

Repairing Boats with GRP

Polyester resin bonds firmly to a wide range of materials including wood, metal and concrete, and makes strong, durable repair patches which are waterproof, rotproof, non-rusting and resistant to weathering. It can be used to repair almost anything, and is especially ideal for mending boats.

Minor scratches on GRP surfaces are quite easy to repair simply by filling with gelcoat resin, or with Gelcoat Filler. It may be necessary to gouge out the scratch (preferably with a V-shaped tool) to ensure the resin locks sufficiently. Leave to cure, then smooth down with Rubbing Compound.

Small holes, cracks and dents in most GRP, metal or wooden surfaces (other than boats) can be filled with a mixture of lay-up resin and filler powder. You can buy ready-made stopper pastes or bodyfillers, of course, but the advantage of mixing your own is that you can make it to the required consistency (and, in larger quantities, it is more economical). Simply mix filler powder and resin to make a paste, add hardener (10ml per kilo of resin, NOT per kilo of resin/filler mix!), stir, then fill the dent, applying the paste proud of the surface. Leave to harden, then sand down with progressively finer grades of Wet & Dry paper, and paint to match the surrounding surface. The same technique can be used on boat hulls, but you should use Glass Bubbles or Q-Cel rather than conventional filler powder (which tends to absorb moisture, and is therefore not recommended for items which are on, or in, water for long periods). You can also make a repair "dough" by mixing lay-up resin and chopped glassfibre strands - this is used in the same way as bodyfiller, but is much stronger and has better gap-filling properties. It can be used on virtually any surface, including boat hulls.

A glassfibre patch can be used to repair larger holes - in fact, you can use glassfibre to replace entire sections of a damaged hull. There are three ways to replace an extensively damaged area of hull. One is simply a more elaborate version of patching - cutting and shaping formers (usually of foam material) and laminating over them. Better results are obtained if the damaged section is temporarily "rebuilt" with foam sheet, plaster or any material which can be readily shaped and finished. This is then used as a "plug" from which a mould is taken. A brand new section can then be produced from the mould, the "plug" is removed and the new section is laminated into position, with the joints carefully reinforced. Of course, if you are lucky enough to know somebody with an identical boat, you can replace your damaged section by taking a mould from the appropriate area of the second boat!

EPOXY REPAIR SYSTEMS

Epoxy systems are also available for repair work. As different systems vary in their mixing and application, it is best to refer to the manufacturers instructions for the specific product you intend to use.

ADHESION TREATMENTS

for bonding polyester resin to various materials

Polyester resin bonds excellently to wood, plaster, hardboard, stone, slate, brick, plasterboard, chipboard, ferrous metals (eg, cast iron, mild steel), GRP laminates, and polyurethane foam materials. Only a weak bond can be obtained on glass, non-ferrous metals (eg, aluminium), acrylics and acrylates (eg, Perspex). The resin will not bond at all to polythene, latex, most synthetic rubbers (vinyl, silicone, etc), Polyester Film, and Melamine.

MATERIAL	TREATMENT FOR MAXIMUM ADHESION
Wood, hardboard	Clean. Apply sheathing primer (Lay-up resin thinned with styrene, as described in the section on Sheathing) and leave to gel before bonding.
Steel & iron	Clean, score surface and degrease with Acetone.
Non-ferrous metals	Clean and score surface. Apply resin immediately. (Good adhesion will not be possible).
GRP laminates	Clean and degrease. Abrade surface and clean again.
Polythene	None possible – will not bond.
Plaster, stone, concrete	Ensure surface is clean and dry. Preferably seal with sheathing primer (as wood or hardboard). Fresh concrete or plaster should be left to cure thoroughly for at least one month.
Polyurethane Foam	Break surface cells with a rasp or Surform.
Sheet glass	Clean with dilute hydrochloric acid. (Note: acid must be used with great care).
Polystyrene	Not advised. (Is dissolved by polyester resin)