

INFORMATION GUIDE

TREATING GALVANISED SURFACES

One of the protective processes for preserving iron/steel is to electrically coat the metal with zinc. This creates a surface of zinc plates to give a "fish scale", or overlapping effect to preclude water/moisture from creating an electrolyte and thereby prevent oxidisation of the iron/steel.

However, this plating process also causes problems where a paint system is to be applied. On a boat trailer for example the normal course of action is to leave it to naturally weather for up to 24 months by which time the platelets would have oxidised to leave a dull flat surface. At that stage, a solvent degrease and final wash over with hot water, then a final wipe down with NORCLAN-PLUS is usually sufficient prior to prime coating.

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 She may be reached by email: kdunham@galvanizeit.org and her article on: [PREPARING HOT-DIP GALVANISED STEEL SURFACES FOR PAINTING OR POWDER COATING. A PRIMER: Is worth reading.](#)

During continuation of the weathering process, the zinc oxides and hydroxides react with carbon dioxide in the atmosphere and progress into a thin, compact, tightly adherent layer of basic zinc carbonate. This progression to zinc carbonate enhances the excellent barrier protection afforded by the galvanised coating. Because the zinc patina is relatively insoluble, it prevents rapid atmospheric corrosion of the zinc on the surface of galvanised steel. This fully weathered galvanised steel is between 8 months and 2 years old and has a completely formed zinc patina.

Where the weathering process of up to 2 years has not been allowed to occur the consumer often gets impatient, coats the metal over, and then finds a few months later, all of the paint is peeling off. In many cases, the cause is the result of using the **wrong paint products...** without knowing why.

Where a "traditional" oil based product is used, it is usually the **resin** in the coating that causes the failure. "Oil based" products are normally based on **ALKYD RESINS**. When these are used on galvanised steel, "saponification" is created, and the alkyd resin converts into a fatty soap compound and adhesion is lost. Webster's dictionary describes this process as...

"The hydrolyses of an organic compound esp. by alkali"

The selection of paint therefore is critical.

The NORGLASS recommendation is for the primer to be epoxy resin based as these resins offer the **maximum adhesion to galvanised iron**.

The first choice would be **NORSHIELD** due to its anti-corrosive properties. However if over coating with a white finish, **SHIPSHAPE PRIMER-UNDERCOAT** could be substituted (Both epoxies).

Finish coats should always be Polyurethanes either **NORTHANE** or **WEATHERFAST PREMIUM ENAMEL**, as urethanes have the best weathering properties and do not degrade as quickly as Epoxy finish paints.

Where new galvanised material needs to be painted without the weathering patina taking place, **NORGLASS METAL ETCH CLEANER** can prepare the surface (as described on the can instructions and data sheet.)

Then either of the above primers can be applied and finished with **NORTHANE GLOSS** or **WEATHERFAST PREMIUM ENAMEL**. As an alternative primer, **NORGLASS NORUST ALL SURFACE PRIMER** can be substituted, but the optimum primers are the epoxies as stated.

METAL ETCH CLEANER

