

HDG – TROUBLE SHOOTING PAINT FAILURES

TROUBLE SHOOTING PROBLEMS WITH PAINTED HDG STEEL

The following are the most commonly seen complaints on painted galvanised steel (“duplex systems”) and a selection of possible causes. Please note that any of the issues below will be more severe the closer the steel is in coastal or chemical environments or in high humidity areas such as aquatic centres and industrial laundries.

COATING DELAMINATION

- Inadequate degreasing of surface prior to painting
- Inadequate abrasion of surface prior to painting - look for a shiny surface on the underside of the paint flakes
- Excessive etch primer film build (if a single pack etch primer was used)
- Incorrect coating choice (eg an alkyd enamel applied directly to the surface – see Dulux Protective Coatings Tech Note No. 1.2.5).

BLISTERS AND WHITE RUST UNDER COATING

- Use of acid wash during preparation
- Insufficient cleaning of the galvanised surface - contaminants not removed prior to painting
- Excessive temperature/humidity (eg used under insulation on ducting).
- Inconsistent coverage (eg misses, pinholes, edges not stripe coated, handling/erection damage not repaired).
- Chemical exposure - (eg ducting & purlins in aquatic centres with chlorinated/heated pools).
- Contamination between coats - eg primed in shop then taken to site for storage and erection before topcoating.

WHITE DEPOSIT ON COATING

- High moisture/humidity environment (in areas of high rainfall and/or coastal areas)
- Insufficient coating thickness to protect zinc layer from water, ions and oxygen
- Porous coating that allows moisture to penetrate

RED RUST

- Insufficient zinc layer thickness – zinc depletion
- Excessive abrasion, removing too much of the galvanising
- Damage to galvanising not repaired prior to painting (eg cut edges, grinding, welding should be repaired with a zinc rich primer, swarf from cutting, grinding etc not removed prior to painting)
- High moisture/humidity environment (in areas of high rainfall and/or coastal areas)



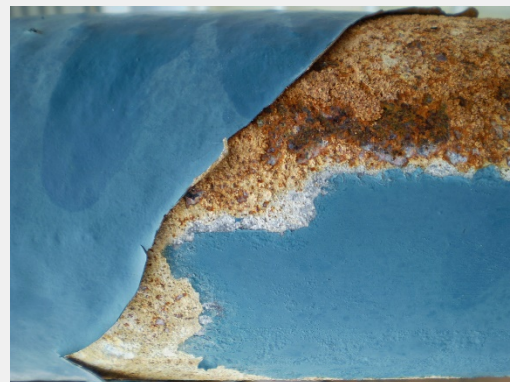
Underside of coating appears very smooth – little or no abrasion of the surface prior to painting



Inadequate coating thickness and humidity cause osmotic blistering



White rust appears on a micaceous iron oxide coating near a beachside residence.



The aggressive coastal environment caused rapid zinc depletion on HDG in a coastal primary school.

For more information, please contact the Dulux Protective Coatings Technical Consultant in your state.

