

Vent-Top ThermaCal 1 and X1 - Installation Instructions

1. PRODUCT

Vent-Top ThermaCal 1 and X1 are nailable roof insulation panels with a built-in space for ventilation. They have one layer of sheathing and panels are a nominal 4' x 8' (actual coverage 47-1/4" x 95-1/2"). Edges of wood sheathing are rabbetted or cut back to allow for expansion. Foam edges may be tongue and groove if specified. For more information on the product and its uses and limitations please see company literature or our web site: www.cornellcorporation.com. CHECK LOCAL BUILDING CODES for any applicable requirements.

2. STORAGE

Vent-Top ThermaCal 1 and X1 are shipped covered with a plastic bag which is intended to temporarily protect the material while in transit only. On the jobsite the piles should be covered with a breathable waterproof tarpaulin. The plastic bag should be removed if moisture accumulates inside it.

3. PRODUCT APPLICATION

Vent-Top ThermaCal 1 and X1 are designed to allow air flow through the air space below the top sheathing. To do this it must have the following:

- a. Adequate air entry flow at the eave. Use eave edge vents or eave soffit vents which allow approximately 9 square inches of air entry per foot run of eave. Where edge blocking is used at the eave, do not cover the entrance to the air space.
- b. The Vent-Top air spaces must not be closed off. If you need a smaller panel it is usually best to cut off the side or end with the tongue on it. Support the cut edge with spacer blocks running up the slope. Extra spacers are supplied with every shipment. **THE TOP BOARD IN EVERY PILE HAS EXTRA SPACERS SO THAT IT CAN BE CUT IN HALF FOR THE STARTER PIECES IN ALTERNATE ROWS.**
- c. A ridge vent with approximately 18 square inches of open area per foot run of ridge should be used. Warm moist air leaking from the inside of the building can cause condensation at the ridge, at the end walls or at any other opening. Seal off these openings by cutting the foam insulation at a suitable angle and filling any gaps with spray foam or caulking. Do not use combustible spray foam around chimneys.

4. INSTALLATION

- a. If specified, install a vapor retarder on the supporting roof deck. We recommend one over high humidity areas such as swimming pools. In this case particular care should be taken to seal all openings in the deck around light fixtures, skylights, end walls and at the ridge, etc. On any building where conduit is installed above the structural deck, a separate layer of 1-1/2" thick foam insulation is recommended.
- b. Fire safety precautions should be observed when Vent-Top ThermaCal is installed. Protect foam from flame cutting and welding operations, etc. Around chimneys provide suitable fire protection.
- c. Install wood nailers at the eave and rake edge of the roof. Before installing the first row of insulation at the eave check how the eave vent or the sheathing over the roof overhang will be supported. Check the supporting roof deck is smooth and even without bumps or depressions.
- d. Lay panels with the wood side up and the long side parallel to the ridge. If foam edges are tongue and grooved, then the tongue should face up the slope. Sheathing has rabbetted edges to maintain the proper expansion clearance between adjacent panels. Field cut panels should be kerf cut to maintain a 1/8" minimum gap between the sheathing on adjacent panels. Stagger end joints in succeeding panel rows.
- e. Place screws directly through the panel into the structural deck, use insulation fasteners as shown on the next page. Do not over-torque the screws and compress the insulation too much.
- f. Check the insulation top surface for uneven edges BEFORE covering. Grind off any uneven edges with an electric sander or grinder.

Vent-Top ThermaCal 1 & X1 - Installation Instructions (Continued)

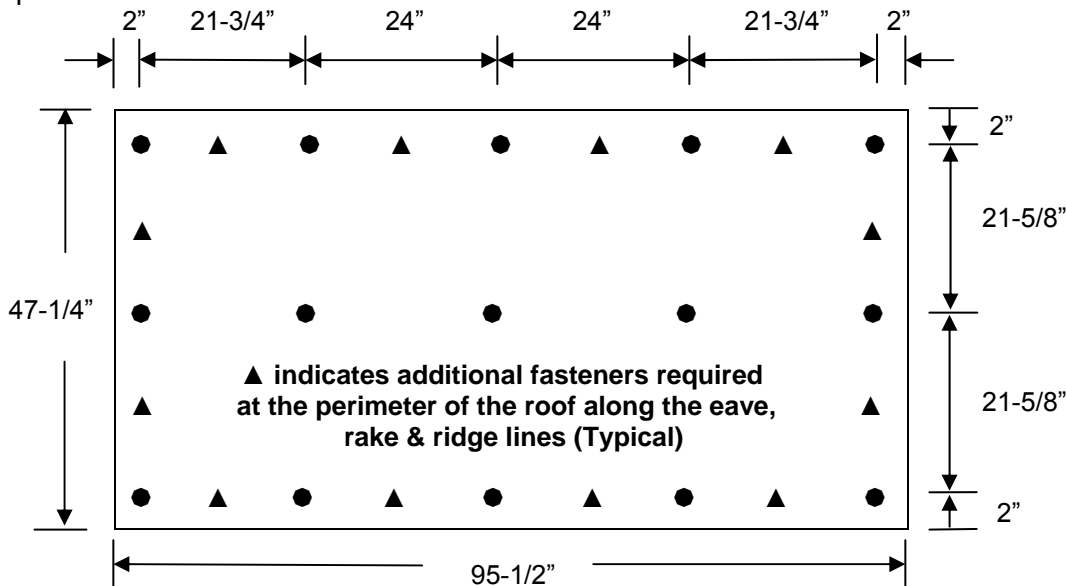
- g. Roofing should be applied over dry insulation as soon as possible. Apply roofing felt and shingles to the Vent-Top ThermaCal using shingle nails placed according to shingle manufacturer's recommendations. For best results use barbed or ring shank shingle nails and premium or laminated shingles.
- h. Install eave and ridge vents as described under Product Application. Check architect's specifications

5. INSULATION FASTENERS

- a. Number - use a minimum of 15 screws per 4' x 8' panel. Apply fasteners at the approximate position of the internal spacers as shown in drawing below. There are lines on the sheathing (OSB only) at 24" and 48" from the panel ends which will assist in locating the fasteners. Ignore the lines at 16" and 32". Use additional screws at the rakes, eaves and ridge as shown.
- b. Wood Deck - use self-drilling self-tapping oval head roof insulation screws **without plates**. They should be 1-1/4" to 1-1/2" longer than the overall depth of the vented roof insulation. If the wood deck is less than 2" actual thickness, use fasteners with a minimum of 1" penetration and install 4 extra fasteners on the horizontal center line of the panel. On plywood use fasteners that protrude through the deck by at least 1/4". If exposed fastener tips are not acceptable, contact Cornell Corporation for suggestions.
- c. Steel Deck - use self-drilling self-tapping oval head roof insulation screws **without plates**.
- d. Concrete Deck - use Tapcon screws or equal. Advance testing is recommended.
- e. Special Applications- Contact Cornell Corporation for special applications not shown here.

6. FASTENER PATTERN:

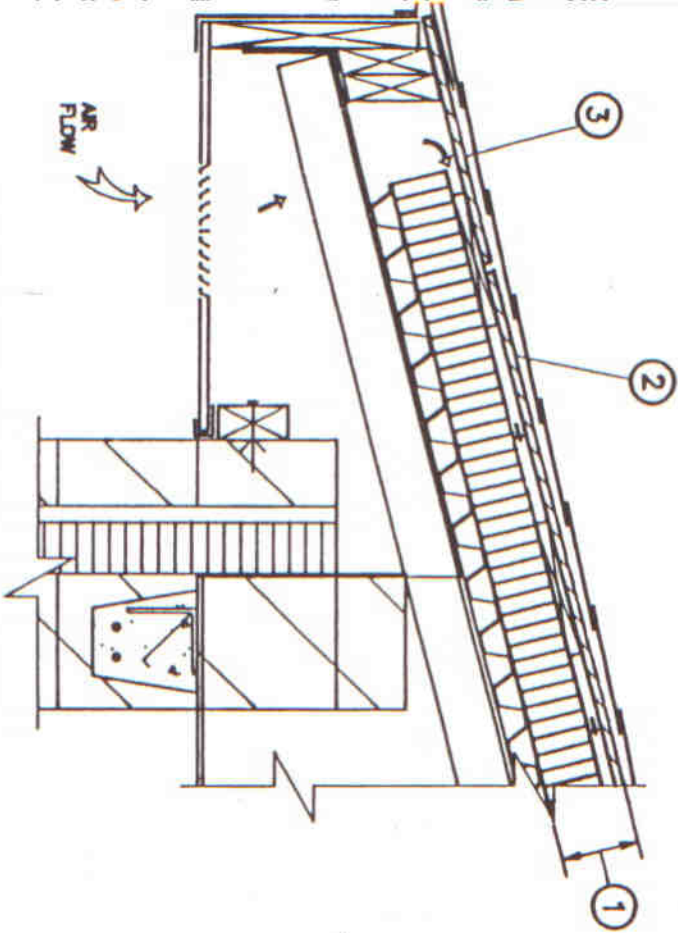
- a. Use 15 screws per panel (5 across- parallel to the ridge & 3 up the slope) as the standard fastening pattern. Add additional fasteners as shown below.



- b. When installing heavy material such as natural slate or tile on a pitch greater than 4/12, install 4 additional fasteners on each panel along the center of the panel (aligned along the 8' length) parallel with the ridge line.

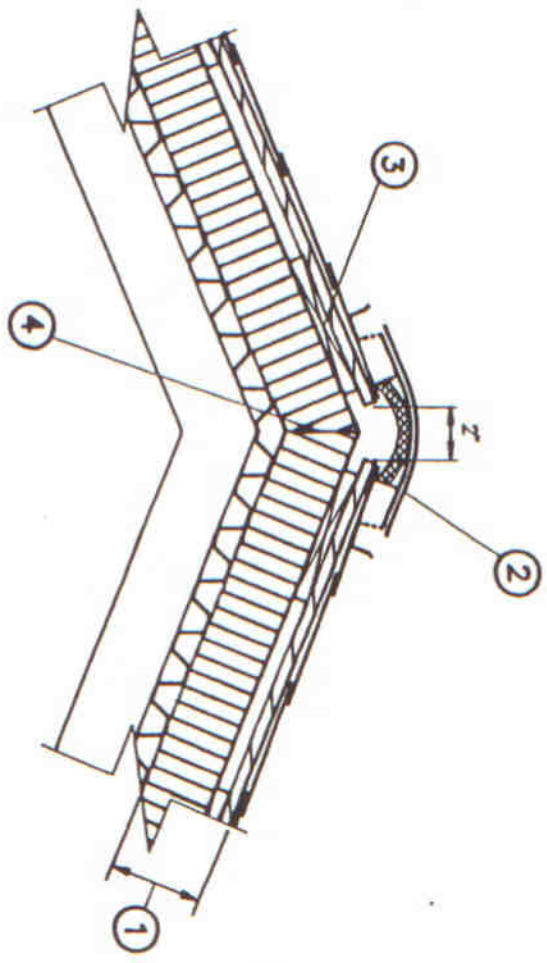
DETAIL DRAWINGS: Check architect's plans for Eave and Ridge Details. See page 3 and 4 attached for our suggestions. If they conflict, contact the architect.

- ① Ventilated Nail Base Insulation.
- ② Top sheathing of insulation cut back to center of support spacer.
- ③ Field cut sheathing (by others) to width required.



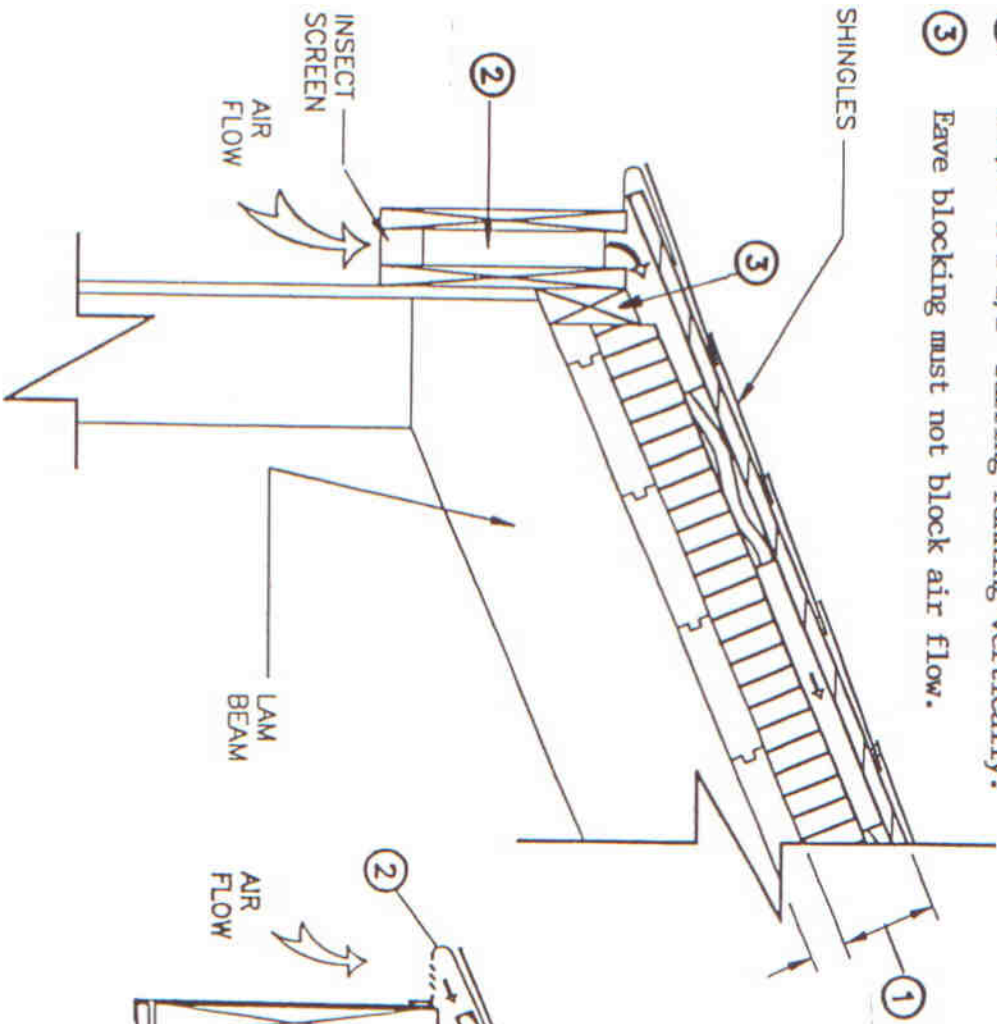
SOFFIT VENT DETAIL

- ① Ventilated Nail Base Insulation.
- ② Ridge vent (by others). 2" opening between two top layers of sheathing.
- ③ Insert extra spacer block (supplied) if no block within 3" of cut.
- ④ Cut foam at angle to fit tight together. Fill any gap with urethane spray foam.



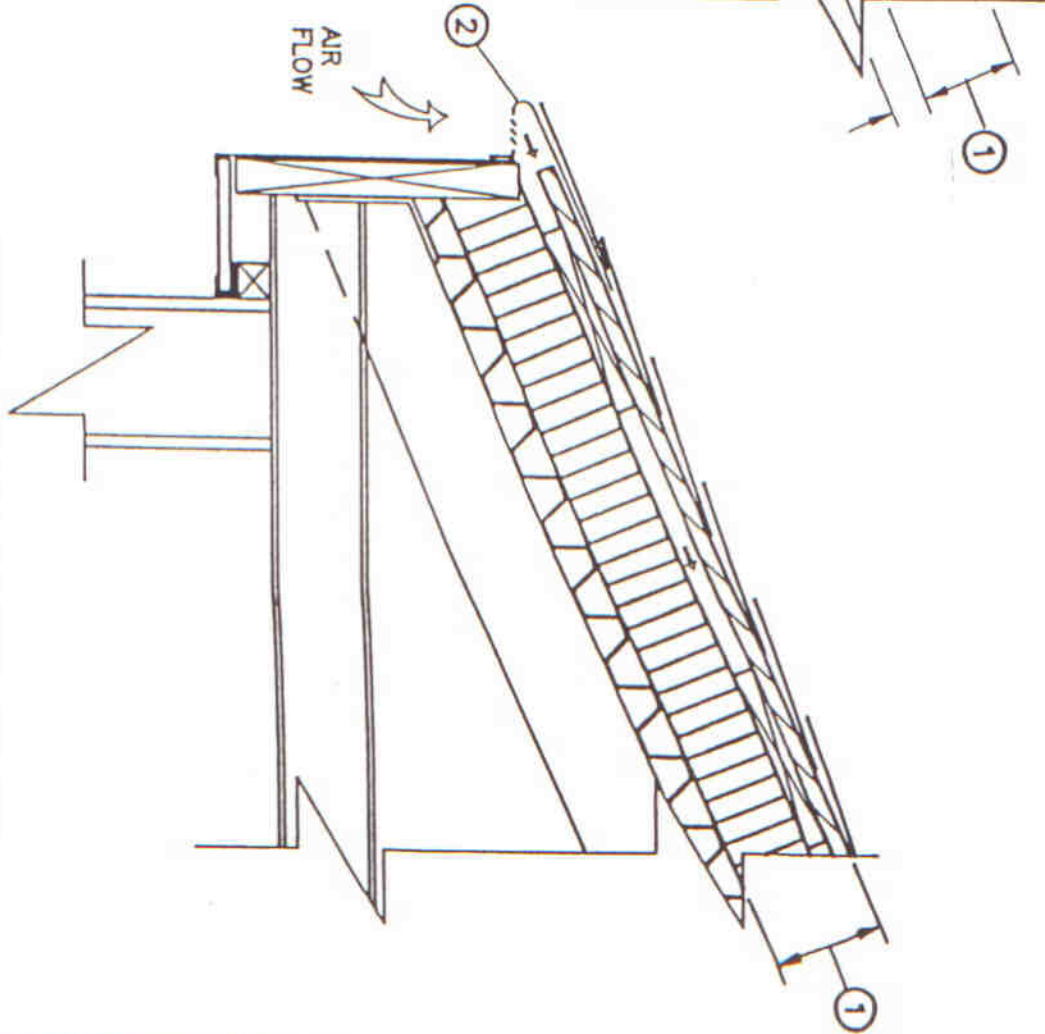
RIDGE VENT DETAIL

- ① Ventilated Nail Base Insulation.
- ② 1-1/2" x 1-1/2" furring running vertically.
- ③ Eave blocking must not block air flow.



DOUBLE FASCIA
VENT DETAIL

- ① Ventilated Nail Base Insulation.
- ② Ventilated drip edge by others.



DRIP EDGE VENT DETAIL