Waterborne Tri-Coat Refinish Process

This Tri-Coat Refinishing Process is designed as a guide when performing a tri-coat refinish repair. It's important to familiarize yourself with the aspects of this process and plan your application prior to beginning the tri-coat refinish repair.

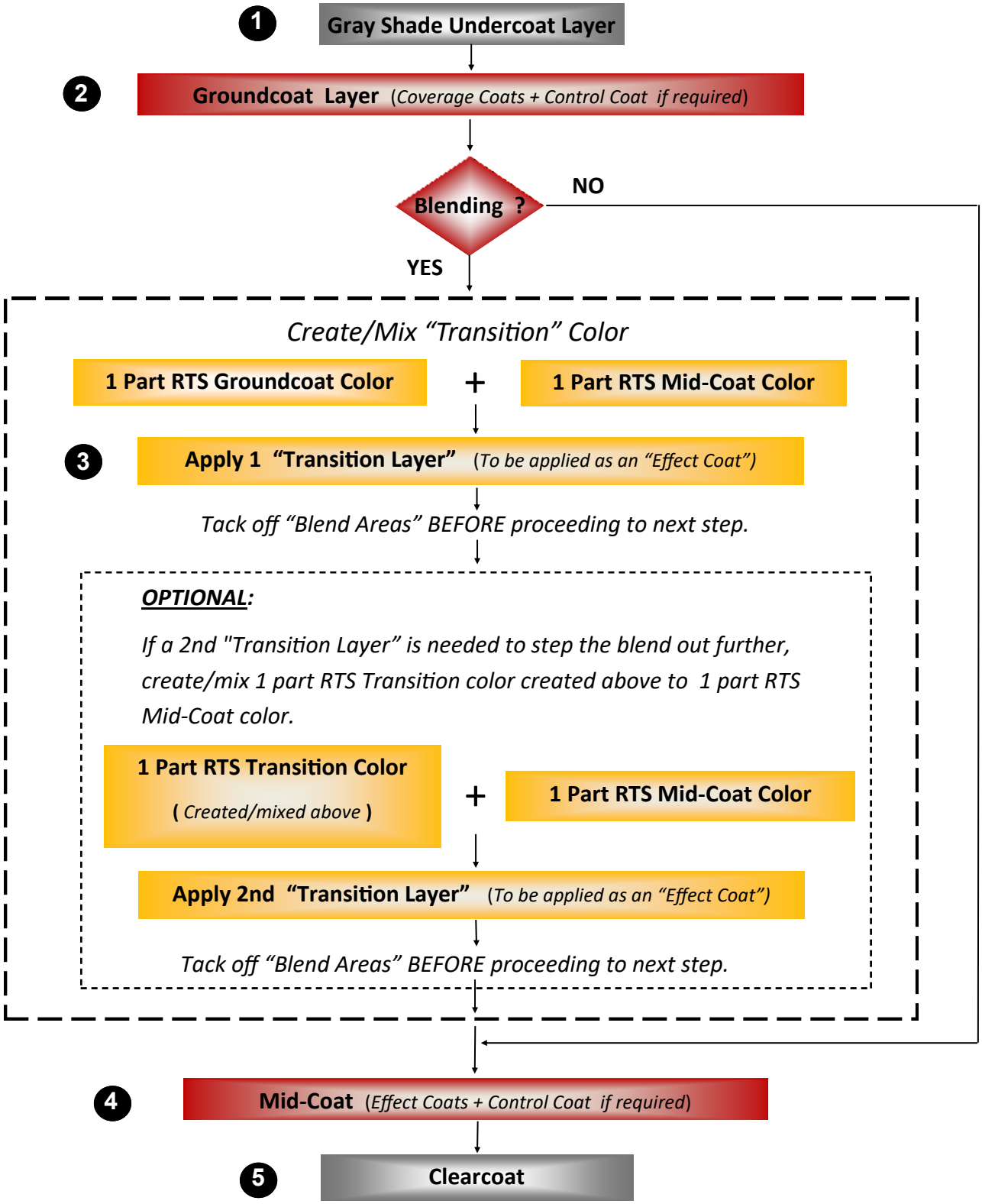
Should you have additional questions, please contact your local PPG Training Center. www.ppgrefinish.com

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Waterborne Tri-Coat Repair Process

The following graphic shows a process for the application of a Tri-Coat Paint System:

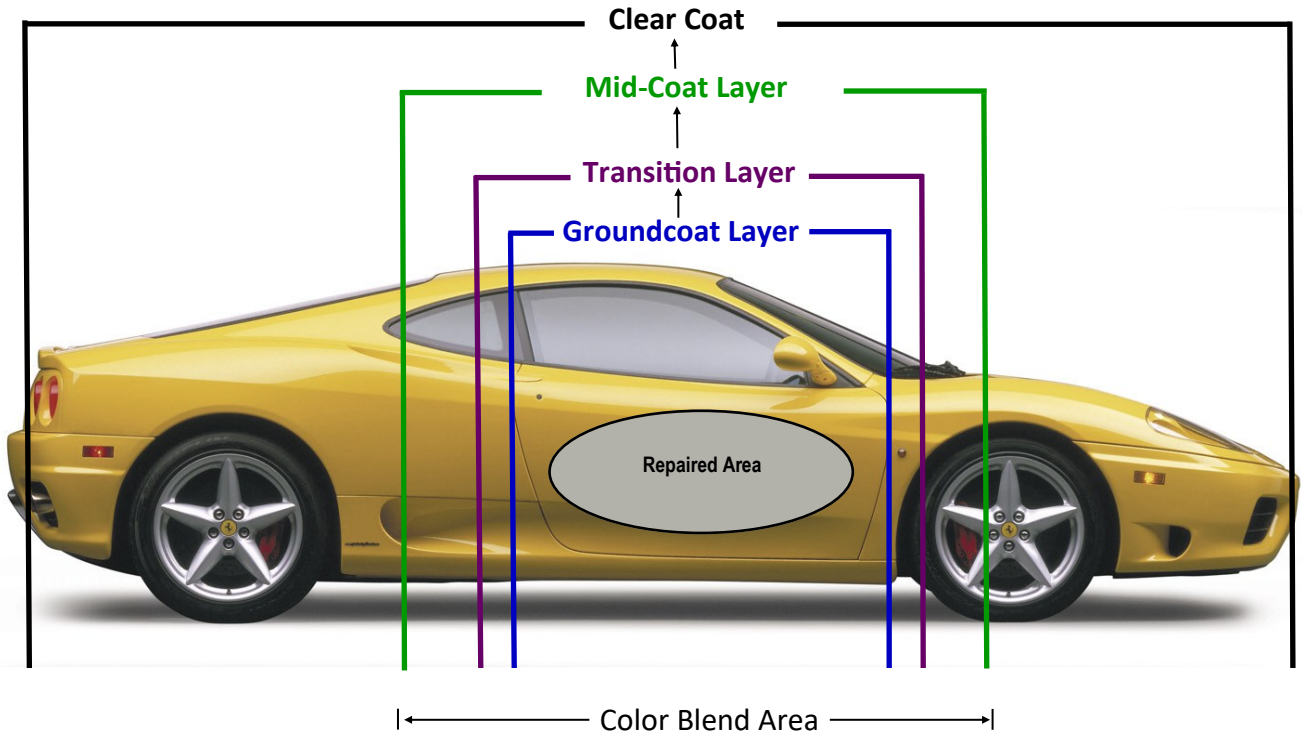


Descriptions of Tri-Coat Terminology:

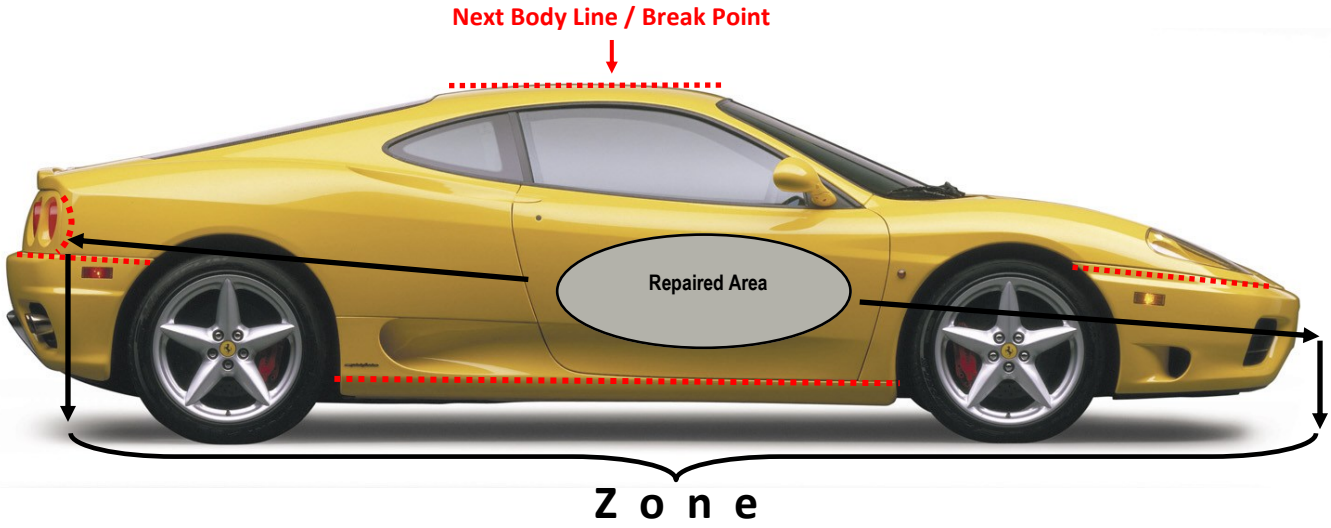
Term	Description
"G" Shade Undercoat	Primer/Sealer "gray shade" recommended/referenced on the formula. This will help achieve desired color in the fewest number of coats. *Refer to PPG's color retrieval system for correct G-Shade.*
Coverage Coat	Spraygun distance of approximately 6-8", 75% overlap applied to achieve coverage. Apply to a uniform "wet-dry-wet-dry" appearance. Caution should be taken to avoid wet or over application of color. *
Control Coat	Spraygun distance approximately 10-12", 90% overlap with reduced air pressure * . Only to be used on pearl and/ or metallic containing colors. This will ensure metallic and/or pearl orientation. Apply dry with no wetness.
Groundcoat *(also referred to as Main Layer)*	A basecoat color (*solid, pearl and/or metallic)* used as the first or "ground" color coat of a "Tri-Coat" paint system. This coat should be sprayed like a standard "Coverage Coat". Pearl and/or metallic colors will require a "Control Coat". Spraygun distance approximately 6-8", 75% overlap applied to achieve coverage. Apply to a uniform "wet-dry-wet-dry" appearance. *Caution should be taken to avoid wet or over application of color.* *
Effect Coat (*Used for the "Tri-Coat" or "Three Stage" system.)*	The application "method" of applying the Transition Layer and the Mid-Coats. The "Effect Coat" differs from the normal Groundcoat and Control Coat application in that the "Effect Coats" are specific to achieving proper color and effect. *A 90% overlap is required and a 10% (2-4 psi) reduction in air pressure * may be necessary to achieve an ap-pearance that is drier than a "Coverage Coat" but wetter than a "Control Coat".*
Transition Layer	A 1:1 mix of the *ready-to-spray* (RTS) Groundcoat color and RTS Mid-Coat color. The purpose of the Transition Layer is to help make a gradual transition from the Groundcoat to the Mid-Coat in blend areas. Sprayed /applied as an "Effect Coat". **NOTE:** A "Control Coat" may not be necessary over the "Transition Layer".
Mid-Coat *(also referred to as Tinted Clearcoat/Transparent Coat)*	Translucent layer (*tinted or pearl containing*) that is applied over the groundcoat in a three stage or "Tri-Coat" system.
"Zone" or "Section" Refinishing	The process of refinishing an entire "Zone" or "Section" of a vehicle rather than "blending" the repair area. (*Refer to Page 4.*)
"Let Down" Process	A process to help determine the number of "Mid-Coats" necessary in achieving a blendable color alignment to the vehicle. (*Refer to Page 5.*)
Reverse Blending	A process used to minimize the total size of the blend area. This method is achieved by blending back into the cov-erage or repair area. This is achieved by starting outside of the coverage or repair area and blending into the repair or coverage area. As this move is made with the spraygun, the trigger is gradually pulled from no material to full trigger. keeping the spraygun at a 90 degree angle is important. This will help keep metallic and/or pearl overspray "float out" to areas that will receive no Mid-Coat.
Viscosity	Waterborne basecoats should be mixed at a viscosity of 23-28 seconds using a DIN4 cup. For optimal performance however, a viscosity of 23-25 seconds generally provides the best results. **Tech Tip: As a general rule, 1 fluid oz. of waterborne thinner will lower the viscosity for 24 oz. of water-borne basecoat by approximately 5 seconds (*temperature and humidity will also affect viscosity*).**

* *Refer to DOX440 Gun Chart for air pressure recommendations.*

Standard Repair with Color Blending:



"Zone" or Section Refinishing: *(No Color Blending)*



(*Apply color to the entire "Zone" and then clearcoat all panels to panel edge*.)

NOTE:

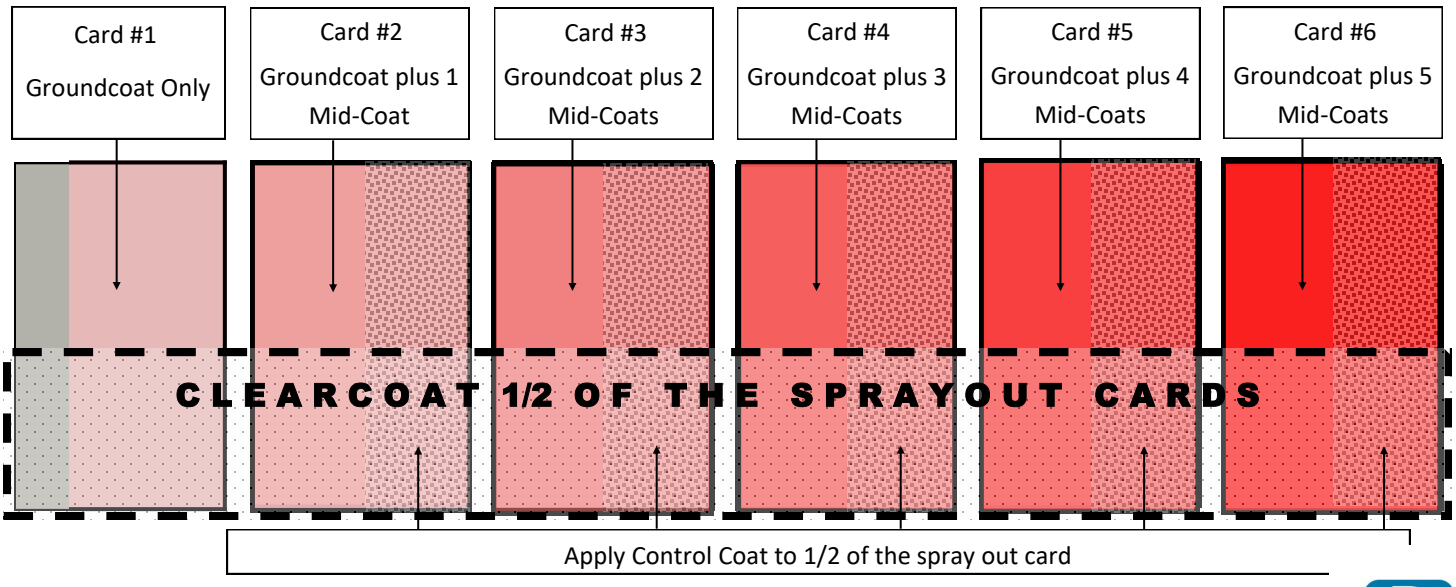
"Zone" or Section Refinishing is considered when existing finish varies in blotchiness and/or opaqueness in multiple panels on vehicle. Depending the vehicle/repair area, body lines, feature lines, moldings, etc. may be used to "disguise" or "hide" the color blend rather than a typical/traditional color blend in the middle of a panel.

Building a Let-Down Tool

To help achieve a blendable match when applying a Tri-Coat finish, it is necessary to perform a Let-Down process to determine the appropriate number of "Mid-Coats". Follow the steps listed below to build a Let-Down tool. IMPORTANT: the Let-Down tool and vehicle must be sprayed in exactly the same way (application, viscosity, equipment, etc.).

1. Adhere/affix the necessary number of PPG sprayout cards to a stationary object (cardboard box, scrap hood, etc.). Sprayout cards should be the correct "G-Shade" or the appropriate G-Shade sealer should be applied.
2. Spray all cards with single coats of Groundcoat until perceived opacity is achieved. Dry thoroughly between coats.
   - For metallic and/or pearl containing Groundcoats apply a Control Coat to help ensure proper color alignment.
   - IMPORTANT: The Groundcoat must match the Groundcoat of the target before applying the Transition Layer or a Mid-Coat otherwise it will be difficult to get a blendable match.
3. Using masking paper, cover Card #1. This will be used to reference Groundcoat color by itself.
4. **If** a blend is being performed, apply 1 Transition Layer to exposed cards (this is not necessary for full-panel, zone, or overall refinishing).
5. Cover **all but 1** card with separate pieces of masking paper.
6. Apply 1 Mid-Coat to exposed card.
7. Remove masking paper for the next card and apply 1 Mid-Coat to both exposed cards.
8. Repeat step 7 until Card #2 has only one coat of Mid-Coat.
9. For pearl-containing Mid-Coats, vertically mask off ½ of each sprayout card and apply a Control Coat to the exposed areas (depending on the vehicle, a Control Coat may or may not be necessary).
10. To properly evaluate color, all basecoat layers should be allowed to dry thoroughly before applying 2 coats of clear to ½ of each card. **NOTE:** Color should be evaluated either in natural daylight or color-correct lighting.

Once the cards are dry, write on the back of them the formula numbers, viscosity, # of ground and Mid-Coats applied, spray gun type/set-up, air pressure, etc. Thorough documentation will make it easier to replicate in the future.



PPG Automotive Refinish
19699 Progress Drive
Strongsville, Ohio 44149

PPG Canada, Inc.
5676 Timberlea Blvd
Mississauga, Ontario L4W 4M6

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www.ppgrefinish.com

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