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## Speed the Welding Process on TPO Bumpers with our New R13 Polypropylene Strip

Way back when Jimmy Carter was president, the only way to repair plastic bumper covers was to use a hot air welder. Fortunately, there weren't too many plastic bumper covers back in those days.

Hot air welding technology has been around since the dawn of the plastics age back in the 1950's. It got its start in industrial welding and fabrication.

Crossing the industrial-based hot air welder over to automotive plastic repair was not pretty, as most of the plastic bumpers back in the 80's were thermoset polyurethane (PUR), which is virtually impossible to repair using a hot air welder.

That's why Urethane Supply Company invented the airless welding process back in 1983 and has been its main proponent ever since. Airless welding allows you to control the heat input into the substrate, so you can "weld" PUR easily. (Actually, this is more like a brazing process since the substrate is not melted).

The main disadvantage of airless welding is speed, or rather lack of it. A six inch tear in an ABS motorcycle side fairing can be hot air welded in about 30 seconds, but the same

repair will take about five minutes with the airless welder.

We still recommend the airless welder to most body shops because it is still easier to use and less expensive than the hot air welder. This is especially true if you're only doing the occasional plastic repair.

But if you do a lot of plastic repair, like our bumper recycling customers, the hot air welder could save you some time. Why? Because over 90% of late model bumper covers are made from PP blends (TPO, TEO, PP/EPDM, etc) instead of the old PURs. That means the old hot air welder can be used with great success.

With our new R13 series of polypropylene strips, hot air welding has never been easier or stronger!

We've found the stickiest PP resin on the market and extrude it into a flat ribbon profile that's 7/16" wide by 1/16" thick.

The flat ribbon has several advantages over the standard round rod. First of all, it has a much broader contact area with the substrate, making for a stronger fusion weld.

Second, because the molecules in the strip are largely unmolested, they retain the strength gained in the extrusion process.

The enormous pressure generated in the extrusion process aligns the polypropylene molecules, giving the strip excellent tensile strength. The airless welding process mixes the filler rod, invariably

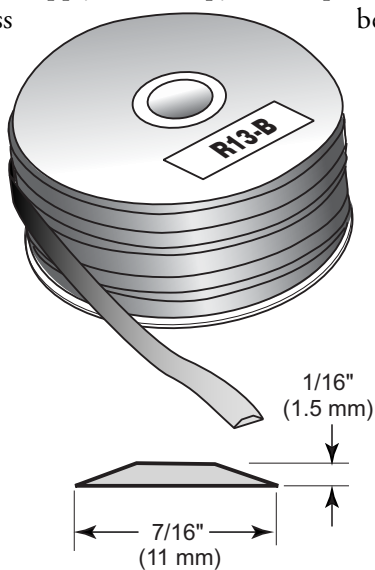


*Here the hot air welder is shown in position to start a repair of a torn mounting hole with the R13 PP strip.*

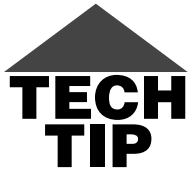
creating air voids which jumble up the molecules. As a result, an airless weld using a standard round rod is much less strong than the same repair using the R13 strip and the hot air welder.

We have developed a repair method we call the "hybrid welding method," which combines the best features of both hot air and airless welding. This works by first laying the strip down using the hot air welder. The airless welder is then immediately used while the strip and substrate are still hot to burnish down the edges of the strip and shape the repair area.

Combining the methods combines the advantages of both-- the speed of

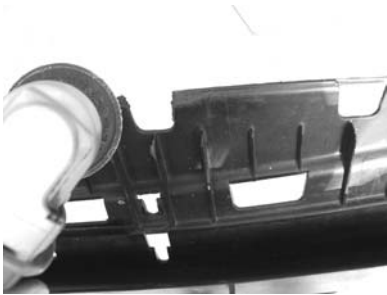


*R13 PP Strips are available in 30 ft rolls and in a 1.3 lb spool (approx. 170 ft). We extrude it in both black and white (natural)*



## Using the Hybrid Welding Method with R13 PP Strip to Repair Honda Tab

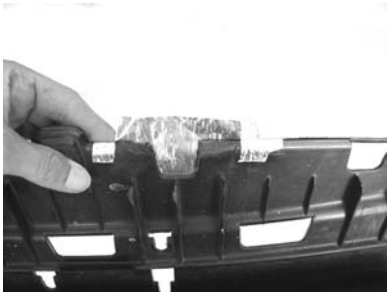
The small plastic bars that run along the bottom edge of Honda bumpers have long been a difficult problem for body shop technicians and bumper recyclers alike. There's not enough area to get a good repair with the FiberFlex rod, and the area's too small to sink any of the stainless steel mesh into. This Tech Tip will show you how to repair these buggers with the new R13 PP strip using the "hybrid welding method."



**Step 1.** Grind plastic on both sides of the missing plastic bar with a 50 grit Roloc on both sides. Taper down to a point.



**Step 5.** Put the hot air welder down and immediately burnish the hot R13 strip into the bumper using the 6028RT round tip and the airless plastic welder.



**Step 2.** Apply a piece of 6481-2 aluminum body tape across the gap to support the softened welding rod during the repair process.



**Step 6.** Repeat the process on the opposite side. Use the airless welder to shape the plastic to nearly the final shape and melt it in with the base material very well.



**Step 3.** Premelt the base material with the hot air welder, then stick the R13 down and slowly feed the strip down onto the base plastic as you make your pass.



**Step 7.** Using a Dremel tool and the 6121-T Teardrop Cutter Bit and a DA sander, final shape the plastic bar to the finished dimensions.



**Step 4.** Bridge the strip across the gap without melting it, then pick up the weld pass on the other side. Melt the R13 down for at least 1/2" on the other side.



**Step 8.** When finished, the bar can support the entire weight of the bumper! This is a very strong repair considering how little area you've got to work with.

hot air with the ability to physically press on the surface using the airless welder tip. The sidebar in this issue of Plastic Pointers will focus on use of the hybrid welding method using the R13 PP strip.

The R13 doesn't feather out as nice as our FiberFlex rod, so you can combine the methods by welding with the R13 on the back then use the FiberFlex on the frontside for easier sanding and finishing.

The R13 strips are available in both black and natural in both 30 ft rolls and 1.3 lb. spool. Suggested User prices for body shop customers are as follows:

Part No.	Price
5003R13BLK 30 ft roll	\$ 15.95
5003R13NAT 30 ft roll	\$ 15.95
R13-B 1.3 lb spool	\$ 76.00
R13-W 1.3 lb spool	\$ 76.00

Buy one of our hot air welders (either the 6050HA or the 6055) today to try out this speedy new repair technique!

## Hot Air Welders from Urethane Supply Company

Our original welder, the EZ Weld hot air welder, is built by us using components sourced in the United States. This is a high quality tool that allows for variable temperature and, using the enclosed mini regulator, adjustable air flow. The EZ Weld has a 550 watt heating element that gives welding temperatures approaching 1000°F.



*6050HA EZ Weld requires external compressed air supply*

The EZ Weld must be connected to a source of filtered, dry compressed air. You must be careful to shut off electrical power to the heating element before shutting the air off, otherwise the heating element will be damaged.



*6055 Steinel LCD Welder has self-contained blower for greater portability and ease of use.*

The 6055 Steinel LCD welder is basically a high temperature heat gun with a reduction nozzle for welding. It has a 1400 watt heating element allowing for a temperature adjustment range of 180-1020°F. The LCD screen on top of the welder displays the temperature set point and the actual temperature of the heated air. Because the welder doesn't have to be hooked up to compressed air, it is more convenient to use than our EZ Weld. The 6055 Steinel LCD welder is now shipped in its own plastic carrying case and a selection of plastic welding rods.

Prices for our two hot air welding kits are as follows:

Part No.	Price
6050HA EZ Weld	\$490.00
6055 Steinel LCD	\$249.95

The 6055 Steinel LCD welder is easier to use for a novice, but its air-flow, even though adjustable, is still rather high even at the lowest setting. This would make the 6055 unsuitable for working on very thin material. By contrast, the 6050HA EZ Weld's airflow can be turned down very low for more precision.

## Urethane Supply Welcomes New Staff

We're happy to announce two new additions to the Urethane Supply Company staff--Donna Furlong and Jeff Thurmond.

Donna is our new customer service agent. She'll probably be the person who answers the phone when you call in and she'll be the one to take care of your orders. Donna has over a decade of experience in customer service at O'Neal Steel in Chattanooga, so she just has to get used to all the new part numbers here at Urethane Supply.

Donna played basketball on the Ider High School 3A Alabama state



*New team members Jeff Thurmond and Donna Furlong*

championship team as forward, "many years ago" she says. She enjoys shopping, traveling, taking snapshots, and spending time with family and friends.

Jeff's our new inside sales manager. Jeff started with Urethane Supply Company in the factory manufacturing the products you use everyday, but when we created the inside sales position in December, Jeff jumped at the chance to work in sales. He's busy calling our existing bumper recycling customers and getting used to his new surroundings.

Outside of work, Jeff is an accomplished musician who plays keyboard, drums, guitar, and mandolin. He enjoys spending time with his wife and two daughters.



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## Bumper & Cladding Adhesion Primer Still the Easiest!

When we introduced the Bumper & Cladding Coat paint line in 2003, we planted the flag with the first product that made it fast and easy to refinish raw TPO replacement bumpers. PPG has since released a new plastic adhesion system called One Choice that claims to be easy and fast. We've tested it, and it's a good product. But Bumper & Cladding Coat will still save you time and money. Let's check out the numbers:



### Special Introductory Offer!

Never tried Bumper & Cladding Adhesion Primer before? **Order a quart can and get a FREE aerosol can of Super Clean plastic cleaner!** Call us at 800-633-3047 today!

Offer expires May 31, 2005

### Save Time!

<b>Bumper &amp; Cladding Coat saves you 1/3 the time</b>	
Ready to base-clear (50 min)	Ready to base-clear (75 min)
Cool down (10 minutes)	Cool down (10 minutes)
Bake B&C Adhesion Primer at 130°F (20 minutes)	Bake sealer (20 minutes)
Spray on B&C Adhesion Primer (10 minutes)	Mix & apply PPG Chromatic sealer (10 minutes)
Spray on Super Clean, wipe off (10 minutes)	Let Plastic Bond flash (5 minutes)
	Spray on SU4903 Plastic Bond (10 minutes)
	Let Adhesion Wipe flash (5 minutes)
	Wipe with SU4902 Adhesion Wipe (5 minutes)
	Wash with SU4901 Clean & Scuff Sponge, dry (10 min)

**Bumper & Cladding Coat Adhesion Primer**

**PPG One Choice Plastic Prep System**

### Save Money!

<b>Bumper &amp; Cladding Coat Adhesion Primer System</b>	<b>PPG One Choice Plastic Prep System</b>
Super Clean, pint \$3.50	4901 sponge \$8.50
B&C Primer, 1/2 pint, \$10.93	4902 wipe \$8.50
<b>Total = \$14.43</b>	4903 bond, 1/2 pint, \$10.00
	Chromatic sealer, 1/2 pint, \$12.31
	<b>Total = \$39.31</b>

**Save 63% off the material cost by using Bumper & Cladding Coat!**

(see full details of the test - visit our website at [www.urethanesupply.com/bcc](http://www.urethanesupply.com/bcc))