

Dimond
Advanced
Roofing Systems

Installation Guide

VERSION 1.0 / JUNE 2024

Dimond
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Advanced Standard System



Purpose

This installation guide is specifically designed for the installation of Advanced Standard 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), and the Dimond Roofing Technical Manual 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, MRMCOP, and the Dimond Roofing Technical Manual. It is imperative that each component of the Advanced Standard 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 metal roof or wall cladding, the contractor must inspect approved drawings and specifications. Any deviations require written agreement before work begins. Safety measures complying with Health and Safety at Work Act 2015 are mandatory. The structure must be inspected, ensuring purlins and girts are correctly positioned and fixed. Coordination with other trades for weatherproofing at intersections is essential and should be agreed upon beforehand.

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 aluminium or zinc, whether unpainted or pre-painted steel products, as they can cause corrosion. Instead, use pencils of any colour 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

Installation of Dimond Base Sheet

- Install under flashings as necessary.
- Lay the **Dimond Base Sheet** with its wide ribs oriented towards roof purlin. Ensure that all side laps are positioned correctly. Any end laps should extend a minimum of 100mm over the purlin, and they should be arranged with the upper sheet overlapping the lower sheet. This configuration directs water over the lap, facilitating its flow down the roof slope and preventing water from seeping into the gap between sheets.
- When installing on H3.2 CCA treated timber purlins, it is essential to incorporate an isolation barrier between the purlins and the **Dimond Base Sheet**.
- Pan Fix **Dimond Base Sheet** every 2nd pan to the purlins below ensuring straight screw lines placed accurately in the center of the purlins. This alignment is vital as it will serve as a reference point for subsequent rail fixing.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.

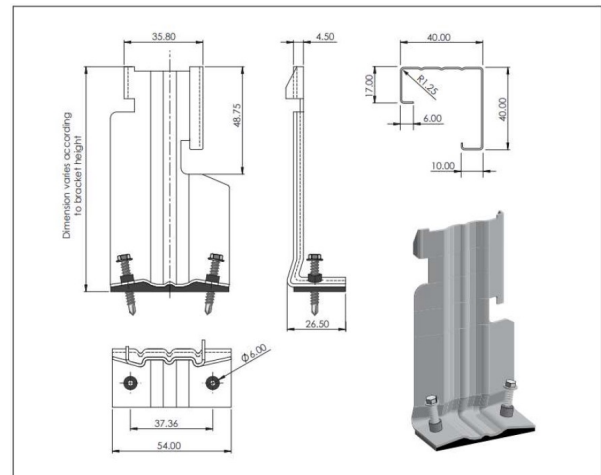
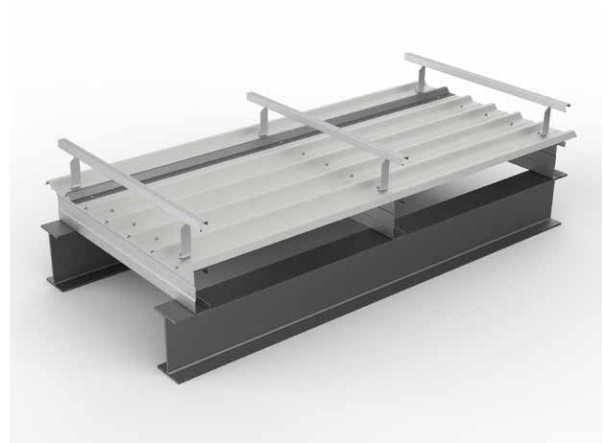


Installation of Dimond Lap Seal Tape

- Confirm that the **Dimond Base Sheet** is smooth, dry, and free from any debris or contaminants.
 - Peel off the release liner from the **Dimond Lap Seal Tape**.
 - Position the **Dimond Lap Seal Tape** at the centre of the lap material.
 - Firmly press **Dimond Lap Seal Tape** down and peel off more release liner from the tape as needed. Do not stretch or pull the tape at any point during the installation.
 - Crease mark or folds on the tape can occur to **Dimond Lap Seal Tape** when large amount of correction is made or made during installation. When the tape is off-centred, terminate the tape by cutting it with a sharp craft knife and start again with new tape at the location where it shows off-centred.
 - Lap join distance between **Dimond Lap Seal Tape** must be minimum 50mm.
 - Tape damages due to installation or site activities must be repaired by applying a second layer over the damaged area.
 - Take relevant photos of completed stage and sign Dimond Quality Assurance document.
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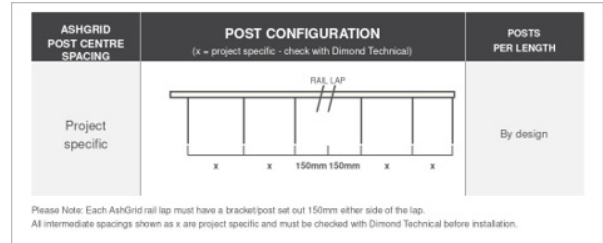
Installation of Dimond Post & Rail System

- Run each post along the rail section and loosely locate in position at specified centres.
- Stand upright centrally over the purlin support, twist lock the posts on the rail at 90 degrees to rail.
- Fasten posts through pre punched post holes. Screw fixings need to be 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.
- Butt and clip subsequent rails together to ensure no gaps.
- String lines are recommended to ensure the fixing lines remain straight along the purlin length.
- Ensure all swarf has been removed from the liner sheet to avoid unsightly rust marks.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document.



Post Rail Set-Out Example

- Locate the rail lap and mark the lap position before fixing the AshGrid posts.
- Install posts/brackets either side of each rail lap. The lap post before the lap is to finish 150mm before the lap.
- Install the first post/bracket after the lap starting 150mm from the lap.
- Set out intermediate posts/brackets at the project specific centre spacing confirmed for the project.
- Post spacing is determined by local wind load, snow load and solar load requirements.
- Do not assume a fixed 300mm or 600mm spacing. Check with Dimond Roofing for the required AshGrid post/rail spacing before installation.
- Take relevant photos of completed stage and sign Dimond Quality Assurance document



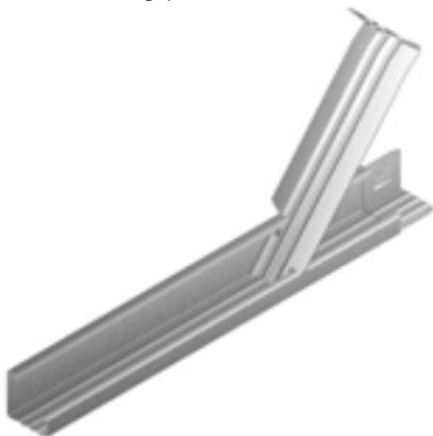
Dimond Post & Rail System assembly

Method 1.

1. Lay bar on roof deck and offer the small flange of the bracket to the small flange of the bar.



2. Tilt and rotate bracket backwards at desired fixing position.



3. Twist bracket and snap into position at 90° to bar



Method 2.

1. Offer the post to the rail at an angle from the non-spigot end.



2. Slide posts along the rail to the desired fixing positions.

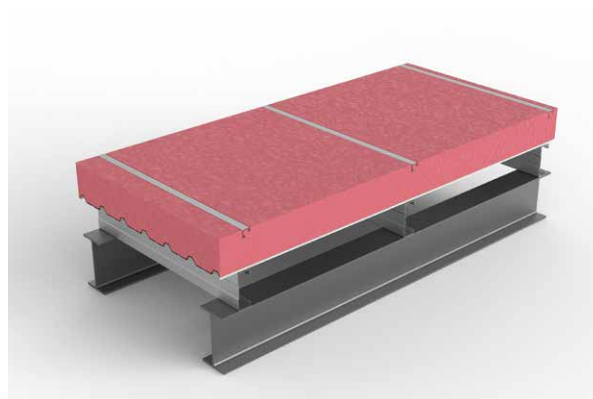


3. Snap each post upright to lock into position at 90° to the rail.



Installation of Dimond BIB Insulation

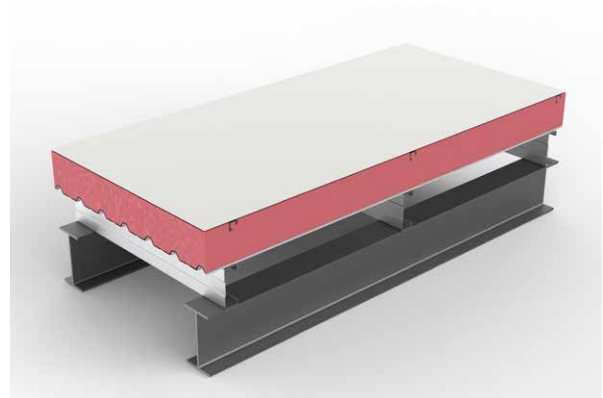
- Ensure the weather forecast clear of rain and strong wind on day of installation of **Dimond BIB Insulation**, **Dimond Underlay** and **Dimond Top Sheet**.
- Ensure the **Dimond Base Sheet** is dry and clean with no water ponding.
- If laying horizontally **Dimond BIB Insulation** rolls may need to be cut to suit rail spacing.
- Laying vertically requires **Dimond BIB Insulation** strips to be fed under each rail with cut outs made to fit around the post.
- Lay just enough **Dimond BIB Insulation** for the days work ahead, as the insulation must not be left exposed overnight or allowed to get wet during installation.
- The insulation in roll form with the outer plastic wrap can be cut with a sharp saw or knife.
- All gaps must be filled with **Dimond BIB Insulation**. Ensure the insulation is fitted underneath the rail and around the posts.



- The **Dimond BIB Insulation** must be fully lofted to the published thickness for its R value. Sometimes this may take a few hours to achieve so avoid squashing or tucking the corners down. This may require a gentle lift-up to ensure even thickness and allow the lofting to take place.
 - Take relevant photos of completed stage and sign Dimond Quality Assurance document.
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Installation of Dimond Underlay

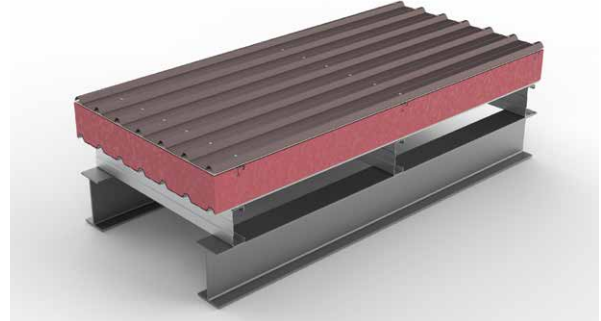
- Vertically lay **Dimond Underlay** on top of **Dimond Post & Rail System** in continuous ridge-to-gutter lengths and tension it so there is no creases.
- All laps either vertical or horizontal must be a minimum of 150mm lap.
- **Dimond Underlay** must not be left exposed to UV sunlight for more than 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 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 Roofing technical data for the relevant profile, following the guidelines outlined in the MRM Code of Practice.
- The length of roof fasteners should be sufficient to penetrate through the **Dimond Top Sheet** into the **Dimond Post & Rail System**, engaging 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

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Engineered by
 **Dimond Roofing®**