

Ask Dr. Gel



by Dave Weakley



Dave Weakley is the owner of American Boat Restoration and has been helping Northeastern boaters keep their boats in fine trim and good repair for over 40 years.

"Email me or call me with your questions! I'll be happy to help you out!"

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Got minor surface scratches, dock rash, faded gelcoat? With proper training you can do great repairs on your boat!

Dr Gel

"I bought a Gelcoat Repair Kit and did a minor repair. The repair is still tacky, the color does not match, and it looks terrible! Help! Brian, Northampton, MA"

Gelcoat is a very unique surface material on a boat. There is a lot to know about it.

Have you ever tried to attempt a repair on gelcoat? Used a gelcoat "repair kit" with Patch Paste off the shelf or a Preval? Don't waste your time or money on what I call "snake oil". I have tried the repair kits and I don't get a satisfactory repair. If you can prove me wrong call me.

Gelcoat repairs can be challenging even for the



Before and after example of successful Two Tone Gelcoat repair.



professional! There is a lot you need to know about it before you attempt a repair.

Gelcoat is affected by many things including age, temperature, humidity, hardener, surfacing agent, additives, and application methods. The amount of color fade the boat has will also determine how nice the repair will look.

Important things to understand about gelcoat;

AGE- Gelcoat has a shelf life! Hopefully that Repair Kit you used was fresh and not sitting on the shelf for a couple of years! Gelcoat has its best quality if used within three months of being made but may work up to 6 months old. I won't use gelcoat if it is more than 3 months old. There are chemicals in the gelcoat that evaporate over time. The chemicals are crucial to insure a proper cure. Once a boat manufacturer sent unknown to me, outdated gelcoat to do a warranty repair! I sprayed the gelcoat and it would not fully cure – it was TACKY! Hummm, brand new boat, outdated gelcoat. I asked the manufacturer to please ship me some fresh gelcoat! Repair was redone successfully. That will only happen to me once!

TEMPERATURE – Gelcoat is very temperature sensitive. Apply it in a minimum temp. of 68 degrees - maximum 98 degrees. I don't recommend 98 degrees! I think 73-75 degrees is the ideal temperature to work in. It is very important the boat and gelcoat be the same temperature when applying the gelcoat.

HUMIDITY – Gelcoat and water don't like each other. If there is heavy humidity in the air, wait to do your repair. A humid environment will create pin holes and affect the color and adhesion. These are just three of many problems humidity will cause.

HARDENER- mekp - There is 50% mekp hardener for gelcoat and another type of mekp 9% for fiberglass resin. Be sure you have the proper type! At 68 degrees, 1- oz. of gelcoat will require 12 eye dropper drops of mekp. At 73 degrees you will need 9 drops of mekp, 88 degrees use 6 drops. 98 degrees requires 4 drops but trust me, at 98 degrees you won't get it from the mixing cup to the boat before it hardens.

Too much mekp will change the color. Using the wrong mekp will affect the cure.

SURFACING AGENT- A must! You need to apply a surfacing agent over gelcoat because air inhibits the curing of it. Cellophane is the type often included in Repair Kits. It will do the trick if you get a good enough seal! The instruction states to lay the cellophane on the wet gelcoat. Good luck with that! The cellophane causes air bubbles, irregularities and a ripple surface. Two other types used by professionals are sprayed on PVA (Polyvinyl Alcohol) or a mixture of Styrene/Paraffin Wax added to gelcoat before it is applied.

APPLICATION METHODS- When you use a popsicle stick or brush to apply the gelcoat, it is often applied too thick & fast. The thicker the gelcoat, the



Fractured fiberglass from impact damage.



Fractured fiberglass ground off.



New fiberglass & resin layers applied.



Body lines restored.

hotter the cure. Too much heat developing quickly will affect the color. Gelcoat is designed to be applied with a spray gun resulting in a better color match and finished product.

GELCOAT COLOR FADE - It is important to compound the boat, make it look as nice as possible. You are now matching the color of the boat and not the dirty faded gelcoat.

ACETONE INFO- Acetone is a cleaning solvent used to clean repair area and to clean your equipment. No matter what you read or hear DO NOT use acetone to reduce (thin) gelcoat. Ever!

It will attack pigments cause gelcoat discoloration and poor color match. It will slow down cure. It will shorten stability of gelcoat and likely to cause chalking and fading. It will cause a lack of shine. The cure will be soft and it will be difficult to sand and buff. It will not evaporate completely. It will often cause a halo.

Repair Kits include Patch Paste = Unsightly repair

Here's my thoughts about why using patch paste is not a good idea. The "repair kit" Includes: gelcoat base, liquid hardener (MEKP), usually 6 Color resins, white, yellow, black, red, blue, brown for tinting gelcoat base, instruction guide, mixing sticks, plastic release film. An additive is used to make the gelcoat thicker turning it into a paste so it can be used like body filler. Cabosil is one type. Because the paste is thicker it is going to cure hotter and the heat will turn the repair spot darker. It will also cause little, tiny, unsightly pin holes that you will not be able to get rid of. Also, the filler material used to make it a paste will cure harder than the adjacent area. So when you sand the filler the surrounding area will sand away faster leaving a bump. Also the more pigment used to tint the gelcoat the slower the gelcoat cure will be and it may not even harden at all. The surface would be soft and you wouldn't be able to polish it and would always be dull.

My thoughts on a Preval

Prevals may have a useful purpose in certain applications but they should not be used for gelcoat repair.

Many repair facilities use them with unsatisfactory results.

The Preval Sprayer is an aerosol-based spray system. In order for the gelcoat to be sprayed from the paint can type tip the gelcoat needs to be mixed with a thinner. Adding a thinner as mentioned above such as acetone or styrene causes a bad color match.

To do a expert gelcoat repair requires different techniques and materials compared to paint. You must know what they are or you'll have a big mess on your hands.

If you goggle how to do gelcoat repairs you'll come across many web sites full of instructions and many are giving wrong information.

Recently I looked at a site about repairing "dock scars" and I could not believe how wrong the instructions were. Surprisingly the information was



Vinyl ester finish filler applied.



New gelcoat applied.



Repair complete.

from a well know boat manufacturer. It's all about the level of repairs you are looking to have.

Learn how to do successful professional level minor repairs. We at American Boat Restoration teach all levels of repair to boat owners looking to do their own minor repairs and those in the repair trade who want better results in their repairs.

"Your knowledge and the quality of the materials you use will lead to successful repairs!"

For more information about our gelcoat repair training class Contact us - boatrepair@aol.com or 518.577.7799 or 413-665-7424

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