

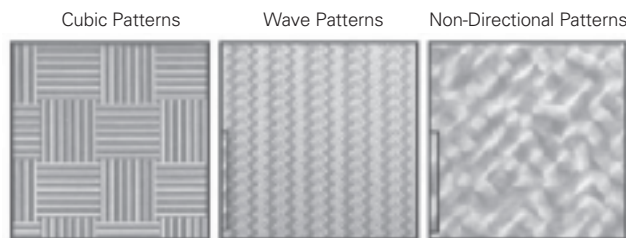
# UV Coatings Enhance Decorative Metals

By Mike Christiansen

**D**ecorative metals have been used in architectural applications for centuries.

Designers continue to search for new methods to enhance metal's finished appearance. Forging, pounding, forming, etching, grinding, and polishing have long been the mainstays in metal finishing.

Pacific Crest Industries Inc., located in Corona, Calif., manufactures a line of decorative sheet metal with designs and patterns engraved and polished onto the surface of the metal. This unique process is computer guided, which allows the patterns to be scaled to fit any application, and also insures that each sheet is an identical match.



*Applications range from architectural and interior design to cabinetry and automotive trim.*

Pacific Crest works with metals such as aluminum, brass and copper, which are prone to oxidation and discoloring over time when exposed to the atmosphere. In addition, they are soft metals that scratch easily.

## Prior to UV-Lamination

Prior to implementing UV-cured clearcoating in 2002, sheets were laminated with clear vinyl to protect them from wear and the elements. This process was time-consuming, expensive, and didn't always adequately protect the material. Sometimes air would get

trapped between the vinyl and the metal eventually causing oxidation.

## UV Implementation

In May of 2002, Pacific Crest switched over to a UV-cured clearcoat. The entire process for UV coating the application is as follows:

1. The sheets are cleaned with a heated high-pressure spray of purified water.
2. A heated high-velocity air knife is used to remove the excess water.
3. Then, a secondary drying process to ensure that the surface of the sheet is free of moisture.
4. The 100% solids UV coating is applied by roll coater to approximately a .5 mil thickness.
5. The sheets are cured immediately with 400 watt/cm<sup>2</sup> UV light.

The adoption of UV coating has been beneficial in several areas:

- **Cost Savings per Square Foot.** Even factoring the cost of the application equipment, UV coating has saved Pacific Crest about 1.5-2 cents per square foot over previous methods.
- **Less Scrap.** The UV coating goes on much more consistently resulting in fewer rejects.
- **Environmentally Green.** Even though Pacific Crest manufactures in California, using zero-VOC, no HAPs and no NVPs, UV coatings means that it doesn't have Environmental Protection Agency (EPA) restrictions and expensive "Emission Credits" to further burden costs and production process.
- **Superior Coating Performance.** UV coating gives products superior

scratch resistance, resistance to graffiti from felt pens and spray paint, and no clouding or yellowing when exposed to sunlight.



*Examples of Pacific Crest decorative metal installations.*

- **System Throughput/Performance.** UV coating has better throughput because it takes a fraction of the time required by previous methods.
- **Reduced Storage.** Storage is less of a problem. A one 5-gallon bucket of UV coating will cover approximately 13,000 square feet of product. To cover that much product with vinyl would require more than 20 square feet of storage space. With manufacturing floor space at a premium in California, every square foot saved is a benefit.

- **Zero Work-in-Process.** Product is manufactured in-line from machining directly into coating for finished product.

The use of UV coatings has been a great benefit by lowering cost, increasing production, and improving quality and features. Pacific Crest prides itself on taking care of the environment—UV coating fits with that philosophy. ▀

*—Mike Christiansen is president and CEO of Pacific Crest Industries, Corona, Calif.*

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