



## *Painting Galvanized Metal*

*What is the required surface preparation and best paint system recommendation for galvanized metal? How can peeling problems be minimized? Following is a discussion on galvanized metal and the special requirements that must be considered when painting it.*

### ***What is Galvanized Metal?***

Galvanized metal is made by plating steel with a thin zinc coating. This is done to increase the service life of the steel by preventing corrosion of the steel directly, but it creates some painting problems.

### ***What are the Difficulties with Painting Galvanized Metal?***

One problem concerns the surface treatment manufacturers use to seal off the surface from the atmosphere to prevent "white rusting" during storage. This treatment is often a light oil that must be removed before painting or adhesion will be impaired. Solvent cleaning with clean rags (periodically rotated and replaced), washing with a detergent or degreaser such as **DEVPREP® 88 Heavy Duty Cleaner**, or weathering for several months is usually effective. Weathered galvanized metal will also require cleaning to remove zinc corrosion products.

### ***What is a Passivator and How can its Presence be Determined?***

Another surface treatment that manufacturers use involves chemically treating or passivating the surface. A passivator on the surface will prevent proper adhesion of an applied coating. To test for the presence of a passivator, first prepare a solution by dissolving 20 grams of copper sulfate in one liter of water. Solvent wash a small area and then sand a small area of this washed area using an emery cloth. Next, using a cotton swab saturated with the copper sulfate solution, apply a swipe to both the sanded and unsanded washed areas. If sanded and unsanded areas turn black at the same time, there is no passivation on the surface other than light oil as mentioned above. If the unsanded area turns slower than the sanded area, or not at all, a passivator is present on the surface.

### ***How should a Passivated Surface be Prepared for Painting?***

If a passivator is determined to be present, there are only two ways to prepare the surface for painting. One option is to thoroughly scrub with a phosphoric acid solution and thoroughly rinse with clean water. The second option is to abrasively brush blast the new galvanized metal surface to remove the treatment.

### ***What Primers should be used on New Galvanized Metal?***

For moderate exposure, the cleaned or weathered metal should be primed with a special galvanized metal primer such as **DEVGUARD® 4160 Multi-Purpose Tank & Structural Primer**, or **Devflex 4020PF Direct to Metal Primer & Flat Finish**. Acrylic latex paints such as **FORTIS® 450 or 350** exterior flat, satin and semi-gloss finishes are also acceptable when used self-priming, but the surface must be very clean or sufficiently weathered. For interior overhead galvanized surfaces such as roof decking, **1280 Waterborne Interior Flat Dry Fall**, **1482 Waterborne Interior Eggshell Dry Fall**, **1486 Waterborne Interior Semi-Gloss**

**Dry Fall, 1370 Solventborne Direct-to-Galvanized Metal Interior Flat Dry Fall, UNI-GRIP® 4380 Modified Epoxy Flat Dry Fog Primer & Finish, and UNI-GRIP 4382 Modified Epoxy Eggshell Dry Fog Primer & Finish** may all be used self-priming. For severe exposures, the cleaned or weathered metal must be primed with a high performance epoxy primer such as **DEVTRAN® 205 Universal Epoxy Primer**.