

### **WHITE RUST OR ZINC STORAGE STAIN**

#### **Avoiding White Rust or Zinc Storage Stain**

DuraGal products, as well as Galtube and Tubeline Hot Dip Galvanized (HDG) are given a protective finish in the form of a zinc conversion coating and/or polymer coatings. One purpose of these coatings is to prevent the formation of white rust during packing, storage and transport.

#### ***Avoiding White Rust on DuraGal Channels, Flats and some Angles***

DuraGal Profiles, (except for angles up to and including angles 2.000" x 2.000"), have been specifically treated to resist white rust by the application of a clear polymer barrier coating, typically 8 microns thick.

This coating is designed to provide packs of DuraGal Profiles with protection from white rust and atmospheric corrosion, in non-marine environments, for a period of 3 months.

If clear coated packs of DuraGal Profiles are to be stored outside for a total of more than 3 months, or if white rust has formed, the advice given below, for DuraGal hollow sections, can generally be followed with just one major modification -

**Methylated spirits is the only solvent that should be used to clean clear coated DuraGal open Profiles.**

Failure to follow this advice could reduce the adhesion, and thus the corrosion protection, of any additional paint coatings applied to the DuraGal sections.

Any clear coated DuraGal Profile product that has been stored out in the elements, and is going to exceed 3 months open air storage before being used, should be inspected for white rust. If white rust has formed it should be treated, dried and then stored as described in "Preventative Actions".

OneSteel cannot be held responsible for deterioration to galvanized DuraGal Profile products caused by unsuitable storage practices after the product has arrived at the customer's warehouse.

#### ***Avoiding White Rust on All DuraGal Hollow Sections and Angles 2.000" x 2.000" & Smaller***

The packed product must be stored under clean, dry and ventilated conditions. This is especially important for smaller size hollow sections, as their physical size and pack configuration restricts natural ventilation.

Storage of packs of galvanized products under covers which restrict ventilation (eg tarps) is not recommended. Changes of temperature from day to night may cause condensation inside the bundles. This condensate will promote the forming of white rust.

Packs of product stored in the open or wet product stored anywhere will develop white rust. OneSteel's quality assurance program ensures that dry first grade product is delivered to Steel Distributors.

OneSteel cannot be held responsible for deterioration to galvanized hollow section products caused by poor transport or storage practices after the product has arrived at the customer's warehouse.

#### ***Preventative Actions***

If it is necessary to store galvanized sections where they will get wet, either outside or undercover where wind driven rain or spray can enter through a leak, or an opening like a door or window, the product should be arranged so that water will easily run off and all surfaces of the sections are well ventilated. The most common way of achieving this is to stack on non-staining timbers, one end of the stack higher than the other. Each row of galvanized product must be separated by timbers, each item in each row separated by at least 5mm from the next item and open sections stored so that water cannot pool, ie for DuraGal angles, stack with the toes of the profile facing down.

A suitable non-staining timber is seasoned dressed pine. Galvanized sections should never be stored in contact with cardboard or other paper products, cinders, clinkers, unseasoned timbers, treated pine, anything even slightly acidic (pH less than 7) or very strong alkalis (pH greater than 12).

## Easy Painting & Corrosion Protection Guide

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### **Remedial Treatment**

DuraGal RHS packs, and packs of angles 2.000" x 2.000" and smaller, that become wet should immediately be separated. Each length should have the bulk of any water wiped off, and then be allowed to dry before being stored in a dry place or being stored as recommended in the previous section.

Very light wet storage stains (ie the surface is smooth without significant growth of oxide layer) do not reduce the protective properties of the coating and can be removed by rubbing with a rag soaked in methylated spirits.

Light white rust deposits may be removed by blasting with clean high pressure water, or careful abrasion with soft plastic scouring pads, followed by rinsing with clean water or rubbing with a kerosene or consumer grade rubbing alcohol soaked rag. Only if these methods do not work should steel wool or other harsh metallic scourers be used, as they can significantly reduce the thickness of the zinc coating and thus the corrosion protection provided.

White rust deposits that do not respond to the above methods may be removed by brush blasting, wire brushing or abrasion with a metallic scourer. The dust left on the section should be cleaned off with water or methylated spirits. The original bright, metallic galvanized surface cannot be restored by these treatments and the zinc thickness will probably be significantly reduced.

If the sections are to be painted the white rust can be partially removed by the appropriate method above and then completely removed by chemical

treatment. Suggested solutions are 10% acetic acid or proprietary solutions such as Deoxidine 624 by Henkel Australia Pty. Ltd. Henkel recommends a dilute solution of 1 part Deoxidine 624 to 4 parts water.

**WARNING !!!** The above chemically treated surfaces must be chemically neutralised or rinsed to remove any traces of acid, and then painted immediately, certainly within 4 hours. In particular acetic acid treated surfaces must be carefully rinsed and dried to ensure no soluble salts are left on the surface. Soluble salts reduce paint adhesion.

If removing the white rust reduces the zinc thickness below the specified minimum, the coating can be repaired by application of two coats of zinc rich paint complying with AS2204 to a total thickness of 100 microns. When colour matching is required, Galmet DuraGal Silver paint may be applied over the zinc rich paint.

### **Warning to Powder Coaters**

Bubbling of the coating may occur when trying to powder coat galvanized sections that have had heavy white rust removed.

This can occur at any spot where you can feel surface roughness after the white rust has been removed. There may be a black spot in the bottom of these holes.

This problem can often be overcome by wiping with a weak phosphoric acid solution and then rinsing in clean water and drying before coating.