Report Card:
2005 BMW 730i (Silver)

DISCLAIMER: Use of Adobe Photoshop.

All photographs are **UNALTERED** except for the addition of a frame & watermark and an automatic contrast adjustment.

Registration plates have been masked in accordance with our client confidentiality policy.

CURRICULUM

1.0 Enrolment:

For the second time in as many weeks, we were engaged to undertake 'Major Paint Correction' services on a newly purchased BMW. In a similar vein to our recent work on the 525i M-Sport, the owner of this sleek executive sedan was disappointed with the condition of the vehicle upon delivery from the dealer - and keen to achieve a showroom-perfect finish.

This particular 730i is a 2005 model, first registered in New Zealand less than 3 months ago. It has only travelled 35,000kms and is presented in almost brand-new condition. (Except for the swirls and minor scratches covering much of the vehicle.)

We were requested to make the paint as 'perfect as possible', and additionally to remove the vehicle's wheels for a comprehensive clean of the vehicle's alloys and arches.

Despite appearing remarkably clean and defect free, direct lighting shows evidence of swirling and random, deeper scratches - both under 500W Halogens…

…and direct sunlight.

The wheel arches also have a small amount of grime which detracts from the vehicle's overall appearance.

And the rims showed evidence of accumulated brake dust having bonded/etched into the wheel surface.

2.0 Remedial Tutelage:

Before approaching the vehicle's painted panels, it's important to attend to some prerequisite tasks. Generally, we tackle particularly dirty areas, such as the vehicle's engine bay, wheels, arches and sills/shuts ahead of a traditional 'wash' process to ensure that the vehicle is cleaned in the safest possible manner. This also ensures that we don't end up rinsing dirt onto areas that have already been cleaned.

Engine Bay

To begin, the engine bay was cleaned with Meguiars Super Degreaser, diluted 10:1 and agitated with a Slide-Lock Detailing Brush. This was then rinsed off at low pressure.

The engine compartment was then dressed with 303's Aerospace Protectant, using a Sonus Microfibre work cloth:

We find that the 303 Aerospace Protectant leaves a fantastic, matte, factory finish rather than the sticky/shiny results of other brands. In addition, it provides a significant amount of UV protection to minimize fading.

Wheels & Arches

The wheels were then attended to, one at a time. Firstly, with the wheel off, we have the opportunity to thoroughly clean one of the dirtiest areas of any motorcar:

The arches are initially rinsed with high-pressure spray, then a strong solution (4:1 dilution ratio) of “Meguiar’s Super Degreaser” was applied and the arches are scrubbed vigorously with a stiff bristled brush.

One clean, the wheel arch liner is dressed with Meguiars All Season Dressing, leaving a very smart finish.

The wheels themselves also accumulate a disproportionately large amount of dirt – primarily from the brake pads. The cleansing process for these was to scrub the tyre walls with “Meguiars Super Degreaser”, and to clean the bulk of the grime off with soap and water.

This left us with the etching and bonded particles of brake dust to attend to:

P21S Wheel Gel was employed to remedy the problem, combined with another full hour spent meticulously cleaning each of the rim's 20 alloy spokes. This was followed with an application of Poorboy's Wheel Sealant to protect the rim.

The end result is sensational, and the process was then repeated for each of the remaining three wheels.

Foam Bath

Prior to any polishing, or paint correction of any kind, it is imperative that the paint surface is impeccably clean. To achieve this in the most 'gentle' way possible, the vehicle is first covered in a thick blanket of foam. This is achieved with "Meguiar's Hyperwash", applied to the vehicle via an "Autobrite UK Foam Lance".

And left to dwell for 5 minutes before being rinsed off.


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Hand Wash

With as much dirt as possible removed from the vehicle without direct contact, it was time to complete the wash process with a hand wash via a Lambswool Mitt and Meguiars Shampoo Plus.

A lambswool (or microfibre) mitt should always be used for 'contact' washing of a vehicle's painted surfaces. Particles of grit and dirt on the paint are the **primary** cause of swirls on modern vehicles with 'clear coat' paint. Regular sponges cause the grit to be trapped against the surface of the paint and dragged across it. (Even worse still are the brushes at self-service or automatic carwashes.) The plush mitt however will draw the dirt away from the paint surface, deep into the fibers of the wool, thus preventing it from inflicting further damage.

Also notice the separate buckets for 'wash' and 'rinse' action. This is the safest and most effective way to clean a vehicle's paint. The Mitt is soaked in the 60° C Shampoo Plus solution which has a "*Low-Suds / High-Lubricity*" formula and then worked over the vehicle. After each panel, the Mitt is cleaned off in the 'rinse' bucket, dislodging any dirt picked up off the car, before being re-soaked in the shampoo.

Despite the vehicle having been “washed, clayed & waxed” only days prior by the owner, it still pays to maintain ‘safe’ wash procedures. The fine particles of grit in the ‘rinse’ bucket on the left would still cause marring of a vehicle’s paint, resulting in a visibly ‘dull’ finish, and potential scratches over time.

Clay Treatment

The final step in ensuring a perfectly clean paint surface is the removal of bonded contaminants with a detailing clay bar. This can include tar spots, tree sap or industrial fallout, all of which contribute to making the paint surface rough to the touch and dull to look at. In this instance, a Meguiars 'Mild Professional Detailing Clay' bar was used with Meguiars Last Touch (diluted 1:1) as lubrication.

Even small amounts of contamination can dramatically reduce the effectiveness of any subsequent polishing. If not removed, the material will be drawn into the polishing pad, and potentially instill scratches to the paint surface throughout the machining process - so it is well worth taking the time to ensure that the paint is perfectly clean and smooth prior to any form of correction.

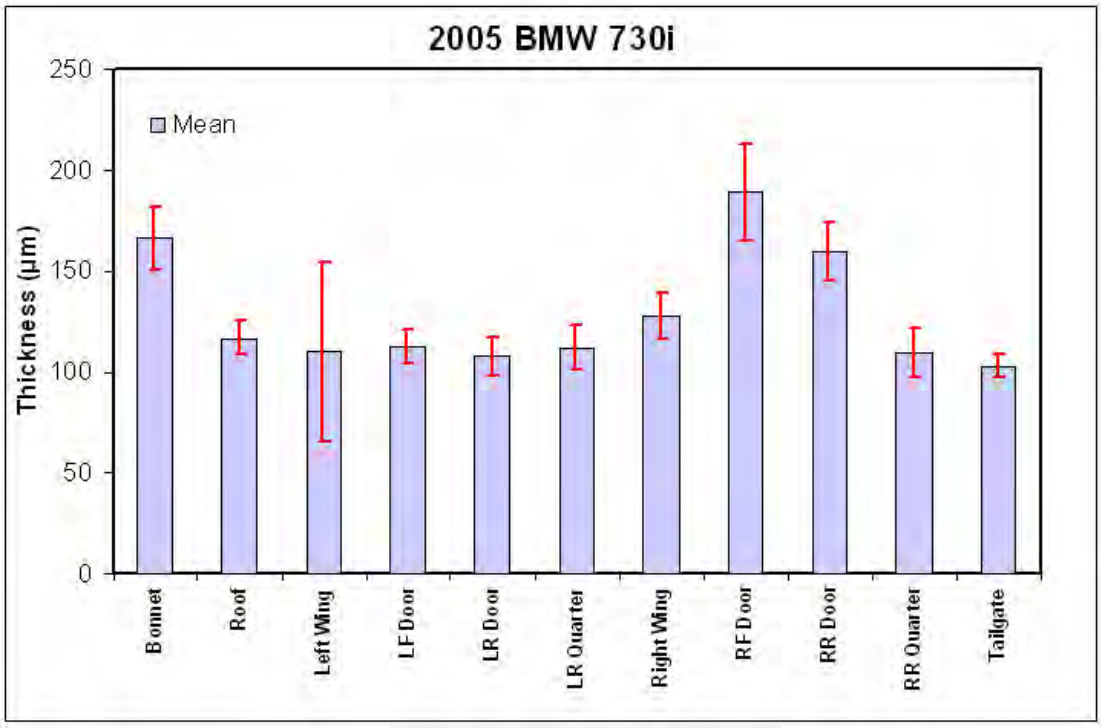
3.0 Initial Assessment:

Initially, it was thought that only minor work would be required to "perfect" the paint on this vehicle. Silver coloured vehicles, however, do tend to mask defects especially well and as you will see in the upcoming sections; Major Paint Correction would be required to achieve the desired finish.

As the correction process essentially involves 'removing' a microscopic layer of the top coat of the paint, a thorough examination of each panel is necessary, paying particular attention to the thickness of the paint present.

The "PosiTest DFT Combo" gauge from DeFelsko is an invaluable tool for this purpose. It will quickly and accurately (to the nearest micron (µm) which is 1/1000th of a millimeter) measure the thickness of a coating on any ferrous (eg. steel) or non-ferrous (eg. aluminium) surface.

Having knowledge of the relative thickness of the paint is a fundamentally important factor when undertaking any form of paint correction. Both in terms of understanding the amount of 'working material' that you have to begin with, and throughout the correction process to gauge the effect that different polishes have on the vehicle's paint and ensure that only 'safe' amounts of the top layer of clear coat are removed.



Each panel was carefully assessed to highlight any localised 'thick' or 'thin' areas that might represent previous touch-up work, or aggressive cutting in a localised area.

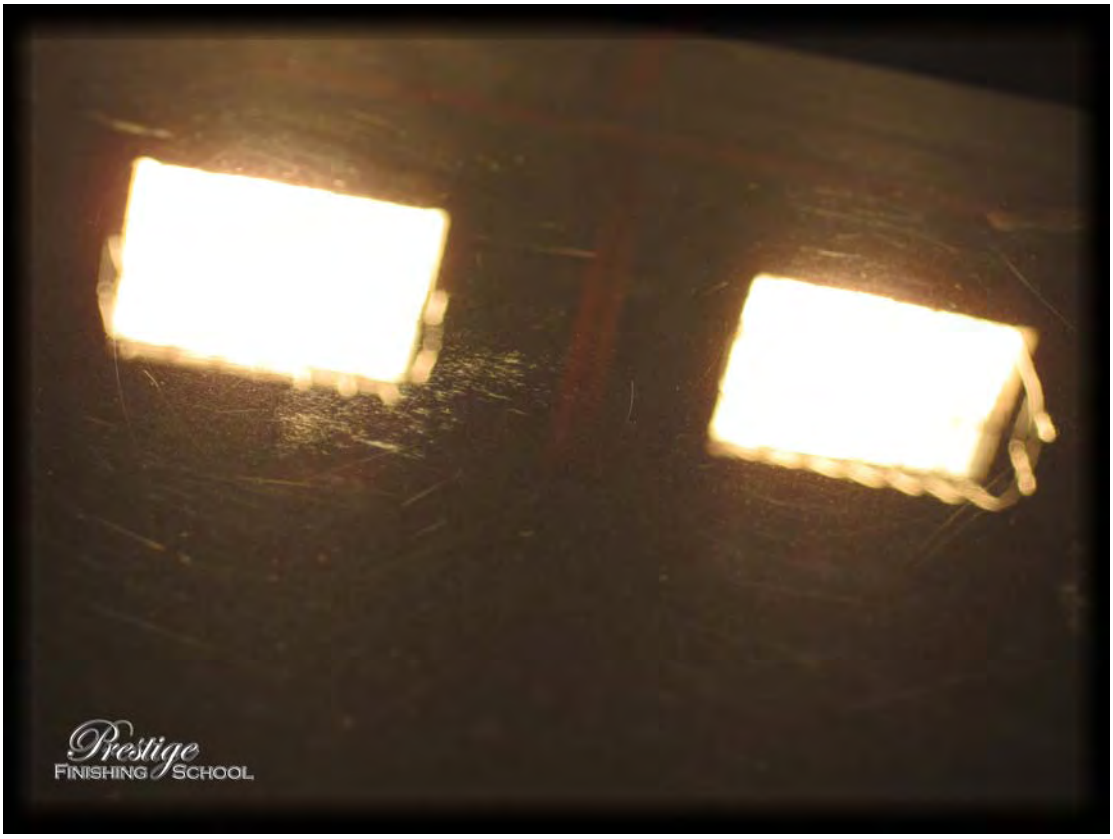
In total, nearly a thousand individual readings were taken, and all panels showed healthy readings.

4.0 Course of Correction

This section details the paint correction process for each panel.

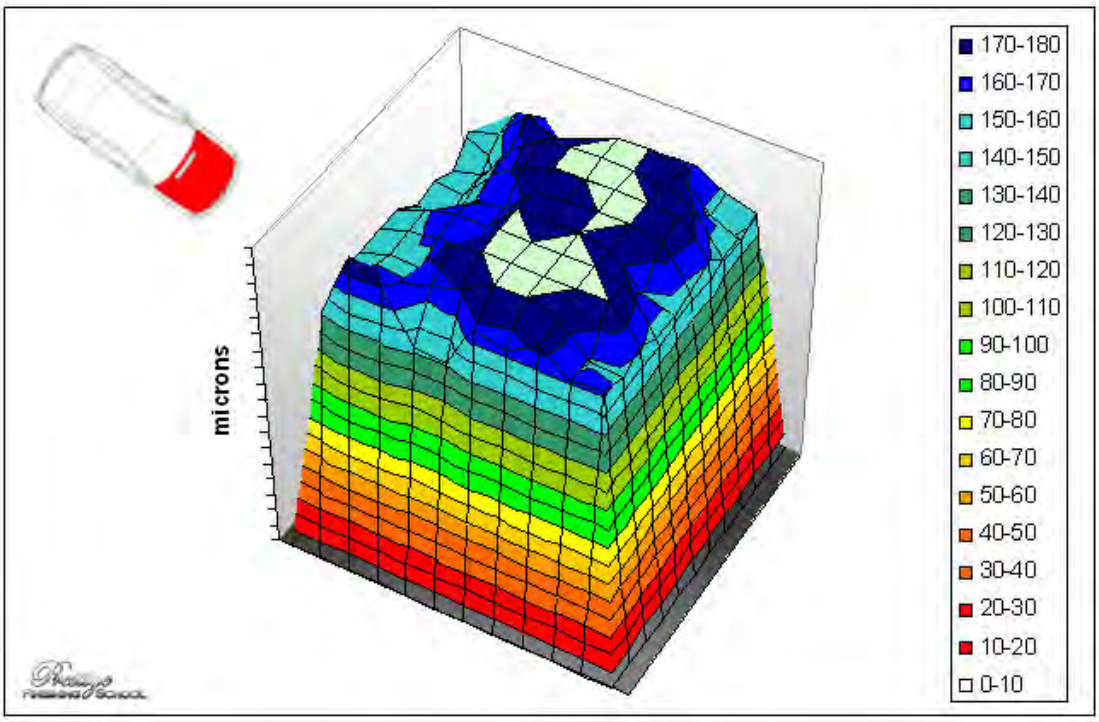
Bonnet

To begin, we need to establish the correct polishing compound, pad and technique combination required to achieve the desired level of correction for this vehicle's paint. It is important in all cases to approach this exercise from the 'least aggressive' option, and step up the cutting level, machine speed, and pad type as required. This ensures that the paint defects are corrected with the smallest possible amount of paint being removed from the vehicle.



This was the condition of our 'test' area prior to starting.

Paint thickness (as illustrated in the diagram below) was consistent across the panel, and averaged a generous 165 µm in total thickness.



BMW paint has a reputation for being “rock hard” and this specimen turned out to be no exception! We quickly graduated from finishing polishes to 3M Extra Fine Polish on a 3M polishing pad which has a bit more ‘cut’.

This is the level of correction after a single pass of the Extra Fine Compound. Much improved, but some defects are still evident in the paint.

Once again, we reached for Menzerna “Power Finish” PO85 RD 3.02 on a 3M compounding pad.

PO 85 RD 3.02 was initially developed for removing more severe paint defects and 2000 grit sanding marks from the cerami-coat finish of modern Mercedes paints. It is now being widely used on regular clearcoat finishes and is particularly effective on the harder clear coat finishes found on VAG and BMW paints.

The RD3.02, combined with appropriate rotary polishing technique gave the following level of correction:

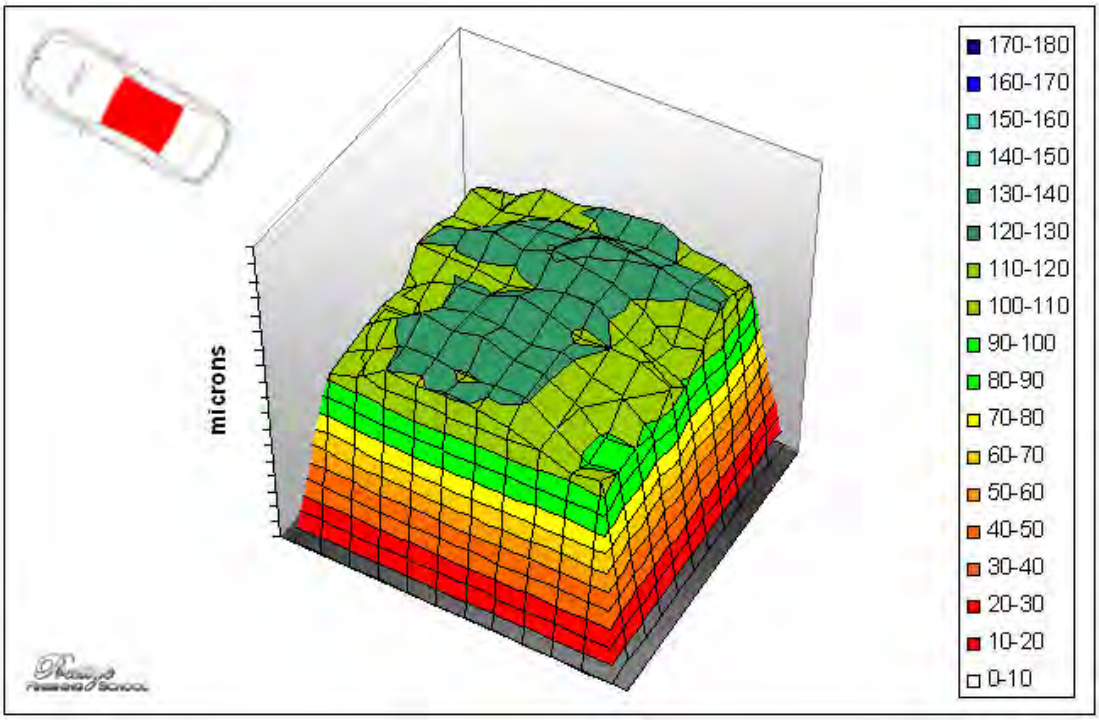
Only a very slight hazing remained in the finish…

…which was subsequently refined with Menzerna RD85 on a 3M finishing pad.

…leaving a crisp, glossy, deeply reflective surface.

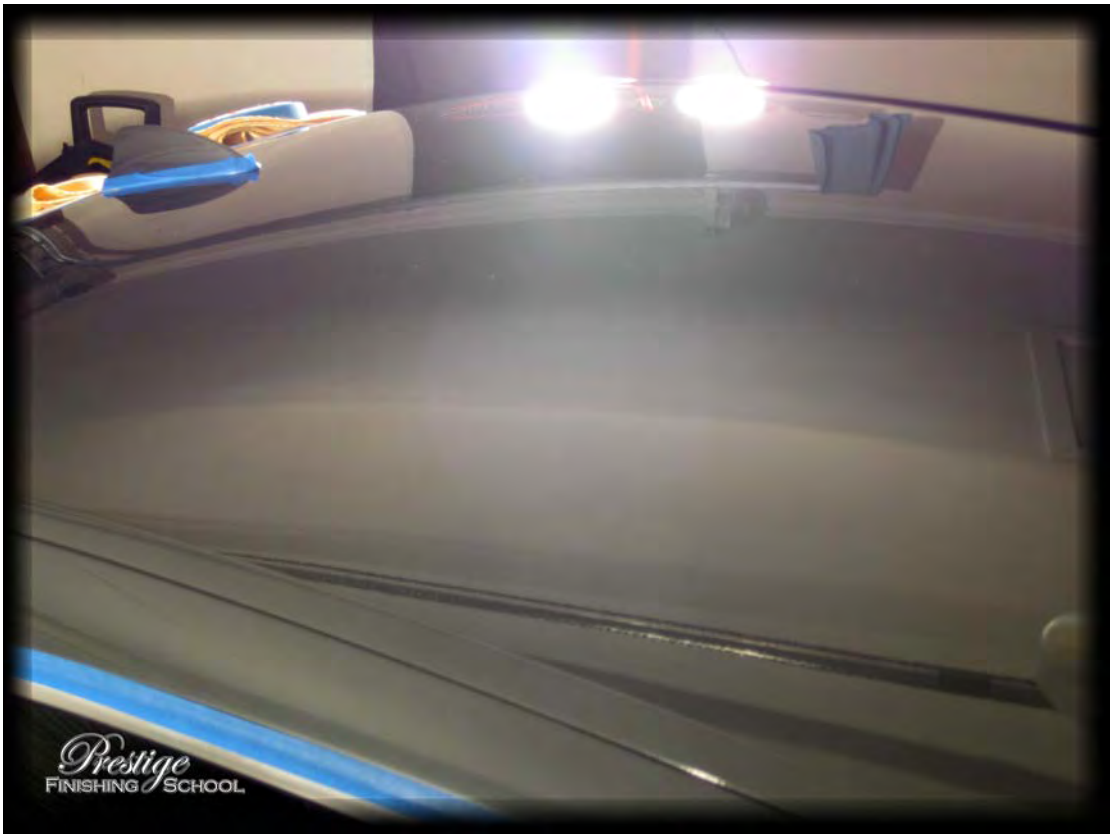
Roof

The roof was also showing healthy paint levels…



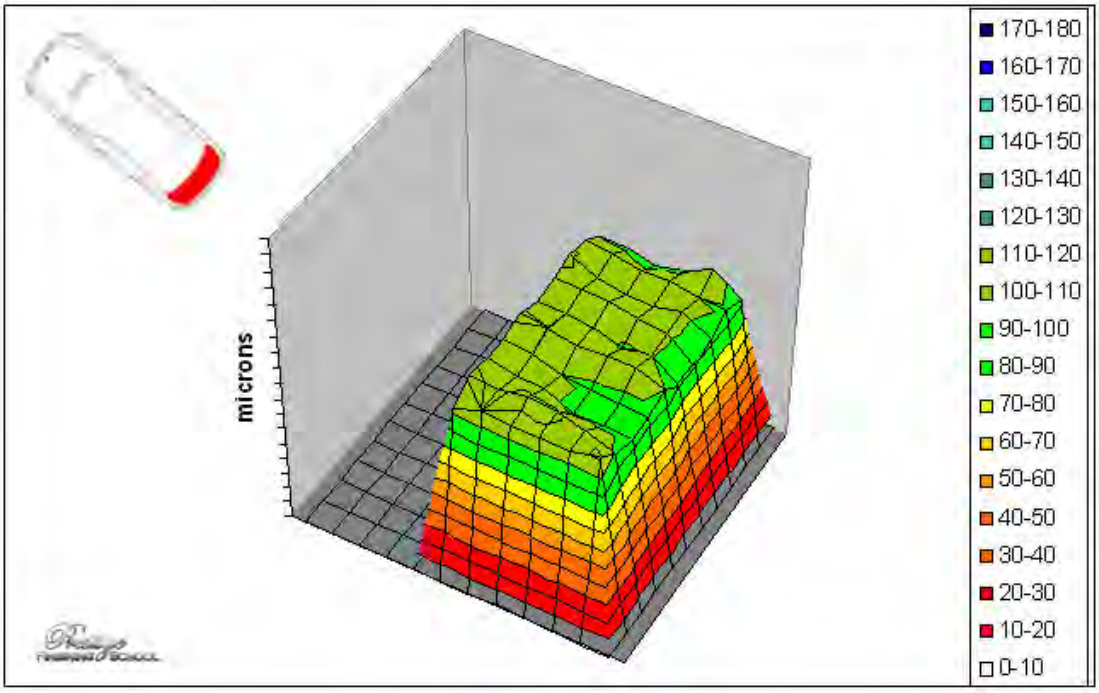
…with slight marring on the surface of the panel.

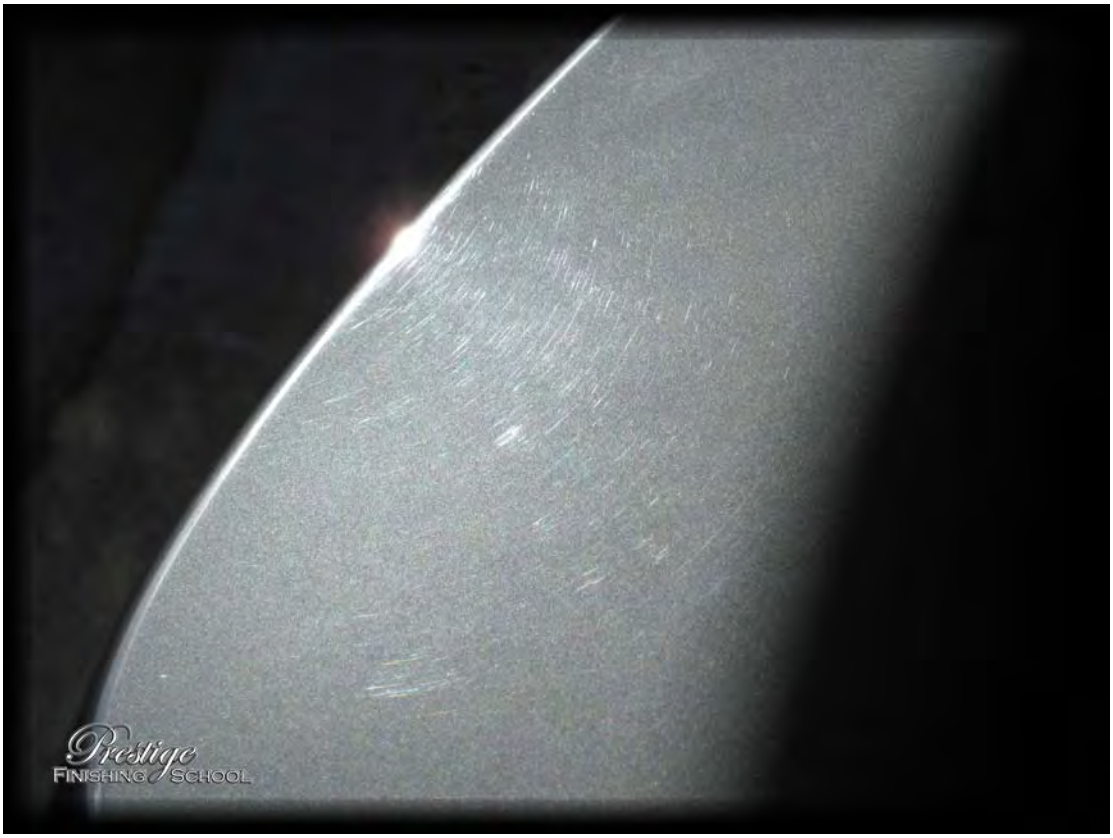
The finished panel:



Boot

The bootlid was a location that was showing signs of swirl marks under sunlight. The paint thickness on this panel was the lowest on the vehicle, but still well within 'safe' working range.



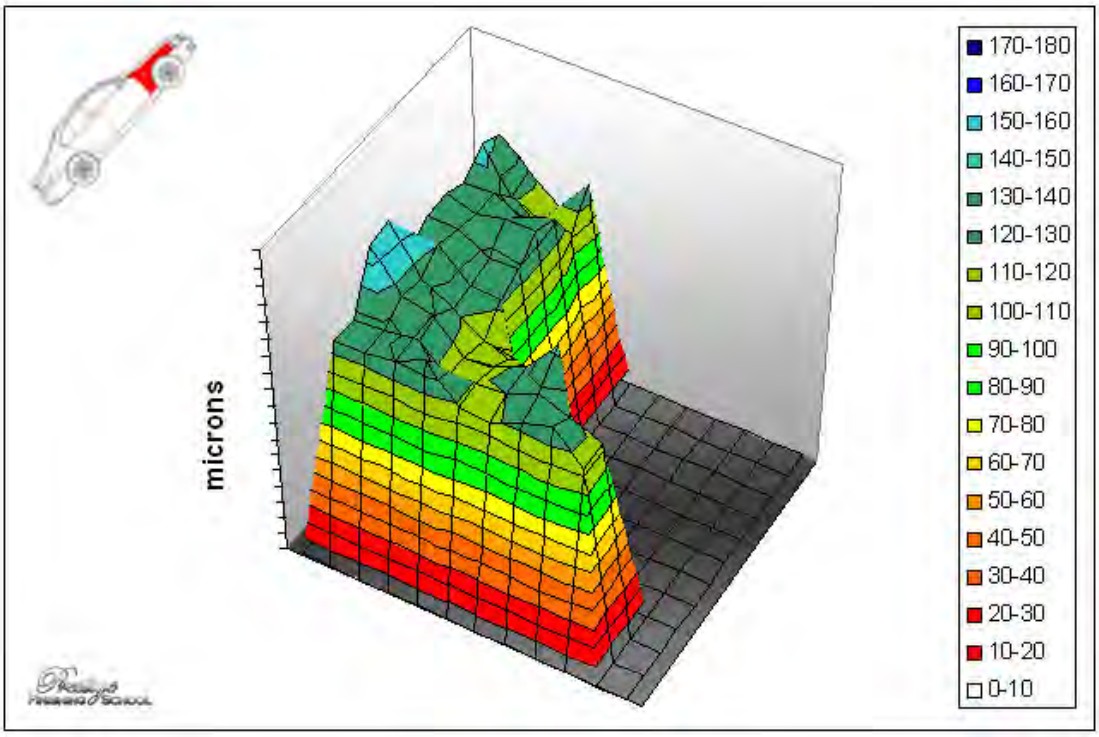


The same corrective process was followed…

…resulting in a flawless finish.

(NB. This is not a “half-and-half” photo – the sky is reflected on the left, and the underside of the eaves on our roof on the right)

Right Front Wing

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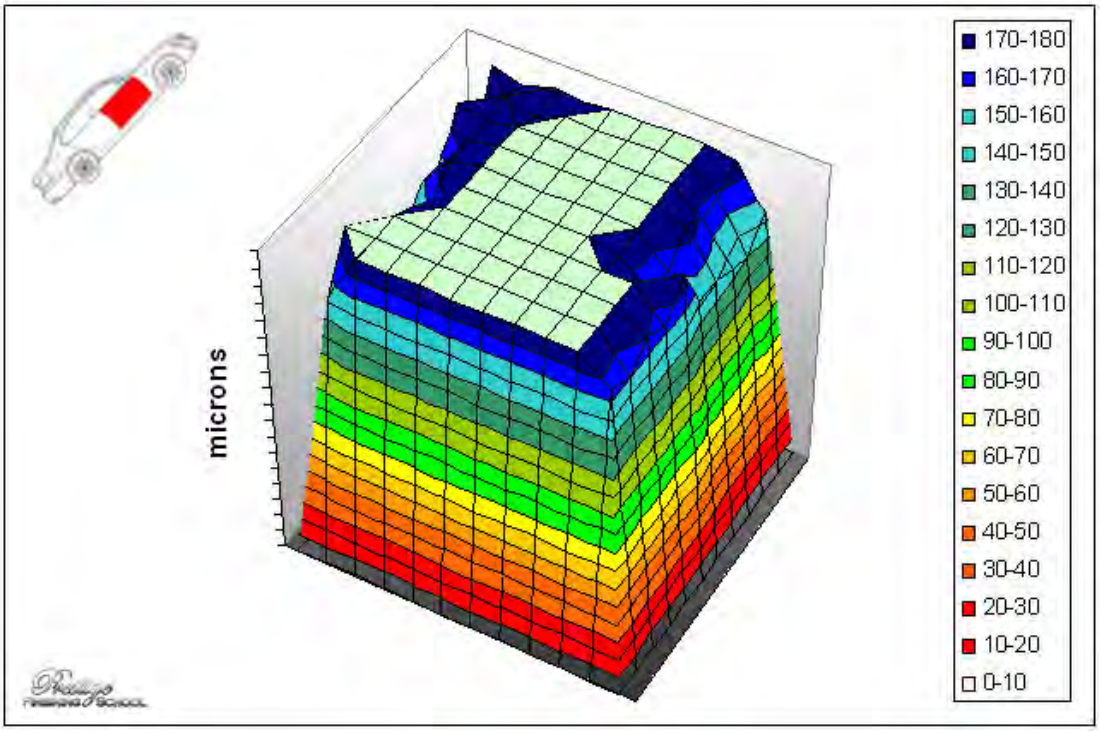
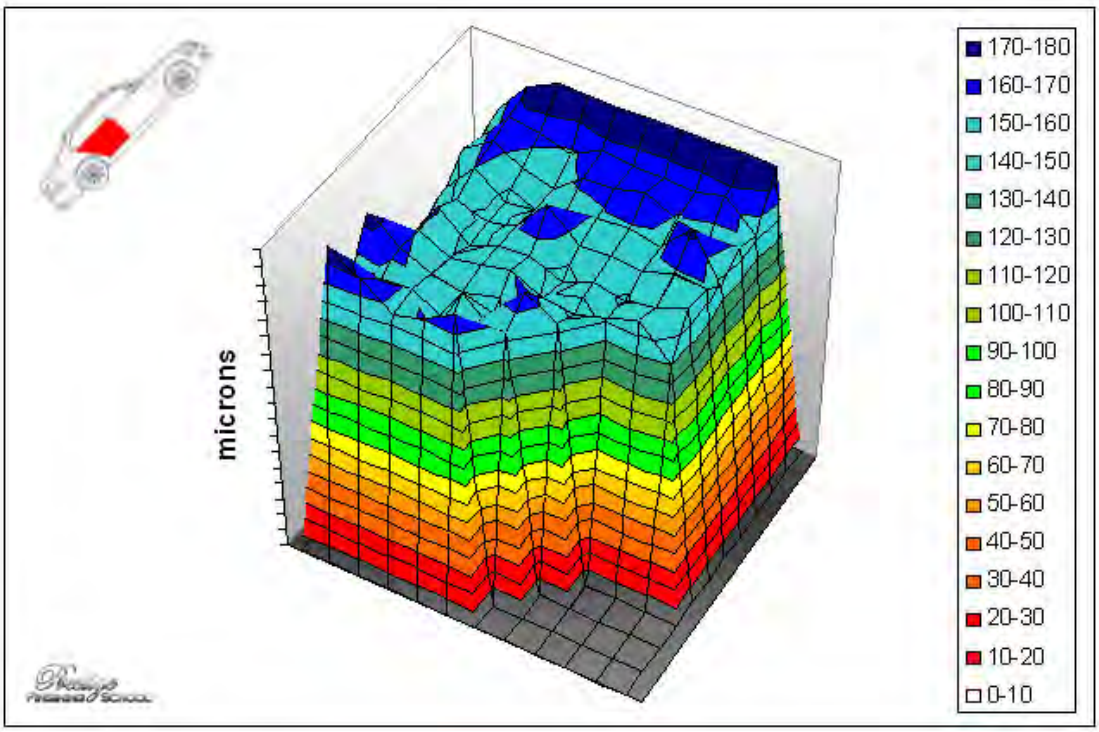
Right Front Door

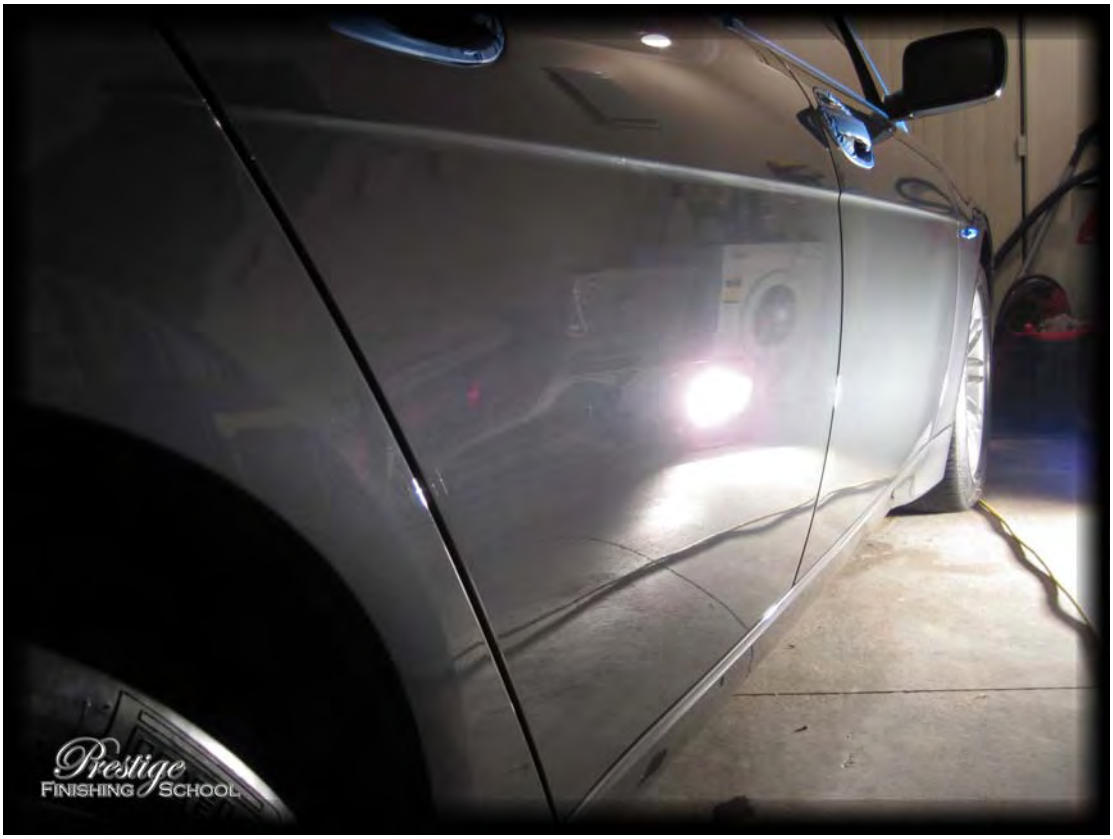


Right Rear Door

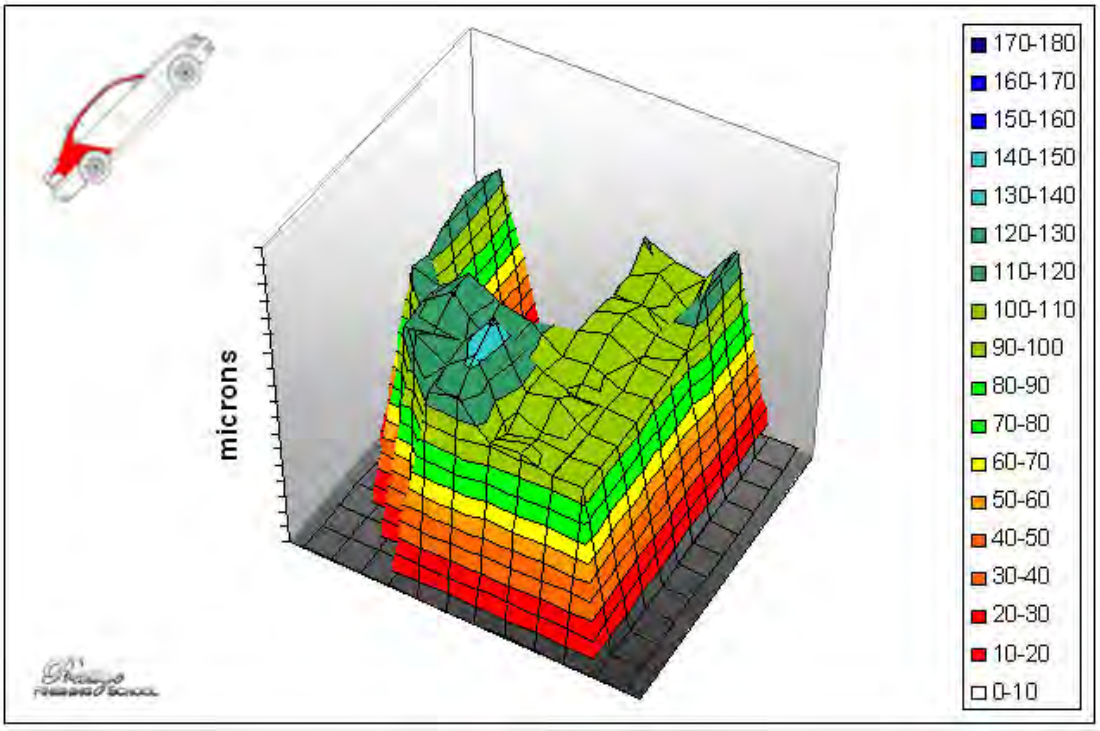


This shot shows the difference between the two right hand doors. The front has been corrected, with the rear showing holograms & buffer trails (likely from previous attempts at machine polishing with poor technique) …as well as the expected swirls & scratches.

Now with both panels fully corrected:



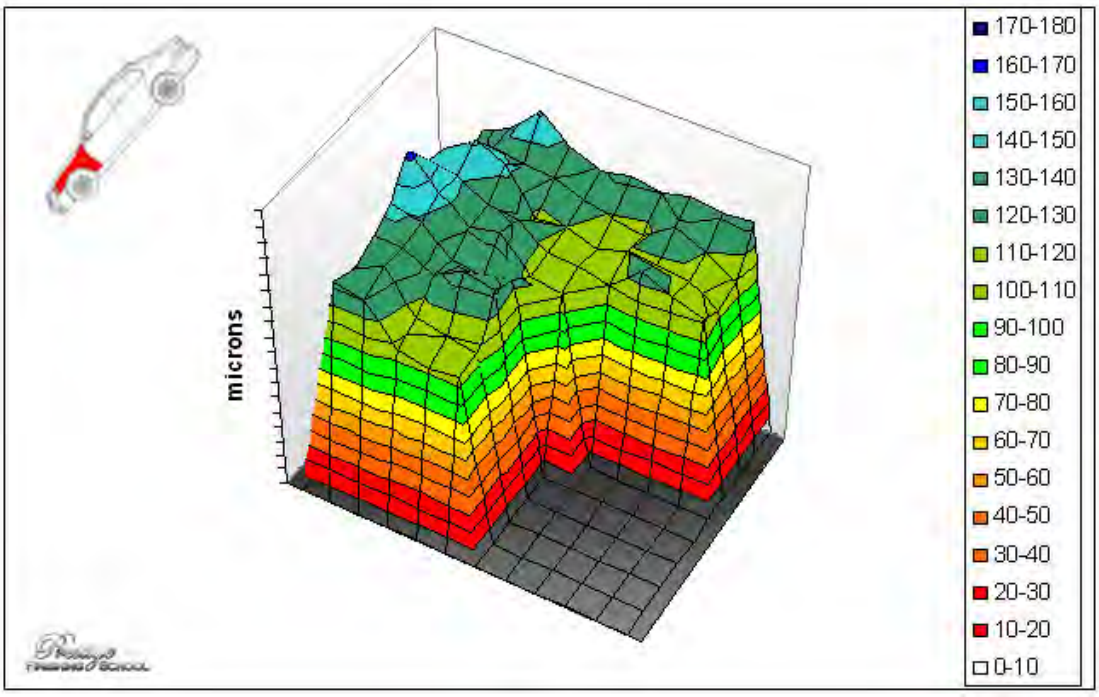
Right Rear Quarter

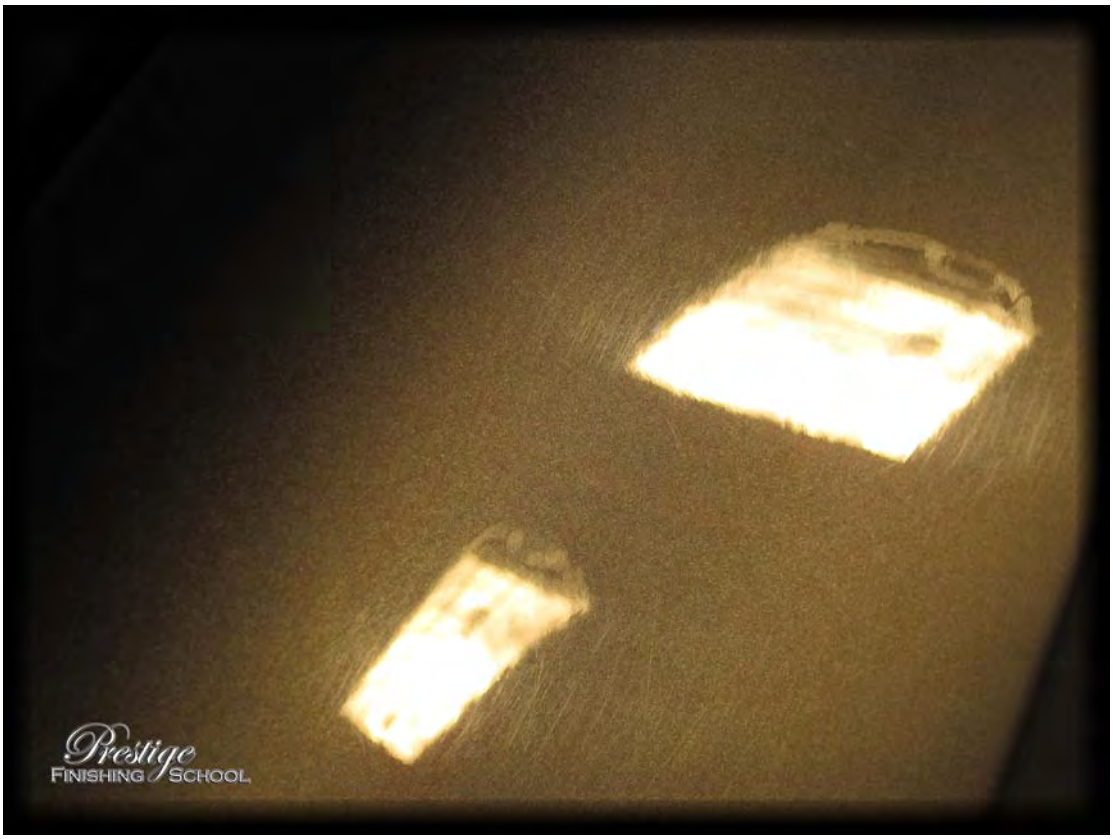


The right hand side of the vehicle now completed.

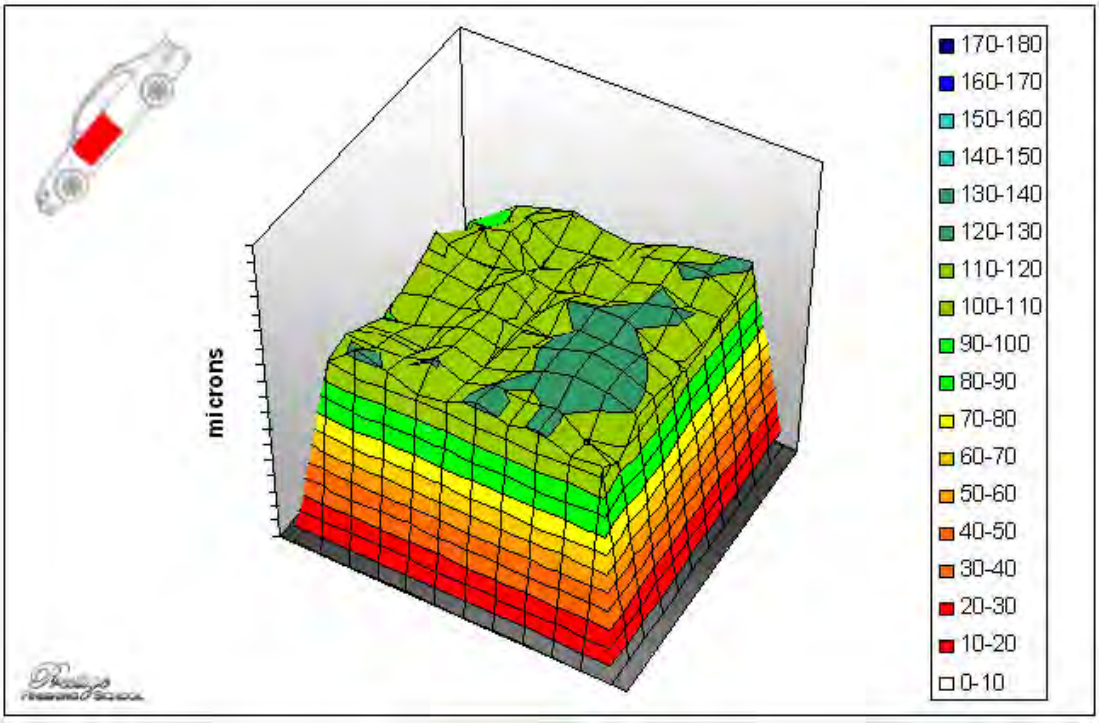
Left Front Wing

The passenger's side of the vehicle was consistent, hard, uniform factory paint, with varying amounts of surface defects.

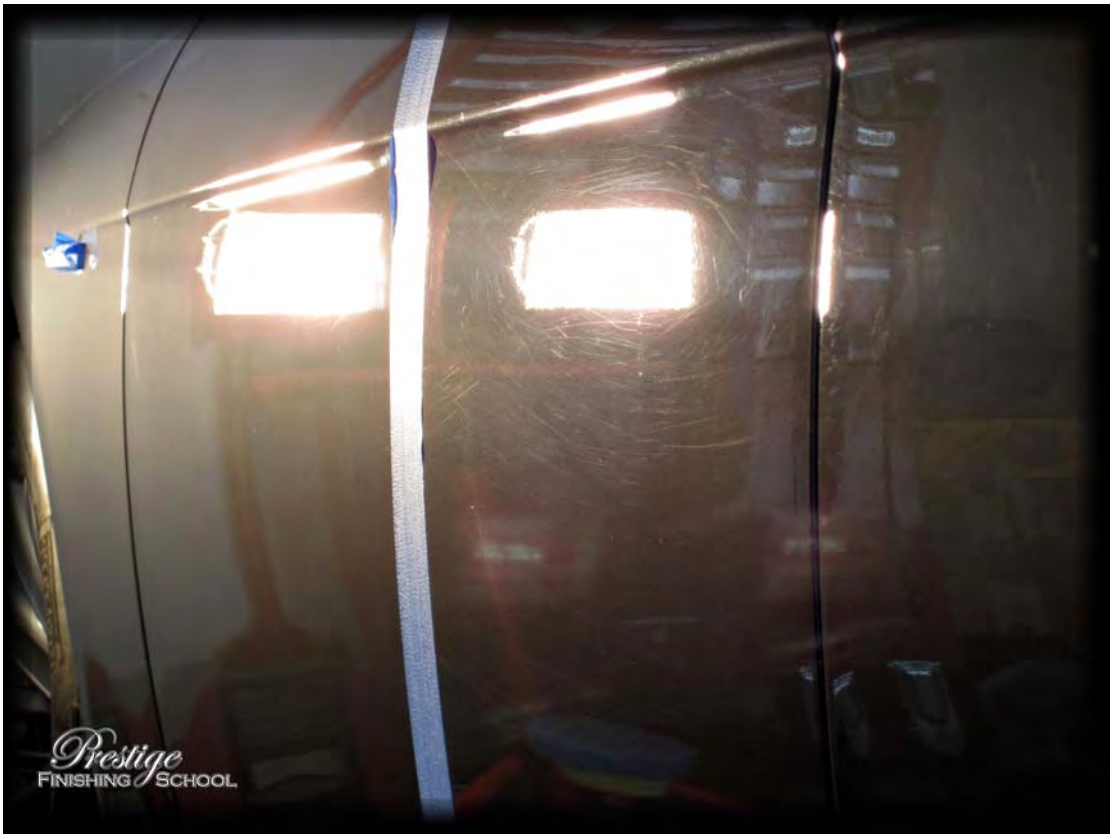




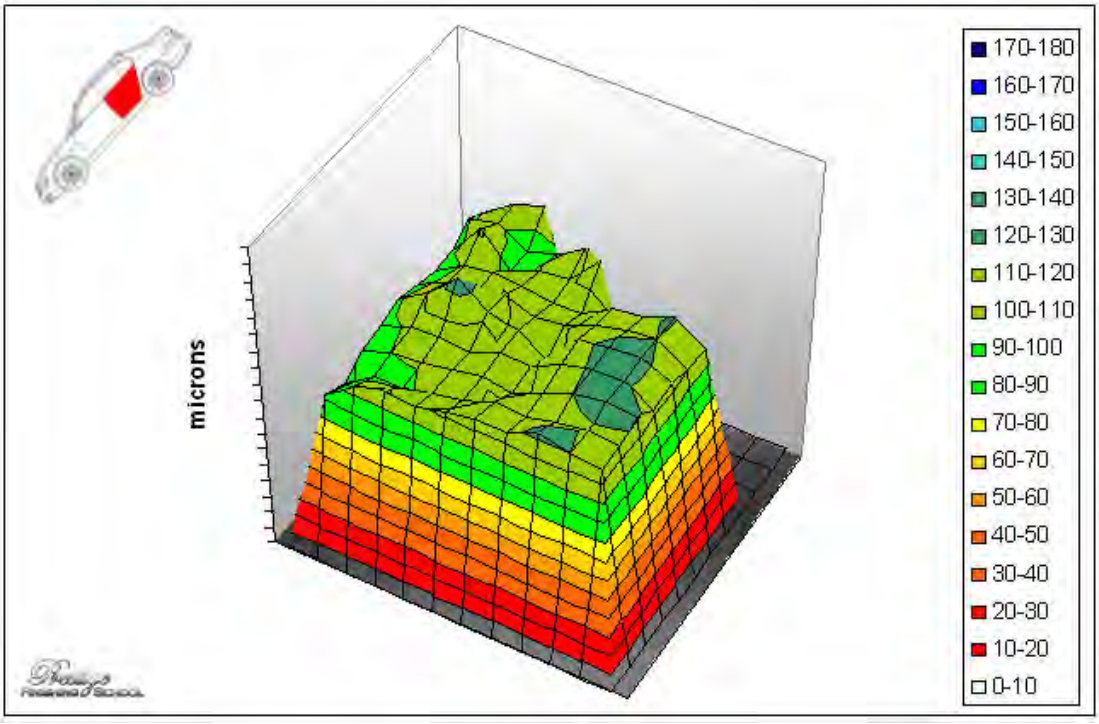
Left Front Door



This is a 50:50 shot of the left front door, clearly showing the before and after state of the paint finish on the panel.



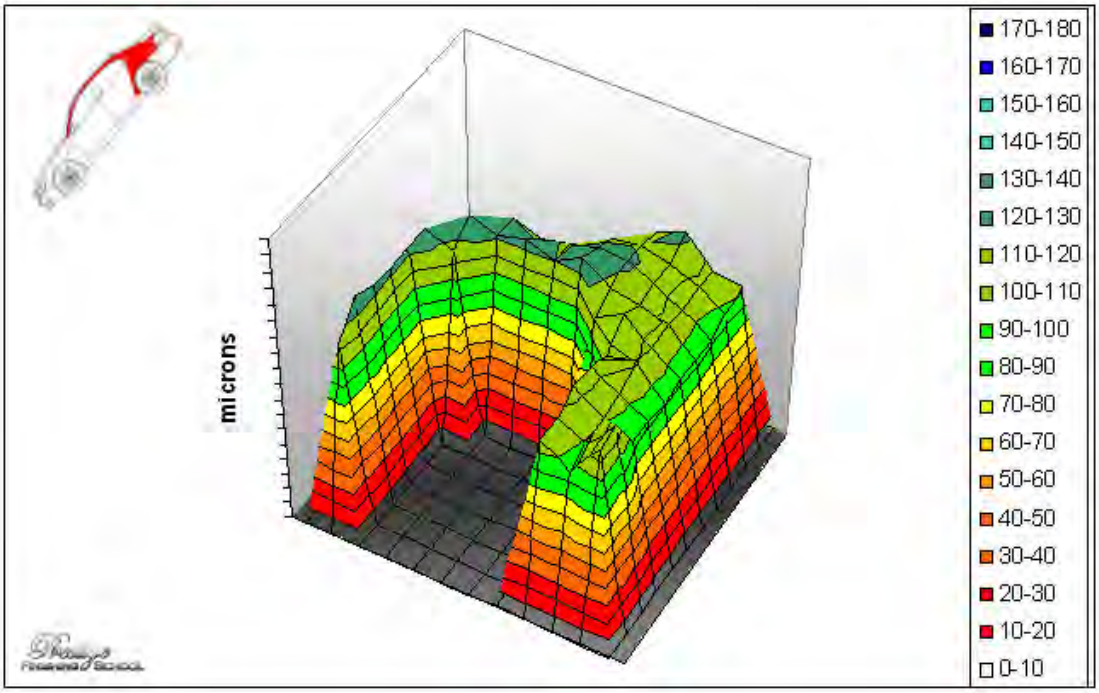
Left Rear Door



Minor swirl marks clustered around the twin light sources…

Gone!

Left Rear Quarter



5.0 Finishing

Again, owing to time pressures, we were unable to make time to capture any photos of the finishing process. The final steps in preparation of this vehicle were as follows:

- Paint work was protected with Blackfire's "Wet Ice over Fire" premium paint protection system. This constitutes a coat of their "All Finish Paint Protection" synthetic sealant, applied via Meguiars G220 (Dual Action Orbital Buffer) on a 6.5" Meguiars Finishing Pad, buffed off with an ultra plush microfiber cloth. This is then left to cure for a minimum 8hr period before being topped with a coat of Blackfire's "Midnight Sun" pure Carnauba Wax.

- Glass was cleaned with Meguiars Glass Cleaner Concentrate

- Arches and plastic trim pieces were dressed with Meguiars All Season Dressing.

- Tyres were dressed with Blackfire Long-Lasting Tyre Gel.

6.0 Final Showing

With all the hard work complete, it's time to show off…

…we moved the vehicle outside and held our breath for some sun to appear.

The “Wet Ice over Fire” finish gives an almost “liquid” look to the paint.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This was an absolute giant of a vehicle (over 5 meters long, and nearly 2 meters wide) and with every single panel requiring multi-stage machine polishing, this detail quickly ran into the 20hr+ duration. The vehicle's metallic silver colour (and fresh coat of wax on first inspection) did a wonderful job of masking the imperfections, and initially, we underestimated the magnitude of corrective work required.

Nevertheless, by the end of day 3 of this detail, we were completely satisfied with the outcome and we are proud to present another exceptional graduate from Prestige Finishing School!