

VersiWeld® Mechanically Attached Roofing Systems

Alternate Fastening Method

RhinoBond

December 2009

This is an alternate fastening method for the VersiWeld Mechanically Attached Roofing System and is intended to be used as an attachment to the VersiWeld Mechanically Attached publication. Projects where a membrane system warranty is required must be routed to Versico for approval prior to installation.

A. Description

The RhinoBond Attachment Method incorporates 3" diameter corrosion-resistant plate with a high-solid TPO coating. The Rhino plates are typically installed in accordance with the attached drawing and specific fastening pattern approved by Versico. The plates are fastened to a minimum 22 gauge steel deck or 15/32" thick plywood with Versico HPVX Fasteners. The VersiWeld membrane, 45- or 60-mil thick, is positioned over the insulation and welded to the plates with a RhinoBond induction welding tool. Adjoining sheets of membrane are overlapped approximately 2" and joined together with a minimum 1-1/2" wide heat weld.

Base wall securement and securement around roof penetrations as well as flashings of walls and penetrations must comply with Versico requirements for the VersiWeld Mechanically Attached Roofing System.

B. Products/Heat Welding Equipment

Products listed in "Attachment I" of the VersiWeld Mechanically Attached Roofing System, "Design Criteria" Specification can be used as part of this alternate fastening method in conjunction with the RhinoBond Welding Plates.

RhinoBond Plate (packaged 500/ctn): A 3" diameter, 0.028" thick, corrosion-resistant steel plate with a high solids coating on the top surface. The plate is used in conjunction with Versico's HPVX Fasteners to attach the roofing assembly and is activated using the RhinoBond induction welding tool.

RhinoBond Induction Welding Tool: An induction heating tool is used to emit the magnetic field at its work coil, and an electronic controller measures the energy being used by a power converter that generates the alternating current driving the work coil which creates the magnetic field.

C. RhinoBond Portable Induction Tool Calibration:

1. Prior to proceeding with membrane attachment to the plate, the RhinoBond Induction Tool must be calibrated. To begin the calibration process, place 5 plates on an insulation equal in thickness and type to that to be used for the project.

Note: It is not necessary to use a fastener with the plate during the calibration.

2. Place membrane over the insulation covering the RhinoBond Plates.
3. Using a portable induction device at default setting, weld the first plate by placing Cool & Clamp device over the membrane over the plate increasing induction energy one level by depressing the "up" button once.

Note: Upon cycle completion, the **Activate/UP** lights flash once to indicate tool is set to +1. If set to -1, the **Activate /DN** lights will flash once.

4. Repeat above procedure for the remainder of the plates, increasing induction energy one level for each plate. Lights will flash a number of times to indicate the number of steps "UP" or "DN" from the default setting.

Note: Energy level will return to default whenever power is interrupted.

5. Allow membrane to cool to ambient temperature.
6. Using pliers, apply force to peel RhinoBond Plate from underside of membrane to measure bonding strength. Validate correct induction energy setting based on strength and bond and peel resistance.

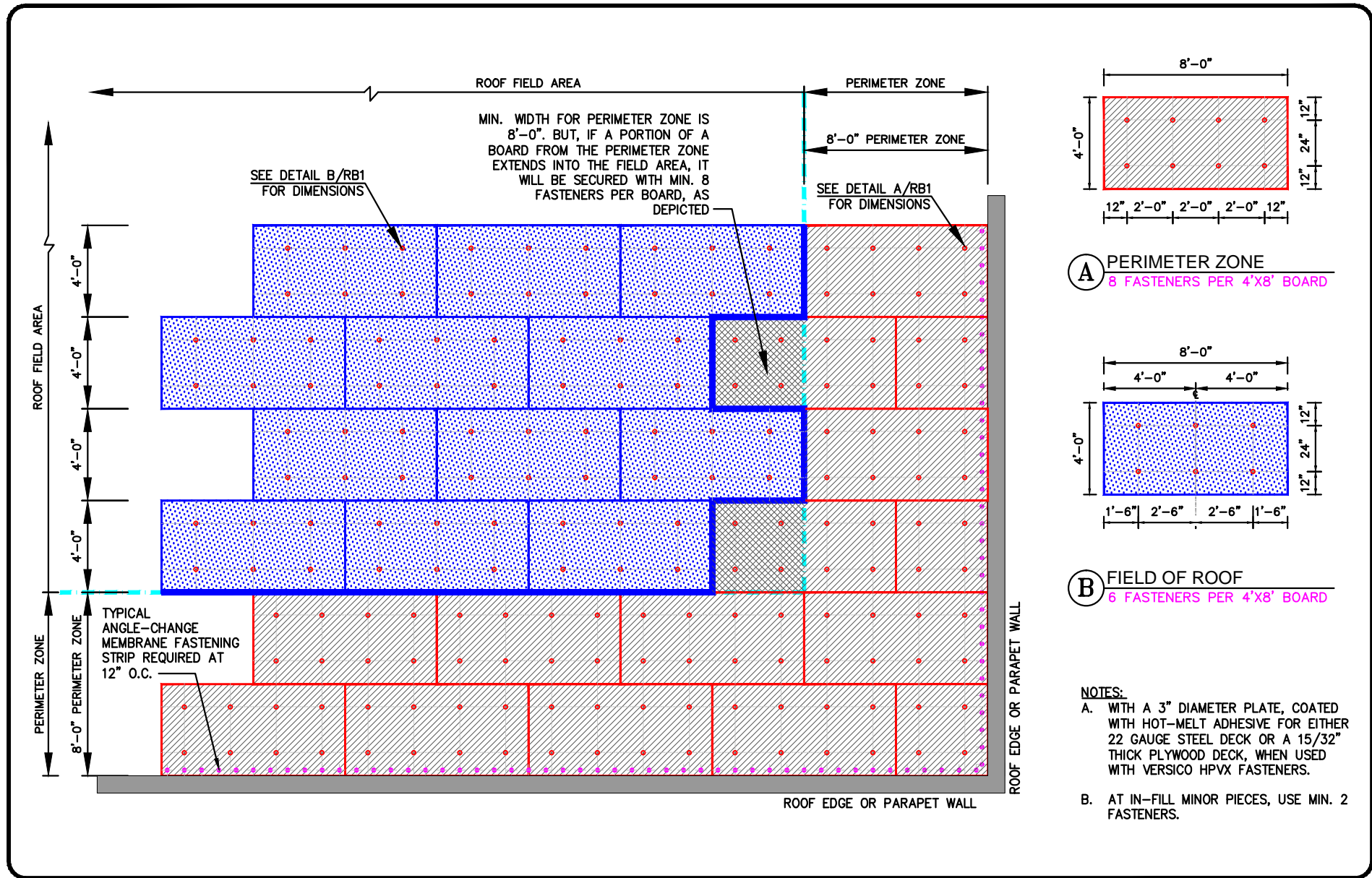
Desired failure mode is delamination of bottom film of membrane from reinforcement (scrim).

7. Repeat trial process, if needed, adjusting energy level up or down until desired results are achieved.
8. Recalibrate induction tool settings when ambient temperature changes more than +/- 15°F.

C. Installation

Do not proceed with installation of this system unless an approval has been secured from Versico, outlining the required fastening density.

1. After placement of insulation on substrate, place RhinoBond plates according to approved fastening pattern.
2. Secure RhinoBond Plates to substrate using approved HPVX Fasteners avoiding fastener overdrive to prevent plate from deforming.
3. Place VersiWeld membrane over insulation covering RhinoBond Plates and allowing membrane to relax.
4. Activate weld between membrane and plate using approved portable induction device.
 - a. Induction coil must be positioned over center of plate, +/- 1".
 - b. Portable induction device must elevate the temperature of plate from ambient to 400-500°F.
 - c. Cycle time will be affected by available power. To reduce cycle time and enhance productivity, use heavy gauge extension cords and stable sources of power. No less than 12 **gauge** x 100 **feet (maximum length)**, 10 **gauge** preferred.
5. Immediately place Cool & Clamp device on the membrane over the plate and leave in place for at least 60 seconds.
6. Resume the process ensuring membrane is attached to all plates.
7. At overlapping of adjoining membrane sheets, weld membrane following standard welding procedures as outlined in the Application Section of the VersiWeld Mechanically Attached Roofing System Specification.



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RhinoBond ATTACHMENT METHOD FASTENERS' LOCATION AND NUMBER OF FASTENERS

2010 RhinoBond Attachment Detail

RhinoBond Attachment

VersiWeld
RB1