



THINK OUTSIDE THE SEAMS

With the RhinoBond System, you have to think differently when it comes to scheduling and running your job, compared to a traditional mechanically attached installation.

These Best Practices are based on several years of RhinoBond project observation and evaluation.

It should also be noted that for improved productivity, a minimum of two RhinoBond tools should be used.

PATENT NOTICE: The OMG RhinoBond® Electro-magnetic Induction Tool is covered by U.S. Patent No. 8,492,683.



Always follow supplied roof system manufacturer's fastening patterns for field, perimeter and corner areas needed to achieve desired wind ratings. (i.e.: FM 1-90, FM 1-120, etc.)

POWER REQUIREMENTS

Generators should be 5000 watt (minimum) in good working order. "Auto throttle" and/or "auto idle" switches **MUST** be in OFF position.

RhinoBond tools are designed to run on 105–220V. Use a true RMS multimeter to verify voltage at the generator, and at end of extension cord.

12 gauge (minimum), 100' (maximum) extension cord per RhinoBond Tool. **Inspect** power cords regularly for signs of damage; replace if necessary.

Safely operate two RhinoBond tools (maximum) per 5000 watt generator, with each tool plugged into a separate 20A, GFCI circuit.



Dedicated power source: No other equipment should be plugged into RhinoBond generator during operation!

DO NOT plug the tools into a pigtail.

DO NOT plug RhinoBond tools into a 15A GFCI adaptor.

If the weld time lasts more than five seconds, check the power source.



One power cord per circuit and per tool



Do not use pigtails

SAFE START UP & SHUT DOWN



NOTE: Unstable generator power during start-up increases the risk of damage to RhinoBond Tools.

SAFE START-UP

Always wait until generator is running at **full speed** and delivering stable power **before** plugging in the RhinoBond tool.

SAFE SHUT-DOWN

Simply unplug the RhinoBond tool to shut down. To resume work, **confirm** that generator is running at **full speed** and delivering stable power **before** plugging in the RhinoBond tool.

Static interference when there's a radio on the job. Don't worry, this is normal. The tool meets FCC transmission requirements for industrial tools, but can cause static interference under certain circumstances, especially if the radio is plugged into the same circuit as the tool.

INSULATION COMPATIBILITY*

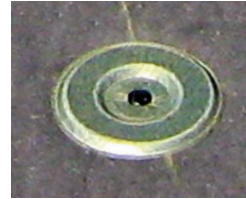
Insulation Types and Thicknesses: RhinoBond is compatible with mineral wool, polyisocyanurate, DensDeck® and Securock® as well as any insulation that will not melt by the induction welding process. Induction welding should not be used directly over extruded polystyrene, EPS or foil faced insulation boards. The recommended thickness of the cover board is ½-inch minimum over XPS and EPS and 1½-inches minimum over foil faced insulation.

Metal Deck: When using RhinoBond over a metal deck, a minimum of 1½-inches of insulation over the metal deck is required for proper tool operation.

*These recommendations address various technical operating requirements of the RhinoBond Induction Tool only, and are not provided in lieu of any applicable building code or roofing system manufacturer requirements or specifications.

PROPER FASTENER INSTALLATION

Fasteners must not be overdriven. They should be tight enough that you cannot turn the plates with your hand. Overdriven fasteners are harder to find, and may result in a poor or partial bond.



Proper installation



Overdriven



Always follow supplied roof system manufacturer's fastening patterns

for field, perimeter and corner areas needed to achieve desired wind ratings. (i.e.: FM 1-90, FM 1-120, etc.)

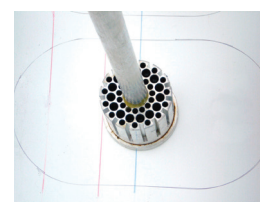
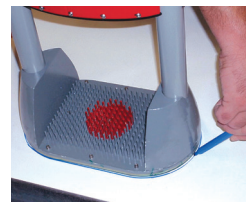
The RhinoTrac™ advantage. Using the RhinoTrac Fastening System may help to ensure proper fastener installation and depth. The RhinoTrac System simultaneously drops a RhinoBond plate and drives the fastener while saving time and manpower.



TOOL ALIGNMENT

For optimum weld quality, **the RhinoBond plate must be centered within 1 inch under**

the red dot. Train crew by having each new operator outline the base of the tool with a grease pencil every 10th plate or so, to check the tool alignment. After several checks, the operator will get the hang of it.



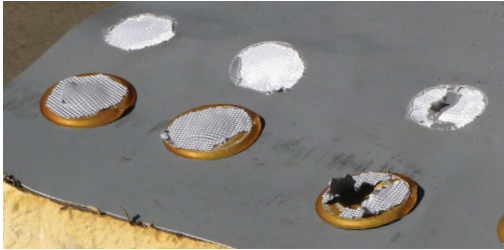
For best results, the RhinoBond tool must be centered over the plate.

ALWAYS CALIBRATE THE TOOLS

Refer to RhinoBond Owner's Manual for calibration instructions.

Calibrate **each** tool at least once in the morning, and once after lunch, or whenever the temperature changes more than +/- 15°F. Optimal weld settings may differ from one RhinoBond tool to the next; therefore, it is important to calibrate **each** tool for best results.

Select Energy Levels. Use the up and down arrows on the RhinoBond display to change the Energy Level, and set the tool to the energy level that provides a 100% bond, i.e. total, even consistent adhesion of membrane to 360° of the raised surface on the RhinoBond plate. See RhinoBond Owner's Manual for more information.



Evaluate bond strength through calibration

Test welds. When making test welds, be sure to test the plates over the same assembly used in the actual installation. For example, don't calibrate over a concrete deck if plates are being installed over ISO/cover board. Also make the test welds in actual working environment (i.e. outside, on the roof).

KEEP PLATES AND MEMBRANE CLEAN AND DRY

For best results, RhinoBond plates and the bottom side of roofing membrane **must be clean and dry.**



Do not operate RhinoBond tool in rain or if standing water is present.

Top side of membrane may be slightly damp from dew or frost.

HEAT SINK MAGNET USE

Wait time/weld. After the RhinoBond tool has cycled and performed a weld, a Heat Sink Magnet is placed over the weld for a minimum of 45 seconds. Six Heat Sink Magnets are supplied with each RhinoBond tool.

Magnet alignment is important. Operators should make sure the magnet completely covers the plate. Misalignment may result in less than perfect bonds.

Keep magnets clean. Metal shards or other debris sticking to the magnet can mar the membrane. Therefore, wipe the bottom of the magnet with a clean cotton rag **every time** before placing on a weld site.

Keep the membrane clean. Any debris on the membrane can be pushed into the surface of the membrane by the magnet during the bonding process. Use a leaf blower to eliminate all debris from the membrane surface prior to welding.

FASTENER INSTALLATION



ATTENTION: RhinoBond Plates must be protected from prolonged UV (ultra violet) sun exposure. Keep RhinoBond buckets covered when not retrieving plates. Installed RhinoBond plates must be covered with membrane by the end of each workday.

Fasteners installed in a straight row in a least one direction with even spacing makes locating fasteners under the membrane easier and speeds installation.



Straight rows – good



Random rows – hard to find

Snap chalk lines to layout prescriptive grid pattern for field, perimeters and corners.



Snap chalk lines



8' template bar marked with prescriptive grid measurements speeds layout

MAXIMIZE WELDS PER MINUTE

GOAL: Keep the RhinoBond tool cycling as frequently as possible. Achieve maximum productivity by managing simultaneous tasks during the 5 second cycle time.

SEQUENCE OF STEPS EXAMPLE

1. Center tool over plate; push activation button.
 2. Pick up first magnet and wipe clean with rag.
 3. Simultaneously locate next adjacent plate.
 4. Remove tool at end of 5 second cycle time.
 5. Lift tool, center on next plate and activate.
 6. Position clean magnet on weld for a minimum of 45 seconds.
 7. Pick up second magnet, wipe clean with rag.
- Repeat from Step 3.

An experienced operator should be able to weld 4 to 5 plates per minute or 240 to 300 plates per hour, with one RhinoBond tool. With fewer seams to weld, RhinoBond is an even more efficient option.

WELD IN ZONES

GOAL: Since fastening patterns are different in the field, perimeter and corner areas, treat each as a separate zone and weld each zone separately. This helps ensure that all plates are welded as you move from zone to zone.

MAXIMIZE LABOR ALLOCATION

GOAL: Capitalize on the ability to perform **simultaneous work**, repositioning labor across the roof as needed. RhinoBond increases the amount of simultaneous work over fewer installation steps.

CREW ROTATION EXAMPLE

Using an Eight-Man Crew

STEP 1

All eight laborers tear-off old roof.



STEP 2

As soon as enough roof is torn off, 2 crew members begin laying out insulation, and cover board if required.



STEP 3

When 25–30 sheets of 4 x 8 insulation (and cover board) have been laid down, 2 crew members start marking grid pattern for fastening, using an 8-foot template and chalk lines.



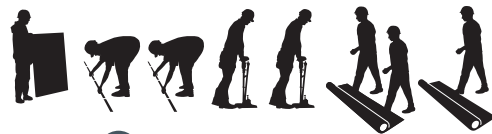
STEP 4

Once the insulation is marked, 2 crew members can begin securing it with specified fasteners and RhinoBond plates. Use RhinoTrac for faster installation. **NOTE:** Secure just enough insulation to accommodate 2 rolls of membrane, then blow off all dirt and debris.



STEP 5

Once surface is cleared of dirt/debris, 3 crew members begin rolling out membrane. **NOTE:** Pre-heat and calibrate seam welder.



STEP 6

When 2 rolls of membrane have been laid, 1 crew member begins welding seams. Once seams are sealed, this section of the roof is dry. 2 crew members can calibrate RhinoBond tools and 1 crew member begins detail work.



STEP 7

Once seams are welded, 2 crew members secure membrane using the RhinoBond tool, and 2 work on accessories and details while all others rotate back to Step 1.



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PATENT NOTICE: The OMG RhinoBond® Electromagnetic Induction Tool is covered by U.S. Patent No. 8,492,683.

Superior productivity.
Superior performance.

