

The Art of Detailing:

The Steps to Successful Paint Correction.

To better understand the process of detailing, and where your money is going, you should have an idea of what is being done. We'll use a Full Detail with paint correction as our example.

◆ Pre-Washing & Inspection

- It begins with a cursory inspection of the cars paint and clear coat(cc) condition to determine the extent of what will need to be done and whether or not your expectations can be met.
- Next is an exculpatory wash to get a better look at the cc. This is done by soaking the car with snow foam or car shampoo, letting the detergents break down the detritus on the surface. There is no contact with the vehicle during these steps to help eliminate the chance of adding scratches and swirls from dragging contaminants across the surface of the cc.
- Next is a very thorough rinse down to carry away all the broken-down surface dirt and flush all that dirt and grime from the edges and panel gaps.
- Next is a final inspection to determine what areas require special products, attention and techniques. **Fig.1** shows the layers of your cars paint.

Fig.1



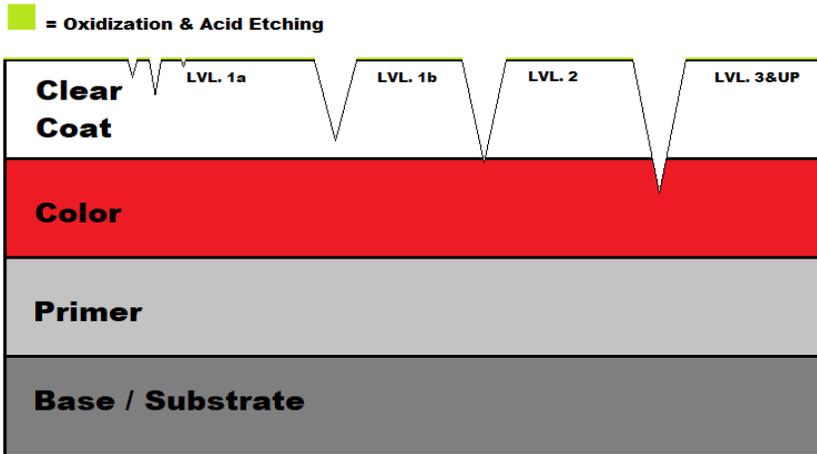
◆ Hand Washing

- The next step is the Hand Wash. Using a strip wash and various other specialized solutions to remove old waxes, sealants, and other things like bug guts, bird bombs, tar, grease, road grime, etc. even some paint protection products. Adhering to proper technique and using high quality products here is key. We mainly use the 2-bucket method with ultra-premium wash mitts and detailing brushes. And occasionally the single bucket method with premium microfiber towels used once and put aside to further reduce the risk of introducing imperfections because this is where you can end up instilling more defects into the cc. Once the unbonded surface contaminants have been agitated and rinsed away, the next step begins.

◆ Decontamination & Drying

- There are 2 main types of decontamination utilized today.
- 1. Mechanical. This is often referred to as “clay-barring”. It involves taking an ultra-fine abrasive with a lubricant to the paint to remove any bonded contaminants. Most people confuse the results of “clay-barring” with polishing. Though polishing can sometimes have the same effect as claying, the opposite of that is not true. In fact, claying can actually create MORE imperfections and not a great idea unless you plan on doing correction or polishing later.
- 2. Chemical. This method uses solvents and various chemicals to dissolve iron, oxidation and fallout particles that have embedded into the cc. It is safe on paint and rims and usually requires it to be sprayed over the entire vehicle and left to dwell, to increase efficacy. This process is vital to successful paint correction. **Fig.2** shows surface imperfections.
- Once the decontamination process is complete, a final wash is usually warranted. Followed by a VERY thorough drying process. It is paramount for the next steps that the working surfaces be absolutely, bone dry.

Fig.2

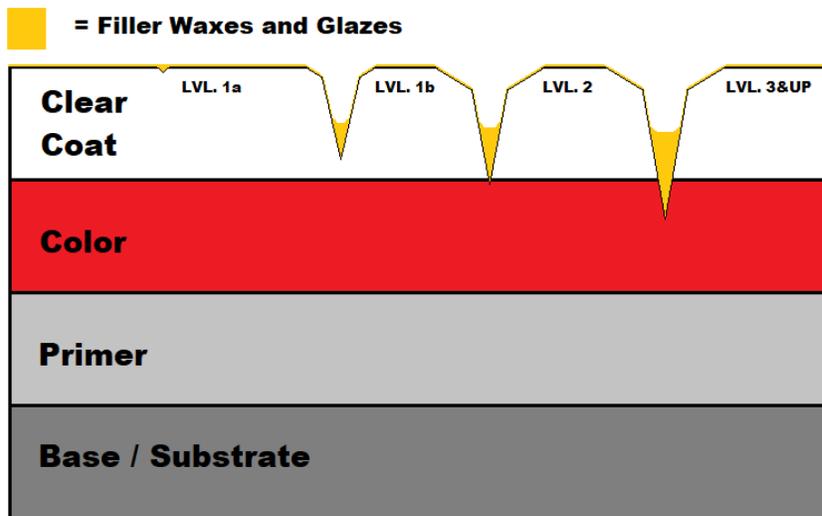


◆ Paint Correction – Compounding, Polishing & Glazing

- Fig.2, LVL.1a and LVL.1b show the general depth of imperfections that can be expected to be removed or greatly reduced in the cc during these next steps. Fig.2, LVL.1a can, generally, be corrected and made to appear less evident in a single stage. Fig.2 LVL.1b requires, often, heavy cutting fluids and pads to diminish them. And sometimes wet-sanding. But you run the risk of burning through the cc if you take too much off. It is important to know the limits of the cc. The polishing stage can help reduce the appearance of these further though, by rounding the scratches sharp edges off. Some imperfections won't "buff out" lol. This is where cost variations are the biggest and where paint correction begins. There is no "one size fits all" when it comes to paint correction. It is also where specialty materials and equipment come into play.
- Single stage correction is only the polishing stage, usually. Some compounding fluids can polish out very well in a single stage as well. This is where a milder fluid and pad combination are used to remove hazing, round-over scratch edges to minimize their appearance and bring luster and depth back to the cc. The polishing step can also usually remove etching and oxidization (Fig.2) when using certain types of fluid and pad combinations. Most customers are looking for this level of correction as the results line up with expectations and budgets. But some are looking for that show-car finish and that requires a 2-stage correction.

- Two step correction is also known as compounding, correcting or mow down. Followed by a polishing stage. Compounding involves, you guessed it, a more aggressive fluid and pad combination. The general idea here is to take a measurement of the depth of the cc to see how much you can safely remove without getting too close to the paint layer, as you want to leave as much cc behind to keep the car protected as is humanly possible.
- Using these more aggressive items, you'll literally be shaving off ever-so-slight amounts of cc to get as close to the base of the scratch as possible and level it off with the rest of the cc surface. In **Fig.3** The valleys of the scratches remain the same. It is the top layers of the cc that are polished out. Generally, the compounding stage doesn't "finish out" too well thus, the need for a follow up polishing. **Fig.3** shows a Two-step correction removing a thin layer of cc. Followed by a polishing to reduce the angle of the remaining scratch platues. This is how scratch appearances are truly reduced. This is followed by the glazing process described below.

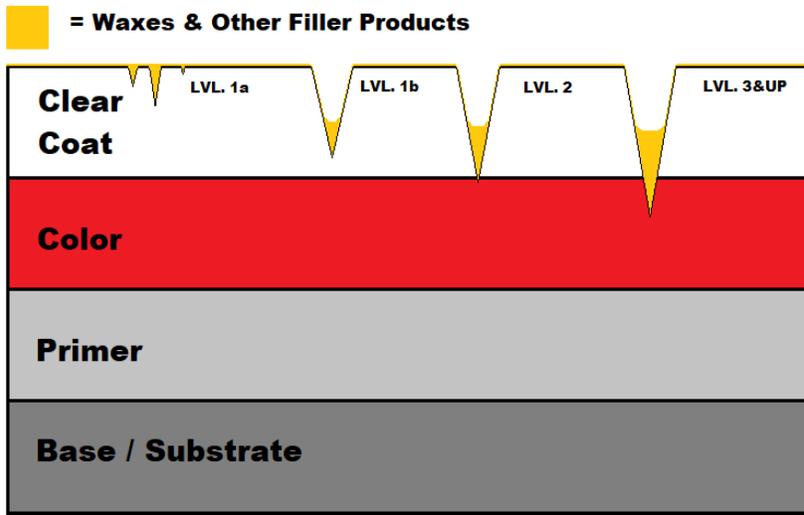
Fig.3



- Finally, there is one other step to take when looking for a concours finish. Glazing. This involves using a high-speed machine with a non-abrasive glazing fluid on an ultra-fine finishing pad to reduce or remove the appearance of deeper scratch valleys that aren't safe to continue compounding. Glazing is not a paint protector

like wax is but it has similar effects as wax such as adding luster, depth and hiding scratches. And because it is performed before sealants or other paint protection are applied, the effect generally lasts much longer than that of wax. Fig.4 shows uncorrected cc with wax and filler. It makes for a nice appearance but not for long. As it breaks down, the hard edges of the scratches become apparent again and the product in the valleys of the scratched are eventually eroded and filled back up with dirt and grime.

Fig.4

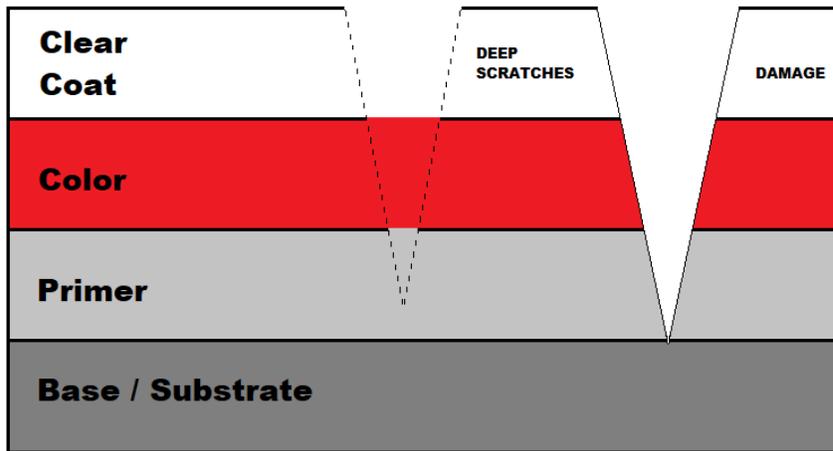


Those first 2 steps alone can take days to complete as it is all trial and error with certain areas requiring more time, attention and caution taken to ensure damage doesn't occur.

◆ Level 2 and Higher Scratches (REPAIR)

- Some scratches are just too deep to be approached from the above method. Fig.5 shows deep scratches, through the cc and paint and into either the primer or base. Some base scratches, even when filled, leveled, cured and perfected, have done damage to the base metal or plastic and will require body work to look perfect again. You can get an idea from the deep scratch in Fig.5 how the scratch needs to be cleaned out and filled back up from the bottom. It is a tedious and time-consuming project and there is no guarantee that it will look right when you finish it. Sometimes replacement is more effective than repair in this world.

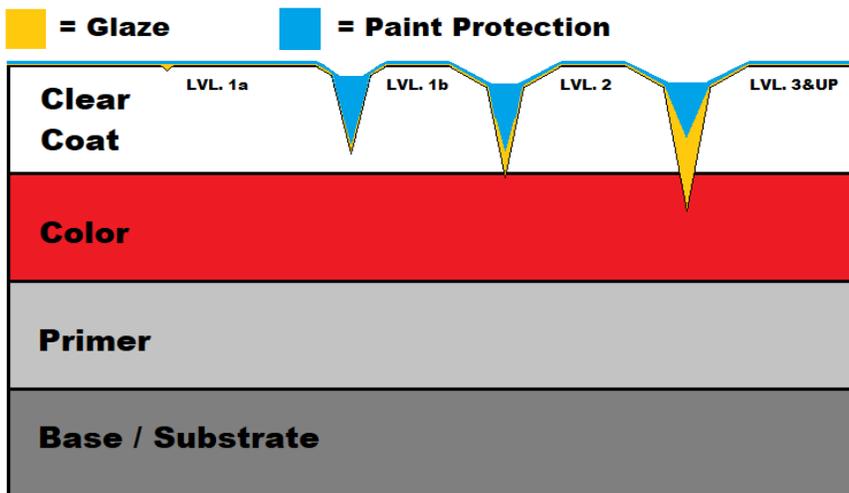
Fig.5



◆ Sealants, Waxes, Graphene & Ceramic (SiO₂) Coatings and Other Paint Protection Products

- None of these steps, so far, are providing any protection to your cc though. And it's vital that all that effort put in already, is protected. After all, it is MUCH easier and cheaper to maintain than it is to restore. And let's face it, if you're still reading this you probably care about your car. There are so many different options these days when it comes to the subject of paint protection. The following are just a few examples readily available and effective options. **Fig.6** shows a corrected surface that has been glazed and then had a layer of paint protection applied to seal in the work and seal out contamination.

Fig.6



- **WAXES.** Over the years there have been some excellent wax replacement options brought to the market such as paste and spray sealants, graphene & SiO₂ coatings and paint protection film(ppf). Some cars still need “wax” as we knew it though. Older cars with single stage paint, for example, respond really well to high quality wax. But be prepared to pay. It is now a niche market like micro-breweries, so they set the price. Worth it if you want it but durability can be a big issue.
- **SEALANTS.** By far the most options offered in all the categories. Prices vary, but most will generally offer some sort of shine-boosting claim as well as chemical and UV resistance. Most common and readily offered are as a spray-on-buff-out application. I’ve used a few I really like, for their price points and durability. There are also spray-on-rinse-off applications. More a rinse aide leaving behind some protection, again, durability is usually suspect with these but application is a cinch. Then we have what I call heavy application products. These are more in line with waxes and polishes in their application. They also generally last longest due strictly to their method of application (if the directions are followed lol). Usually, a bit more costly as well, but, worth it.
- **GRAPHENE & SiO₂ COATINGS.** No doubt the best options today are ceramic coatings, in my opinion, of course. These can last for many years and provide far superior protection than most other types of paint protection. They are super-hydrophobic meaning they are tremendous at water repulsion. And based on this property you can get an almost “self-washing” effect from just using regular water to rinse it off, or even the rain itself. I do not recommend you use this as a substitute for proper washing and maintenance though. You can coat almost everything on your car nowadays. Tires, rims, plastic and rubber trim, glass, even leather. And obviously, also, your paint. They’re becoming more and more popular as the market competition is pretty fierce right now.
- There are 2 main differences in this group. Pro-grade and Consumer grade. There have been many head-to-head comparisons on the internet so I won’t get into who’s-what’ing here. The main difference is Pro-grade is sold only to affiliated shops for application and warranty purposes. (More on the warranties, they’re almost all garbage and don’t give specific coverages, including hydrophobic properties. That’s pretty weak in my opinion. I believe Gyeon did cover it out of maybe another dozen competitors included.) And Consumer-grade is available to all. Pro-grade claims 5+ years with (garbage) warranty, usually. Consumer-grade claims are usually between 1-3+ years with no (garbage) warranty, usually. They do the same thing, provided they are applied properly. Proper application is crucial for ANY of these coatings to work though. It is almost surgical. They truly

are revolutionary in vehicle maintenance and worth the money if you care for your ride. If you're wondering about the difference between graphene and SiO₂, here's my understanding, so far. They both have the same qualities in their paint protection roles. Very good, very efficient. The claims are that graphene is better at either dissipating or blocking heat than SiO₂. The significance is said to be that it gives a better chance for contamination to be carried off and less likely to get a bake-in. I think it's NASA's \$1M space Inkpen when the pencil still did the trick.

- PPF. Paint protection film. Pretty self-explanatory. Crystal clear skin that goes right on top of your paint. It's applied similarly to window film tinting. This is about the only option that even broaches the subject of chip or scratch protection. You can also apply ppf to specific areas like mirror covers and polished B-pillars or door handles. It is expensive but it is also the best option for driven vehicles.

◆ Glass Polishing

- Lastly, an often over looked or service that isn't even offered, is glass polishing. Using cerium oxide pastes and rayon polishing pads it removes fine imperfections in the glass for amazing clarity and better visibility at night and in the rain. And, can help reduce glare from diffracted light. This process can be looked at much like the paint correction steps. The deeper the scratch the less likely it is to be removable but, still the effects can be greatly reduced by the rounding-off effect. This is also a situation where replacement could be cheaper if there are extensive significant scratches or pitting present.

Once all these steps are done, your car will be looking as good as the day you got it, if not better. And when a ceramic coating is applied, not allowing contaminants to bond to it, it will stay looking that way for a long time to come.