

Sunscreen damage on coated steel products



RSC TECHNICAL BULLETIN

Sunscreen is an important safety measure for anyone who works outside. But while sunscreen protects your skin, certain sunscreens can have the opposite effect on the Colorbond® products you are working with.

EFFECTS OF SUNSCREEN ON COLORBOND®

When sunscreens containing titanium dioxide (TiO₂) and zinc oxide (ZnO) are applied to Colorbond®, it can cause a fast acting chemical reaction that degrades the quality of the material, causing stains and loss of its gloss finish.

One study showed that when this type of sunscreen was applied to coated steel and placed in the sun for six weeks next to a sheet with no sunscreen, the sheet with the sunscreen had significantly degraded - the same amount of damage that would be expected after 15 years of exposure.

WHAT TYPE OF SUNSCREENS CAUSE THE DAMAGE?

It is actually the size of the particles within the sunscreen that is the main factor here. Zinc sunscreens have been used for years, but manufacturers have more recently formulated them with tiny particles (nanoparticles) to help reduce the white film that zinc leaves behind. Any product that contains titanium dioxide (TiO₂) and zinc oxide (ZnO) or is labelled as 'non-whitening' or 'mineral sunscreen' is considered 'in-organic' and should be avoided. Research shows that organic sunscreens do not cause the same damage as in-organic sunscreens.

PREVENTING DAMAGE

The best option to avoid damaging the Colorbond® is prevention, as once it has made contact with the material, it cannot be cleaned off, and in fact, attempting to clean it may cause further damage.

Check the active ingredients in your sunscreen before you buy it. Avoid anything with titanium dioxide (TiO₂) and zinc oxide (ZnO).

Use clean gloves when handling the Colorbond® and of course, wear correct PPE at all times to protect yourself from UV rays.

WARRANTIES ON YOUR COLORBOND®

Bluescope will not cover sunscreen damage to Colorbond® products under warranty, so prevention is critical.



Example of sunscreen damage
(Image credit Bluescope Steel)

OTHER SURFACE DAMAGE

The damage caused by sunscreen is not limited to coated steel products like Colorbond®. Other finishes have also been shown to be impacted, including interior and exterior house paints, automotive coatings, and water based wood finishes.

EFFECTS ON YOUR SKIN

So what does this mean for your skin? The Cancer Council states that there is no indication to date that nanoparticles can penetrate through the skin and pose a risk to health, although if you are concerned we recommend you seek a professional opinion.

Sources: Philip J Barker, 2016, Modern sunscreens make a lasting impression on surface coatings
Prevention of Sunscreen Damage, TB 37, Aug 2019, Bluescope Steel
Cancer Council of Australia, Nanoparticles and sunscreen, are they harmful?