

# Prevention of sunscreen damage

## INTRODUCTION

Given the outdoor nature of roofing and walling installations it is recommended that suitable precautions be taken to prevent personal sun damage.

However, it has been found that certain sunscreens containing semi-conducting metal oxides such as titanium dioxide ( $\text{TiO}_2$ ) and zinc oxide ( $\text{ZnO}$ ) used to absorb UV can accelerate the degradation of BlueScope paint systems.

Only organic sunscreens that block UV should be used where there is a chance of contact with COLORBOND® steel to minimise the risk of paint degradation. Any corrosion to perforation or paint flaking or peeling caused by sunscreen is not covered by BlueScope's warranties.

## EFFECT ON PREPAINTED STEEL

### Inorganic sunscreen formulations

Clear or nanoparticle inorganic sunscreen formulations are marketed as 'non-whitening' to skin.  $\text{TiO}_2$  and  $\text{ZnO}$  nanoparticles within inorganic sunscreen formulations function as UV absorbers and become 'photocatalysts' producing free radicals. Free radicals can generate sufficient chemical reactions that are very aggressive and can damage paint systems much faster than normal weathering.

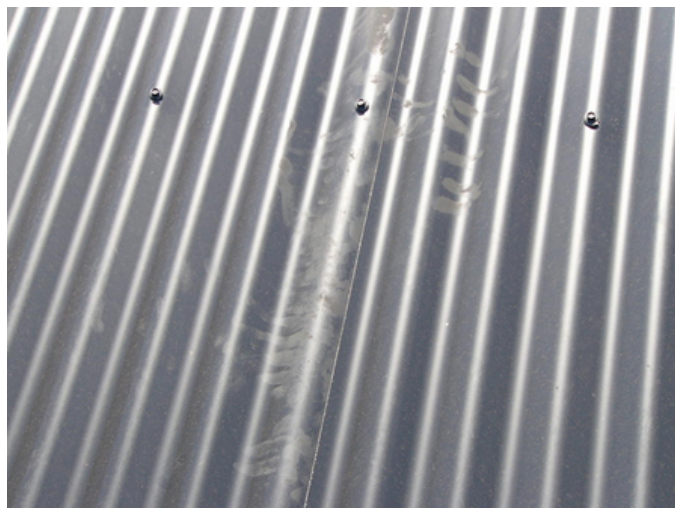
### Organic sunscreen formulations

Studies indicate that organic sunscreen formulations do not generate sufficient free radicals to be of concern to paint systems. Testing conducted by BlueScope showed organic sunscreen formulations did not cause damage to the prepainted finish of COLORBOND® steel.

## RECTIFICATION

Although sunscreen damage is irreversible it will not affect the corrosion performance of the material. The sunscreen affected areas cannot be cleaned and attempts to do so may ultimately impact on the corrosion performance of the material. If aesthetics are a concern, BlueScope recommends that the material be replaced.

Figure 1 and 2: Roofing sheets with sunscreen damage. The hand prints are quite visible.



## PREVENTATIVE MEASURES

For personal safety, and to protect the surface of COLORBOND® steel, it is recommended to:

- wear clean, dry, cut-resistant gloves that are suitable for the task;
- take suitable precautions against personal sun damage; and
- prevent contact of the painted surface with sunscreens that contain titanium dioxide ( $\text{TiO}_2$ ) and zinc oxide ( $\text{ZnO}$ ).

**If you have any questions regarding this Bulletin, contact BlueScope Steel Direct on 1800 800 789.**

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