



Plastic Pointers

The Newsletter on Repairing & Refinishing Automotive Plastics

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New Dodge Neon Bumpers on "Acid"

Have you ever heard of Ethylene Methacrylic Acid? No, it's not one of those drugs kids are taking in high school these days, it's what many of the new Dodge & Plymouth Neon's front and rear bumper covers are made of.

EMA is a new DuPont polymer which goes by their trade name Bexloy W. "Bexloy" stands for "Body Exterior Alloy," and this is just the latest variant of DuPont's long line of successful Bexloy products.

The advantage to Chrysler is that Bexloy W can be molded in color, completely eliminating the need to apply a finish coat, thus reducing cost. The quality of the finish is not quite as good as a painted TPO bumper, but it is adequate for the base Neon models. EMA covers are molded in Bright White, Deep Black, Lapis Blue, and Flame Red. Gray bumpers may be either TPO or Bexloy W.

According to Steve Long, Bexloy W Product Manager at DuPont, the material cannot be painted, so Neons with higher level trim and metallic paints use TPO bumper covers.

Can It Be Fixed?

We found that our new **5003R8 Uni-Weld Ribbon** works very well for repairing tears and gouges in Bexloy W. The adhesion is excellent and it makes a strong repair, especially when the Reinforcing Wire Mesh is used on the backside of the damage.

After welding, we used **2000 Flex Filler 2** to fill in the low spots. The filler showed very good adhesion to the substrate without use of an adhesion promoter.

Painting is the Problem

Painting Bexloy W is a problem because the bumpers have a high gloss, textured finish which is impossible for the paint to adhere to without thorough preparation. Since paint cannot be blended into the original color of the bumper, the entire bumper will need to be refinished even for spot repairs. In order to get adequate paint adhesion, the entire bumper must be completely sanded with 240 grit. After sanding, we recommend applying **3000 Light Gray Flexible Primer** to the entire bumper. To restore the texture, follow with a coating of **3800 Flex-Tex**. Black bumpers can be finished with our **3300 Black Bumper Finish** and other

colors may be finished with a urethane topcoat using **3750 Flex All 2** flexibilizing additive.

We tested paint adhesion using the industry standard cross hatch test and found no problems with coating adhesion with proper preparation. Using Urethane Supply Company's



Many new Neons sport Bexloy W front and rear bumper covers.

complete line of plastic repair and refinishing products, you can make durable repairs to any kind of plastic, even those on "acid."

Uni-Weld Repair Kit Makes Big Splash at NACE

No, we didn't have Jeff Gordon or a buxom blonde model at our booth, but we were attracting plenty of attention at NACE with our new **Uni-Weld Repair Kit** (Part No. 6301SK).

Featuring our new **Uni-Weld Ribbon** universal welding rod, the Uni-Weld Repair Kit includes everything the body technician needs to repair any kind of automotive plastic in one convenient, durable, carry-to-the-job case.

Tips on Repairing Neon Bumpers

1. **Clean with 1000 Super Clean plastic cleaner.**
2. **Repair damage with Uni-Weld Ribbon.**
3. **Sand entire bumper with 240 grit.**
4. **Prime with 3000 Light Gray Primer. Don't try to blend repair area.**
5. **Retexture with 3800 Flex-Tex.**

Attendees at the show were most impressed with the Uni-Weld Ribbon's universal applicability -- from urethane to TPO to polycarbonate, one rod does it all. The only plastic you can't repair with Uni-Weld is SMC, so the kit includes 2020 **SMC Hardset Filler** to repair that material.

Another great feature of the Uni-Weld Ribbon is how quickly it works. Melt it on using the kit's integral airless plastic welder, cool it off with water, and you're ready to sand *right now!* No waiting for a messy two-part repair compound to cure.

Uni-Weld Ribbon adheres very well to problem plastics like polypropylene and TPO, so it feathers out beautifully on these materials. Many small repairs are ready to prime within 15 minutes.

Because it works so quickly and easily, the **Uni-Weld Repair Kit** makes an excellent addition to the paint shop, where small gouges can be repaired on the spot without having to send the whole car back to the metal shop.



New Uni-Weld Repair Kit has everything the body shop needs to repair any type of bumper fascia.

Use of TPOs to Increase to 75% in Next Ten Years

Thermoplastic polyolefins (TPOs) have made a lot of progress from their initial, undemanding uses in such parts as wheel well liners and step pads. Their basic appeal is based on their combination of relatively low cost, low density,

low-temperature impact, and recyclability. They are making major gains in exterior applications and are poised to make inroads in the interior and under the hood as well.

On the exterior, the hot applications are bumper fascia and rocker-panel and other side cladding. Inside the vehicle, the largest single application has been airbag covers, but heavy effort is going into developing TPO skins for instrument panels, door panels, and consoles.

Between 1990 and 1995, the North American automotive industry more than doubled its consumption of TPOs and is expected to double that figure again by 2000. Usage over the next decade is forecast to rise by an average of about 10% per year, resulting in average consumption of over 31 lb/vehicle in 2005 compared to only 12.7 lb/vehicle today.

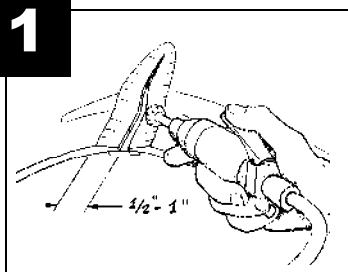
Ron Price, automotive marketing manager at Exxon Chemical Co. predicts that TPO's share of the North American plastic bumper fascia market will rise from about 37% currently to 65% within the next five years and to 75% by 2005.

TECH TIPS

Uni-Weld Ribbon Requires Different Technique

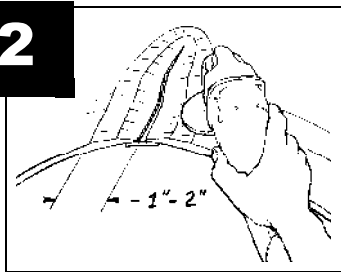
Customers who are used to welding with our standard plastic welding rods will have to make some adjustments to their technique when using the new Uni-Weld Ribbon universal welding rod. Uni-Weld is a brand-new technology in automotive plastic repair -- a thermoplastic hot-melt adhesive -- and it requires a different surface preparation than does our standard rod. Here are a few hints that will help you make strong repairs using the Uni-Weld Ribbon.

1



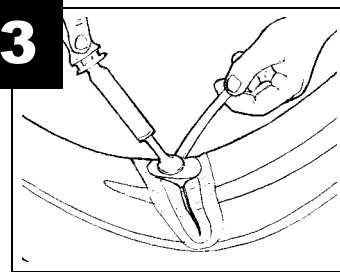
The fastest way to make your v-groove is to use the 6290 Air Die Grinder. V-groove about halfway through the plastic, Don't worry about surface finish here, you just want to remove material.

2



Use a low-speed electric grinder with a 40 grit disc or coarser. Slowly grind a broader v-groove to ensure maximum surface area for the repair. After grinding, lightly hand sand with 80 grit to put even finer grooves into the plastic to further increase adhesion.

3



With the Airless Plastic Welder set to high heat, premelt one side of the Uni-Weld Ribbon, flip it over and stick it to the part, then nip off a small section of the rod with the edge of your tip. Spread the Uni-Weld over the surface. Don't try to melt the base material with the Uni-Weld.

Urethane & Xenoy Will Decline

TPO's two main competitors in the bumper fascia market, polyurethane RIM and PC/PBT (Xenoy) are forecast to drop to 20% from 42% and to 1% from 13% respectively by the middle of the next decade, if not sooner, as the three U.S. OEMs convert to TPOs.

Among the Big Three, GM is reportedly underway on a widespread conversion from RIM, while Ford, the industry's principal user of PC/PBT, is planning a phase-out of that alloy. Polyurethane and polyurea are likely to hold onto at least some of the luxury-car end of the business, where high-gloss surfaces, dimensional stability and moldability are required.

This massive reshaping of the fascia market, according to Market Search Inc., is partly due to TPO's 15% to 30% cost advantage and 15% to 25% weight savings, but also reflects substantial improvements in material properties. GM, for instance, reportedly has decided to use TPO fascia on all new models starting in 1997 unless a case can be made for another polymer.

The Painting Question

The majority of exterior parts will be painted, especially where the TPO will be adjacent to steel. "The industry has dealt with the early paintability issues with TPO," state D&S' Louis Martin. "The test case for paint performance is the bumper fascia, which is exposed to the toughest service conditions of any painted component on the car," Martin points out. "There are no problems with durability, adhesion, cracking, or chipping."

However, TPOs, being polyolefins, currently cannot be painted without a preliminary process to aid adhesion. TPO suppliers are working to eliminate the need for this cost-generating extra operation. Approaches include giving the compound higher surface conductivity by using more polar rubbers or using a migratory conductive additive.

(*Plastics World*, October 1995)

Making Instant Adhesives Just Like Making Whiskey -- Just Don't Drink It!

Instant adhesives, or cyanoacrylates, are made much the same way that you might make whiskey... in a still. The chemicals used to manufacture instant adhesives are mixed in a "reactor" and boiled. The "steam" runs through a condenser and the end product is instant adhesive. The instant adhesive is very watery when it is made. This is fine when you have a clean break on hard plastic, but does not work well when you need to fill a gap. For this reason, the viscosity needs to be modified.

The viscosity is measured in centipoise (cps). The higher the number, the thicker the adhesive. The adhesive coming out of the "still" is about 1 cps. The viscosity can be modified anywhere in the range of 1 to 10,000 cps. Our usability testing has shown that 1 cps and 100 cps work best for automotive plastic repairs. For this reason, we've formulated our **2200 Insta-Weld 1** (thin) and **2250 Insta-Weld 2** (thick) with viscosity ratings of 1 cps and 100 cps respectively. Our **2225-G Insta Weld Gel** has an even higher viscosity.

The name "instant" adhesive is a little bit misleading. Filling gaps with instant adhesives sometimes requires up to 2 minutes to form a bond. Also, the surfaces being bonded can affect the bonding time. These bond times may be shortened with the use of an activator.

Activator is just a mixture of heptane and trichlorotrifluoroethane, or "trike". The trike is the active ingredient. The more trike in the mixture, the shorter the bond time. The problem with adding too much trike to the mixture, though, is the boiling and bubbling you see in the adhesive after applying the activator. This boiling action often pushes some of the adhesive out of the gap or spreads the adhesive into unwanted places.

Our regular activator is a compromise between bond time and boiling. It significantly speeds the bond time without the boiling that comes

with activators containing higher percentages of trike. However, many of you have told us that you don't mind the boiling and just want fast bond times. In response to your requests, we have just introduced **2303-6F Fast Activator**.

In the next issue of *Plastic Pointers*, we'll discuss some of the advantages and disadvantages of instant adhesives. We'll also discuss some repair techniques for the GTX plastic used in Saturns and other GM products.



Urethane Supply Company's line of instant adhesives.

Keeping Our Customers Informed

Thanks for taking the time to look over the first issue of Urethane Supply Company's *Plastic Pointers*. This quarterly newsletter is a new way for us to keep in closer contact with YOU, our valued customer.

Our goal is to keep you up to date with the latest technical tips and news in the field of automotive plastic repair. Look for your next copy this summer!