July 2023

PRODUCT DATA SHEET

Roofspec Viking
Taking care of detail

Viking RhinoBond Mechanical Fastening

Version: 1.0

Introduction:

This Data Sheet is to serve as a reference guide for Viking Roofspec Licensed Installers who are already familiar with Viking Roofspec's systems and are responsible for Viking roof-system installations.

The following guide contains precautions, best uses and application procedures for the correct installation of RhinoBond Induction Welded technology for mechanical securement of Viking Enviroclad TPO

RhinoBond provides security of fixing into the substrate if overlaying an existing roof system, or where the client wants to reduce the use of solvent-based adhesives.

It is an advanced powerful induction heating system that creates a strong bond between the underside of the Enviroclad TPO roofing membrane and specially coated fastening plates fixed through to the substrate. Being a non-penetrating method of mechanically securing the membrane into the supporting substrate it can reduce cost and waste by negating the need to either remove and dispose of the existing membrane or replacing the substrate entirely if it is deemed suitably supportive. RhinoBond can use the same fastener and plate to secure the membrane and insulation (when needed) to the roof-deck without penetrating the roofing material itself.

The induction technology of the patented RhinoBond tool has been in use since the 1990's and performs well under variable weather conditions. The tool is effective even when the membrane is wet.

The RhinoBond System spreads the wind load evenly across the roof as opposed to traditional in-seam fastening method where sheets are mechanically secured at sheet laps only. Resulting in faster close-in and allowing the roofing applicator to tackle more square metres each day without the added concern of disrupting activities inside the building due to potential inclement weather.

Properties

Description	Packaging	Weight
RhinoBond Tool and 6 Cooling Clamp Magnets	Moulded Cases	27 Kg
6 Cooling Clamp Magnets	Moulded Cases	10 Kg
TPO Plates	500 / Bucket	16 Kg

RhinoBond Tool		Cooling Clamp Magnets	
Height	723.9mm , Handle Extends to 863.6mm	Quantity	6 Per Case
Width	317.5mm	Base Diameter	82.55 mm
Weight	10.5 Kg	Weight	1.13 Kg per Magnet

FASTENERS & PLATES:

- RhinoBond Plates are designed to secure roof insulation and Thermoplastic roof membranes. Plates are 80 mm round, specially coated Galvalume, installed with fasteners on steel, wood or structural concrete roof decks. All RhinoBond plates have a recessed center and a raised flat bonding surface and come in easy-to-handle weather resistant packaging**.**

MAGNETS:

- Weighted magnets are placed over the plates to dissipate heat and ensure correct and secure contact between the bottom surface of the membrane and the hot-melt adhesive of the RhinoBond plates for 45-60S secs. Keep magnets clean. If a metal shard or other debris from the roof sticks to the magnet, it can cause damage to the membrane surface in the weld area. Regularly ensure there are no contaminants on the underside of the magnet.

SUBSTRATE COMPATIBILITY:

- RhinoBond is compatible with polyisocyanurate PIR, mineral wool and hard cover boards as well as any insulation that will not melt by the induction welding process. When using RhinoBond over XPS, EPS**, use a minimum 13mm cover board under each plate** to protect the insulation from melting. **On metal deck**, I.E. Viking WarmSpan, or foil faced insulation the recommended **minimum insulation** or cover board thickness is **40mm**.

Installation

Keep substrate and membrane clean. Any debris on the top of the substrate or the membrane should be removed prior to initiating the induction welding process. Use a leaf blower or broom to eliminate any debris from the membrane surface.

Keep magnets clean. If a metal shard or other debris from the roof sticks to the magnet, it can cause damage to the membrane surface in the weld area. Periodically ensure there are no contaminants on the bottom side of the magnet.

1. CALIBRATION of RHINOBOND INDUCTION TOOL
    a. Prior to proceeding with membrane attachment to the plate, the RhinoBond Induction Tool must be calibrated. Follow calibration process as required (5 plates) each morning and afternoon. Keep records for QA
    b. Recalibrate the RhinoBond tool whenever the ambient temperature changes by 7°C (warmer or colder)
2. Avoid fastener overdrive to prevent plate from deforming
3. Keep the RhinoBond plates clean. Otherwise clean with Viking TPO Weathered-Membrane cleaner
4. Reduce UV exposure to RhinoBond plates. Cover each day.
5. Keep the under-side of the Enviroclad membrane clean to ensure a clean weld to the RhinoBond plates
6. Leave the Enviroclad to relax flat to where it wants to lay. In other words, do not fix at points then try to pull tight
7. Activate induction welding tool and leave in place until heating cycle is complete (approx. 5 secs based upon correctly calibrated setting for the days conditions)
8. Immediately after, place clean Magnet on the membrane over the plate and leave in place for at least 45-60 seconds. Regularly wipe the Magnet clean to remove any debris.
9. Refer details RB01 – RB04 for fixing centres up to and including 2.7kPa
    a. Perimeter fixing at 300mm centres 100mm from edge / 600mm centres throughout field of sheet
    b. Refer detail RB01 for Attachment Pattern for PIR Insulation sheet.
    c. Site specific placement of the plates will be required for wind-pressures above 2.7kPa (ULS). To confirm what these are consult with Viking Roofspec.

10. Fixing centres up to and including 6.46kPa (135psf)
    a. Refer Carlisle Evaluation Report FL14083
        i. 5.7.1 “MDP” = Maximum Design Pressure is the result of testing for wind load resistance based upon allowable wind loads and reflects the ultimate passing pressure divided by 2 (*the 2 to 1 margin of safety per FBC1504 has already been applied).
        ii. Refer Table 1C: W-32 Wood Deck min. 15mm (17mm plywood is typical) -67.5psf = 3.23kPa x *2 = 6.46kPa
    b. Perimeter fixing at 300mm centres 100mm from edge / 450mm centres throughout field of sheet

Precautions

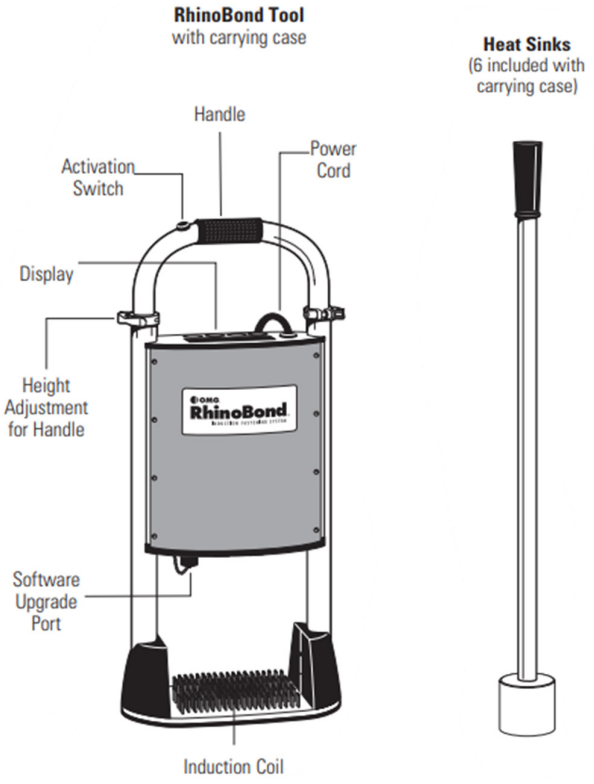
DO NOT USE THIS TOOL:

1) If you have (or anyone near you has) a pacemaker, surgical implant, prosthesis or other medical device. The RhinoBond tool may interfere with their proper operation.
2) DO NOT activate tool over metal objects in or on the floor.
3) DO NOT leave the RhinoBond Induction Welder in any rain however light.
4) Stable power (110-125 volts, 60 Hz) is required to operate the tool. Operators should use a 5,000 watt generator (minimum) with one 20A GFCI protected circuit per tool
5) A maximum of two RhinoBond tools per 5,000 watt generator is recommended. The power cord should be 12 gauge at a minimum, with a maximum length of 30m.

Storage

Handling and storage of all materials whether on or off site is under the control of the Viking Roofspec Licensed and Trained Installers. Dry storage must be provided for all products, do not let products get crushed under weight of stacking pallets on top of each other.

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



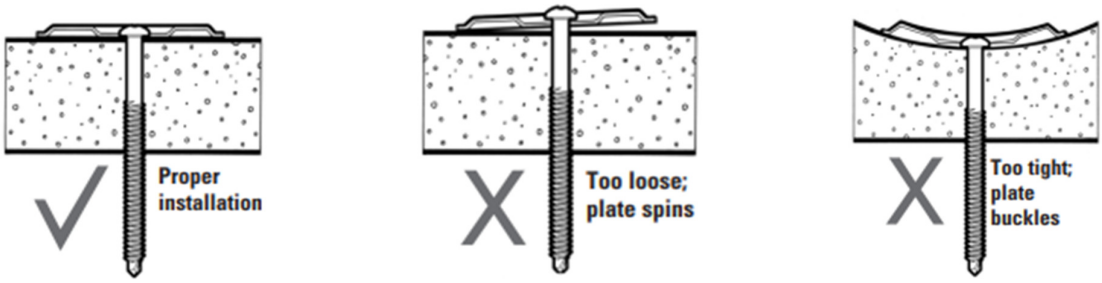
July 2023

PRODUCT DATA SHEET

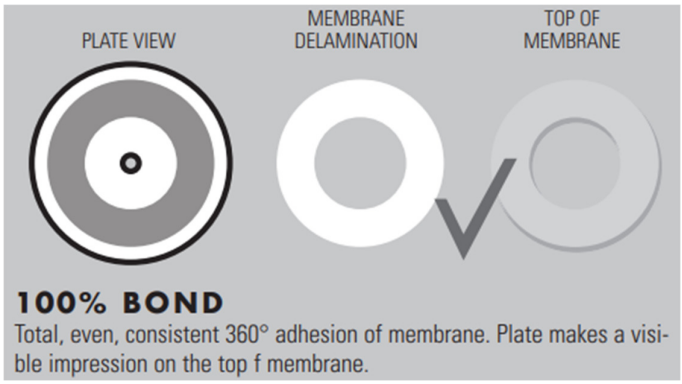
Roofspec Viking
Taking care of detail

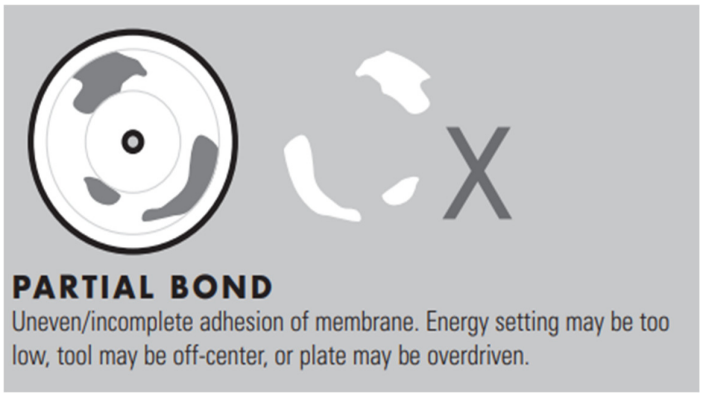
Notes

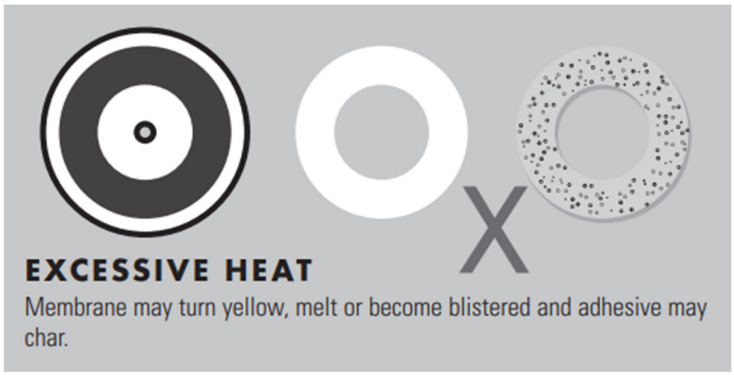
- Only use fasteners approved for RhinoBond applications. For best installation results, use a variable speed screw gun (2,500 rpm max.). When installing into purlins, use 1,200 rpm max.



Bond Results to Membrane







Auckland office
80 Alexander Crescent, Otara PO Box 14-541, Panmure, Auckland 1741, New Zealand

Christchurch office
2 Nazareth Avenue, Middleton, PO Box 9117, Tower Junction Christchurch 8149, New Zealand

Wellington office
19 Pretoria St, Lower Hutt 5010, New Zealand

T: 0800 729 799
F: 0800 729 788

info@vikingroofspec.co.nz
www.vikingroofspec.co.nz

A division of Viking Group Limited