



# Installation Guidelines Matrix Insulated Roofing System

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## Application Instructions and Best Practices for Installing The Matrix Insulation Roofing System

System Name:	Quik-Therm Matrix Insulation Roofing System (Matrix)
Products Used:	Two (2) or more Layers of Quik-Therm Air Dry Connect (Air Dry Connect)
Product Components:	Perforated metallic polymer facers - laminated over Type 2 expanded polystyrene
Product Dimensions:	4' x 8' Rigid Sheets - Thicknesses from 2" to 6" Complies with CAN/ULC S701-05

### A. System Description

The Patent Pending Quik-Therm Matrix Insulated Roof System (Matrix) is a science based composite rigid foam roofing insulation technology consisting of two or more layers of Quik-Therm Air Dry Connect running perpendicular to each other. Matrix integrates simply, intuitively and quickly with metal standing seam and screw down roofs. Alternative roof cladding systems may require an exterior layer of wood sheathing and/or furring strips. The Matrix system is vapour permeable, vented and perforated.

### B. Scope & Purpose

This document describes the recommended best practices for installing the Quik-Therm Matrix Insulation Roofing System (Matrix) with standing seam roofing.

Specific installation conditions may warrant digression from these instructions. In all instances, refer to section 1, "General Installation Guidelines" prior to installation to ensure the technical advantages of the product are maintained.

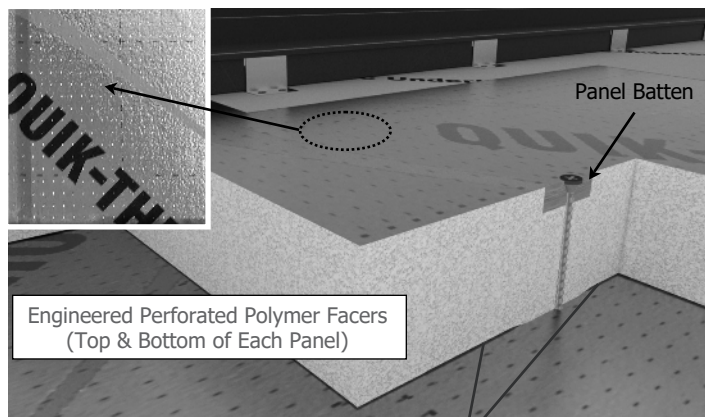
\*\*\*\* Always adhere to local building codes.

### C. Technical Advantages

Moisture resistant continuous insulation system that promotes drainage and drying. It is neither an air nor vapour barrier. Facers are perforated, resulting in NO double vapour barrier. Drying cavities on the inboard panel surface allow roofs to drain, dry and disperse moisture.

Inherent 3/4" thick x 3" wide plywood nailing strips imbedded into the foam insulation panel allow for secure fastening of panels to roof decking, as well as the installation of roofing materials.

Tongue and Groove connections allow for proper panel alignment and sealing at the joints.



Drying Channels (Panel Bottom)

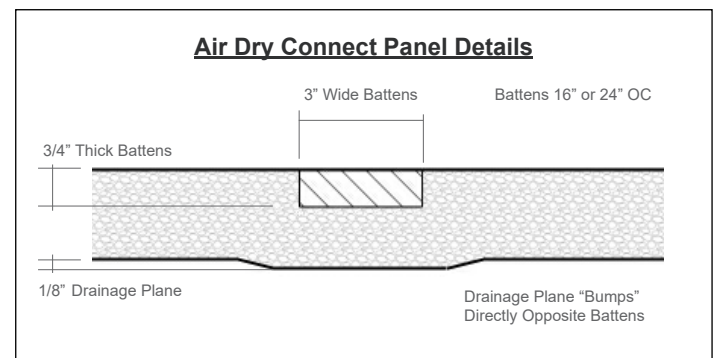
### D. Effective Thermal Resistance

In addition to nominal R-Value testing as per ASTM C518, Quik-Therm Insulation Solutions Inc. has undertaken a program of full scale thermal performance testing to ASTM C1363-05 "Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus."

#### Effective R-Value ASTM C1363 (R-Eff)

8" R-Eff = 33      10" R-Eff = 42      12" R-Eff = 50

Nominal R-Value Testing ASTM C-518 = R-4.18



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# Installation Guidelines

## Matrix Insulated Roofing System

Section 1  
General Installation Guidelines

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### 1.1 Handling & Storage Considerations

1. Store product in a covered area, away from the elements and direct sunlight.
2. Protect product from damage. Although Quik-Therm Air Dry Connect is rugged and durable, corners and edges are especially susceptible to damage during transport, storage and installation.
3. Product is typically shipped in bundles 1' thick consisting of several individual sheets. Bundles may be awkward to handle due to their physical size and weight. Use proper caution to avoid personal injury and/or physical damage to product.
4. Product has an EPS foam core. Keep away from extreme heat.

### 1.2 Personal Protective Equipment

Follow standard workplace safety protocols including (but not limited to) the use of eye and hearing protection, gloves, and dust masks as required.

### 1.3 Cutting

The product can be cut using a variety of methods typical for standard foam board insulation, including (but not limited to):

- Utility Knife
- Hand Saw
- Circular Saw
- Table Saw
- Hot Knife

### 1.4 Suggested Tools and Materials

Hammer, Screw Gun and/or Nail Gun, Utility Knife & Blades, Hand Saw, Circular Saw, Spray Foam and adhesive (PL-300) or compatible adhesive with Polystyrene foam, Coated Deck Screws (Appropriate length), Hammer Drill (Concrete Only), 4' Level, Caulking Gun, Measuring Tape. Optional: Table Saw.

### 1.5 General Notes:

- Matrix instructions assume an impermeable WRB over a wood or metal fluted substrate (deck) with surrounding perimeter C Channels, unless otherwise specified by a design professional.
- Depending on the project specific wind uplift, the size and type of fasteners should be evaluated by a professional registered in the project jurisdiction.

### 2.1 General Installation Recommendations

- General instructions apply to application over a wood or fluted metal substrate with surrounding C channels. For other scenarios, please contact a building professional.
- DO NOT over torque fasteners. Set clutch on fastening tool. Wood furring strips and fastener heads should be flush with outer surface of EPS foam panels. Maximum 1/16" furring indent is acceptable. Best practice use counter sunk (flat head) screws. See illustrations.  
  
\*\*\* For two layer systems the inner layer may be fastened with dome or hex head fasteners.
- If applicable, the thickest Air Dry Connect layer, should be the first (bottom) layer.
- All panel edges to fit snugly together. Cut perimeter panels to fit snugly against metal C channels.
- Typical fastener spacing is 16" O.C. Location of fasteners from the upper layer to fasteners in the lower layer should coincide closely to each other (within 6 inches). See Detail C. To avoid flexing, all battens require a fastener approximately 1" from batten ends.
- Top layer panel joints/connections MUST be staggered. Seams from top layer panels MUST NOT align directly over seams of bottom layer panels.
- Tape all seams on the bottom layer of Air Dry Connect with an approved vapour barrier tape. Taping of the top layer panels is not required.
- Top layer batten ends must be fastened to lower layer battens. All top layer fasteners must fasten through top layer battens to bottom layer battens. DO NOT remove misplaced fasteners. Install another fastener in close proximity to the misplaced fastener.
- For metal standing seam cladding an air permeable synthetic underlayment should be installed.
- Quik-Therm panels should not be exposed to the environment longer than 60 days. For longer exposure periods, cover with a synthetic building wrap or cladding materials.

### Notes

1. Typical air barrier locations and underlayment requirements presented herein are as per common construction practise; confirm/consult with design professional.
2. Typical constructions shown herein. Please refer to design drawings specific to your application. Confirm/consult with design professional prior to installing Quik-Therm products.
3. The information presented herein is based upon data considered accurate. Quik-Therm Insulation Solutions Inc. does not assume any responsibility for any misrepresentation or assumptions the reader may formulate. Please check local building codes prior to installing Quik-Therm products.

**Quik-Therm Insulation Solutions Inc.**

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# Installation Guidelines

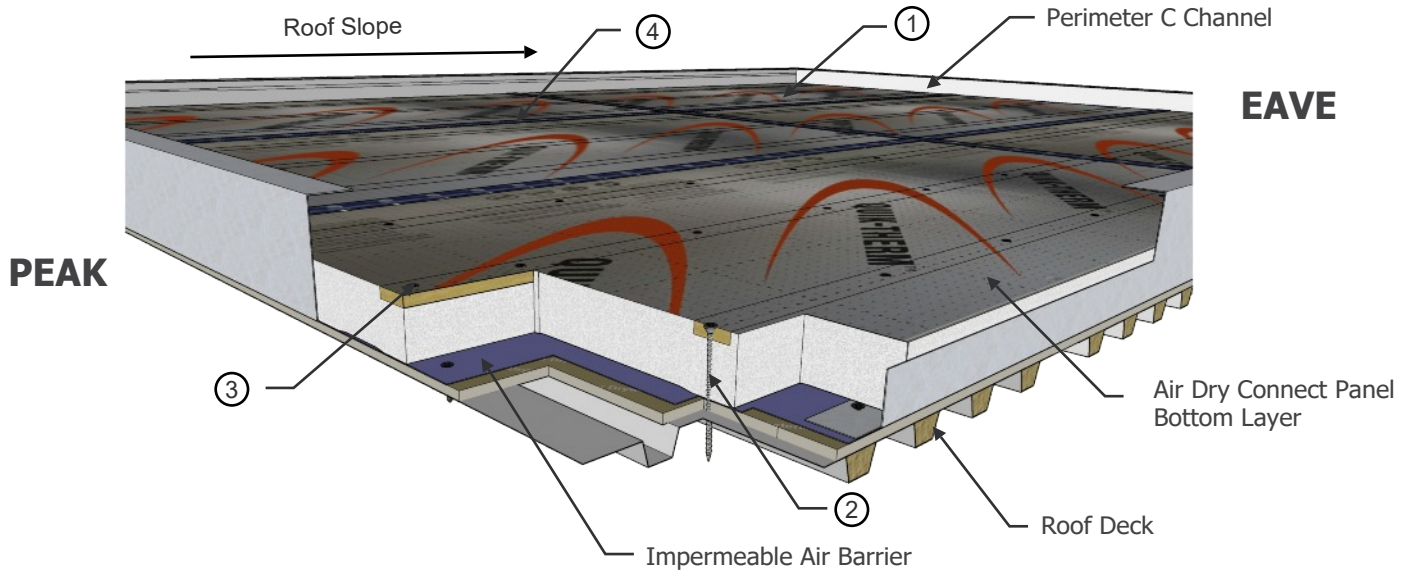
## Matrix Insulated Roofing System

DETAIL A  
Bottom Panel Layer

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### Panel Installation Overview



### General Instructions

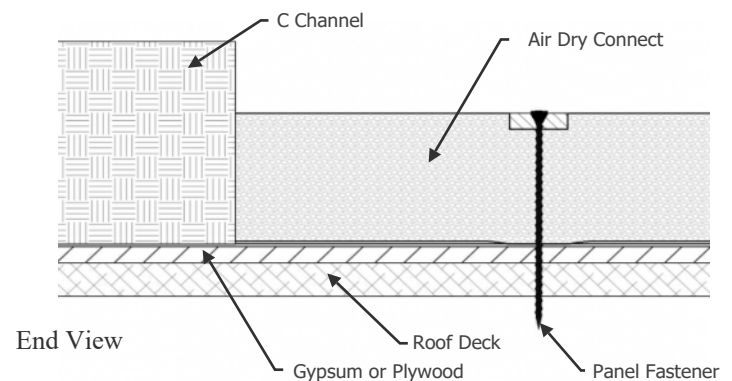
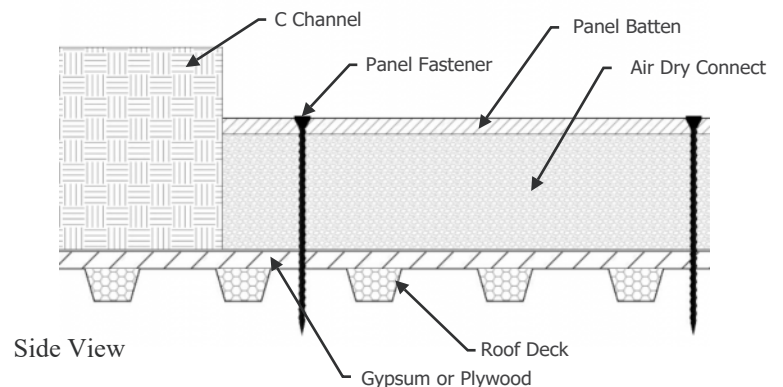
- ① Starting from the lower eave, install first layer of Air Dry Connect panels. Drainage gaps and plywood battens run peak to eave. Ensure all panels fit snugly together. Cut panels as required to fit snugly against C channels.

**NOTE:** If applicable, the thickest Air Dry Connect layer should be the bottom layer.

- ② Secure each panel to the roof deck through the battens using sufficient length fasteners. Typical fastener spacing: 16".

- ③ **NOTE:** Ensure to locate a fastener through each batten within 1" of each panel end. Refer to Detail C: Fastener & Panel Details.

- ④ Tape all seams using an approved vapour barrier tape.



Typical Roof Cross Section N.T.S.





# Installation Guidelines

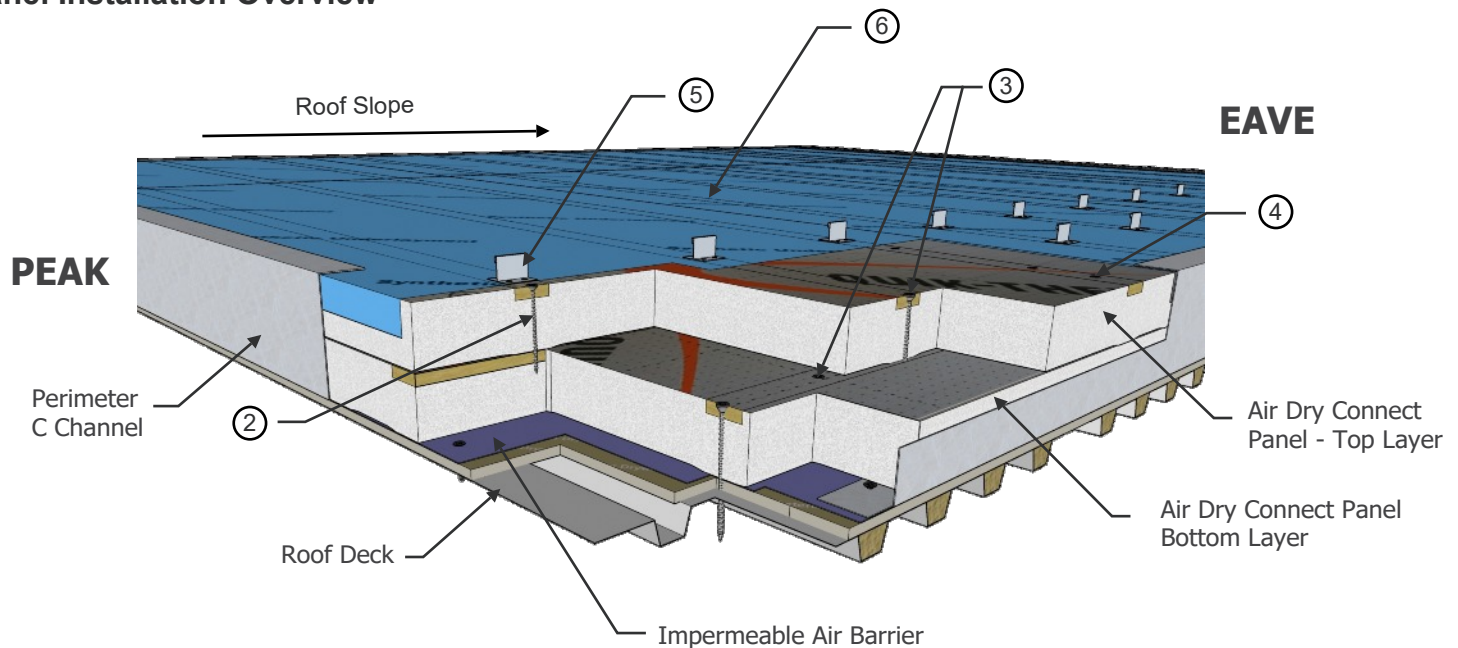
## Matrix Insulated Roofing System

DETAIL B  
Top Panel Layer

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### Panel Installation Overview

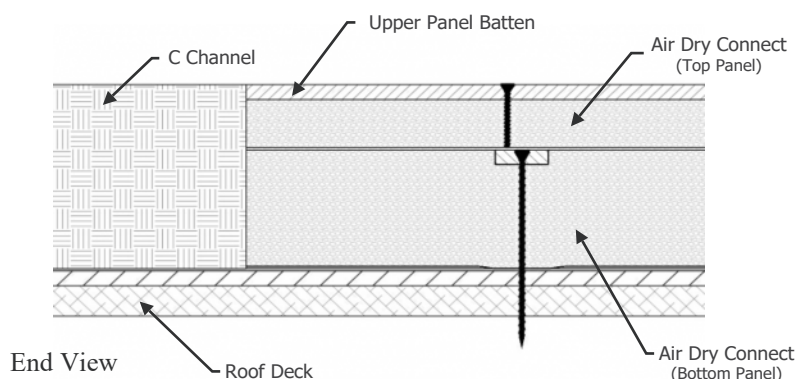
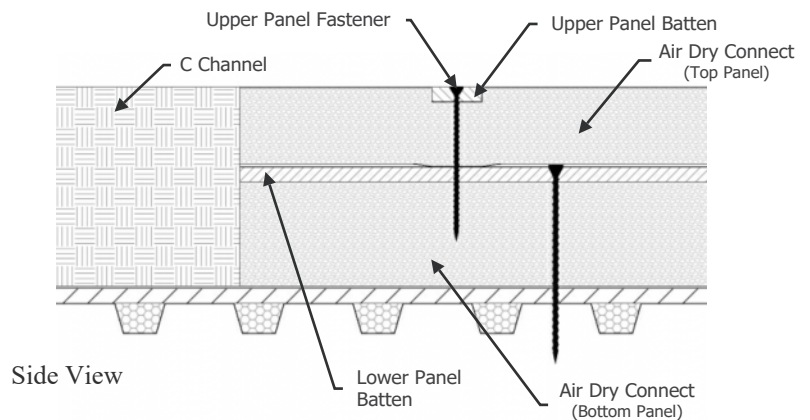


### General Instructions

- ① Starting from the lower eave, install second layer of Air Dry Connect panels. Drainage gaps and plywood battens run perpendicular to the lower layer battens and air channels. Ensure all panels fit snugly together. Cut panels as required to fit snugly against C channels.

**NOTE:** Top layer panel joints/connections MUST be staggered. Seams from top layer panels must **NOT** align directly over seams of bottom layer panels. If applicable, the thinnest Air Dry Connect layer should be the top layer.

- ② Secure each panel to the battens of the panel below using sufficient length fasteners. All top layer fasteners must fasten through top layer battens to bottom layer battens. DO NOT remove misplaced fasteners. Install another fastener in close proximity to the misplaced fastener. Refer to Detail C: Fastener Placement.
- ③ **NOTE:** Location of fasteners from the upper layer to fasteners in the lower layer should coincide closely to each other (within 6 inches). Refer to Detail C: Fastener Placement.
- ④ **NOTE:** Ensure to locate a fastener through each batten within 1" of each panel end.
- ⑤ Metal roofing hold-down clips (if applicable) are similarly installed in close proximity to top layer fasteners.
- ⑥ Taping of the top layer panels is **not** required. For metal standing seam cladding an air permeable synthetic underlayment should be installed.



Typical Roof Cross Section N.T.S.



# Installation Guidelines

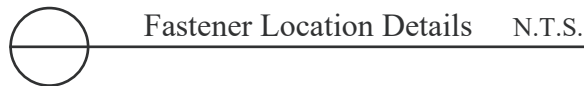
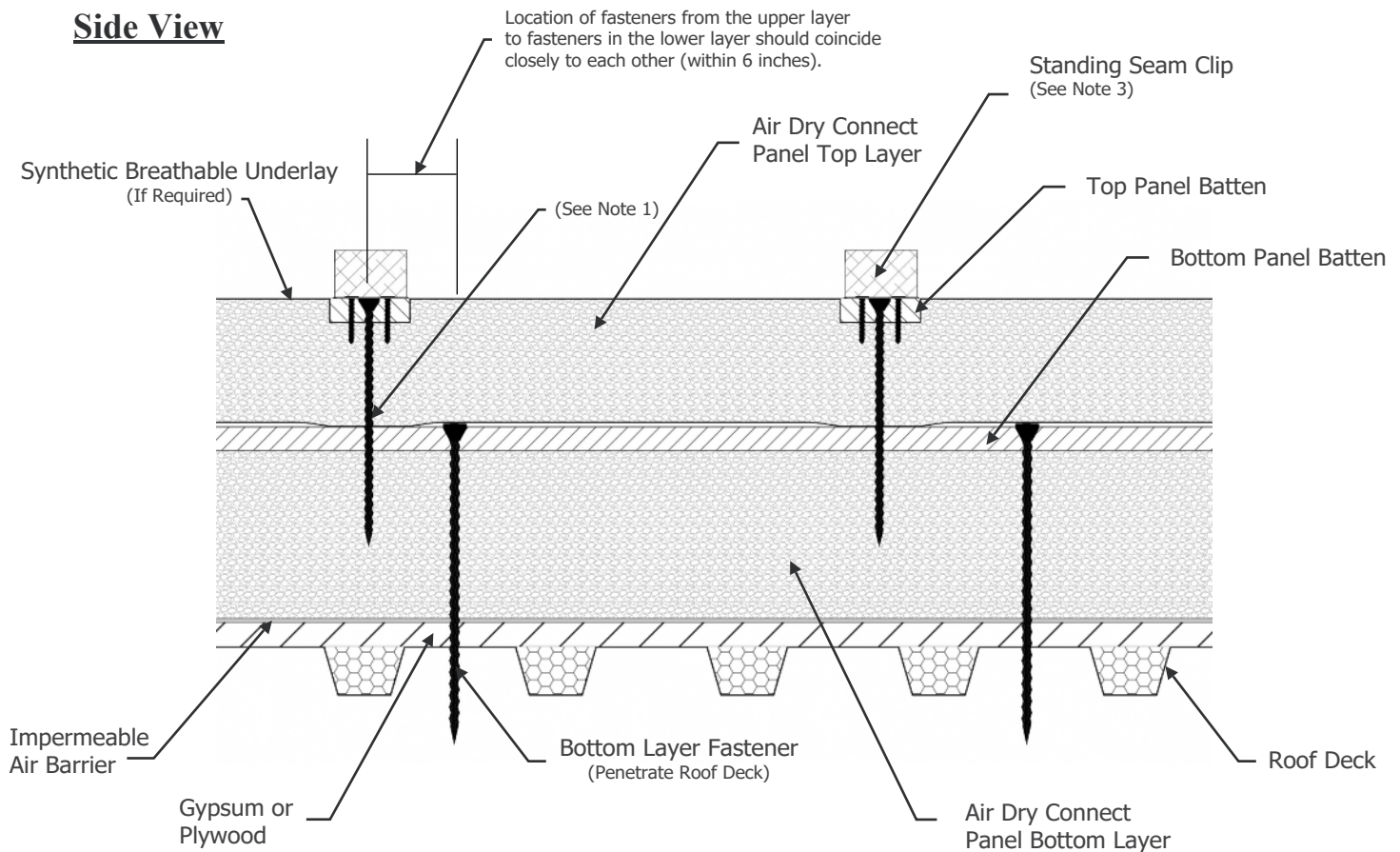
## Matrix Insulated Roofing System

DETAIL C  
Fastener Placement

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### Side View



### Notes

1. Top layer batten ends must be fastened to lower layer battens. All top layer fasteners must fasten through top layer battens to bottom layer battens. DO NOT remove misplaced fasteners. Install another fastener in close proximity to the misplaced fastener.
2. Location of fasteners from the upper layer to fasteners in the lower layer should coincide closely to each other (within 6 inches).
3. Metal roofing hold-down clips (if applicable) are similarly installed in close proximity to top layer fasteners.
4. Panels secured using fasteners through furring/strapping. Fastener length and number required will depend on insulation thickness, roofing choice and overall building design. Fasteners must penetrate sufficiently to support insulation and cladding. Refer to local codes.