

STRUCTURAL EPOXY ADHESIVES

Chemical Welding with Structural Epoxy Adhesives

1. Define the type of plastic you are working with. Refer to the **I. D. Chart** and the Helpful Hints
2. If the part is out of shape, preheat with a hot air gun, and push back into shape with block of wood or the end of a hammer handle, then cool quickly with water or an air blower.
3. Always start your repair on the non-visible side. If the part is ripped or torn, push the two sides together and hold them in place with Aluminum Tape (**Part# RM770**) on the opposite side or use our Liquid Adhesive Kit. (**Part# CA180**). Apply our liquid adhesive to one edge of the tear and the accelerator to the other edge. Position and hold it in place for approximately 3 - 5 seconds. For fiber reinforced plastics, such as FRP or SMC, which are more porous materials, it is preferable to use an additional amount of our Liquid Adhesive.
Note: Always pre fit the parts before applying the liquid adhesive as once it is set it is very difficult to remove.
4. "V" grind and taper the edges 1 ½ - 2 inches on each side of the damaged area.
5. If you are repairing an Olefin based plastic, (**TPO, PP, PE and EPDM**), apply Adhesion Promoter (**Part# AD500**) to the entire repair area. Use a spray gun or wipe on with a clean cloth. It should take about 3 to 5 min. to dry. It is very important that this product is dry before any material is applied over it. May be forced dry with heat.
6. Cut a minimum of 3 pieces of Fiberglass Reinforcement Tape (**Part# RM890**), each one approximately ½" bigger than the other to cover the repair area.
7. Choose the appropriate Structural Epoxy Kit (**SE Series**), for either flexible or rigid plastic.
8. Insert the Structural Epoxy Kit into the applicator gun; remove retainer nut and both end caps. Dispense a small amount of product until both barrels flow evenly. Discard this material. Dispense enough material on a mixing board to do the repair. Mix thoroughly to a consistent color.
Note: (Static mixing tips should only be used when you need a long even continuous bead for bonding side panels, roof panels and hard to reach areas).
9. Apply epoxy over the repaired area, pressing it into the "V" groove. Place your smallest piece of reinforcement tape into the groove and press it into the epoxy using a spreader. Cover it with a layer of epoxy and then repeat process with your second and third piece of reinforcement tape.
10. Finish with a coat of epoxy. Cover with a clear plastic sheet (plastic bag) and use a spreader to apply pressure over the repair area, this will embed the epoxy into the reinforcement tape and leave a smooth finish. Allow the epoxy to cure before removing clear plastic sheet
Note: Epoxies are cured by a chemical reaction, which creates heat when parts A and B are combined. This curing process is called an exothermic reaction. The thinner you apply our epoxy the longer the curing process takes. You may speed the curing process by applying heat with a hot air gun. Heating too much will cure the epoxy but will keep the epoxy soft, so just the right amount of heat (approx. 2 - 3 minutes) will produce excellent results.
11. Repeat the process (steps 7 to 10) on the visible side.
12. Once the repair is cured, grind down the structural epoxy slightly below the surface of the part using a 60-80 grit disc at slow to medium speed. Be sure not to create too much heat, as this will cause the epoxy to lose adhesion around the edges.
13. Sand the repair and surrounding areas with 80-120 grit paper at slow to medium speed.
14. Remove any dust then clean with our Wax and Grease Remover.

You are now ready to apply our epoxy finishing filler. Choose the appropriate filler depending on whether the part is flexible or rigid plastic. (**Refer to the "Instructions for Finishing Filler"**).

Illustration 1

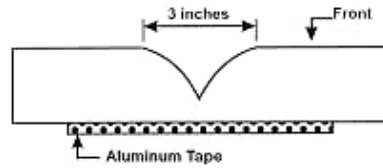
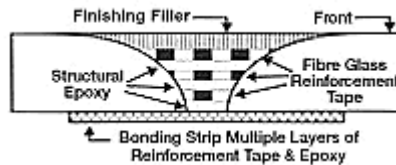


Illustration 4



NOTE 1: REPAIR PROCEDURES FOR OLEFIN PLASTICS

Olefin based plastics have mould release agents added in the manufacturing process. This causes the waxy greasy feeling and is why they smear when sanded at high speeds. Every time you break the surface of an Olefin plastic the mould release agent comes to the surface, this is what causes adhesion problems.

TWO WAYS TO COUNTERACT THIS PROBLEM ARE:

Heat Treatment

Pass a propane torch over the surface to be repaired until it becomes glossy (be careful not to overheat the plastic), this causes the flame to oxidize the surface. This procedure allows the plastic part to readily bond to the oxygen molecules found in the repair material. The repair materials must be applied within 1 hour. If more than 1 hour passes, re-flame the area before proceeding with the repair.

Adhesion Promoter

Pro-Tech Adhesion Promoter is water based and has zero V.O.C.

Apply with sprayer which is included with Adhesion Promoter #AD500. May also be sprayed with conventional spraying equipment (approximately 60 lbs. pressure). Adhesion Promoter should be sprayed 2ml to 3ml wet. This will give a final coating of approximately 2ml to 3mls. After a flash off time of approximately 2 minutes (depending on shop conditions), you may force dry with either a hot air gun for small areas or infrared heat lamps for larger areas

INSTRUCTIONS FOR USE OF A DUAL CARTRIDGE GUN.

1. Press release lever and pull back the plunger rods all the way.
2. Insert Dual Cartridge into the applicator gun, back end first.
3. Remove nut and / or ends caps from cartridge. Pump out a small amount of product and discard. This will equalize the mix.
4. Install the static mixer tip (if required) and nut. Pump the gun until the mixture is even in color (no streaks), then apply. Replace end caps and / or retaining nut after use.

NOTE: *The use of static mixer tips is not always desirable. We suggest to use them ONLY when bonding large panels, when the need of a long even bead of product is required. Otherwise dispense onto a plastic mixing board, mix thoroughly, then apply.*