

The Miracle of UV Light

By Michael Kelly

UV Coatings

- ✓ Faster
- ✓ More Efficient
- ✓ Cleaner

UV coatings offer manufacturers the economic benefits of ROI—Return on Investment.

- ✓ Faster line speed, coating cure and coating optimization.
- ✓ Smaller floor space, less work-in-process, lower energy costs, lower quality costs.
- ✓ UV coatings offer environmental benefits, including NO solvent content:
 - No VOCs—Volatile Organic Compounds.
 - No HAPs—Hazardous Air Pollutants.

This article highlights some examples of UV-coating applications.



Black UV Coating on Cylinder

- Substrate:** Metal
- Application:** HVLP—high-volume/low-pressure spray
- Technical:** High temperature will cause cylinder seal failure
- Economics:**
 - Elimination of IR oven
 - Elimination of work-in-process
 - Improved quality/less waste
 - Ability to reclaim and reuse coating

Color UV Coating on Propane Tanks

- Substrate:** Cold rolled steel
- Application:** Bell atomizer & HVLP gun
- Technical:**
 - Multiple colors
 - Excellent color opaqueness
- Economics:**
 - Elimination of pre & post IR Oven
 - Less down time
 - Quick color change
 - Reclaim coating



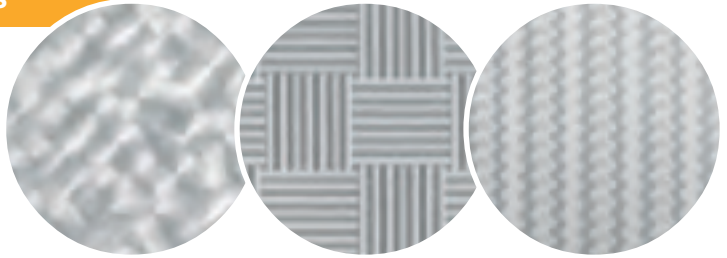


UV Color on Strapping Material

- Substrate:** Steel
- Application:** Roll coated
- Technical:** Thin application of coating
Coating will not cure in roll coater
- Economics:** Speed, speed, speed
Environmental permitting
Capital costs

Clear UV Coating on Architectural Pieces

- Substrate:** Aluminum
- Application:** Roll coating
- Technical:** Eliminate lamination process
- Economics:** No work-in-process
Minimal floor space
Environmental benefits/no reporting

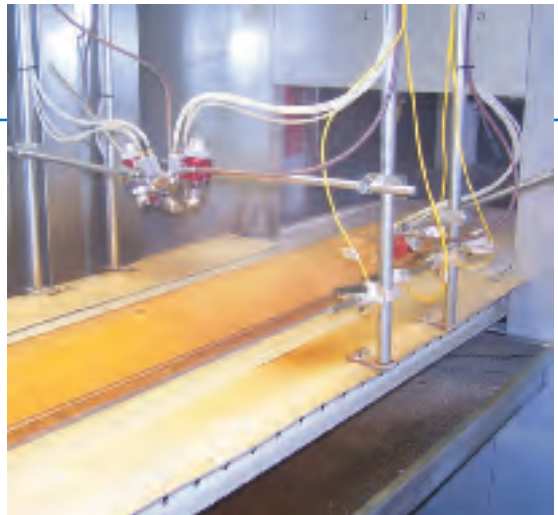


UV Color on 20-Pound Propane Tanks

- Substrate:** Cold rolled steel
- Application:** Rotary bell atomizer
(2) HVLP—high-volume/low-pressure guns
- Technical:** Coating specification requirements
- Economics:** Minimal floor space
Energy savings
Ability to reclaim coating
Speed improvements in the future

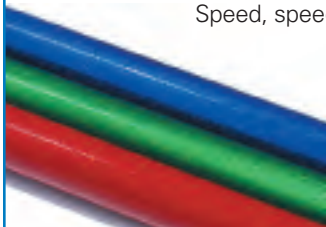
UV Clear Coating on Outdoor Log Cabin

- Substrate:** Wood
- Application:** HVLP—high-volume/low-pressure guns
- Technical:** Substrate temperature sensitive
- Economics:** Quality/immediate inspection
Work-in-process reduction
Just-in-time Quality



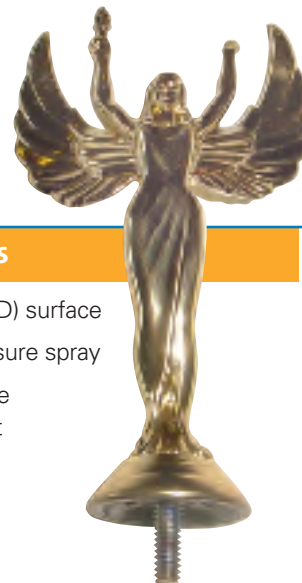
Color UV Coating for Conduit

- Substrate:** Metal
- Application:** Vacuum coated
- Technical:** Line speed
- Economics:** Coating thickness
Elimination of IR oven
Speed, speed, speed



Clear UV Coating on Trophy Pieces

- Substrate:** Physical Vapor Deposition (PVD) surface
- Application:** HVLP—high-volume/low-pressure spray
- Technical:** PVD substrate is heat sensitive
Cannot tolerate extended heat
- Economics:** Floor space
Coating performance vs. cost
Less environmental reporting



Clear UV Coating for Automotive Rims

- Substrate:** PVD surface
- Application:** Bell atomizer
- Technical:** Adherence to PVD substrate
Ability to provide primer and topcoat
- Economics:** Cost per gallon/100% solids
Floor space significantly reduced
Less work-in-process
Overall process improvement



Black UV Coating for Automotive Pulley

- Substrate:** Cast steel
- Application:** HVLP—high-volume/low-pressure spray
- Technical:** Line speed
- Economics:** Coating thickness
Economic savings—elimination of IR oven
Specification alignment and flexibility



Summary

UV coatings today are being qualified and implemented in a variety of industries and applications. The true benefit to implementing UV is true economic savings—Return on Investment. Understanding these true costs of each area is critical to your ROI+**E**—It's your Return on Investment and with UV you get one better—Return on the **Environment**.

This can be described as faster, more efficient and cleaner.

Faster

- Line Speed
- Coating Cure
- Coating Optimization

More efficient

- Smaller Floor Space
- Less Work-In-Process
- Lower Energy Consumption

- Lower Maintenance Costs
- Less Capital Equipment Cost
- Lower Quality Costs

Cleaner

- Zero VOCs and No HAPs
- Reduced Reporting
- Improved Health and Safety

—Michael Kelly is CEO/president of Allied PhotoChemical, Kimball, Mich.