

FRP Techniques

Recommended Procedure For How to Prepare and Paint Carbon Fiber and Composite Parts



Figure 1. A primed composite tailbase with a carbon fiber top wing element.



Figure 2. Installing and adjusting the fit of the tailbase prior to any preparation for painting.



Figure 3. A primed composite tailbase with a carbon fiber top wing element. The outline box shows a close-up of the parting line in Figure 4.



Figure 4. Close-up of the parting line, which will be masked off and have a black trim line painted on.

Figure 1. A typical carbon fiber wing and composite tailbase ready for installation.

Figure 2. The first step, as outlined in all of the FRP TECHNIQUE installation booklets, is to install the tailbase onto the car and make any adjustments needed to attain a perfect fit. This includes, but is not limited to: positioning the tailbase at the swinging portion of the hinge, positioning the fixed portion of the hinge, installing and setting the bump-stop heights, adjusting the latching point, loosening and adjusting the tail lights, shimming the edge of the bumper to the decklid and light sanding of the sides.

Figure 3. Once the installer is satisfied with the fit he may begin preparing the parts for painting, beginning with the carbon pieces. **UNLESS SPECIFICALLY ORDERED OTHERWISE, THE CARBON PARTS WILL NEED TO BE REFINISHED AND PAINTED USING EXACTLY THE SAME STEPS AS THOSE USED FOR REFINISHING AND PAINTING THE COMPOSITE TAILBASE.** The surface will first need to be prepared so that a high quality automotive paint can be sprayed on. In most cases, this will be a clear coat.

Figure 4 shows a close-up of the parting line on the leading edge of the wing. This is the joint where the two halves of the wing are bonded during manufacture. The parting lines on the front, rear and sides will need to have any imperfections filled with a tiny amount of body filler. It will then be sanded and masked off to create a thin trim line that is then painted black.



Figure 5. Filling in small pinholes, prior to sanding.



Figure 6. Block sanding the wing to remove any surface imperfections.

Figure 5 demonstrates a small pin hole in the parting line being filled with a standard body filler. It is well worth the extra effort to primer this area as well (see Figure 8).



Figure 7. Masking off for painting the trim lines.

Figure 6 shows the entire wing being sanded in preparation for painting. This is done to remove any surface texture from the carbon weave, eliminate small scratches from handling and to attain the correct smoothness for painting. The wing is sanded in three stages, using wet sand paper: starting with #220, then continuing with #400 and finishing with #600. **See Page 6 for the additional steps required to remove heavy print through.**

Figure 7. Here, the painter is masking off the parting lines so they can be painted black first. Afterwards, the whole part will be clear coated.

Figure 8. An even more professional method to detail the parting line is to take the additional step of priming the trim line first and filling all the voids. This insures that you won't miss some spots and the line will be perfect.

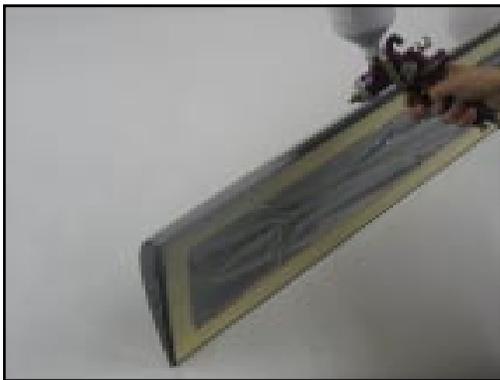


Figure 8. Adding a primer step to cover any parting line repairs, is a good additional step to insure all the pinholes are filled.

Figure 9. With the wing masked off, the painter sprays the trim lines black.



Figure 9. Painting the trim lines black.



Figure 10. A wing end plate. The portion in the outline box is shown in close-up view in Figure 11.



Figure 11. The parting line around the perimeter of the end plate needs to be detailed and painted black, just like on the wing.



Figure 12. Your first step is to repair any imperfections. Here, the paint technician is using a razor blade to spread some body filler in small pin holes.



Figure 13. Next, the end plate is block sanded.



Figure 14. The trim line is taped off.

Figure 10, 11, 12, 13, 14 and 15, 16, 17 on the next page. These eight pictures illustrate that the exact same steps that are applied to finishing any additional carbon parts. In this case, the wing endplates.



Figure 15. The trim line being sprayed black.



Figure 16. Spraying a high quality automotive clear top coat on the wing end plate.



Figure 17. Spraying the entire wing with a high quality clear coat.



Figure 18. A close-up of the finished, clear coated wing, showing a thin, elegant black trim line



Figure 19. A primed composite tailbase, ready for preparation. If you are starting with a gel coated part, please refer to FRP TECHNIQUES for the correct additional steps required to reach the primer stage.

Figure 19 shows a primed tailbase that is ready for the final stages of preparation before painting.

Figure 20. Carefully examine the tailbase and fill in any small imperfections with body filler.

Figure 21. Continue examining the surface of the tailbase and sand as needed (depending on the desired amount of smoothness for the paint) before applying the last primer.



Figure 20. Filling in small imperfections with body filler.



Figure 21. Block sanding so that the last primer can be applied.



Figure 22. Shows a carbon surface that requires more aggressive sanding to remove print-through and a light scratching.

Carbon fiber parts that have not had any initial preparation to remove heavy print through or carbon parts that have sustained heavy surface scratching will need to be first sanded with much coarser papers.

Figure 22 illustrates heavy print through, as well as some scratching, on a carbon wing surface. This part will have to be carefully block sanded first, with #80 grit dry sand paper and then with #180 grit dry sand paper, before starting the wet sanding. The factory surface coat is approximately 20 mils in thickness so it will tolerate substantial sanding, but be careful to not sand down into the carbon fiber.

Clear carbon fiber parts that have been on cars for some time may have experienced a clouding or fogging of the surface coat due to the effects of ultraviolet radiation. These parts can also be reclaimed by sanding off the opaque surface and repainting with a high quality automotive clear coat paint.



Figure 23. Because of the heavy print through and surface scratching, this wing is first being block sanded with 80 grit, dry sandpaper.

I acknowledge that I have read Recommended Procedure For How to Prepare and Paint Carbon Fiber and Composite Parts and I understand the steps my installer, body shop or painter must take to install my new part. I also understand that I am receiving these parts in an unfinished state, and that any minor scratches, nicks or imperfections that may have been incurred during shipping and handling will be addressed in the normal course of the procedural steps of preparing the wing for painting, as both the composite part and the carbon fiber part will both have to be completely sanded to accept their new top coats.

This procedure applies to all clear, carbon parts, including, but not limited to: wings, end plates, scoops,