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Epoxy Resin for Auto Body Repair & Restoration – and More



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My first classic car was a 1968 Mustang notchback coupe in questionable condition. The engine wasn't firing on all cylinders (and at times neither was the driver), the transmission needed rebuilding, and the body looked like it had been through a war (and on the losing side). The idea of course, was to purchase the vehicle inexpensively, and restore this pony car to its original classic look. And that's just what we (my father and I) did.

The majority of the body work needed was focused on the back of the car, where both quarter panels and the taillight assembly and trunk lid needed lots of attention; however, there was also rust around the wheel wells also. Some of the parts needed replacing as they were beyond restoration – one rear quarter panel, the trunk lid and taillight panels were removed from a parts car and replaced. The rest of the body damage was addressed with that old standby auto body filler – bondo – which, in hindsight we shouldn't have used...

Bondo versus Epoxy Resin Auto Body Filler

Bondo is best used for filling in minor dings and pits and smoothing out surfaces cosmetically before painting. Since it is not meant to be a structurally enhancing material; if used to restore larger surface areas, chances are it will crack over time – which is just what happened to my Mustang in a couple of spots. For Mustang body repair part 2 (the sequel) – we turned to a more flexible and stronger solution that would better adhere to the substrate metal and last much longer – fiberglass and epoxy resin...

Auto Body Filler Levels of Repair



There are three basic levels of auto body filler repair that are used by professional body shops as well as DIY restorations; they are classified as standard, medium and premium levels of repair. The type/grade of filler selected will depend upon the application being addressed:

- Standard Body Filler - lightweight often putty, used to repair minimal auto body damage such as minor dents and scratches, also employed to address small rust spots and minor hail damage – easy to apply and sand, fast-curing (20-25 min) – but provides least stain and stress resistance



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- Medium Body Filler - fiberglass-filled to reinforce repairs such as cracks, holes and tears in metal or fiberglass body panels, more durable than standard filler and will bond to a variety of other substrates as well including aluminum, wood and concrete/masonry
- Premium Body Filler – features the application of state-of-the-art resin technology, this premium polymer process features superior adhesive qualities with all types of metals and other substrates, and is easy to spread, sand and paint – to restore damaged surfaces to good-as-new
- Long-strand Filler - used for significant damage repair for piercings such as cracks, holes and tears in an auto body surface - doesn't provide the adhesion of short-strand filler - but gives more material flexibility for larger repairs

Auto Body Filler Materials

On the materials side, as auto bodies have become lighter and thinner over the past several decades (remember the heft of the doors on your father's and grandfather's cars?), Vance Crethle says, "body filler has become essential to nearly every collision or dent repair job," in a column ['Pros And Cons Of Premium, Short Strand, And Long Strand Body Filler.'](#) "Here are the advantages and disadvantages of the three primary types of filler:"

- Premium Filler – (not to be confused with the 'process' above) this material made with resin & powder offering the advantage of easy sanding for minor repairs, since this filler uses powder as its' adhesive - it won't flex as much as the others and can only be applied in thin layers
- Short-strand Fiberglass - consisting of resin and fiberglass strands, this filler is more 'dense and durable' than premium as well as more adhesive - and is often

used as a sub-layer to be covered with premium cosmetically

Epoxy Resin Automotive Repairs Applications Review

Restoring Metal & Fiberglass Auto Body Panels

For superior bonding and moisture proofing - you can't beat Epoxy resin. It has far superior qualities than polyester auto body fillers - to repair corroded or damaged metal and fiberglass auto body panels. A missing body panel may be rebuilt using fiberglass cloth and epoxy – creating a strong permanent foundation to anchor the repair. Once the epoxy has cured; simply sand smooth and apply primer and paint.

Repairing Cracked Bumpers & Fenders



As the old saying goes, "when you least expect it - expect it." Fender benders can happen at any time - and epoxy resin makes for a great repair for minor automotive mishaps. Just clean the edges of the crack, apply epoxy resin, lineup the



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seams and press together until cured. Aside from epoxy resin (of course), you'll need plastic repair tape (to hold the crack together during curing) and a plastic spreader and mixing plate. Simply mix epoxy resin on the plate or other surface from which to work, apply within the crack evenly, and tape (to hold until dry). Cover the tape with another light layer of epoxy, and once the repaired area has dried - sand smooth and finish with primer and paint.

Repair Cracked Steering Wheels & Other Automotive Plastics



Cracked plastic interior or exterior car parts are easier to repair if you remove them first (if possible). Be sure to thoroughly clean the part to ensure a solid bond for the adhesive. (In the case of parts frequently handled like a steering wheel; you want to remove any buildup of oils for instance.) Open up the crack a little, preferably making the bottom a bit larger than the top – to increase the bonding surface area and so the epoxy, once set, will be trapped into the crack and can't come out. After the repair has dried, gently shave off any excess epoxy – and you're good to go!