



Ask Dr. Gel

by Dave Weakley



Dave Weakley is the owner of American Boat Restoration and has been keeping boaters afloat 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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The Road To Learning

The art of quality gelcoat, polyflake and fiberglass boat repair begins with an expert in the trade

"I was very impressed with the level of skill and knowledge Dave possessed in gelcoat repair. Truly Dave is a gelcoat artist. More impressive was Dave's skill as a teacher. Teaching is more about focusing on student learning than the amount of content covered. Dave focused on my learning. He monitored my progress and made adjustments to reinforce specific skills, to make corrections, as well as move to the next level when appropriate while making changes to his teaching style to suit my learning style. I recommend Dave's class for anyone who wishes to learn or improve their skill in gelcoat repair."
 Deric T. - student, Chittenago, NY

How I became involved in the gelcoat boat repair trade is a question my students often ask. In 1971-72 I took auto body repair at Boces vocational school in Niskayuna, NY. I was fortunate to have had the two best instructors that anyone could have. I learned a lot about auto body from them. The first year was learning basic auto body techniques. It involved learning how to diagnose collision repair problems and choosing the right tools from hammers to air compressors to welding devices for the job. Working in this field involves many mechanical tools, and you need to know what tools are appropriate in what circumstances and how to use them. The second year was advanced auto body; how to prepare and repaint car surfaces to make them look as good as new.

People actually trusted us to work on their cars including corvettes. This is when I started working with fiberglass.

After I graduated high school I was hired by Scotia Marine in Scotia, NY to do mechanical and fiberglass boat repair. That's when I entered the school of hard knocks. I was skilled in fiberglass and paint repair thanks to Boces but not gelcoat work. Gelcoat repair was not taught there. I found out that good quality gelcoat repair was no easy task. It was a different animal all together from paint. Back in the day I had to figure out what worked and what didn't. What mixed together and what did not. What caused "fish eyes", "halo", bad color match, gelcoat is tacky and not curing correctly, dull finish, "orange peel", sagging, cracking, etc.

I figured it out resulting in perfect repairs. During the past 47 years there has been major developments and improvements in repair equipment and materials. I have seen major changes in fairing compounds, abrasives, advancement in spray and shop equipment, and the introduction of low voc (volatile organic compounds) gelcoat as a result of EPA regulations

At the end of the day I discovered it was all about using the proper equipment, product filler materials, compatibility, mixing and temperature resulting in many years of successful gelcoat, fiberglass and polyflake repairs.

If you ask 100 people how to do gelcoat repair you'll get 100 different answers. Beware of any product that sounds too

Students come from near and far to train with Dr. Gel!
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On site training at the Ozark Yacht Club.
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good to be true! Stay away from for example-Easy Fix Gelcoat Repair, Magic Fix, Quick Fix, Miracle Fix, Fix a Crack in a Can", "Gel Paste" "Repair Kits", etc. Trust me, there is a lot of "snake oil" on the market!

Here's an excerpt of an Ask Dr Gel published in May 2014 Boating On The Hudson

Do-It Yourself instructions for Gelcoat repairs are often wrong.

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 what the instructions were. Surprisingly the information was from a very, very well known boat manufacturer.

The following steps were given and my opinion follows each step. Hopefully my counter answers will guide you to a better repair if you are undertaking repairs on your own.

#1 WRONG - "Cut off excess gelcoat shavings with a straight razor blade leaving a fairly smooth edge

CORRECT PROCEDURE- I use high speed angle grinders with a round carbide tip to remove damaged gelcoat. At the very least use a drummel to remove excess gelcoat cracks and shavings. Using a straight edge razor blade is ludicrous because it will not give you the necessary results which should be a nice taper cleaning out around any damaged gelcoat

#2 WRONG- Wipe the damaged area with acetone

CORRECT PROCEDURE- Never, ever wipe the ground out area with acetone-

Acetone leaves a residue resulting in poor adhesion. I wipe down the area with water and a sponge.

#3 Surround the damaged area with strips of 2" tape.

Surprisingly this is correct but the instructions don't explain why. The reason is the tape provides protection for the undamaged gelcoat when sanding the filler with the proper grit sand paper which is 80 grit.

#4 WRONG- Mix blister repair filler with 10% marine cream hardener. Amount will vary depending on size of repair

CORRECT PROCEDURE- Filler materials will vary for above and below the water line. For above the water line a flexible polyester material can be used. The filler material should be easier to sand than the surrounding gelcoat. Otherwise you'll be sanding away the gelcoat around the hard filler and there will be a bump on the side of your boat. Below the water line it is necessary to use epoxy fillers or vinyl esters. If you plan to regelcoat use only vinyl esters which are compatible with gelcoat and epoxy fillers are not.

#5 WRONG- Apply filler to damaged area with a spatula. We are not using spackle to repair walls.

CORRECT- I use a flexible plastic spreader. It's more forgiving and accommodating to body lines.

#6 WRONG- Allow the filler to harden and dry. To decrease drying/hardening time use hair dryer.

DO THIS- Allow the filler to harden just to the point of being able to sand it without plugging up your paper. Allowing it to dry to a full cure will make it a "bear" to sand. Let the filler dry on its own. Use a hair dryer for your hair. Accelerating the cure time could result in cracking. You are fixing a crack; you don't want to create another one!

Training a student at my shop in Northampton, MA



#7- Their instructions state- Sand filled area with 80 grit sand paper to even out the surface of the repair.

MY OPINION- I agree with 80 grit sand paper but there is a slight problem with step #7.

You don't want the repair to be even with the surrounding gelcoat. If you do that the new gelcoat will be on top of the filler and higher than the surrounding gelcoat. When you sand the sprayed gelcoat you'll sand through it. Leave a slight deficit in the repair area to accommodate the new gelcoat.

#8- Next, sand the filled area with 180grit sand paper to smooth the surface.

MY OPINION- 180 grit is not a bad choice but my choice after using 80 grit is 220. 180 grit may leave "comet tails" which are noticeable scratches around the repair area after your work is complete.

#9 - Remove tape

#10- Finally sand with 360 grit to remove the grooves of the coarser sand paper.

CORRECT PROCEDURE- 360 is still coarse. I use 400 grit to insure you can't see the grooves of the 220 grit paper. 400 is the finest you can use and still get good adhesion for the gelcoat.

#11- WRONG- Clean sanded area well with acetone.

CORRECT PROCEDURE- Never ever use acetone! It will leave a residue in the body work. Use water and a sponge.

#12- WRONG- Reapply 2" masking tape 3" away from damaged area on all side.

CORRECT PROCEDURE - 2" wide tape is over kill- Use ¾" masking tape which is adequate.

I'd go further out than 3" because you don't want to spray gelcoat on the edge of the tape. It would leave a hard gelcoat line that would be hard to remove.

#13- WRONG-Prepare gelcoat for application by mixing gelcoat with 1-1/2% - 3% gelcoat hardener (mekp) and 25% acetone.

CORRECT PROCEDURE- Never ever! under any circumstances add acetone to gelcoat.

In addition temperatures- air and substrate temperatures will determine how much mekp to use. I never add anything but mekp to the gelcoat before a spray is done. Of course proper spray guns are needed to do this.

Acetone will alter the pigments of the gelcoat.

#14 WRONG- Clean repair area again with acetone

AGAIN- Wiping with acetone leaves a residue

#15-Spray approx. 20-30 mils of gelcoat at 30 lbs pressure. Just spray repair area.

#16-WRONG -Allow to dry for 2 hrs.

CORRECT PROCEDURE- For best results gelcoat should be allowed to cure for 24 hrs.

#17- WRONG- Clean repair area with acetone to remove tacky top surface of the newly applied gelcoat.

IT'S STICKY because no surfacing agent was applied. Gelcoat will not cure in the presence of air.

The newly applied gelcoat should be hard after waiting 24 hrs. and will not be tacky. What the instructions failed to say was gelcoat requires a surfacing agent. Best to use is sprayed on Poly Vinyl Alcohol (P.V.A.). Save the acetone to clean your equipment.

#18- Instructions say -Sand repair area with water soaked 360 grit sandpaper.

CORRECT PROCEDURE - 360 not a bad choice here- I use 400 grit to knock down any orange peel.

#19- WRONG- Sand down repair area with water soaked 1200 grit paper.



Dave teaching repair techs from Norsafe Marine & Offshore Services - New Orleans, LA.

CORRECT PROCEDURE- There is a big jump from 360 grit paper. I recommend 600 grit here to get rid of the remaining orange peel.

Then use 1000 grit wet sand paper. Depending on the finish of the rest of the boat use 1200-1500 or even 3000 grit wet sand paper.

#20- Instructions- Wipe off excess water with a towel.

O.K. Good

#21- Instructions say to- Buff the repair area with buffer, compound and Finesse-It II Finishing material.

I use a coarse compound, then a swirl remover, sealer glaze and wax using a variable speed buffer.

Feedback from some of our students:

December 2014 - Lake Chaplain

"Extremely helpful, answered all my questions and made it clear so that I understood and knew what my problems were. Tops in my Book. Thanks Dave for sharing what you know. Dave was able to understand what we know and where we were in our trade. Because of that he touched more on areas where we needed his expertise. I enjoyed and learned from every portion of this class"

Dec. 2014 Lake Champlain

"I feel Dave did an outstanding job. Made everything clear and not only told me what I was doing wrong but showed me. I know quality of work will be better and done right the first time."

August 2014 Annapolis, MD

"Excellent class, very hands on and I got any information I asked for"

July 2014 Anchorage Alaska

"It was wonderfully helpful! I feel confident to start doing this on my own!"

March 2013 Morgan City Louisiana "Great class!"

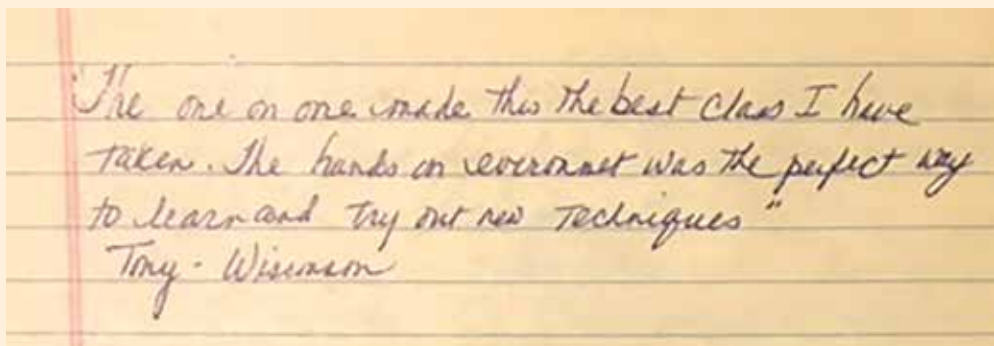
Sept 2014-West Nyack, NY "I learned a lot. Very relaxed environment. Dave is a pleasure to work with. I look forward to more classes in the future"

November 2014 -Chittenago, NY " Dave was a great instructor, host and friend. I enjoyed the time with Dave and appreciate his willingness and service to offer a class."

Learn the proper way to do gelcoat repairs without knocking your head against the wall from disappointing results. Save yourself the frustration and take a Gelcoat & Fiberglass Repair Class. I also teach Polyflake Repair (sometimes called metal flake- FYI Polyflake is on boats, metal flake is on autos)

Classes can be designed for those who want to work on their own boats or can be geared for those who work in the trade and want to improve the quality of their repairs.

A majority of the training is "hands on" it is not a class room setting. The class covers- Proper compounding and buffing techniques, gelcoat color restoration, gelcoat color matching, grinding gelcoat and fiberglass damage to prep for a repair, basic fiberglass lay-up, mixing and applying fiber fillers, sanding and prepping for gelcoat, spraying gelcoat, finish sanding, compounding, buffing to complete repair. It also includes repair techniques for osmotic blisters, holes, airvoids, stress cracks, fractures and gashes. We offer Advanced Training Polyflake repair as well.



If you have a boat that needs minor gelcoat repair and can trailer it to the class it is the perfect opportunity to learn gelcoat repair and do your own small repair!

Students are given a binder to keep. A "Bible" one student calls it. It includes step by step gelcoat repair techniques and information covered in the class, equipment and repair materials list and sources to purchase.

Classes can be scheduled year round. We are busy with

our own customer repairs and will work with your schedule and ours!

Call me for more information or to schedule a class in the future! Due to Covid we stopped our training but will resume as soon as it is safe to do so – hopefully soon!

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