



# Photovoltaic Panels

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Guide to good practice

# Steel roofing and photovoltaic panels

Framed photovoltaic (PV) panels can be successfully installed on COLORSTEEL® and ZINCALUME® steel roofs.

The following maintenance practices will help to ensure the long term performance, durability and aesthetic appeal of your roof.

## Your roof and photovoltaic panels

**Roof clearance** – ensure adequate clearance is available between the PV panels and your COLORSTEEL® or ZINCALUME® steel roof. This will:

- Assist with self-cleaning and limit the build up of leaves and other debris.
- Provide easy access for cleaning, inspection and maintenance of the roofing material and fasteners beneath the PV panels.
- Allow air movement to quickly dry areas beneath the PV panels. This may also benefit the performance of the PV panels, as electrical output is usually temperature dependant.

**Product compatibility** – ensure all products are fully compatible with your COLORSTEEL® or ZINCALUME® steel roof:

Dissimilar metals should not be used in direct contact (or contact that could create an electrical connection) with roofing made from COLORSTEEL® or ZINCALUME® steel. Dissimilar metals include stainless steel, lead, copper and alloys containing copper (such as monel and brass). This caution also applies to conductive seals and gaskets.

Avoid using PV panels or flashings made from materials such as copper, or alloys containing copper or lead. This has the potential to create bi-metallic corrosion resulting from water run-off onto COLORSTEEL® or ZINCALUME® steel. Refer to **Incompatible**

### Materials.

- Timber should not be used in direct contact with COLORSTEEL® or ZINCALUME® steel roofing. Damp timber resulting from exposure to rainfall, cleaning water or high humidity, may expose COLORSTEEL® and ZINCALUME® steel to long periods of wetness.

**Watertightness** – ensure continued watertightness of your COLORSTEEL® or ZINCALUME® steel roof:

- Install PV panels to allow free drainage of moisture from all surfaces to avoid water ponding.
- Any penetrations through the roof should be placed to minimise the risk of water ingress. Ensure penetrations through the roofing sheet are correctly sealed using flashings and sleeves specified for steel roofing.



- Avoid valley fixing or valley holes for electrical cables.
- Install PV fasteners and brackets away from sheet side laps. Fasteners and brackets may distort the profile and interfere with the specifically designed anti-capillary laps, leading to possible water ingress.

**Comparable service life** – ensure fasteners and brackets used in the installation of PV panels are compatible and have a service life comparable with the expected performance of the COLORSTEEL® or ZINCALUME® steel roof appropriate for the PV panels.

**Positioning** – when considering the location and orientation of PV panels, consider the ease of access for maintenance.

**Cables** – electrical cables should not sit directly upon the roof as this may lead to an accumulation of dirt, salt and other airborne contaminants. Instead, it is recommended that cables are affixed to the PV panel support structure.

**Electrical earthing** – ensure appropriate earthing of the PV system. Stray currents to the COLORSTEEL® or ZINCALUME® steel roof may accelerate corrosion due to electrolysis. **Refer to AS/NZS 5033 – Installation of photovoltaic (PV) arrays.**

**Safe work practices** – during the installation and ongoing maintenance of PV panels, New Zealand Steel recommends working safely in accordance with relevant safety legislation.

## Maximising roof performance

PV panels shield COLORSTEEL® or ZINCALUME® steel from both the drying action of the sun and beneficial washing from rainfall. As such, the roof area directly below the PV panels is considered to be an ‘unwashed area’ and may be subject to accelerated corrosion due to:

- An accumulation of dirt, salt and other airborne contaminants.
- Accumulated contaminants becoming, and remaining, moist for extended periods due to moisture from condensation or high humidity.

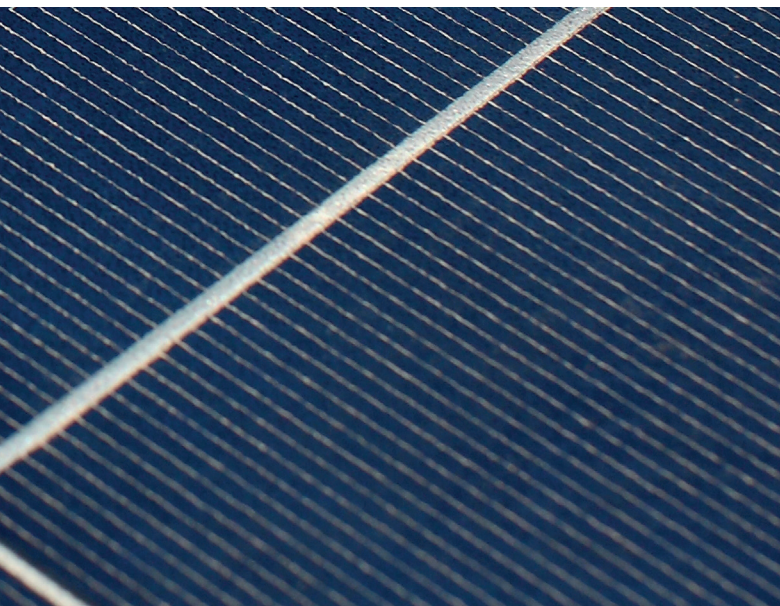
During installation, it is important to allow an air gap between the PV panels and roofing made from COLORSTEEL® or ZINCALUME® steel to assist with drying any accumulated contaminants.



## Roof care and maintenance

As unwashed areas have an increased risk of corrosion compared to washed areas, regular cleaning is recommended. Generally unwashed areas should be cleaned with fresh clean water, every 3 months for coastal areas and every 6 months elsewhere. This may coincide with any periodic or scheduled PV panel cleaning. Further guidance for maintaining unwashed areas is contained in the **Maintenance Recommendations Brochure**.

During maintenance, it is important to inspect the condition of the roofing fasteners, as well as the surface condition of the COLORSTEEL® or ZINCALUME® steel roof. This will provide an indication of washing frequency, whether any fasteners require replacement, or if remedial work is required to the roof sheeting.



**Please note: All roof work should be carried out safely and in accordance with relevant legislation for safe working at heights. Poor installation practices may affect the validity of the roof manufacturer’s warranty.**

For more information about COLORSTEEL® products  
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