



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”

americanboatrestoration.com / email: boatrepair@aol.com / Office: 413.665.7424 / Cell: 518.577.7799

“What’s with all these cracks?!”

“Dr Gel, I have a large amount of serious cracks on the inside of my outboard motor boat in the spill well corners, what’s causing it and can they be repaired?” Tim

At some point most fiberglass boats will develop cracks; it’s characteristic of them. It would be a stretch to find a boat without a crack on it somewhere. Cracks are most of the time superficial. There are circumstances when cracks can be an indication of more serious structural damage or defects.

In your situation Tim, excessive gelcoat applied to the mold during production of your boat is the cause of the cracks. The gelcoat should be routinely measured to specific mil thickness using a wet film thickness gauge. The preferred thickness should be between 18-22 mil. I have seen gelcoat as thick as 3/8 during a repair process and brand new boats with multiple cracking due to excessive



Cracks starting from under rub rail due to impact and excessive gelcoat.



Cracks caused by improper screw installation.



Notice the cracks originate at the screw holes.

gelcoat. Often the gelcoat accumulates in corners, curves and bends. There is a fine line between too much gelcoat and not enough. Not enough can cause “print through” meaning the fiberglass laminate is visible. Too much will cause cracking. I have seen boat building production first hand. It’s not a pleasant environment and I can understand how techs can make errors.

Cracks can be known as “crazing”, “spider cracking”, “hairline cracks”, “star cracks” and can be caused by;

As mentioned above, excessive gelcoat mil thickness sprayed in the mold during production, bulk heads installed too tight during construction, air voids, a fastener that was installed without being drilled and counter sunk, hardware installed with no or inadequate backing plates (e.g. bow eyes, cleats, swim platform brackets, etc), soft core material, impact damage, travel lifting, age, environmental temperatures – freezing and hot temperatures, etc. polyester resins become more and more brittle over time and they will shrink and crack. Your boat is actually smaller than it was the day you bought it! ☺
As the boat rides over the waves it flexes and the

fiberglass laminate and gelcoat needs to flex with it. Hard impact on waves can cause cracking. The thicker the gelcoat on it the stiffer and more brittle it becomes. It won’t flex now; it’ll crack! So if you bounce off the side of the dock or if another boat slightly bumps into the boat the gelcoat could crack. If cracking occurs under the rub rail you’ll not see it until the crack grows and spiders into view. A well built boat with the correct amount of gelcoat on it will flex and cracking will be minimized along with proper care. Take it slow!

One very common cause of cracking as mentioned is clearly seen in photo; not properly drilling for hardware, snaps and windshield screws. If a hole is not properly predrilled the fastener goes in and lifts the edge of the gelcoat resulting in the beginning of a crack that will travel like a crack in a windshield Here’s the proper way to drill for fasteners- First use a sharp drill. Put the drill in reverse and make the hole turning the drill backwards. The hole also needs to be chamfered so when the screw is put in the hole the threads do not pick up on the edge of the gelcoat. Bass boats with high powered motors, jack plates and high speed running over rough waters will cause cracks in the spill well. It’s the nature of the beast. The manufacturer could not make it strong enough to

prevent cracking. It's usually cosmetic and not structural. Everything else is flexing just not the gelcoat. And once again the thicker the gelcoat the more susceptible to cracks. Here's a suggestion if you are looking to buy a boat. Ask to have a small piece of hardware removed in an area that will clearly show the thickness of the gelcoat.

Airvoids caused by trapped air between the gelcoat and laminate during lay up are usually found on sharp angles but can occur also on flat surfaces. They may appear to be 1" in size on the surface but when ground into the void may become several inches or even feet long. Bulkheads that are too tight won't allow the boat to flex as it was designed to do and can cause cracks on the outside of the boat. These circular "star like" in formation cracks are often in the same area on the port and starboard side. When a boat is lifted out of the water with a travel lift cracks can occur from pressure of the straps put on the sides of the boat. Areas of the boat that are susceptible are the walk thru transoms and gunwales.

Is it important to repair cracks? Absolutely! Sooner is better! Some boat owners may think the surface cracks are nothing but unsightly and can live with them. The cracks will keep traveling and will begin to get bigger. The gelcoat becomes susceptible to water intrusion. A crack will create a worse situation allowing water to seep between the gelcoat and the laminate eventually causing delamination.

What can be done to help protect the gelcoat and help prevent gelcoat damage as much as possible?

It's pretty simple. I have preached for over 13 years in "Ask Dr Gel" to keep gelcoat protected. Keep it covered and most importantly apply sealer glaze and good UV protecting wax to it on a regular basis.

Can I fix a crack myself? In most situations it is probably not in your best interest to do a repair on your own. There is a lot you need to know to properly repair a crack. If cracks are not properly repaired they will come back! They can't be fixed with mecuricome or butterfly band aids. Don't waste your time or money buying gelcoat paste or a "patch kit" it is exactly what it is called a patch and not a repair. Keep in mind a re-repair is often more costly. Best to have a repair facility who knows what they are doing do the repair.

Seek a professional or come to one of my Gelcoat Repair Training classes and learn correct repair techniques.

For more about Gelcoat

Please refer to Ask Dr Gel July-August 2019 issue.
www.boatingonthehudson.com/past-issues-2019/



Removing canvas snaps reveals gelcoat thickness at screw hole



Ground cracks shows excessive gelcoat



Ground out to laminate to remove all of the cracks.



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