

# The Miracle of UV Light

By Michael Kelly

## UV Coatings

- ✓ Faster
- ✓ More Efficient
- ✓ Cleaner

**U**V 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



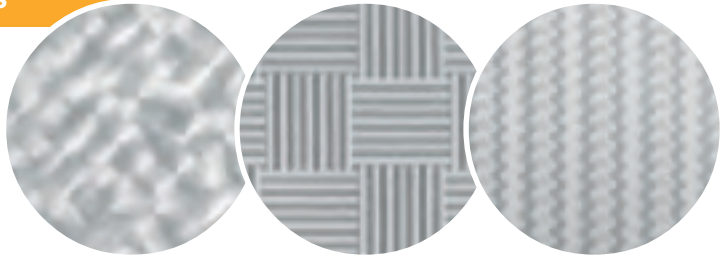


### UV Color on Strapping Material

- 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

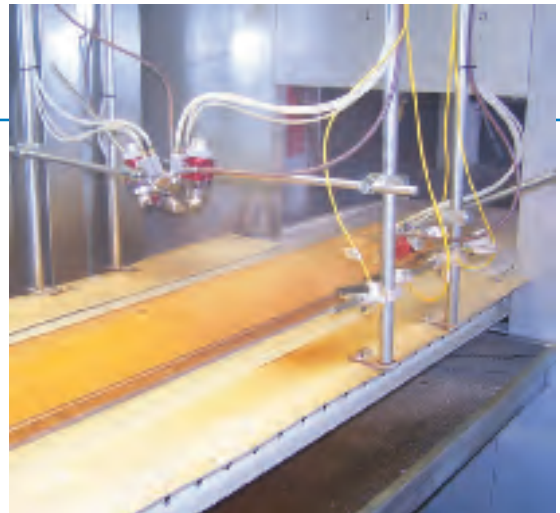


### UV Color on 20-Pound Propane Tanks

- 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

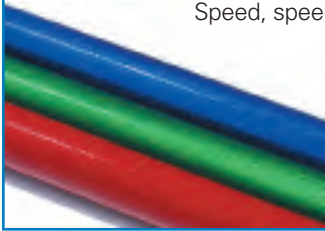
### UV Clear Coating on Outdoor Log Cabin

- 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



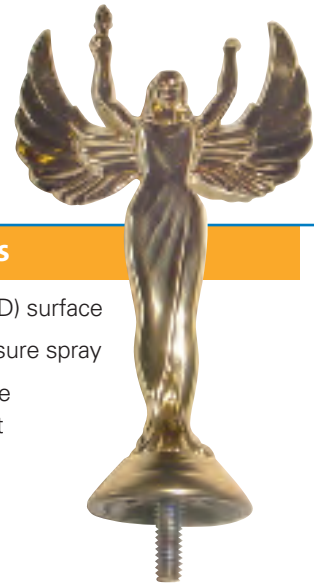
## Color UV Coating for Conduit

- 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.