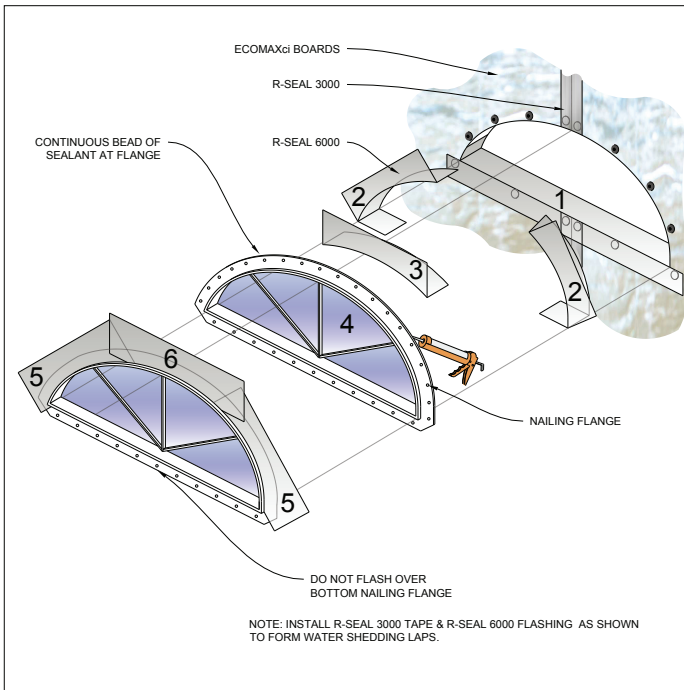


Figure 4

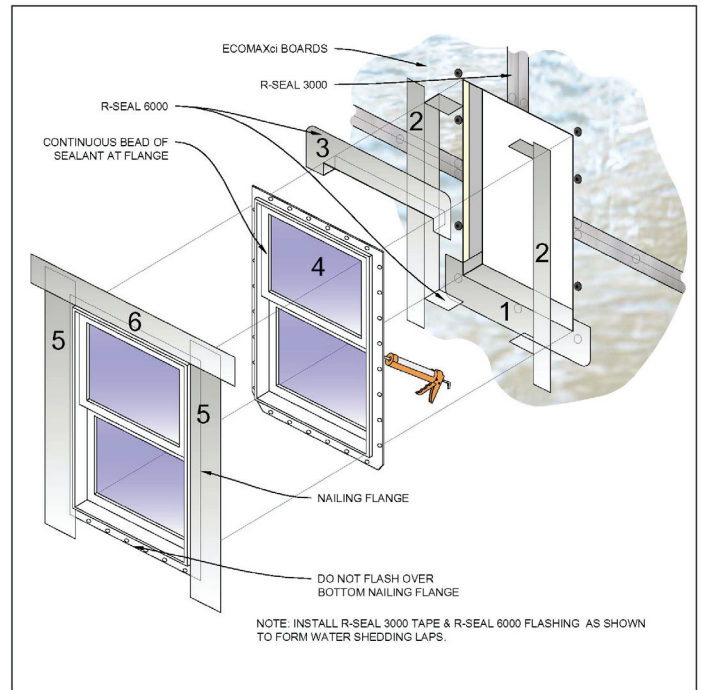


Figure 5

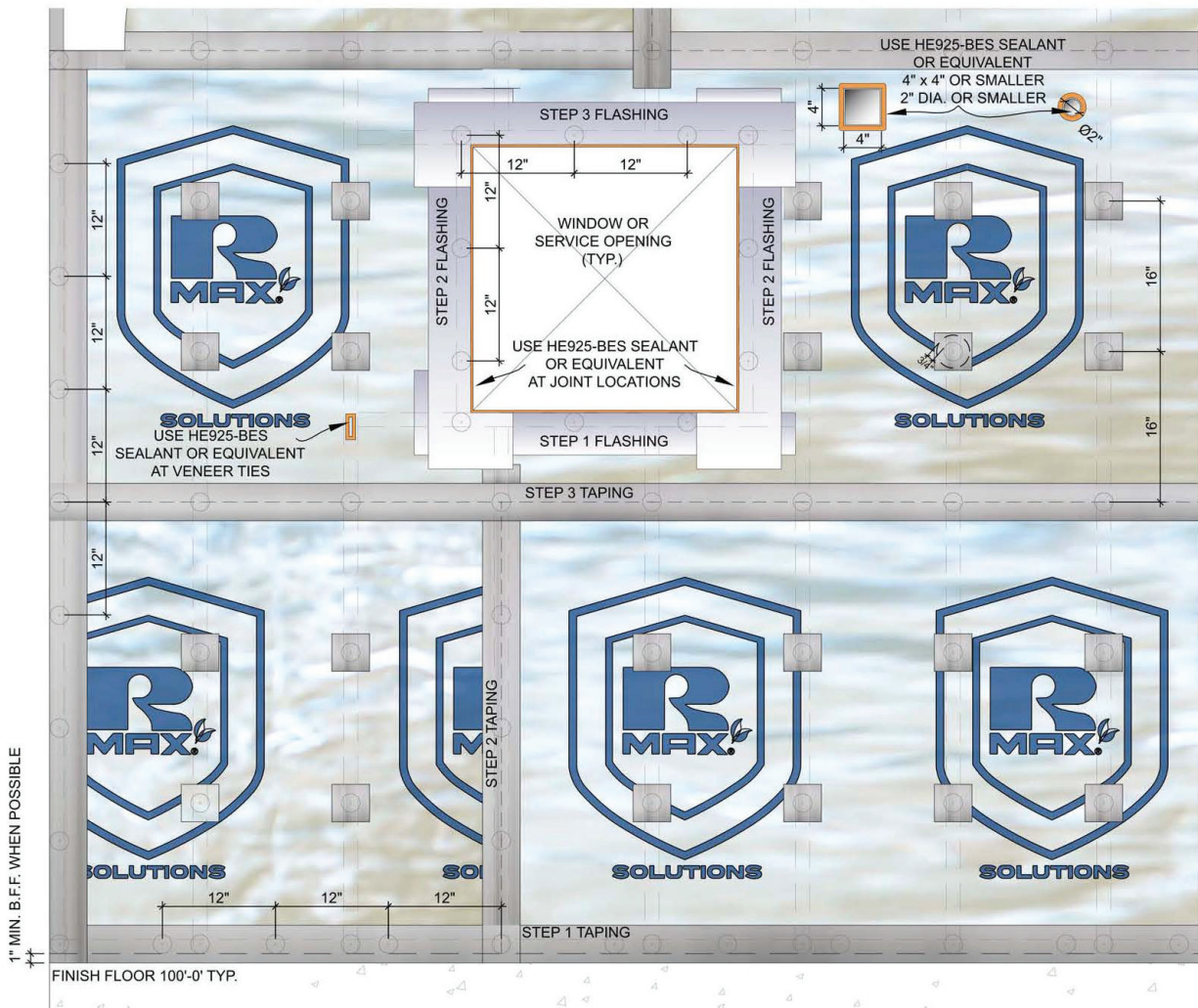


Figure 6

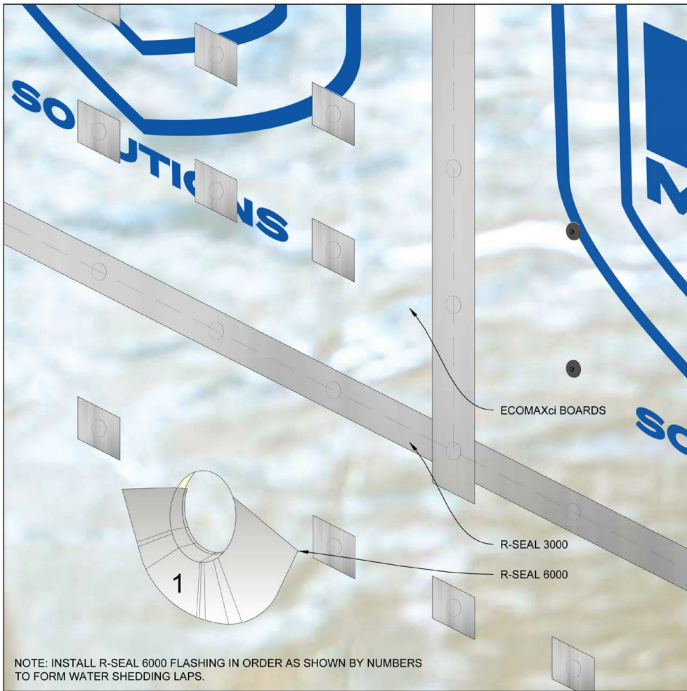


Figure 7A

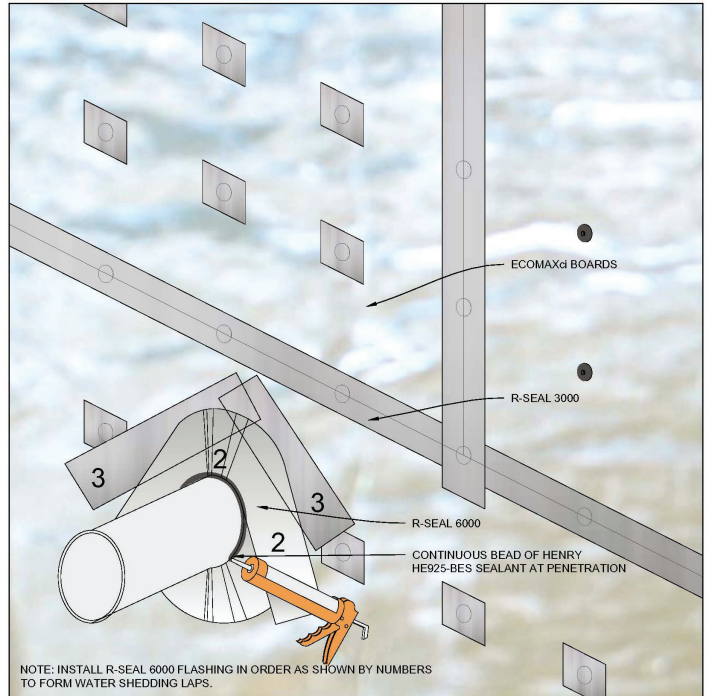


Figure 7B

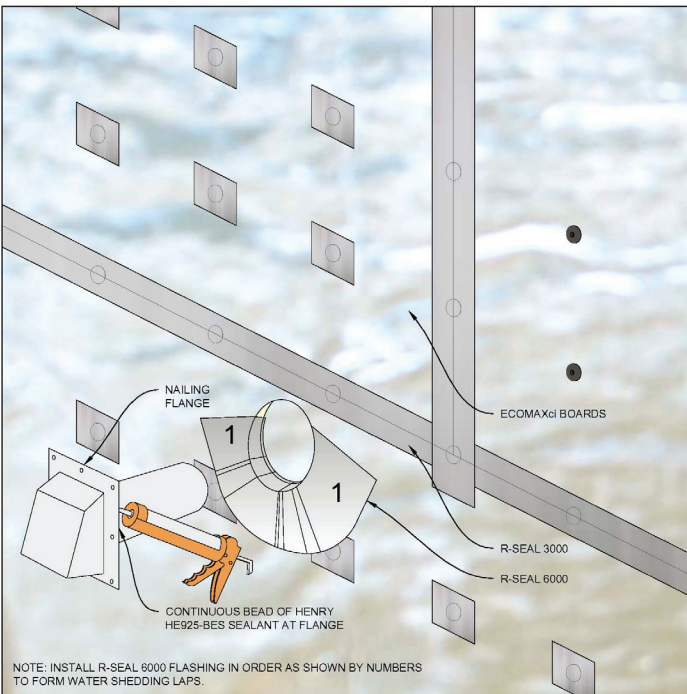


Figure 8A

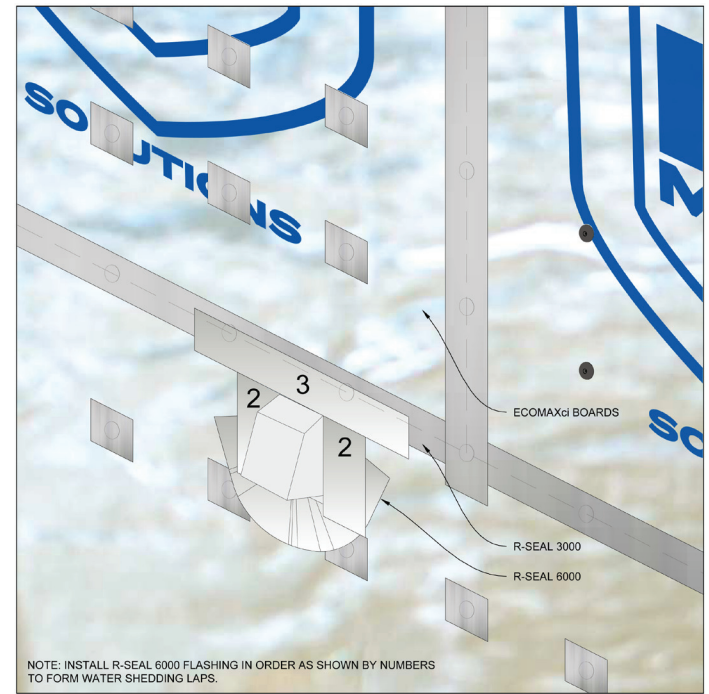


Figure 8B

## APPENDIX

The following chart shall be used for the R-Trac HVHZ system based on the required wind resistance design pressure. Refer to Florida Product Approval (FL #16406) for additional system design requirements.

<b>RMAX FOAM ANCHORING CHART</b>				
MPH	DESIGN PRESSURE	MIN. STUD GAUGE	FIELD WASHER O.C.	
	PSF		3" DIA	2" DIA
99	25			16
108	30			
117	35			
125	40			
132	45	18	16	N/A
140	50			
146	55			
153	60			
158	64			
159	65			
165	70			
171	75	16	12	
177	80			
182	85			
188	90			
193	95			
198	100	16	8	
203	105			
207	110			
212	115			
216.5	120			

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# Improving Your Design.

For warranties, limitations and conditions refer to Rmax Sales Policy and applicable warranties. All documents are located at [www.rmax.com](http://www.rmax.com). For technical and sales support, email [rmax@rmax.com](mailto:rmax@rmax.com) or call (800) 527-0890.

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