

UV-Cured Primer System Successful in Bodyshops

UV-Coating and Curing System Receives 'Thumbs Up' from Customers

By Daniel L. Maloney Jr.

Shops Interviewed for this Article

- **Gordie Boucher Chevrolet/Olds,**
Port Washington, Wis.
- **Besson's Autobody,**
West Allis, Wis.
- **Griffin Ford, Inc.,**
Waukesha, Wis.
- **Perfection Auto Body,**
Burlington, Wis.

The speed of the UV system allows the technician to prime and cure quickly ensuring customer delivery expectations are met. Where used, the UV system replaced 2-K primers, which are two-component urethane solvent-based chemistry.

The use of UV primers and curing systems is still in the infancy stage in the automotive refinish industry, commonly referred to as the paint body and equipment (PBE) market. However, success stories are beginning to be told as product placement increases and users have had the time necessary to analyze the benefits of the technology.

Recently, a field study was conducted in four bodyshops that have been using a UV-cured primer system for 4-6 months. Each shop was interviewed using a predetermined list of questions designed to identify realistic input from technicians and shop owners

who have used the system on a daily basis in real bodyshop environments.

The interviews were conducted with both independent shops and dealer-owned shops. Shop managers or owners, as well as production technicians (painters) were included in the interview process. All of the shops interviewed were using the same primer (PPG DS1002) and the same curing light (H&S Autoshot/Cure Tek

UVA400A). Although usage levels varied depending on shop volume, all shops shared similar applications and used the system at every opportunity.

Applications

The low-intensity UV-curing lamp combined with the easy to use aerosol primer is ideal for fast repair on small spot jobs and bumper repair. The lamp will cure an area of up to 16-inch diameter in two minutes making the system ideal to address small dent and scratch repairs, which are common in every shop. UV technology has added a big boost to the efficiency and profitability of repairing scratches on plastic bumpers.

The use of this system has also proved beneficial when small imperfections are found just prior to final painting. The speed of the UV system allows the technician to prime and cure quickly ensuring customer delivery expectations are met. Where used, the UV system replaced 2-K primers, which are two-component urethane solvent-based chemistry.

How It Works

- The UV-cured primer is sprayed to cover the damaged area.
- A low-energy UV lamp is used to cure the primer.
- The uncured layer of the UV primer should be thoroughly removed.
- The worker sands the repair as usual.



The UV-cured primer is sprayed to cover the damaged area.

Benefits

Speed is the obvious initial benefit realized with the UV system. Every shop interviewed stated that the timesaving with the UV-cured primer was a primary driver in the decision process to invest in the system. Timesaving ranged from 25-88% (2-3 hours to 6-10 minutes) compared to the typical 2-K-primer process used in similar applications.

Typically, priming with 2-K primer requires longer preparation time, spray time and clean up time when compared to the same job application using a UV product. There is no mixing time with the aerosol UV primer used in the shops interviewed. Materials used in the preparation of 2-K applications such as mixing cups, mixing sticks are eliminated and masking is reduced. During the actual paint process, 2-K primers require up to three or four coats, with flash times in between for proper build. This is not the case with the UV primer, which has high-build characteristics with no flash time. Clean up with the UV primer is much faster than 2-K clean up since spray gun cleaning is not necessary and the waste associated with cleaning solvents and over mixes of catalyzed 2-K product is eliminated.

Although the timesaving is significant, it is not the only benefit experi-



A low-energy lamp is used to cure the primer.

enced in the bodyshop environment. With any new investment, the question of return on investment (ROI) is a normal business evaluation. In the bodyshop market, this is not always a simple process. Procedures utilized to evaluate ROI are usually somewhat subjective to varying level of cost analysis practices.

In the interviews conducted for this article, the focus was on the perceived return on the initial investment (ROI). The initial investment was comprised of the cost of the curing lamp and one case (six 10-oz. cans) of UV primer. ROI ranged from 3 weeks to 3 months depending on shop volume.

In one case where accounting practices allowed for more precise

analysis, the initial investment realized a return in 38.7 book hours. Factoring ROI based on book hours will vary according to local rates and pay scales. Also, the cost, or reduced cost of associated products used during a repair, will vary due to technician brand preference and local pricing variances.

Additional benefits and features of UV technology are now apparent as

user experience grows. Combined, they represent advantages over existing coating technology that point to a possible change in the direction of current automotive repair standards.

These benefits include:

- Cost reduction in material savings regarding waste and waste management. Most bodyshops are considered generators of hazardous waste because any left over paint from a job must be handled and disposed of according to existing regulations. This is additional cost of operation to the shop. UV coatings lower the shops generating level and liability exposure associated with hazardous waste management, resulting in reduced operational costs.

- Increased turnover of vehicles.
- Less masking. Less preparation and clean up required.
- On bumper repairs or bare metal, there is no need for adhesion promoters resulting in cost savings.
- Less overspray and better transfer efficiency.
- Excellent sandability and feathering.
- No VOC emissions. Positive contribution to environmental and health concerns.
- High film builds with more material staying on the repair surface.
- No window between coats (normally 5-10 minutes).
- No shrinkage—a major concern in bodyshops.
- Faster cycle time for customers and related sales benefits.
- No heat on panel. No outgassing on SMC (sheet molding compound)/BMC (bulk molding compound) composite panels.
- Reduction of natural gas cost associated with spraybooth operation. The electrically powered lamp, chosen by the shops interviewed, cost less than one dollar per hour to operate versus a typical cost of \$30/hour to run a heated downdraft booth.
- More efficient use of shop space since the UV primer can be applied virtually anywhere in the shop. The curing lamp is easily moved to any location on the bodyshop production floor, reducing bottlenecks at the paint booths.
- Overspray is reduced, which in turn reduces the need to “contain the mess.”

The driving factors pertaining to the curing lamp investment included footprint size (curing area), mobility, reliability, and easy storage features. The UV-curing lamp when analyzed properly over the existing systems involved no more investment than the 2-K curing system. In addition, U.S.

manufacturing, support and availability were strong considerations.

Investors in this technology agree that the benefit of meeting customer delivery promises has a positive effect on cash flow and profitability. Operating efficiencies and capacity output increase as scheduling and turnover time become more manageable adding to bottom line retention.

It is worth noting that the shops interviewed for this article did not experience any downsides to using this technology.

VOC Regulations/ Environmental Issues

The use of UV technology does have definite environmental advantages over solvent-based chemistry. In the PBE market, meeting existing and future VOC and EPA regulations is a constant concern. While current cost of meeting regulations may vary from one geographical jurisdiction to another, there is little debate that future regulations will dictate stricter enforcement and added management

cost. The lack or reduction of VOC in UV coatings will have a positive effect on material and management costs.

Lower VOC emissions allow the shop to promote a more “environmentally friendly” image to the general public; a strong marketing spin for aggressive shops. Internally, the shop atmosphere becomes safer and healthier as the use of UV coatings and curing systems grow. This is substantial in the PBE market where the hiring and retention of qualified technicians is becoming increasingly more challenging.

Future Requests

At the moment, UV technology in the PBE market is limited to spot priming. Participants in the market place are anxious for the next generation of product to become available. The number one request was for UV coatings to be available in a sprayable format that can be used with existing spray equipment. This would allow for larger coverage areas.

Topcoat products (clearcoats) utilizing UV chemistry was a common



A UV-cured primer system makes the most of shop space since the UV primer can be applied and cured with a UV lamp anywhere in the shop.

request from those shops interviewed. The advantages envisioned could revolutionize the automotive repair process.

As the technology evolves in meeting future demands, larger curing lamps will be required. It is mandatory that the curing and coating technologies develop simultaneously in order to penetrate the market.

Those interviewed also showed interest in UV-cured sealants, adhesives, body fillers and glazes. The quality of UV cure and reduction in shrinkage would be a significant benefit in these product categories.

Conclusion

The use of UV-coating and curing systems has seen moderate growth in the PBE market to date. As new product offerings enter the market, as they are expected to do, user awareness levels will increase as well as levels of serious involvement. New technology in the PBE market, although sometimes slow to change direction, is always stimulated by the amount of product choices available.

The urethane paint technology commonly used in the PBE market, did not establish a strong market position until it was universally available from most major suppliers in the market place. The old lacquer paint systems held a share position longer than anticipated, but eventually fell to the success created with basecoat/clearcoat systems.

The same scenario could be said of UV technology in the PBE market of the future. Existing and future improvements in UV-coating and curing systems are on the frontline of a constantly changing automotive repair industry. ▸

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