

Perma-Green® III



The Original Metal Framing System

FOCUS



Perma-Green® III

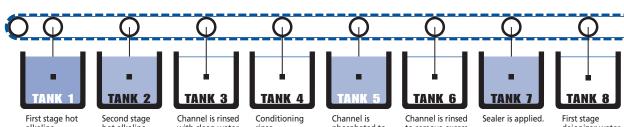
The performance of Unistrut's Perma-Green III far exceeds that of conventional finishes. And compared to competitive

"high-performance" coatings, Perma-Green III provides superior resistance to chalking, checking and fading and is far less vulnerable to common acidic atmospheres, solvents and alkalis. Just as important, Perma-Green III is the result of an environmentally neutral process that virtually eliminates the toxic metals commonly found in competitive paint-based finishes.

Unistrut Perma-Green III is a factory applied, electro-deposition acrylic coating with superior rust protection and fade-resistance. The acrylic coating is a proprietary formulation and is essentially "heavy-metal" free. The electrodeposition coating process provides a smooth, hard, durable surface which is completely cured. This inhibits introduction of airborne contaminates which can adversely affect sensitive manufacturing environments.

Before the electrodeposition acrylic coating is applied, Unistrut channel and fittings are thoroughly cleaned and coated with a zinc phosphate conversion coating. Unistrut's unique, custom-designed "prep" process consists of ten separate steps, the most thorough in the industry. The cleaning, phosphating and electrodeposition coating processes are continuous and, unlike "batch" processing, result in a uniform coating quality.

The Unique, 16-Step PERMA-GREEN® III Proc



alkaline cleaning of channel.

hot alkaline cleaning of channel

with clean water to remove cleaning solution.

rinse

phosphated to produce a zinc phosphate coating.

to remove excess phosphate solution.

deionizer water rinse to remove excess sealer.

Production samples are tested on a continuous basis for corrosion resistance. Unistrut Perma-Green III exceeds 400 hours salt spray (1/8" creep from scribe) when tested to ASTM B117. Unscribed samples exceed 600 hours salt spray (6% red rust).



Techinal Data

STEEL SUBSTRATE PREPARATION:

Ten stage continuous cleaning, phosphate process.

Substrate after "prep": sealed zinc phosphate conversion coating.

COATING: Thermoset acrylic

Color: Federal Highway Green Color Tolerance Chart PR Color No. 4

Hardness: 2H.

Coating Process: Cathodic Electrodeposition.

PERFORMANCE:

Salt Spray:

SCRIBED: exceeds 400 hours per ASTM B117. (1/8" creep)

UNSCRIBED: exceeds 600 hours per ASTM B117. (6% red rust)

Chalk: Nominal at 1,000 hours per weatherometer G-23 test.

Checking: None at 1,000 hours per weatherometer G-23 test.

Fade: Less than 50% compared to standard epoxy E.C. coatings.

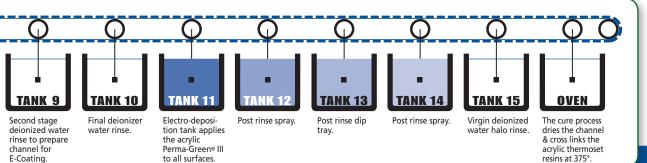
ENVIRONMENTAL ISSUES:

Formulated as a "heavy metal"-free coating

(trace elements only).

Outgassing in service: essentially none at 350°F for 24 hours.

ess



Other Finishes

PLAIN (PL)

Plain finish designation means that the channel retains the oiled surface applied to the raw steel during the rolling process. The fittings have the original oiled surface of the bar-stock material.

SPECIAL COATING

When specific applications require other than standard available finishes, special finishes can be supplied per customer requirements.

HOT DIP GALVANIZED (HG)-ASTM A123 OR A153

The finished part is immersed in a bath of molten zinc resulting in complete zinc coverage and a thicker coating than pregalvanized or plated zinc.

The zinc coating is typically 2.6 MIL or 1.5 oz./sq. ft. of surface area. This is the coating of choice for applications where severe corrosion is a design factor.

PREGALVANIZED ZINC (PG)-ASTM A653

Pregalvanized steel is zinc coated by a hot dip process. Steel strip from a coil is fed through a continuous zinc coater which cleans, fluxes and coats the steel with molten zinc. After cooling, the steel is recoiled.

The pregalvanized zinc coating conforms to a G-90 thickness designation per ASTM A653. The zinc thickness is .75 MIL or .45 oz./sq. ft. of surface area.

This coating is offered on Unistrut channel and tubing and is a well-proven performer for indoor and outdoor applications. For severe corrosion applications, hot dip galvanizing, as described below, is available.

ELECTROPLATED ZINC (EG)-ASTM B633, TYPE III SC1

In the electroplating process, the part to be zinc coated is immersed in a solution of zinc ions. An electric current causes the zinc to be deposited on the part.

Zinc plated parts typically have a zinc coating of .2 to .5 MIL and are recommended for dry indoor use.

PERMA-GOLD™ (ZD)— Industry Standard Yellow Dichromate

The high quality Perma-Gold finish is a zinc dichromate finish applied over an electro-galvanized zinc plating and is totally compatible with the aesthetics and performance of yellow dichromate finishes used on other brands of metal framing.

A .5 mil electro-galvanized plating is used instead of a standard galvanized coating. This creates a cohesive molecular bond between the steel and the applied zinc coating. The strength of this bond repels corrosion and prevents future blistering and peeling.

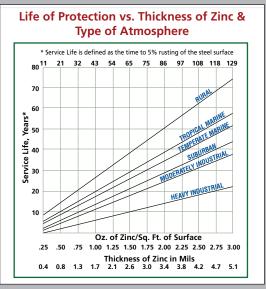
ZINC COATINGS

Zinc coatings offer two types of protection.

- Barrier: The zinc coating protects the steel substrate from direct contact with the environment.
- Sacrificial: The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

The service life of zinc coating is directly related to the zinc coating as shown in the table.

Finish Zinc Thickness Hot Dip Galvanized 2.6 MIL Pregalvanized .75 MIL Electro-Galvanized .2 to .5 MIL Perma-Gold .5 MIL



4205 Elizabeth Wayne, MI 48184 Phone: 800-521-7730 Fax: 734-721-4106

www.unistrut.com

