

# "Green"

## UV Coatings Technology Comes to Total Door

**I**n a time of unprecedented economic uncertainty, we have been able to strategically position ourselves to meet the current and future needs of our customers." Those were the words stated by Patricia Yulkowski, Total Door® Chief Executive Officer, marking the grand opening of Total Door's new environmentally conscious, Feng Shui-inspired, innovative manufacturing and training facility.

What may not have been touted as loudly as the significant historical event of the grand opening are the impressive "green" innovative processes, materials and tools that Total Door has designed into its manufacturing system. Patricia Yulkowski notes that "80% of our material is recycled, and we have significantly reduced the use of volatile organic compounds. Our door systems are also made in the United States, whereas 80% of builder's hardware product is manufactured overseas."

An exceptional example of one of Total Door's innovative process changes was moving from solvent-based coating to UV coating technology. The move was a major part of the company's green strategy, and teaming with Allied PhotoChemical, Inc., a Michigan-based UV technology company, delivered the right solution – streamlining the manufacturing process, for Total Door's needs.

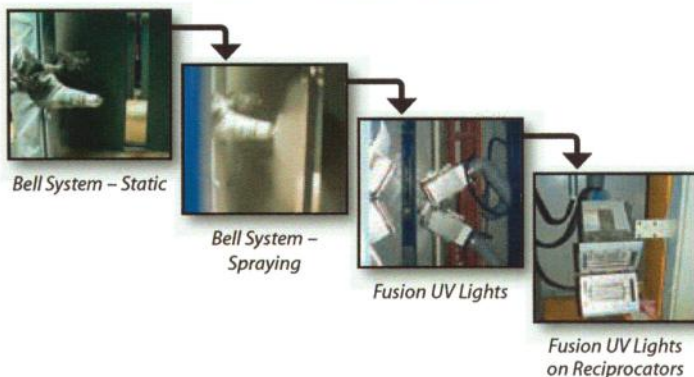
Total Door's decision to move from solvent-based coating to UV coating technology was based on "sustainability" of the technology. UV coating provides a platform for Total Door's manufacturing based on the following key attributes:

- faster production speed;
- reduced work in process;
- reduced manufacturing footprint;
- reduced energy costs;
- reduced quality costs;
- cleaner – no VOCs or HAPs; and
- cleaner and safer work environment.

Sustainable UV coating technology offers a process that has many benefits that deliver to the bottom line for Total Door. This technology enables the company to run its door manufacturing process at a higher line speed, which offers them more production capacity and flexibility. In addition, the UV coating process offers a cure time of less than two seconds, which offers many benefits, from immediate handling to reduction in quality costs. Also, UV coatings are typically 100% solids, meaning no solvent or water content to deal with – a much greener process.

From a production standpoint, UV coating technology offers Total Door the ability to implement a process that consumes a great deal less floor space, mainly by reducing or eliminating conventional ovens and conveyors. "Work in Process" is virtually eliminated due to the instant cure properties of the UV coating process. With these reduc-

**FIGURE 1** | Overview of Total Door UV manufacturing systems.



By **Michael Kelly** and **Dan Sweetwood** | Allied PhotoChemical Inc., Kimball, MI; and **Kevin Joesel**, Fusion UV, Gaithersburg, MD





Company web shot.



Color UV matching system.



New Total Door manufacturing facility, located in Waterford, MI.

tions, energy costs are also reduced. One main area of focus for Total Door is overall quality and the costs associated with quality. The ability to immediately inspect UV-coated cured parts is critical to Total Door's goal to continually reduce quality defects. The UV paint process delivers this capability.

The sustainability of UV coating technology offers Total Door a means to greatly reduce its VOC emissions, as most UV coatings contain no VOCs or HAPs (Hazardous Air Pollutants). Typically, UV coatings offer the manufacturer reduced reporting as well as cleaner and safer work environments.

#### Total Door Manufacturing Flow

Figure 1 outlines the details of the UV coating process at Total Door. The system has two bell atomizers that are reciprocated. The coating is applied electrostatically, ensuring excellent coating coverage.

After the coating is applied, two Fusion microwave UV lights are reciprocated on each side of the product. This ensures that adequate curing of the coating takes place. Figure 1 is a pictorial representation of the UV coating and cure of the UV coating process at Total Door.

#### Total Door Color Match Capabilities

Another important feature of the Total Door UV system design and implementation is that the UV coating technology provides on-site color matching capabilities.

#### Conclusion

From the company's modest beginning, Total Door's mission has been, as Leon Yulkowski so humbly put it, "to fill a hole in a wall". However, on closer examination it is much more than a simple statement. What it stands for is the focus on its customers' ultimate success by providing a highly differentiated custom product to meet specifically determined, valued customer needs, as well as excellent service that makes the installed product look superior and exceed performance expectations. Implementing UV coatings technology to replace a solvent-based system serves as an example of Total Door's commitment to quality, higher production capabilities and a safer work environment for employees. ■

Oxylink™

For better  
waterborne  
coatings

Call us for a free sample!

Buhler Inc. (PARTEC)  
Oxylink@buhlergroup.com  
USA / Canada: 512- 466 8005  
Europe / Asia: +49 (0) 681 - 394 6550  
www.buhlergroup.com



Be Green and Better!

The *performance* additive for:

- *Stronger* waterborne coatings
- *Faster* drying
- *Better* blocking resistance
- *Higher* humidity resistance
- *Increased* productivity

**BUHLER**

Visit [ads.pcimag.com](http://ads.pcimag.com)