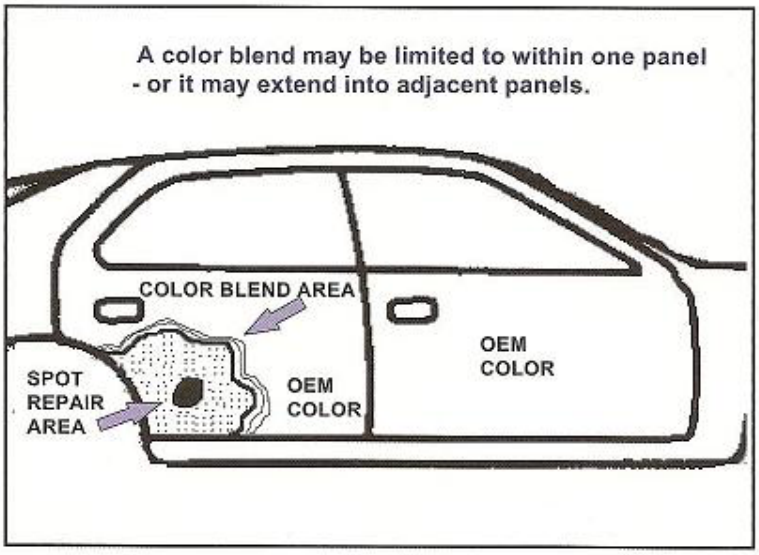
Blending

Blending Procedures

"Color Blending"
Blending is: *A "method of spraying color onto a vehicle in such a way that the edge of the sprayed color "disappears" into the surrounding area, rather than stopping at a hard breakline such as a door gap or molding".*

Why blend?
In most cases, a color is blended to create an "illusion" of a perfect match or an "invisible repair".

***Not to deceive anyone,* but to make the repair so invisible that even someone who knows it is there can't see it.**



Because of the color variances or **"color drift"** in the typical OEM finish, obtaining a "**butt**" **match** (panel to panel) would be **due almost exclusively to luck**. PPG has excellent factory and intermix color matches but since we are trying to match such a broad range of OEM paint variables, **blending is a necessity.** Consider the following list of appearance factors that a technician faces when matching an OEM finish:

- **Color** (hue, value and chroma)
- **Texture** (amount of orange peel)
- **Gloss** (and/or DOI, *Distinctness Of Image*)
- **Metallic** distribution (on the face, flash and flop angles)

Assessing the Situation

When doing the estimate on a damaged vehicle, it's important to note that, when we talk about the "repair area" for a damaged panel, we are just talking about the area of damage itself. We need to consider the area that will be covered by the new primer coat we apply during the course of the repair. As the primed area will in most cases be several times larger than the damaged area, it's important to allow for this, or you can seriously underestimate the time and materials that it will take to do the job.

Bearing that in mind, here are some things you should consider when deciding how far you should continue to blend a repair finish:

- Mentally divide the panel being worked on into thirds (both lengthwise and height-wise). If a metallic or pearl color repair extends into more than two of those thirds, then you should continue the blend into the next panel.
- If the finish being used is a solid-color basecoat/clearcoat, the blend can, in most cases, be restricted to the panel being repaired.
- If a panel is being replaced, rather than repaired, then the color should be blended into the surrounding panels regardless of the color being used.

The Clear Difference

When we talk about blending, we're talking about color only. The entire panel (or panels) should be clearcoated to ensure maximum durability of the repair.

This should be done in two steps:

Step 1: Apply clearcoat over the basecoat, including the blended basecoat area, and allow time to flash.
Step 2: Apply a second coat over the entire panel.

Preparation and Painting
The preparation for blending into a panel should be the same as if the entire panel were being painted. This includes completely removing (rather than masking) door handles, moldings, and other fittings. While certainly more time-consuming than masking, removing fittings is a necessary step for a durable repair. Oftentimes when a fitting has been masked, moisture and dirt have a path to get under the paint film, leading to failure in the form of flaking or peeling.

Don't be tempted to skip or combine steps in your painting, either. That starts with spraying out all colors according to PPG guidelines, and then checking your results. Once that is done, take the time to do the job right. I point that out because "what's right" may seem like a lot to people who have been in the business for decades. Back in the days when most shops did nothing but direct gloss painting, two to three coats were applied within 30 to 40 minutes of one another, and then the job was baked. That was it; you were ready to start putting the fittings back on. Today, when most of a collision shop's work will be basecoat/ clearcoat, anywhere from three to five color coats may be required, followed by two coats of clear, followed by baking. That's as many as seven coats prior to bake, as opposed to as few as two with direct gloss. But one advantage with basecoat/clearcoat systems is that the color-matching process takes less time.

Right the First Time

Care in preparation, giving the attention to properly spraying everything out, and then properly applying and blending the finish are all worth it when the result is what everyone expects: a repair job that is invisible, and a vehicle that has been restored to the same condition it was in before the collision—if not better.

That's the low-cost approach as well. Remember that most OEM finishes are about 5 mils thick. Once a panel has been painted and then has to be reworked, film builds in the panel to be repaired and its neighbors can blow out to as thick as 8-10 mils... and that is dangerously close to PPG's recommendation that paint be stripped when thickness reaches 12 mils. In addition, repainting because of a poor color match means painting over fresh work that is still curing.

Excessive builds and trapped solvent can lead to delamination, loss of gloss, excessive stone chipping, vastly increased cycle time and—ultimately—an unprofitable repair for your shop. So it's worth your effort to do it right. It's the most profitable way to do business, and it will also earn you the reward that's irreplaceable—the grateful smile of a thoroughly satisfied customer.

Understanding the Variables

Even if you've mixed up a perfect match for the vehicle being repaired, a number of application factors can still affect your final color. They include:

Factor	Lighter	Darker
Paint Feed	Decrease	Increase
Air Pressure	Increase	Decrease
Fan Width	Open Up	Close Down
Gun Distance	Farther Away	Closer
Gun Speed	Faster	Slower
Flash Time	Increase	Decrease
Thinning Ratio	Overthin	Underthin
Thinner Type	Fast	Slow
Fluid Tip Size	Smaller	Larger
Air Temperture	Warm Up	Cool Down
Humidity	Low	High
Air Movement	Increase	Decrease

The graphic below illustrate a typical blending scenario: