



Dimond **Advanced** Roofing Systems

Advanced Non-Vented Retrofit System

Installation Guide

VERSION 1.0 / MARCH 2025

Engineered by
 **Dimond Roofing®**

Purpose

This installation guide is specifically designed for the installation of Advanced Non-Vented Retrofit System. It is formulated to ensure compliance with the New Zealand Building Code (NZBC) requirements for the installation of metal roofing and cladding. Adherence to the NZBC, the New Zealand Metal Roofing Manufacturers Association Code of Practice (MRMCOP) is essential for the proper installation of metal roof and wall cladding.

Compliance Requirements

All aspects of the installation process must strictly adhere to the guidelines outlined in the NZBC and MRMCOP. It is imperative that each component of the Advanced Vented RetroFit System is installed according to the manufacturer's specifications to fulfill the requirements of the manufacturers' warranties.

Site Safety

Ensuring site safety during roof installation is paramount due to the numerous hazards involved, including laceration, electrocution, puncture, and falling from heights. To mitigate these risks, it is imperative to adhere to prudent personal protective equipment (PPE) usage and safe installation practices. Following the guidelines outlined by WorkSafe: Working at Heights in New Zealand is essential. Additionally, precautions such as avoiding handling roof sheets in windy conditions, wearing protective clothing like gloves, and ensuring compliance with WorkSafe requirements regarding edge protection and fall restraint systems are crucial. Whenever uncertain, consulting with a supervisor or site foreman is encouraged to maintain a safe working environment.

Pre – Installation

Before installing the metal roof or wall cladding, the contractor must thoroughly review the approved drawings and specifications. Any deviations from these plans require written approval before commencing work. Compliance with the Health and Safety at Work Act 2015 is mandatory, and appropriate safety measures must be in place. The existing structure, including purlins and girts, must be inspected to ensure they are correctly positioned, securely fixed, and capable of supporting the new cladding. Additionally, coordination with other trades is essential to ensure proper weatherproofing at all intersections, with agreements made in advance to prevent issues during installation.

Transportation Guidelines

Drivers are primarily responsible for load safety. Short sheets are placed atop longer ones with proper end and edge protection to prevent damage. Dunnage should be evenly spaced vertically, and bundles securely placed to avoid damage. Sheets exposed on the underside need protection to prevent dunnage damage, usually by using a short slip sheet with paper overlay.

Accepting Delivery

Check the delivery for correctness and prime condition. Ensure all installation components are onsite before starting installation. Choose a safe landing point for the load in collaboration with the main contractor. Crane operators must refuse unsafe loading instructions. Bundles of roof cladding should remain banded during crane lifting.

Unloading

Prepare a flat area with supporting dunnage to prevent sheet damage. Store sheets under a waterproof cover if onsite for more than a day. Use a crane with a spreader bar and nylon slings with sleeves to prevent damage.

Site Storage

Close-stacked sheets are prone to rapid deterioration if moisture enters the pack, forming unstable compounds. Upon delivery or storage, wet sheets must be used immediately or dried. Long-term storage should be in dry, well-ventilated areas. Failure to do so can lead to surface damage, voiding warranties. Consider waterproof packaging for on-site storage exceeding one week to prevent damage.

Footwear

When walking on roofs, wear flat rubber-soled footwear to avoid marking and slipping. Place a mat at the ladder base for cleaning shoes before climbing or remove dirty shoes. Roofs can be slippery, so be cautious.

Strippable films

Strippable film is a clear plastic applied to roofing products for protection during handling, transportation, and installation. It shields against damage but not corrosion, humidity, or chemicals. Remove it promptly after exposure to sunlight and collect it for disposal.

Store products with strippable film below 50°C and away from direct sunlight to prevent UV damage. Keep them dry to avoid moisture causing issues to the painted surface or whitening and breakdown of the film adhesive.

Marking and cutting

Avoid using black lead pencils for marking aluminum or zinc, whether unpainted or pre-painted steel products, as they can cause corrosion. Instead, use pencils of any color other than black, marker pens, or crayons. When cutting pre-painted steel, employ shear cutting methods such as nibblers or hand shears to preserve the finish. Avoid using friction blades or high-speed saw blades on metal cladding to prevent damage from excessive heat and hot swarf. Lastly, ensure debris is cleared from the job site daily to prevent swarf damage.

Fixings

Fixings must match or surpass the durability of the material they secure. Additionally, their metal or coating should be compatible with the cladding material if they come into contact. For pre-painted steel products, it's imperative that fasteners are factory colour-matched prior to installation.

Screw fasteners need to have adequate length to ensure they penetrate the supporting structure properly. Generally, for screws into timber, a minimum embedment of 30mm is recommended, while screws into steel should engage at least three threads. In severe environments, a minimum Class 4 rating is necessary, whereas very severe environments call for a Class 5 rating.

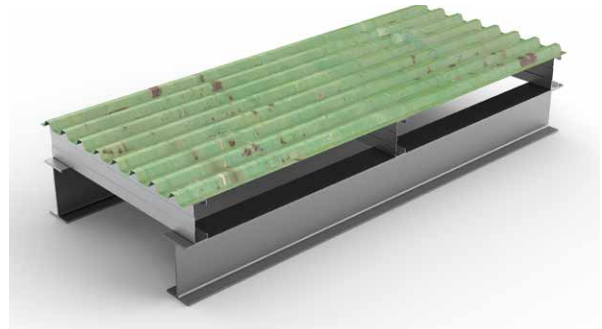
Quality Assurance

Take relevant photos of completed stage and sign Dimond Quality Assurance document.

Installation Process

Preparation of Existing Roofing Sheets

- Install under flashings as necessary.
- Using a medium nylon bristle broom and fresh flowing water, or a water blaster (2000–5000 psi), thoroughly clean the roof profile to remove any dirt, lichen, or mold.
- Take care not to drive water under laps or flashings to avoid water ingress.

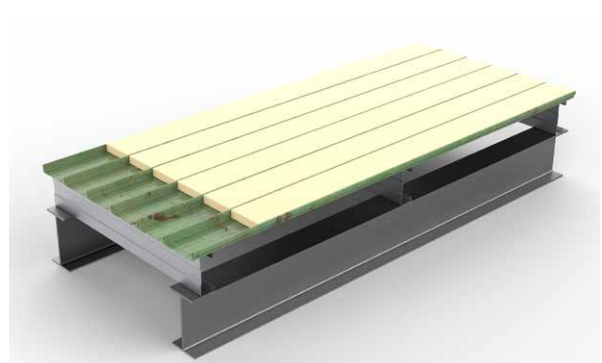


Inspecting for Corrosion

- Check that any white corrosion is easily removed and confirm that no red rusting has developed.
- Allow the roof to dry completely before proceeding.
- Neutralize areas where white corrosion is present using a commercially available metal cleaner specifically designed for this purpose.
- Ensure that the old or corroded roof can support the weight of people and equipment during installation.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.

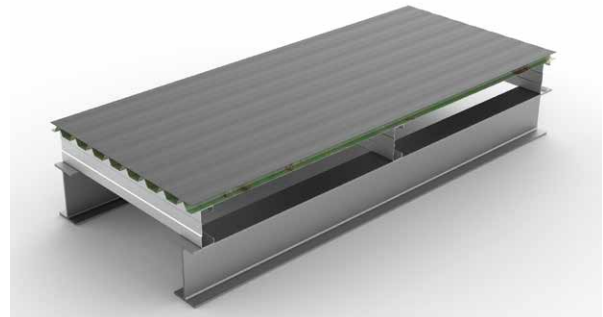
Install PIR infills (if required)

- Wear appropriate personal protective equipment (PPE) such as gloves, goggles, and dust mask to protect against insulation fibers and dust. Work in a well-ventilated area or use respiratory protection if necessary.
- Cut Dimond PIR Infills to fit inside trough pan ensuring PIR sits level with rib height to give a flat surface to lay Dimond Vapour Barrier across and support Dimond PIR Insulation Board.
- Dimond PIR Infills can be temporarily held in place with spot fixing of adhesive or double sided tape.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.



Installation of Dimond Vapour Barrier

- Confirm that the Existing Sheets are smooth, dry, and free from any debris or contaminants.
- Lay the Dimond Vapour Barrier vertically, starting from the ridge and extending down to the gutter.
- Maintain an 80mm cover for side laps and a 100mm cover for end laps during installation of Dimond Vapour Barrier.
- Ensure that the Dimond Vapour Barrier is laid over the Existing Sheets, effectively sealing any gaps between the Existing Sheets and the edges of the building. Extend up 50mm higher than top of the

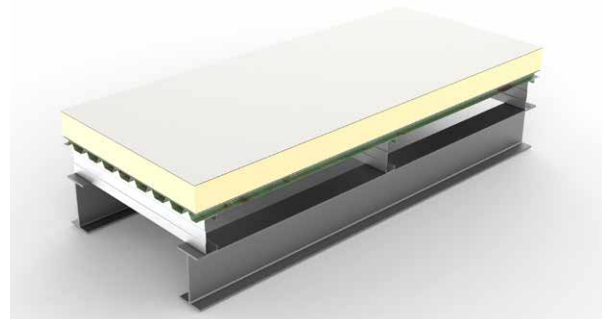


finished Dimond PIR Insulation Board or as per the Dimond Roofing details.

- Take relevant photos of completed stage and sign Dimond Quality Assurance document.

Installation of Dimond PIR Insulation Board

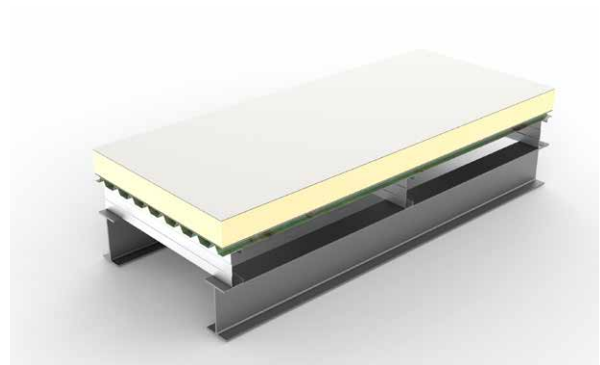
- Wear appropriate personal protective equipment (PPE) such as gloves, goggles, and dust mask to protect against insulation fibers and dust. Work in a well-ventilated area or use respiratory protection if necessary.
- Store Dimond PIR Insulation Boards in a dry and flat area to prevent warping or damage.
- Handle the boards with care to avoid edges being broken.
- Ensure the Dimond Vapour Barrier is clean, dry, and free of debris.
- Measure and mark the dimensions accurately on the Dimond PIR Insulation Boards using a straightedge and a pencil or marker.
- Dimond PIR Insulation Boards can be cut with a craft knife or saw.
- Place the Dimond PIR Insulation Boards atop the Dimond Vapour Barrier in a brick bond pattern to deter movement and eliminate thermal gaps.



- Dimond PIR Insulation Boards can be temporarily held in place with spot fixing of adhesive or double sided tape.
 - All gaps must be filled using expanding foam, such as Holdfast fire proof expanding foam or equivalent.
 - Seal around all penetrations with Dimond Lapseal Tape.
 - Take relevant photos of completed stage and sign Dimond Quality Assurance document.
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Installation of Dimond Underlay

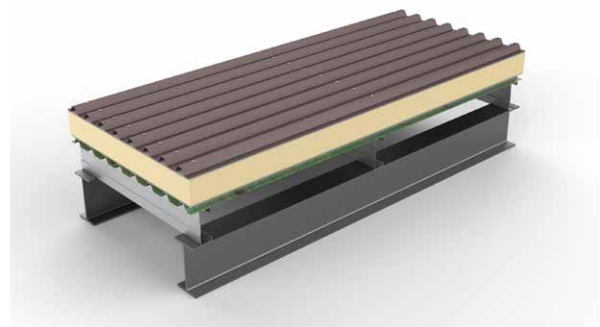
- Vertically lay Dimond Underlay on top of PIR in continuous ridge-to-gutter lengths and tension it so there is no creases.
- All laps either vertical or horizontal must be a minimum of 150mm lap.
- Dimond Underlay must not be left exposed to UV sunlight for more than 7 days.
- Ensure that Dimond Underlay does not extend beyond the gutter line by more than 20 mm.
- Dimond Underlay must be free of tears and punctures, fit tightly and be lap taped around all penetrations (except flue penetrations), to provide drainage for any condensation, or surface water from leaks.



- Any heat sources such as fireplaces, flues or chimneys must be separated or protected from contact with the underlay. Refer to NZBC Acceptable Solutions C/AS1.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.

Installation of Dimond Top Sheet & Flashings

- Refer to Dimond roof installation details on www.dimond.co.nz and the MRM Code of Practice.
- Dimond Top Sheet to be fastened as per Dimond technical data. Profiled washers are required for high wind zones and above or deal with excess sheet movement from thermal expansion when sheets are above 16m long. The roof fasteners must have adequate length to penetrate through the Dimond Top Sheet, the complete Advanced Non-Vented RetroFit System, and into the roof purlin below, ensuring for timber, a minimum embedment of 30mm is advised, while screws into steel should engage at least three threads.
- For fixings in severe environments, a minimum Class 4 rating is required, whereas very severe environments mandate a Class 5 rating.



- Stop-ends must be installed at the top edge of all sheets. Roof cladding with a pitch lower than 8° must have turn-downs added, following the guidelines outlined in the MRM Code of Practice.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.

Completion

- All gutters, valleys, roof channels, and the roof cladding must be thoroughly cleaned and cleared of debris upon completing the project. Any roofing-related debris left on-site should be safely disposed of.
 - Upon finishing the scheduled work, the roofing contractor should inform the main contractor, architects, or owner. It is advisable for the contractor to document any sheet damage (if present) at this stage, especially if other trades will access the roof later. It's important to note that any damage caused by other trades is not the responsibility of the roofing contractor.
 - Take relevant photos of completed stage and sign Dimond Quality Assurance document.
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Warranty Statement:

All components in Dimond® Advanced Roofing Systems are warranted by their individual manufacturer for use in Dimond® Advanced Roofing Systems. Component warranties are subject to the terms and conditions set out by the individual manufacturer. Dimond® Advanced Roofing Components must be installed, used, and maintained in accordance with the individual manufacturer's guidelines.

Contact us

Dimond® Roofing

or 0800 DIMOND (0800 346 663)

Dimond Roofing Specification Team:

Roofspec@dimond.co.nz

Technical Team:

Rooftech@dimond.co.nz

0800 766 377

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