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Introduction

In response to numerous requests from valued Collision Advice customers across the US, we have created this tool to help explain, justify and substantiate time with factual documentation. The collected information and documentation are intended to help clarify whether or not specific repair processes are considered to be required repair operations and if they are included or not-included within any other labor operation. Our objective is to help our customers build a complete repair plan and to get paid for the work they do.

To do so, we utilize four negotiation questions and supporting documentation as described below:

1. Is it required to put the vehicle back to pre-accident condition?
   - OEM Position Statements
   - ALLDATA®, TechAdvisor and Other Similar Systems
   - Paint Manufacture Bulletins
   - Material Manufacturer Bulletins (ex. 3M, Wurth, Kent)
   - Equipment Manufacturers
   - Internet ([www.YouTube.com](http://www.YouTube.com))
   - Estimating Systems
   - Scan Tools (Ex. ASTech)
   - The Vehicle

2. Is it included in any other labor operations?
   - Estimating Systems
   - ASA Not-Included Charts
   - [www.Degweb.org](http://www.Degweb.org)
   - [www.Estimatescrubber.com](http://www.Estimatescrubber.com)
   - SCRS Guide to Estimating

3. Is there a pre-determined time in the database?
   - Estimating Systems
   - [www.Degweb.org](http://www.Degweb.org)

4. What is it worth?
   - Do a Time Study
   - Print an Invoice
   - OEM Warranty Times
   - Equipment Manufacture Times
   - ALLDATA®, TechAdvisor and Other Similar Systems
   - Internet
Definition
**Definition**

Extending clear to the natural breaking point is required to achieve paint warranties. Many OEMs have issued statements that require application to a break line or panel edge.

All five major automotive paint manufacturers (Akzo Nobel, Axalta, BASF, PPG and Sherwin-Williams) have lifetime warranties on their clear coats that basically state:

“The application of clear must extend to the nearest panel edge or breakpoint to qualify for the lifetime warranty.”

Some OE manufacturers are connecting the left and right uniside panels to the roof as one continuous unit. When required to refinish a quarter panel with no natural breaking point, it will be necessary to clear the roof and the opposite quarter panel as well as the rocker panels. This is known as an “up and over”.
Photo Documentation
Photo Documentation
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Photo Documentation
### Justifying Each Line on the Repair Plan

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Question 1.
Is it required?
Four Negotiation Questions

1. Is it required to extend clear to the natural breaking point in order to return the vehicle back to pre-accident condition?

Answer: Yes, it is based on the following documentation.

Answer Documentation:

The major paint manufacturers state that it is recommended to extend the clear coat to the natural breaking point in order to return the vehicle to pre-accident condition and qualify for their lifetime warranty.

- Akzo Nobel – “We recommend clearcoating entire panels and do not approve solvent blending of the clearcoat in order to qualify for the Akzo Nobel Product Assurance Plan lifetime warranty. In addition, may auto manufactures do not recognize a solvent blend as a proper repair.”
- Axalta – “Applying clearcoat to the entire panel is a requirement for coverage under the Axalta Coating Systems (“Axalta”) warranty for collision repair finishes.
- BASF – “BASF recommends applying the specified amount of clear to the entire panel when doing Basecoat / Clearcoat repairs. This will make the repair eligible for the Glasurit or R-M lifetime warranty.”
- PPG – “When performing repairs on an OEM basecoat/clearcoat finish, if no clean break or body line exists for stopping the application of clearcoat, extend the application of clear to the nearest panel edge or break point.”
- Sherwin-Williams – “When performing Sherwin-Williams Lifetime Guarantee repairs, perform full panel refinish repairs or clearcoat to a clean break line only!”
- Valspar Automotive – “Valspar does not recommend or warranty the blending of clear coats.”

The original source documents from the Paint Manufacturers follow.

Several OE manufacturers have also released statements stating that clear should be extended to the natural breaking point.

- Chrysler
- Ford
- Toyota
- Volkswagen

The original source documents from OE manufacturers follow.
The major information providers have this to say about extending the clear to the natural breaking point.

- AudaExplore – “When blending is performed in a two- or three-stage refinish system, the same definition applies to the process and includes the application of clear coat to the entire blended panel.”

- CCC/MOTOR – “Most major paint manufacturers recommend that when performing refinish repairs on an OEM base coat/clear coat or multi-stage finishes, the application of clear coat must be extended to the nearest panel edge or breakpoint to qualify for their lifetime refinish warranties.”

- Mitchell – “In some applications, it may be required to extend the application of clear to the nearest panel edge or breakpoint.”

The original source documents from the Information Providers follow.
Akzo Nobel

Technical Services Bulletin
January 20, 2014
NO. 14-002
Subject: Blending

Blending the basecoat into an adjacent undamaged panel is the most economical and productive process for achieving an invisible repair. This is the standard method taught in all of our training centers for achieving an acceptable color match. Clearcoating the entire panel(s) involved is required when performing a blend.

In some instances, although rare, the blending of the basecoat can be confined to just the repaired panel, and in these instances, this would be the preferred repair process. Again, full clearcoating of the entire panel is required. The step-by-step preparation process is not unlike the preparation process for applying color and clearcoat to the entire panel.

We recommend clearcoating entire panels and do not approve solvent blending of the clearcoat in order to qualify for the Akzo Nobel Product Assurance Plan lifetime warranty. In addition, many auto manufacturers do not recognize a solvent blend as a proper repair. The blend area can become visible over time due to weathering or polishing, and for this reason is not warranted by Akzo Nobel.


Akzo Nobel

Akzo Nobel Coatings / Sikkens strongly recommends the application of clearcoat over the whole panel that is thoroughly prepared. Clearcoating of entire panel is required for lifetime warranty.

There are, however, instances where this is not practical. Such as repairs on older vehicles where economics would dictate that a warranty is not required. In these instances, it may be acceptable to blend the clearcoat into small areas such as a rocker panel or sail panel, vertical areas only. This clearcoat blending procedure does not qualify for an Akzo Nobel warranty and in many cases Is not OE approved.

Blending

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In some instances, although rare, the blending of the basecoat can be confined to just the repaired panel, and in these instances, this would be the preferred repair process. Again, full clearcoating of the entire panel is required. The step-by-step preparation process is not unlike the preparation process for applying color and clearcoat to the entire panel. Further detail for preparation process can be located within the TDS “Spot Repair with Autobase Plus”.

We recommend clearcoating entire panels and do not approve solvent blending of the clearcoat in order to qualify for the AkzoNobel Product Assurance Plan lifetime warranty. In addition, many auto manufacturers do not recognize a solvent blend as a proper repair. The blend area can become visible over time due to weathering or polishing, and for this reason is not warranted by AkzoNobel.
September 12, 2002

Mr. Steve Przybylo
Nissan North America, Inc.
P.O. Box 191
Gardena, CA 90248-0191

Dear Steve:

The following statement should clarify Akzo Nobel’s position in relation to clearcoat blending. It is taken directly from our Technical Reference Manual, which is available to all customers both in print and via the web.

*Akzo Nobel Coatings / Sikkens strongly recommends the application of clearcoat over the whole panel that is thoroughly prepared. Clearcoating of entire panel is required for lifetime warranty.*

*There are, however, instances where this is not practical. Such as repairs on older vehicles where economics would dictate that a warranty is not required. In these instances, it may be acceptable to blend the clearcoat into small areas such as a rocker panel or sail panel, vertical areas only. This clearcoat blending procedure does not qualify for an Akzo Nobel warranty and in many cases is not EO approved.*

Steve, I hope this helps. Please feel free to call me at 770-796-8195 if you have any questions.

Regards,

Tom Moreland
National Accounts

Applying clearcoat to the entire panel is a requirement for coverage under the Axalta Coating Systems ("Axalta") warranty for collision repair finishes. This approach helps produce a durable repair that will not weather prematurely.

Collision repair centers receive requests to blend clearcoat within a panel versus applying the clearcoat to the entire panel. While the blend approach may produce a finish that appears acceptable to the customer at the time of delivery, the blend edge can become apparent within the remaining service life of the vehicle. One reason for increased visibility of the blend edge is the potential for weaker adhesion of the clearcoat in the blend area. Another reason is the potential for poor weathering characteristics of the thin clearcoat edge in the blend area. The result is that the blend edge may look cloudly or dull with continued exposure to the sun and the elements.

Applying clearcoat to the entire panel is the traditional industry practice to restore a late model vehicle to its pre-accident condition and it is a requirement for coverage under the Axalta warranty. Please visit the Axalta Coating Systems web-site for full details regarding Axalta’s warranty coverage and related procedures.

Source: Axalta Coating Systems Clearcoat Recommendation for Collision Repair, Rev. September 24, 2014, Page 1
September 23, 2014

Axalta Coating Systems Clearcoat Recommendation for Collision Repair

Applying clearcoat to the entire panel is a requirement for coverage under the Axalta Coating Systems ("Axalta") warranty for collision repair finishes. This approach helps produce a durable repair that will not weather prematurely.

Collision repair centers receive requests to blend clearcoat within a panel versus applying the clearcoat to the entire panel. While the blend approach may produce a finish that appears acceptable to the customer at the time of delivery, the blend edge can become apparent within the remaining service life of the vehicle. One reason for increased visibility of the blend edge is the potential for weaker adhesion of the clearcoat in the blend area. Another reason is the potential for poor weathering characteristics of the thin clearcoat edge in the blend area. The result is that the blend edge may look cloudy or dull with continued exposure to the sun and the elements.

Applying clearcoat to the entire panel is the traditional industry practice to restore a late model vehicle to its pre-accident condition and it is a requirement for coverage under the Axalta warranty. Please visit the Axalta Coating Systems web-site for full details regarding Axalta’s warranty coverage and related procedures.

Stefan Reinartz, Ph.D.
Refinish Product Manager

Source: Axalta Coating Systems Clearcoat Recommendation for Collision Repair, Rev. September 24, 2014, Page 1
BASF

Clearcoat Application Request 2014

BASF recommends applying the specified amount of clear to the entire panel when doing Basecoat / Clearcoat repairs. This will make the repair eligible for the Glasurit or R-M lifetime warranty.

Blending the clearcoat requires that the thickness of clear be reduced in the blend area. This can result in the clearcoat blend edge becoming visible after a period of exposure to sunlight and weather. The blend edge can also become visible if it is polished too aggressively.

For these reasons, BASF will not warrant the blended edges of clearcoats. Although, BASF has developed processes and products for blending clearcoats, these are intended as a cost saving measure in those instances where an economical, non-warranty repair is required.

Detailed guidelines for applying clearcoats can be found in the R-M or Glasurit technical data sheets and technical reference manuals. These documents can also be found online at BASFrefinish.com.

Source: Clearcoat Application Request 2014, Rev. 07-22-14, Page 1
July 22, 2014

Aaron Schuenburg
SCRS
P.O. Box 346
Smyrna, DE 19977

RE: Clearcoat Application Request 2014

Dear Aaron:

BASF recommends applying the specified amount of clear to the entire panel when doing Basecoat/Clearcoat repairs. This will make the repair eligible for the Glasurit or R-M lifetime warranty.

Blending the clearcoat requires that the thickness of clear be reduced in the blend area. This can result in the clearcoat blend edge becoming visible after a period of exposure to sunlight and weather. The blend edge can also become visible if it is polished too aggressively.

For these reasons, BASF will not warrant the blended edges of clearcoats. Although, BASF has developed processes and products for blending clearcoats, these are intended as a cost saving measure in those instances where an economical, non-warranty repair is required.

Detailed guidelines for applying clearcoats can be found in the R-M or Glasurit technical data sheets and technical reference manuals. These documents can also be found online at BASFRefinish.com

Sincerely,

Jeff Wildman
Manager, OEM & Industry Relations
BASF Corporation
PPG

Tinting and Blending Recommendations

Mr. Schulenburg,

Here are the answers to your questions regarding PPG’s clearcoat blending recommendations.

**Question 1:** What is your company’s recommended procedure for applying clearcoat to qualify for a lifetime refinish warranty?

**Response:** Some car companies have specific procedures for warranty repairs when refinishing an OEM clearcoat where no definite break line exists for stopping the clear. To meet this OEM warranty guidelines and for PPG Lifetime Limited Paint Performance Guarantee purposes, the clearcoat application must extend to the nearest panel edge or break point. For PPG Lifetime Limited Paint Performance Guarantee purposes, the clearcoat must cover the basecoat by a minimum of 2.0 dry mils after sanding, buffing and polishing.

**Question 2:** Is there an acceptable procedure to tape, melt or blend clearcoat mid-panel, and achieve a warrantable refinish?

**Response:** No. PPG does document a clearcoat blending procedure. However, this procedure was designed for specific, economical repairs. Due to its nature, the clearcoat blend edge is not durable enough to withstand weathering, repeated exposure to the elements and becomes visible after a period of time. As a result, for OEM warranty and PPG guarantee purposes, blending a clearcoat edge is not recommended.

Please let me know if you need any further information.

Sincerely,

Robert Burgess

Director of Refinish Training, PPG Industries

Source: Burgess, Robert. Letter to Aaron Schulenburg. 24 July 2014. MS. Strongville, OH.
Date: July 24, 2014

Aaron Schulenburg
SCRS Executive Director

Re: Tinting and Blending Recommendations

Mr. Schulenburg,

Here are the answers to your questions regarding PPG’s clearcoat blending recommendations.

**Question 1:** What is your company’s recommended procedure for applying clearcoat to qualify for a lifetime refinish warranty?

**Response:** Some car companies have specific procedures for warranty repairs when refinishing an OEM clearcoat where no definite break line exists for stopping the clear. To meet this OEM warranty guideline and for PPG Lifetime Limited Paint Performance Guarantee purposes, the clearcoat application must extend to the nearest panel edge or break point. For PPG Lifetime Limited Paint Performance Guarantee purposes, the clearcoat must cover the basecoat by a minimum of 2.0 dry mils after sanding, buffing, and polishing.

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Please let me know if you need any further information.

Sincerely,

Robert Burgess
Director of Refinish Training, PPG Industries

Source: Burgess, Robert. Letter to Aaron Schulenburg. 24 July 2014. MS. Strongville, OH.
Sherwin-Williams

Best Demonstrated Practices for Clearcoating for Lifetime Warranty Purposes

To the SCRS Members,

As a supplier of aftermarket refinish coatings to the collision repair industry, Sherwin-Williams Automotive Finishes produces guidelines and procedures called “Best Demonstrated Practices” to ensure the collision repair industry’s ability to produce a pre-accident condition repair that meets Sherwin-Williams Automotive Finishes qualification for the Lifetime Warranty of a repair. The following statement reflects the recommended best practice for clearcoat blending that will meet Sherwin-Williams Automotive Finishes qualification for the Lifetime Warranty of a repair.

**Important Clearcoat Note:**

When considering clearcoat blending, always refer to the vehicle manufacturer’s blending recommendations for OE warranty repairs. When performing Sherwin-Williams Lifetime Guarantee repairs, completely de-trim the panel to be cleared and perform full panel refinish repairs or refinish to a clean break line only!

This is a necessary practice that is required to meet customer quality expectations as well as to return the vehicle to a pre-accident condition and allow Sherwin-Williams Automotive Finishes to offer its customer a Lifetime Repair Guarantee for the vehicle being repaired.

Source: Best Demonstrated Practices for Clearcoating for Lifetime Warranty Purposes, Sherwin-Williams, Warrensville Heights, OH.
Sherwin-Williams

Sherwin-Williams Automotive Finishes
4440 Warrensville Center Road
Warrensville Heights, Ohio 44128

Bryan Draga
Director of Marketing - VR, Global OEM & Services

July 17, 2014

Re: Best Demonstrated Practices for Clearcoating for Lifetime Warranty Purposes

To the SCRS Members,

As a supplier of aftermarket refinish coatings to the collision repair industry, Sherwin-Williams Automotive Finishes produces guidelines and procedures called "Best Demonstrated Practices" to ensure the collision repair industry’s ability to produce a pre-accident condition repair that meets Sherwin-Williams Automotive Finishes qualification for the Lifetime Warranty of a repair. The following statement reflects the recommended best practice for clearcoat blending that will meet Sherwin-Williams Automotive Finishes qualification for the Lifetime Warranty of a repair.

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This is a necessary practice that is required to meet customer quality expectations as well as to return the vehicle to a pre-accident condition and allow Sherwin-Williams Automotive Finishes to offer its customer a Lifetime Repair Guarantee for the vehicle being repaired.

Please let me know if you have further questions. I would be more than happy to provide further elaboration.

Sincerely,

Bryan Draga
Director of Marketing - VR, Global OEM & Services

Source: Best Demonstrated Practices for Clearcoating for Lifetime Warranty Purposes, Sherwin-Williams, Warrensville Heights, OH.
**Valspar Automotive**

**Suggested Clear Coat Application**

Valspar does not recommend or warranty the blending of clear coats. Over reduction or solvent blending of a clear coat will become visible due to UV exposure of the blended edge. The edge may also fade or peel over time due to the minimal film thickness of the blended edge.

Valspar recommends applying clear coat to the entire panel. Many of today’s late model cars do not have a distinct edge or break line on the quarter panel, in these cases, Valspar recommends applying the clear coat to the roof and the opposite quarter panel.

Source: Suggested Clear Coat Application, Valspar Automotive, Grand Prairie, TX.
August 26, 2014

To: Valspar Automotive Customers

Re: Suggested Clear Coat Application

Valspar does not recommend or warranty the blending of clear coats. Over reduction or solvent blending of a clear coat will become visible over time due to UV exposure on the blended edge. The edge may also fade or peel over time due to the minimal film thickness of the blended edge.

Valspar recommends applying clear coat to the entire panel. Many of today’s late model cars do not have a distinct edge or break line on the quarter panel, in these cases, Valspar recommends applying the clear coat to the roof and the opposite quarter panel.

Sincerely,

Gary Kelby
Technical Manager - Americas
1517 W. North Carrier # 155
Grand Prairie, TX 75050

Source: Suggested Clear Coat Application, Valspar Automotive, Grand Prairie, TX.
Chrysler

NUMBER: 31-002-13
GROUP: Collision Bulletin
DATE: January 31, 2013
SUBJECT: Blending Clearcoat During the Refinish Process
OVERVIEW: This bulletin discusses Chrysler’s position against the use of partial clearcoat blending.

DISCUSSION:
Partial clearcoat blending is not an approved warranty repair process for Chrysler vehicles. Partial clearcoat blending is a process that generally involves adding solvents to a paint manufacturer’s clearcoat mixing formula to reduce the viscosity. This will not only degrade the durability of materials, but it could also produce additional emissions. Partial clearcoat blending is achieved by adopting processes that are typically used to transition basecoat color on repair areas. Clearcoat should always be applied to the entire surface area of a body panel and mixed to manufacturer’s specifications. Any vehicle repaired with the partial clearcoat blending process will prematurely fail and eventually result in a clearcoat delamination condition. An example of clearcoat blending is shown in (Fig. 1).

As shown in (Fig. 1) clearcoat is not applied to the entire quarter panel surface area, but only to a small portion. The repair area will initially appear sufficient but depend on how the process was performed the repair area will begin to degrade in 6 months to 3 years.

Clearcoat (1) has been applied to the entire quarter panel in (Fig. 2) and basecoat (2) was applied to cover the repair area, which is the proper repair process.

NOTE: this figure is used for demonstration purposes only. Most quarter panel repairs require clearcoat to be applied to the entire side aperture which typically ends at the cowl adjacent to the front fender.

**NUMBER:** 31-002-13

**GROUP:** Collision Bulletin

**DATE:** January 31, 2013

**SUBJECT:**
Blending Clearcoat During The Refinish Process

**OVERVIEW:**
This bulletin discusses Chrysler's position against the use of partial clearcoat blending.

![Diagram of a vehicle with clearcoat blending](image)

**DISCUSSION:**
Partial clearcoat blending is not an approved warranty repair process for Chrysler vehicles. Partial clearcoat blending is a process that generally involves adding solvents to a paint manufacturers clearcoat mixing formula to reduce the viscosity. This will not only degrade the durability of materials but it could also produce additional emissions. Partial clearcoat blending is achieved by adopting processes that are typically used to transition basecoat color on repair areas. Clearcoat should always be applied to the entire surface area of a body panel and mixed to manufacturers specifications. Any vehicle repaired with the partial clearcoat blending process will prematurely fail and eventually result in a clearcoat delamination condition. An example of clearcoat blending is shown in (Fig. 1).

As shown in (Fig. 1) clearcoat is not applied to the entire quarter panel surface area, but only to a small portion. The repair area will initially appear sufficient but depend on how the process was performed the repair area will begin to degrade in 6 months to 3 years.

![Fig. 2 Complete Application]

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**NOTE:**
This figure is used for demonstration purposes only. Most quarter panel repairs require clearcoat to be applied to the entire side aperture which typically ends at the cowl adjacent to the front fender.

**POLICY:**
Information Only.

**Disclaimer:**
This bulletin is supplied as technical information only and is not an authorization for repair.

Ford

Clearcoat Blending Procedure Not Recommended

October 6, 2009

Ford Motor Company does not condone or recommend the procedure of clearcoat blending or using clearcoat blending in any warranty or collision repair. Furthermore, Ford never allows for partial clearcoat blending on warranty paint repairs and strongly recommends that repairers do not perform clearcoat blending on customer-payor insurance-pay repairs.

Paint companies and vehicle manufacturers agree that a repair using this material and procedure is not robust, and that over time, the edge will begin to lift and discolor, making the edge around the repair very noticeable. To resist ultraviolet light and other environmental factors, the clearcoat needs approximately two mils of thickness, however, the milage of the clearcoat in a blended area tapers out at the edge.

Ford’s position is continually reinforced in all approved paint system manuals. Furthermore, paint companies will not warrant any products if clearcoat blending has been done. The preferred process – and the one that Ford approves – is to blend the basecoat color as necessary and then clearcoat the entire panel. On a quarter panel or roof, the ditch area is usually the line to make a break point. Most Ford vehicles include a ditch area, which makes it easier to perform the procedure the right way the first time.

More information on specific paint company recommendations will generally appear with their clearcoat application guidelines and mix information.

Clearcoat Blending Procedure not Recommended

October 6, 2009

Ford Motor Company does not condone or recommend the procedure of clearcoat blending or using clearcoat blending in any warranty or collision repair. Furthermore, Ford never allows for partial clearcoat blending on warranty paint repairs and strongly recommends that repairers do not perform clearcoat blending on customer-pay or insurance-pay repairs.

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More information on specific paint company recommendations will generally appear with their clearcoat application guidelines and mix information.

A Refinish technique called ‘clear coat solvent blending’ is an attempt to ‘melt’ a refinish topcoat into an existing or factory finish. However, with modern auto finishes being thermoset (irreversibly hardened) this technique has several inherent flaws, and may not comply with established VOC regulations. It is the responsibility of each facility to verify and comply with all Federal, State and local Environmental Health & Safety regulations.

By their chemistry, modern thermoset finishes cannot be ‘melted’ into one another. This melting phenomenon was previously a characteristic of thermoplastic lacquer finishes that auto manufacturers no longer use.

To achieve optimal paint film build for durability, paint manufacturers typically recommend 2.0 – 2.5 mils of clear coat film build. During solvent blending the clear coat film build is tapered from a recommended thickness to 0.0 mils. This lack of film build greatly reduces finish durability in the ‘blend’ area and lead to undesirable finish appearance issues such as:

- Hazing/Fading
- Visible blend lines
- Peeling/Delamination

Undesirable quality issues can negatively impact refinish durability, customer satisfaction, and the reputation of the repair facility performing clear coat blending. Therefore, Toyota recommends strongly against solvent blending clear coat.

A refinish technique called ‘clear coat solvent blending’ is an attempt to ‘melt’ a refinish topcoat into an existing or factory finish. However, with modern auto finishes being thermoset (irreversibly hardened) this technique has several inherent flaws, and may not comply with established VOC regulations. It is the responsibility of each facility to verify and comply with all Federal, State and local Environmental Health & Safety regulations.

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Volkswagen

Volkswagen Collision Repair Standards
Refinish Procedures for Clearcoat Application
Applicable to All Volkswagen Models

Volkswagen continually enhances vehicle styling which includes precise aerodynamic designs and the highest quality paint work. In order to maintaining these factory engineered standards, Volkswagen is providing collision repair centers with critical information pertaining to collision repair/parts replacement on Volkswagen vehicles.

“Solvent blending” is a method that in the past was commonly used to blend within an exterior body panel. This type of repair procedure cannot be used on the OEM applied finishes on vehicles today. The reason is simple; the body between the OEM finish and the newly applied refinish paint cannot “blend” or “melt” into one another.

Additionally, the following problems are directly related to “solvent blending”:

- Lack of adhesion and/or delamination of the OEM finish and the refinish coating.
- Visible paint lines and defects are caused by polishing, buffing, or detailing a thin “solvent blended” area.
- “Solvent blending” products are not recommended or guaranteed by the paint companies that manufacture them. For a paint manufacturer guarantee, clearcoat must always be sprayed to the edge of the panel.
- “Solvent blending” products are volatile organic compounds (VOCs). Many states have established regulations prohibiting the use of VOCs.

NOTE: “Solvent blending” is not an acceptable method of repair on any Volkswagen vehicle.

Volkswagen recommends the following procedure for refinishing exterior body panels in order to restore the vehicle to a pre-accident condition; this procedure is based on Volkswagen’s concern about our customers as well as our environmental responsibility.

- Remove moldings from the subject panel as well as any adjacent panel.
- Mask the vehicle as usual to prevent overspray.
- Chemically clean the vehicle prior to any spray application.
- Sand/prep panel appropriately based on paint manufacturer’s recommendations.
- Apply base color coat to the repair area only.
- Spray into the adjacent panel as necessary for an undetectable color match.
- Apply the first coat of urethane clearcoat to the repair area only.
- For a two clearcoat system, spray only the second coat to the end of the panel.
- For a three clearcoat system, spray only the final coat to the end of the panel.
Spraying the final full coat of urethane clear insures maximum adhesion, ultra-violet sunlight protection and is environmentally safer. Over-reducing clearcoat, which is required during the “solvent blending” process, does not provide the same level of surface film build in order to provide a high quality repair.

PLEASE DISTRIBUTE THIS DOCUMENT TO THE FOLLOWING: COLLISION REPAIR CENTER MANAGERS, ESTIMATORS, AND TECHNICIANS.
November 2008
Volkswagen Collision Repair Standards

Refinish Procedures for Clearcoat Application

Applicable to All Volkswagen Models

Volkswagen continually enhances vehicle styling which includes precise aerodynamic designs and the highest quality paint work. In order to maintaining these factory engineered standards, Volkswagen is providing collision repair centers with critical information pertaining to collision repair.parts replacement on Volkswagen vehicles.

“Solvent blending” is a method that in the past was commonly used to blend within an exterior body panel. This type of repair procedure cannot be used on the OEM applied finishes on vehicles today. The reason is simple; the bond between the OEM finish and the newly applied refinish paint cannot “blend” or “melt” into one another.

Additionally, the following problems are directly related to “solvent blending”:

- Lack of adhesion and/or delamination of the OEM finish and the refinish coating.
- Visible paint lines and defects are caused by polishing, buffing, or detailing a thin “solvent blended” area.
- “Solvent blending” products are not recommended or guaranteed by the paint companies that manufacture them. For a paint manufacturer guarantee, clearcoat must always be sprayed to the edge of the panel.
- “Solvent blending” products are volatile organic compounds (VOCs). Many states have established regulations prohibiting the use of VOCs.

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Volkswagen recommends the following procedure for refinishing exterior body panels in order to restore the vehicle to a pre-accident condition; this procedure is based on Volkswagen’s concern about our customers as well as our environmental responsibility.

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- Chemically clean the vehicle prior to any spray application.
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- Apply base color coat to the repair area only.
- Spray into the adjacent panel as necessary for an undetectable color match.

Volkswagen

- Apply the first coat of urethane clearcoat to the repair area only.
- For a two clearcoat system, spray only the second coat to the end of the panel.
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Spraying the final full coat of urethane clear insures maximum adhesion, ultra-violet sunlight protection and is environmentally safer. Over-reducing clearcoat, which is required during the “solvent blending” process, does not provide the same level of surface film build in order to provide a high quality repair.

PLEASE DISTRIBUTE THIS DOCUMENT TO THE FOLLOWING: COLLISION REPAIR CENTER MANAGERS, ESTIMATORS, AND TECHNICIANS.

November 2008

Section 4-4 Refinish Guidelines

Blending

Blending is defined as the application of color to a portion of an undamaged adjacent panel for the sole purpose of facilitating the appearance of color match into the area. When blending is performed in a two- or three-stage refinish system, the same definition applies to the process and includes the application of clear coat to the entire blended panel.

Section 4-4 Refinish Guidelines

Blending

Blending is defined as the application of color to a portion of an undamaged adjacent panel for the sole purpose of facilitating the appearance of color match into the area. When blending is performed in a two- or three-stage refinish system, the same definition applies to the process and includes the application of clear coat to the entire blended panel.

Note: I-CAR recommends preparing and planning to blend before the work begins. This means that blending should be planned for in all phases of refinish, from tinting to preparation of surfaces. Following this recommendation will ensure that when the decision is made to blend, the preparation work is already complete. (For additional information, see I-CAR Finish Matching, Module 2, and Topic 3.) Blending into an undamaged/unreplaced adjacent panel to facilitate color match is automated in the Audatex system and can be selected on a panel-by-panel basis.

Audatex’s blend formula is:

- 50% of Audatex estimate refinish labor after overlap consideration, including two-stage or three-stage allowances, if applicable for the panel to be blended. This provides time to apply clear coat to the entire panel. Remember that all overlap is still considered when refinish labor is overlaid.
- This excludes R&I stripes, mouldings and special masking for two-tone, when required, unless two-tone is also selected.

Refinish within Panel Boundaries

Refinish within panel boundaries is defined as the process of applying paint and clear coat to the surface of a repaired panel for the sole purpose of facilitating the appearance of color match within the confines of the panel.

Note: The Audatex blend formula does not apply to this operation.

When the estimator enters a judgment time for refinish labor, the estimator also determines the included operations. Operations that might be considered in the repair refinish time include any steps required to bring the panel to the condition of a new, undamaged panel. This may include feather edge, blow off and clean, mask to prime, tack off, mix each primer, prime bare metal, mix and apply primer filler, guide cost application, unmask as required and block sand. Panel scuff to facilitate application of clear may also be considered for two- or three-stage refinish.

In the Audatex system, there are two ways to include the time to perform this refinish operation in an estimate:

1. The preferred method provided by Audatex is a Manual Entry. Using this method will not remove adjacent panel/non-adjacent panel overlap. This labor will also be used in paint materials calculations. A manual entry for this operation may be entered along with the desired value, or the Standard Manual Entry “M10 Paint As Required” may be used.

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Most major paint manufacturers recommend that when performing refinish repairs on an OEM base coat/clear coat or multi-stage finishes, the application of clear coat must be extended to the nearest panel edge or breakpoint to qualify for their lifetime refinish warranties.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G8
GUIDE TO ESTIMATING

OEM COMPONENT REPLACEMENT - GENERAL - Continued

Some repair operations reported in this guide may be beyond the capability of the repair shop in terms of equipment, skill and knowledge, etc. In this case the repair shop should not attempt the repair.

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Extreme care and caution should always be used when performing collision repairs on any vehicle. All repairs must be of the highest quality using the latest factory recommended repair procedures with the following concerns kept in mind:

- Passenger Protection: Replacing damaged parts of a car designed to crush in a collision may reduce occupant protection in a future collision if the structural integrity is not restored.
- Safety & Handling: An improper repair can create braking, handling, vibration and noise problems. This may lead to possible safety problems.
- Corrosion Protection: A vehicle’s ability to resist corrosion may be reduced if improper repairs are made and the manufacturer’s corrosion protection is not restored. This may lead to future safety and/or resale value problems.
- Resale Value: The resale value of a vehicle can be reduced drastically by improper repairs which may lead to a financial loss to the vehicle owner.

PANEL BONDING (Metal Adhesives)

OEM labor procedures for “panel bonding” requires different procedural steps versus welding, such as panel/vehicle preparation, sectioning, insert/seal, additional panel fit and adhesive application unless otherwise specified in a footnote attached to the sectioning operation. MOTOR published welded panel replacement labor times may be applied for “panel bonding” and would include all the necessary procedure steps as outlined by the OEM. Refer to the Guide to Estimating pages for specific included/not included operations. An adjustment in time may or may not apply after an on-the-spot evaluation of required procedures. Refer to OEM for specific repair recommendations/procedures and replacement product(s).

PARTS SUPPLIED IN COLOR

Some replacement components such as instrument panels, trim panels and moldings can be ordered in various colors and therefore may not require painting. In some instances specific colors may no longer be available from the manufacturer and therefore would require repainting. MOTOR recommends the availability of appropriate replacement colors be confirmed before finalizing any estimate of repairs. Refinishing time should be added if needed color is not available.

NOTE: Air bag components should never be refinished. Refinishing these components will alter the original design and change deployment characteristics.

REFINISH CLEAR COAT APPLICATION

Most major paint manufacturers recommend that when performing refinishing repairs on OEM base coat/clear coat or multi-stage finishes, the application of clear coat must be extended to the nearest panel edge or bodypoint to qualify for their lifetime refinishing warranty.

G8

RESTRAINT SYSTEM (Air Bag)

NOTE: RESTRAINT SYSTEMS, REPLACEMENT COMPONENTS and INSPECTION COMPONENTS are FOR ESTIMATING PURPOSES ONLY. Wiring repairs should only be performed in accordance with vehicle manufacturer specifications. Air bag components should never be refinished. Refinishing these components will alter the original design and change deployment characteristics. Always refer to the vehicle manufacturer’s recommended repair procedures when servicing any air bag system.

Before replacing any air bag system, disconnect and isolate the battery cable so that any back-up power supply is discharged for the time period stipulated by the manufacturer to prevent accidental deployment when working on the vehicle. All system components and mounting areas must be inspected before energizing the system.

On some vehicles the windshield is considered an integral component of the overall system and has specific requirements regarding materials and procedures used when replacing a windshield. Factory recommended procedures must be followed when servicing this type of system. Some vehicles are equipped with dual stage air bags. The air bags are deployed at different rates depending on the severity of the crash, seat belt usage and driver position. If a dual stage air bag has deployed, it is possible that only one stage has deployed. If both stages have not deployed, there is a danger of the second stage deploying if the air bag is not properly handled. On vehicles that are equipped with dual stage air bags, ensure the air bag system is disabled before performing any repair procedures. The air bag should then be properly disposed of. Refer to the vehicle manufacturer’s recommended procedures for air bag disposal.

Estimated Work Times for disabling vehicle safety restraint systems have been developed for instances where the OEM-recommended procedure steps required to disable the system are in addition to steps required to repair the vehicle by disconnecting the battery and/or removing a readily accessible fuse.

RESTRAINT SYSTEM (Seat Belt)

Many automobile manufacturers recommend seat belt components be replaced when subjected to stress by occupants in a collision. Check with the manufacturer for specific repair recommendations and procedures.

SECTIONING

Sectioning is an industry accepted procedure which involves replacing a vehicle’s welded body panel (quarter, rocker, rail, etc.) onto the undamaged portion of a vehicle body at a location other than at a factory seam. This may or may not be a factory recommended procedure. Special care and training is required when sectioning any part due to the wide use of special steels and vehicle design. Repairs of this type should only be performed in accordance with the OEM service repair information, if available. When sectioning procedures are not available from the vehicle maker, it may be possible to section a part using vehicle-specific procedures developed by research organizations such as Tech-Cor and/or general sectioning guidelines taught by I-CAR. Please visit http://www.i-car.com/partreplacemen for more information.

The sectioning location may be affected after an on-the-spot evaluation of the vehicle’s inner structure design. The labor time per panel (included/not included operations) for a sectioned panel is considered to be the same as for the full panel replacement, unless otherwisse specified in a footnote attached to the sectioning operation. The on-the-spot evaluation will define inclusions/exclusions unique to the collision scenario and/or the sectioning approach chosen.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G8
**Extension of Clear Coat**

In some applications, it may be required to extend the application of clear to the nearest panel edge or breakpoint.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 18

**Lifetime Refinish Warranty/ Clear Coat**

The major paint manufacturers listed below have provided the following information: “Major refinish paint manufactures recommend that when performing refinish warranty repairs on an OEM multi-stage or basecoat/clearcoat finish, you must extend the application of clear to the nearest panel edge or breakpoint to qualify for lifetime warranty.” **AKZO – Axalta (formerly DuPont) – Sherwin Williams – BASF - PPG**

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 16
Procedure Explanation

- Remove and install or mask attached components, trim, stripes or decals on blended panels/areas
- Finish, sand, and buff

**NOTE:** Blend labor time does not apply to two-tone refinish or custom non-OEM finish. No overlap deduction applies to blended panels/areas.

**NOTE:** When calculated, the estimate will allocate 40% from the total blend time and apply it to the three stage line item. The total sum of the blend line and the amount allocated in the three stage line will total 70% of the exterior refresh time for the panel being blended.

Example: A panel refresh time is 2.0 hrs. When blended, the refresh time for that panel will be displayed as 1.4 (7 per refresh hour). Once calculated, the refresh blend line will be displayed as 0.8 and 0.6 (40%) will be allocated to the three stage line.

**Extension of Clear Coat**

In some applications, it may be required to extend the application of clear to the nearest panel edge or breakpoint.

The performance of this operation is NOT INCLUDED in the Mitchell finish refresh labor time.

The extension of clear coat is intended to be calculated as a percentage of base refresh hours excluding overlap.

It DOES NOT APPLY to edges, jams, and undersides. No deduction for overlap should be taken.

This formula DOES APPLY to the 2.5 hours maximum clear coat allocation.

Should this operation be necessary, the following formula is provided:

**Extend Clear to Adjacent Panel(s)**

Extend clear to adjacent panel(s): Allow .5 per refresh hour (50%) for each panel/area refresh area(s) cleared.

**Included Operations**
- Detergent/water/algae wash
- Wet sand, scuff (Scotch-Brite) or rubout (compound) panel and clean for preparation
- Mask existing adjacent panels to 30°
- Apply bonding material - if required
- Clear and tack surface
- Apply clear material

**Not Included Operations**
- Repair existing surface imperfections
- Remove and install or mask attached components, trim, stripes or decals on extended clear panel/area
- Finish, sand, and buff
- Nib sand and finesse

**Finish Sand & Buff**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of orange peel and any blemishes that affect paint texture in order to produce a smooth finish to the entire panel surface. This process is not limited to “nib sanding” or “finesse” which is the removal of isolated dirt/crust particles only. The performance of this operation is NOT INCLUDED in the Mitchell finish refresh labor time.

The finish sand and buff formula is intended to be calculated as a percentage of the base refresh hours excluding overlap and clear coat. It DOES NOT APPLY to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refresh time. No deduction for refresh overlap should be taken.

Finish sand and buff outside surface area(s): Allow .3 per refresh hour (30%) to finish sand and buff each surface area(s).

**De-nib & Finesse**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of small isolated dust particles (nibs) and the application of a finishing glaze.

The performance of this operation is NOT INCLUDED in the Mitchell finish refresh labor time.

The de-nib and finesse formula is intended to be calculated as a percentage of the base refresh hours excluding overlap and clear coat. It DOES NOT APPLY to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refresh time. No deduction for refresh overlap should be taken.

De-nib and finesse outside surface area(s): Allow .2 per refresh hour (20%) to de-nib and finesse each surface area(s).

**Mask Vehicle to Prevent Overspray Damage**

The following refresh information is provided should it be necessary to perform these operations as determined by individual job requirements.

**MASK INTERIOR, ENTRYWAYS, ENGINE COMPARTMENT AND TRUNK OPENINGS**

Interior masking may be necessary when refinishing exterior surfaces to stop overspray damage that is not prevented by adjacent panel perimeter masking which includes back taping or application of foam tape. Interior masking may also be used when exterior panels (door, hood, etc.) are removed while applying refresh material. The performance of this operation is NOT INCLUDED in the Mitchell finish refresh labor time.

**Fig. 1: IDENTIFYING INTERIOR MASKING LOCATIONS**

**NOTE:** The times shown in the illustration are for interior masking of that panel and/or opening. Labor time includes all pillars, jams, weatherstrips, edges, entryways and openings as necessary. Deduct .1 hour overlap for each interior masked adjacent panel and/or opening.

The Mitchell REFINISHING MATERIALS GUIDE has the Latest Available Costs for Materials Used in Single and Multi-Stage Refinishing, and is an Accurate Source for Determining Costs.
## Procedure Explanation

### Refinish General Information

**Complete Refinish**

Refinish times in this guide pertain to **NEW, UNDAMAGED PARTS** and are not intended for calculating vehicle refinishing single- or multi-stage. An estimate of this nature would suggest all new panels have been fitted to the vehicle.

#### Lifetime Refinish Warranty/Clear Coat

The major paint manufacturers listed below have provided the following information: "Our standard warranty for life on multi-stage or basecoat/clearcoat finish, you must extend the application of clear to the new panel edge or headlight to qualify for lifetime warranty." AKZO — DuPont — Sherwin Williams — BASF — PPG

#### Required/Used Panels

- Labor times related to repaired and/or used panels: example: Remove and install or masking of glass, outside handles or exterior trim, feather prime & block, masking for primer surfacer application — are not included in refinishing time. The steps required for finishing a repaired or used panel may vary from those required for a new panel depending on the condition of the repair and used panel.
- Feather, Prime & Block

The Not-included refinish operation that completely bodywork repair from 150 grit smoothness to the condition of a new undamaged panel, and the part at which refusal labor time begins. The labor and materials associated with feather, prime and block may vary depending upon the size of the repair area, and should be evaluated when determining the work to be performed. See Welded Panels under Estimating Information.

#### SPOT REPAIR/BLEND ADJACENT PANEL

**Spot Repair**

Spot repair is defined as applying color to the repaired area of a damaged panel to obtain full coverage or undercoats, and blending that color into the original panel finish so that no transition can be detected. The goal is to keep the actual repair as small as possible to avoid having newly applied color directly next to an undamaged adjacent panel(s). Clear coat is then applied to the entire blended panel. This refinish process minimizes color mismatch.

**Blend for Color Match**

Blending is defined as applying color, without necessity to cover undercoats, to less than the full surface area of an adjacent undamaged panel. Paint manufacturers recommend blending adjacent panels when a panel is replaced, or repaired and color applied to the full surface areas, or to an area that borders the adjacent undamaged panels'). Clear coat is then applied to the entire blended panel.

**Major Panels**

Major panels are those listed: **FRONT HEADER, FENDER, HOOD, COWL, TOP, DOOR, ROCKER, ROOF, PICKUP CAB CORNER, PICKUP CAB**

**Back Quarter, Pick-Up Bed Front, Pick-Up Bed Side, Van Side, Van Rear Corner, Engine Lid, Luggage Lid, Lift Gate, Rear Rate, Tail Gate, Rear Body**

**Overlap**

Deduct 4 hour from refinishing time for each **ADJACENT MAJOR PANEL** and deduct 2 hour from time for each **NON-ADJACENT MAJOR PANEL**. There is no overlap deduction taken for the first major panel.

Adjacent major panel example: Right front fender 2.5 hours (full time) and front right door 2.5 hours minus 4. hour overlap for a total of 4.0 hours.

Non-adjacent major panel example: Right front fender 2.5 hours (full time) and left front fender 2.5 hours .2 hour overlap for a total of 4.8 hours.

No overlap deduction for valance panel, pillars, door jambs, underside of hood, underside of luggage lid or undersides of inner fender panels, soft bumper covers or bolt on finned panels.

**NOTE:** Refinish times are for outside surfaces only unless stated otherwise in text (example: add for underside, add to edge).

#### Included Operations

- **Solvent wash**
- **Scuff panel and clean**
- **Mask adjacent panels up to 36 inches or substitute with cover vehicle (bag) complete**
- **Prime or seal as required**
- **Final sanding and clean**
- **Mix materials**
- **Adjust spray equipment**
- **Apply color**
- **Clean equipment**

#### Not Included Operations

- Blending into adjacent panel and/or panels, or nearest breaking point
- Color match or tinting
- Applying anti-corrosion rust resistant materials
- Additional application of soft chip primers or anti-chip undercoats
- Finish sand and buff
- Subsequent vehicle bagging when required: add 2 hour for each application and removal
- Mask interior to prevent overspray damage
- Removal of protective coatings
- Removal of release agent from OEM raw plastic components (example: non-printed bumper covers aka formula under Raw Substrate Prep)
- Feather, Prime & Block paint damage to adjacent panel and/or panels joined by welding due to burn damage (see Feather, Prime & Block definition under Refinish General Information)
- Gravel guard refinish: add .5 hour for the first major panel and .3 hour for each additional panel.

**NOTE:** The included operation of mask adjacent panels is inclusive of any necessary back tape masking to prevent overspray.

**IMPORTANT REMINDER:** Refinish times are for NEW, UNDAMAGED PARTS without exterior or interior trim or attached components. Refinish times may vary depending on individual procedures, product and/or weather conditions.

A small percentage of colors are identified by the paint manufacturers as highly transparent. These colors may require additional application costs to achieve visual hiding. In instances where four or more color coats are necessary to achieve adequate hiding, some adjustment in refinish times may be applicable.

**IMPORTANT REMINDER:** The cost of paint and materials is not included in refinish time.

**NOTE:** Gravel Guard application and appropriate refinish may be necessary beyond the actual replacement area to achieve a "texture" match. It may be necessary to trim or otherwise modify non-exterior colors applied to undersides, edges and/or jambs for which there is no print color formula to achieve a color match. When necessary, reference "color match or tinting" listed above in Not Included Operations.

#### Raw Substrate Prep

Allow .2 per refinish hour (20%) for plastic components that come from the manufacturer/supplier in a raw/un-printed state.
Negotiation Question #1 – Summary

It has been established and proved thru the source documentation it is required to extend clear to the natural breaking point in order to return the vehicle to pre-accident condition.
Question 2.
Is it included?
2. Is extending the clear coat to the natural breaking point included in any other repair operations?

Answer: No, it is not included in any other repair operation.

Answer Documentation:

- **AudaExplore** –
  - “Audatex’s blending refinish formula includes the following operations: Application of clear coat to entire blended panel in two-stage and three-stage systems.”
  - “Two-stage is the application of a basecoat or color coat followed by the application of a clear coat as recommended by the paint manufacturer.”

- **CCC/MOTOR** –
  - “Calculations for clear coating an undamaged panel are based upon the outer surface only and should not include additions for underside, inside or edges of the clear-coated panel. There should be no overlap deduction between refinished or clear-coated panel(s), nor should this procedure be applied towards the maximum clear coat allocation. Clear coating may be necessary for adjacent body panel(s) to nearest break point (See G 8). The following formula may be considered in the event of this type of procedure is required on an undamaged panel: Each clear coated panel(s) 40% of panel’s Base Refinish Time

- **Mitchell** –
  - “In some applications, it may be required to extend the application of clear to the nearest panel edge or breakpoint. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.”
  - “The blend times are for **existing undamaged adjacent surfaces**. The blend labor time includes the application of clear coat to the entire panel on which color is blended. On some panels, the clear may be stopped at natural body lines or be blended into acceptable design configuration areas.”

The original source documents from the leading Information Providers follow.
**AudaExplore**

**Blending**

Auatex’s blending refinish formula includes the following operations:

- Complete preparation of blended panel
- Scuff or buff
- Application of color to blended panel
- Application of clear coat to entire blended panel in two-stage and three-stage systems


**Two-Stage**

Two-stage is the application of a basecoat or color coat followed by the application of a clear coat as recommended by the paint manufacturer.

Because 95% of all refinish operations in the United States are performed using a two-stage process, Audatex defaults to two-stage refinish for all vehicles. This applies to both exterior and interior surfaces. The user may change these options to reflect the appropriate repair process. Audatex’s single-stage refinish times provide a consistent, reliable, and accurate base upon which to calculate time for the two-stage process.

Source: © 2014 AudaExplore North America, Inc. V: DBRM0114, Page 143
Section 4-5 Refinish Operations

Single-stage
Audatex's single-stage refinish formula includes all two-stage refinish operations except:
- Gather additional materials to apply clear coat
- Spray test panel/let down panel (Clear Coat)
- Add flex additive (when required)
- Tack wipe for clear coat
- Mix, apply, and flash clear coat

Three-stage
- Audatex three-stage refinish formula includes all two-stage refinish operations, plus:
  - Gather additional materials
  - Spray test panel/let down panel (mid coat)
  - Tack wipe (between color and pearlyscent/mica coat, when required)
  - Mix, apply and flash pearlyscent/mica coat
  - Clean gun
  - Tack wipe (between pearlyscent/mica coat and clear coat, when required)
  - Mix, apply and flash clear coat
  - Clean gun

Two-Tone
Audatex's two-tone refinish formula includes the following operations:
- Tack wipe (between colors)
- Additional masking
- Mix second color
- Color tint and check second color
- Apply and flash second color
- Clean gun

Blending
Audatex's blending refinish formula includes the following operations:
- Complete preparation of blended panel
- Scuff or buff
- Application of color to blended panel
  - Application of clear coat to entire blended panel in two-stage and three-stage systems

Chipguard
Audatex's chipguard refinish formula includes the following operations:
- Gather chipguard materials
- Masking
- Application of chipguard
- Cleanup

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Section 4-4 Refinish Guidelines

Single-stage

Audatex single-stage refinish labor is currently developed so that it is unique to each panel. The study data confirms this as the most accurate and reliable method of refinish labor determination, consistent with current industry standards.

Two-stage

Two-stage is the application of a basecoat or color coat followed by the application of a clear coat as recommended by the paint manufacturer.

Because 95% of all refinish operations in the United States are performed using a two-stage process, Audatex defaults to two-stage refinish for all vehicles. This applies to both exterior and interior surfaces. The user may change these options to reflect the appropriate repair process.

Audatex’s single-stage refinish times provide a consistent, reliable, and accurate base upon which to calculate time for the two-stage process.

Audatex’s two-stage formula is:

- Set-up time of 0.6 hours with the selection of the first refinished panel, plus 20% of Audatex estimate refinish labor.

Audatex provides two options for calculations of two-stage exterior refinish and one for interior surfaces:

- Two-stage exterior
- Two-stage exterior user-defined
- Two-stage interior

Note: Due to paint manufacturers’ recommendations, user-entered refinish time will have two-stage calculated based on the full Audatex panel refinish time when two-stage is selected as an option.

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CLEAR COAT UNDAMAGED PANEL

SPECIAL NOTATION:

Calculations for clear coating an undamaged panel are based upon the outer surface only and should not include additions for underside, inside or edges of the clear-coated panel. There should be no overlap deduction between refinished or clear-coated panel(s), nor should this procedure be applied towards the maximum clear coat allocation. Clear coating may be necessary for adjacent body panel(s) to nearest break point (See G 8). The following formula may be considered in the event of this type of procedure is required on an undamaged panel:

- Each clear coated panel(s)
  40% of panel’s Base Refinish Time

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G36
GUIDE TO ESTIMATING

BASIC COLOR COAT APPLICATION - Continued

DOES NOT INCLUDE (continued):
- Cover/mask trunk/compartment to prevent overspray
- Cover/mask entire exterior of vehicle to prevent overspray damage
- Cover/mask interior of vehicle to prevent overspray damage
- Edge refinishing
- Prime & block (high build/primer-sealer)
- Test spray-out panel
- Tinting Primer-Sealer
- Tinting to achieve color match
- Underside refinishing
- Wash, grind or sanding damage to adjacent panels
- Wet sanding

BAGGING (Cover Entire Vehicle Exterior)

Published refinishing times include time necessary to mask exterior or surface adjacent to the refinishing area to a perimeter of 36 inches, or 3 feet. When the process of perimeter masking is substituted for an entire vehicle bagging procedure, then no additional time should be added. If entire vehicle bagging is used along with perimeter masking, then the following formula may be considered:

APPLY AND REMOVE VEHICLE COVER (BAGGING)
- Add 0.2 each time a cover is applied and removed

CLEAR COAT FINISHES
(Base Coat/Clear Coat)

SPECIAL NOTATION:
The following items or operations were not considered during the development of any published basic refinishing operation times. If any of these items or operations are required, they should be considered by the estimator. Calculations should be made after deductions for overlap and additions for underside and edges, if required.

- First major panel:
  - Add 70% to refinishing time
- Each additional panel:
  - Add 60% to refinishing time

INCLUDED:
- All components clear coated during a single, continuous procedure
- Apply clear coat
- Clean spray gun and pot (one time)
- Mix clear coat (one time)
- Tack wipe surface (when required)

DOES NOT INCLUDE:
- Any component clear coated as a separate procedure
- Any operation previously excluded in “Refinish Time Premise” and/or “Basic Color Coat Application” groups
- Material costs

CLEAR COAT UNDAMAGED PANEL

SPECIAL NOTATION:
Calculations for clear coating an undamaged panel are based upon the outer surface only and should not include additions for underside, inside, or edges of the clear-coated panel.
There should be no overlap deduction between refinished or clear-coated panel(s), nor should this procedure be applied towards the maximum clear coat allocation. Clear coating may be necessary for adjacent body panel(s) to nearest break point (see G.6). The following formula may be considered in the event this type of procedure is required on an undamaged panel:

- Each clear coated panel:
  - 60% of panel’s Base Refinishing Time

Page 61
Extending Clear to the Natural Breaking Point Negotiation Tool
Version 3.0, December 8, 2015
Extension of Clear Coat

The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 18

Blend Adjacent Panel(s)

With some colors, it may be necessary to blend color into adjacent panels to obtain an acceptable color match.

A blend labor time formula is provided should it be necessary to perform this operation. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The blend times are for **existing undamaged adjacent surfaces**. The blend labor time includes the application of clear coat to the entire panel on which color is blended. On some panels, the clear may be stopped at natural body lines or be blended into acceptable design configuration areas.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 17
Procedure Explanation

- Remove and install or mask attached components, trim, stripes or decals on blended panel/area
- Finish, sand, and buff

**NOTE:** Blend labor time does not apply to two-tone refinish or custom non-OEM refinish. No overlap deduction applies to blended panel(s)/refinish area(s).

**NOTE:** When calculated, the estimate will allocate 45% from the total blend time and apply it to the three stage line item. The total sum of the blend line and the amount allocated in the three stage line will total 70% of the exterior refinish time for the panel being blended.

Example: A panel refinish time is 2.0 hrs. When blended, the refinish time for that panel will be displayed as 1.4 (7 per refinish hour). Once calculated, the refinish blend line will be displayed as .6 and .6 (40%) will be allocated to the three stage line.

**Extension of Clear Coat**

In some applications, it may be required to extend the application of clear to the nearest panel edge or breakpoint.

The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The extension of clear coat formula is intended to be calculated as a percentage of base refinish hours excluding overlap.

It DOES NOT APPLY to edges, jams, and undersides. No deduction for overlap should be taken.

This formula DOES APPLY to the 2.5 hours maximum clear allocation. Should this operation be necessary, the following formula is provided.

**Extend Clear to Adjacent Panel(s)**

Extend clear to adjacent panel(s): Allow .5 per refinish hour (50%) for each panel(s)/refinish area(s) cleared.

**Included Operations**

- Detergent/solvent wash
- Wet sand, scuff (Scotchbrite) or rubout (compound) panel and clean for preparation
- Mask existing adjacent panels to 36”
- Apply bonding material if required
- Clean and tack surface
- Apply clear material

**Not Included Operations**

- Repair existing surface imperfections
- Remove and install or mask attached components, trim, stripes or decals on extended clear panel/area
- Finish, sand, and buff
- Nib and finesse

**Finish Sand & Buff**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of orange peel and any blemishes that affect paint texture in order to produce a smooth finish to the entire panel surface. This process is not limited to “nib sanding” or “finesse” which is the removal of isolated dirt/dust particles only. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The finish sand and buff formula is intended to be calculated as a percentage of the base refinish hours excluding overlap and clear cost. It DOES NOT APPLY to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refinish time. No deduction for refinish overlap should be taken.

Finish sand and buff outside surface area(s): Allow .3 per refinish hour (30%) to finish sand and buff each surface area(s).

**De-nib & Finesse**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of small isolated dust particles (nibs) and the application of a finishing glaze.

The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The de-nib and finesse formula is intended to be calculated as a percentage of the base refinish hours excluding overlap and clear cost. It DOES NOT APPLY to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refinish time. No deduction for refinish overlap should be taken.

De-nib and Finesse outside surface area(s): Allow .2 per refinish hour (20%) to de-nib and finesse each surface area(s).

**Mask Vehicle to Prevent Overspray Damage**

The following refinish information is provided should it be necessary to perform these operations as determined by individual job requirements.

**MASK INTERIOR, ENTRYWAYS, ENGINE COMPARTMENT AND TRUNK OPENINGS**

Interior masking may be necessary when refinishing exterior surfaces to stop overspray damage that is not prevented by adjacent panel perimeter masking which includes back taping or application of foam tape. Interior masking may also be used when exterior panels (door, hood, etc.) are removed while applying refinish material. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

**Fig. 1:** IDENTIFYING INTERIOR MASKING LOCATIONS

**NOTE:** The times shown in the illustration are for interior masking of that panel and/or opening. Labor time includes all pillars, jams, weatherstrips, edges, entryways and openings as necessary. Deduct .1 hour overlap for each interior masked adjacent panel and/or opening.

The Mitchell REFINISHING MATERIALS GUIDE has the Latest Available Costs for Materials Used in Single and Multi-Stage Refinishing, and is an Accurate Source for Determining Costs.
Procedure Explanation

Included Operations
- Detergent wash
- Acid/alkali plastic cleaner wash
- Additional solvent wash
- Application of specialized adhesion promoter
- Clean Equipment

Clear Coat/Two Stage Refinish
First major panel or soft bumper/fascia cover: Add .4 per refinish hour (40%), then add .4 per refinish hour for jamb, jamb and interior, edge panel, and/or underside (when necessary).

Included Operations
- Mix material
- Clean and tack surface
- Apply material
- Clean equipment

NOTE: Some OEMs now utilize a matte clear coat on non-exterior colors applied to undersides, edges, and/or jambs.

Additional panel(s) and/or other refinish area(s): Deduct overlap (if applicable): add .2 per refinish hour (20%), then add .2 per refinish hour for jamb, jamb and interior, edge panel, and/or underside (when necessary).

Included Operations
- Mix material
- Clean and tack surface
- Apply material

NOTE: For NEW, UNDAMAGED PARTS, a total of no more than 2.5 hours should be necessary to perform the four Clear Coat Refinish Included Operations listed above. This calculation DOES NOT APPLY to bumper covers, ground effects, special package equipment, interior edges, jambs, entryways, undersides and additional time that may be required for repaired and/or used panels. It DOES NOT APPLY to complete vehicle refinish, it is not intended to determine the quantity or cost of materials required for the application of clear.

Three Stage Refinish
First major panel or soft bumper/fascia cover: Add .7 per refinish hour (70%), after time has been added for jamb, jamb and interior, edge panel, and/or underside (when necessary).

Included Operations
- Mix primer/mica toner
- Apply primer to test panel
- Mix clear
- Clean and tack surface
- Apply clear to test panel
- Repeat application to surface being refinished
- Clean equipment

Additional panel(s) and/or other refinish area(s): Deduct overlap (if applicable): add .4 per refinish hour (40%), after time has been added for jamb, jamb and interior, edge panel, and/or underside (when necessary).

Included Operations
- Apply primer/mica toner
- Clean and tack surface
- Apply clear

NOTE: With three stage paints, it may be necessary to blend into larger areas of adjacent panels or complete sides of vehicles, otherwise known as zone painting.

NOTE: Some OEMs now utilize a matte clear coat on non-exterior colors applied to undersides, edges, and/or jambs.

Two Tone Refinish
First major panel: Add .5 per refinish hour (50%)

Included Operations
- Mask panel
- Scuff panel
- Mix material
- Apply material

- Clean equipment

Additional panel(s) and/or other refinish area(s): Deduct overlap (if applicable): add .3 per refinish hour (30%)

Included Operations
- Mask panel
- Scuff panel
- Apply material

Blend Adjacent Panel(s)
With some colors, it may be necessary to blend color into adjacent panels to obtain an acceptable color match.

A blend labor time formula is provided should it be necessary to perform this operation. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The blend times are for existing undamaged adjacent surfaces. The blend labor time includes the application of clear coat to the entire panel on which color is blended. On some panels, the clear may be stepped at natural body lines or be blended into acceptable design configuration areas.

Single Stage/Two Stage Colors
Blend adjacent panel(s): Allow .5 per refinish hour (50%) for each panel(s)/refinish area(s) blended.

Included Operations
- Detergent/solvent wash
- Wet sand, scuff (ScotchBrite) or rubout (compound) panel and clean for preparation
- Mask existing adjacent panels to 36”
- Apply bonding material - if required
- Apply color
- Clean and tack surface
- Apply clear material

Not Included Operations
- Repair existing surface imperfections
- Remove and install or mask attached components, trim, stripes or decals on blended panel/area
- Finish, sand, and buff

NOTE: Blend labor time does not apply to two-tone refinish or custom non-OEM refinish. No overlap deduction applies to blended panel(s)/refinish area(s).

NOTE: When calculated, the estimate will allocate 20% from the total blend time and apply it to the clear coat line item. The total sum of the blend and line and amount allocated to the clear coat line will total 50% of the exterior refinish time for the panel being blended.

Example: A panel refinish time is 2.0 hrs. When blended, the refinish time for that panel will be displayed as 1.0 (.5 per refinish hour). Once calculated, the refinish blend line will be displayed as .3 and .2 (20%) will be allocated to the clear coat line.

Three Stage Colors
Blend adjacent panel(s): Allow .7 per refinish hour (70%) for each panel(s)/refinish area(s) blended.

Included Operations
- Detergent/solvent wash
- Wet sand, scuff (ScotchBrite) or rubout (compound) panel and clean for preparation
- Mask existing adjacent panels to 36”
- Apply bonding material - if required
- Apply color
- Clean and tack surface
- Apply primer/mica toner
- Clean and tack surface
- Apply clear material

Not Included Operations
- Repair existing surface imperfections

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 17
Negotiation Question #2 – Summary

It has been established and proved thru the source documentation that additional labor operations is not included to extend clear to the natural breaking point.
Question 3.
Is there a pre-determined time?
3. If not, are there pre-determined times for extending the clear coat to the natural breaking point?

Answer: Yes, there are pre-determined times.

Answer Documentation:

• AudaExplore –
  – “User-overridden values: For user-entered refinish values, Audatex will provide an additional 20% to clear coat the entire panel. The user supplies the value for the color coat and the mica coat.”

• CCC/MOTOR –
  – “The following formula may be considered in the event of this type of procedure is required on an undamaged panel: Each clear coated panel(s) 40% of panel’s Base Refinish Time”

• Mitchell –
  – “Extend clear to adjacent panel(s): Allow .5 per refinish hour (50%) for each panel(s)/refinish area(s) cleared.”

The original source documents from the leading Information Providers follow.
Exterior and Interior Surfaces

Three-stage provides time both for exterior and interior surfaces including edges, jambs, and undersides. Three-stage interior surfaces must be selected in conjunction with three-stage exterior. To provide time for three-stage of exterior surfaces and two-stage of interior surfaces, both options must be selected.

User-overridden values: For user-entered refinish values, Audatex will provide an additional 20% to clear coat the entire panel. The user supplies the value for the color coat and the mica coat.

Section 4-4 Refinish Guidelines

Exterior and Interior Surfaces

Three-stage provides time both for exterior and interior surfaces including edges, jambs, and undersides. Three-stage interior surfaces must be selected in conjunction with three-stage exterior. To provide time for three-stage of exterior surfaces and two-stage of interior surfaces, both options must be selected.

User-overridden values: For user-entered refinish values, Audatex will provide an additional 20% to clear coat the entire panel. The user supplies the value for the color coat and the mica coat.

Four-stage

Some vehicle manufacturers occasionally use a four-stage refinish process. At the manufacturer level, four-stage refinish is the same process as three-stage with an additional clear coat between the base and mica coat. This does not need to be duplicated in the repair process. When these vehicles are being repaired, the three-stage process applies.

Two-Tone

Audatex’s single-stage refinish times provide a consistent, reliable, and accurate base upon which to add time for the two-tone process.

Audatex’s two-tone formula is:
- Setup time of 0.4 estimate hours upon selection of the first two-tone panel, plus 30% of Audatex estimate refinish labor per panel selected. Two-tone is automated in the Audatex system and can be selected as an operation on a panel-by-panel basis.

Chipguard

The application of chipguard material to the lower portions of panels (up to 8” of protection) is automated in the Audatex system and can be selected on a panel-by-panel basis.

Audatex’s chipguard formula is:
- 0.3 for the first panel and 0.2 per each additional panel.

Note: This formula can be used to determine time to apply chipguard material only, and does not account for texturing or finish matching of any kind. Today’s vehicles often require exact-match texturing in the chipguard process. These cases are not addressed by this calculation and must be considered individually at time of inspection.

*Any printed copy of this document may not contain the most current information. For the latest version, please refer to the Database Reference Manual accessed through the Help Menu in the current release of Audatex Estimating, Repair or Shoplink. The current version of the Database Reference Manual may also be found at www.training.audatex.us.*

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DEG INQUIRY #81

Inquiry #81

Inquiry Description

On vehicles such as this model with no break point between the quarter panel and outer roof, the outer roof often has to be (full) refinished or blend refinished. Audatex allows only 0.5 to full refinish and 0.3 to blend refinish, both values being significantly below the time required to perform these operations. Also, Audatex does not provide the option to select repair and/or refinish of the quarter lock pillar separate from the outer quarter panel.

Suggested Action// I would suggest values more in line with those provided within the Audatex database for several other makes / models – 1.3 for full refinish and 0.7 for blend refinish. Second, the ability to select reapri and refinish of the quarter lock pillar.

Resolution Description

The time on the panel body side, otr upr (gn 0478) has been changed from 0.5 to 1.5 hours. The change will be reflected on the February 2008 CD.

Our labor department will create a repair scenario for the “Pillar, body lock” which will also have corresponding refinish for this vehicle. A refinish operation for 1.0 hours on the lock pillar has been added to the 2005 Chrysler 300 on g/gn
’s 365/6. This operation will be available on the March 2008 CD.

### DEG DATABASE INQUIRY

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<th>Track_#</th>
<th>Estimating Platform</th>
<th>Inquiry Category</th>
<th>Year Make Model</th>
<th>Resolution Status</th>
<th>Origination Date</th>
<th>Submission Date</th>
<th>Resolution Date</th>
<th>Total Time to Resolve</th>
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**Inquiry Description**

**Outer Roof Rail**

On vehicles such as this model with no break point between the quarter panel and outer roof, the outer roof often has to be (full) refinished or blend refinished. Audatex allows only 0.3 to full refinish and 0.3 to blend refinish, both values being significantly below the time required to perform these operations. Also, Audatex does not provide the option to select repair and/or refinish of the quarter lock pillar, separate from the outer quarter panel.

**Suggested Action**

1. Would suggest values more in line with those provided within the Audatex database for several other makes/models - 1.3 for full refinish and 0.7 for blend refinish. Second, the ability to select repair and refinish of the quarter lock pillar.

**Resolution Description**

**Estimated Fix Feb/Mar 2008**

- The time on the panel body side, otr upr (gn 0476) has been changed from 0.3 to 1.5 hours. The chance will be reflected on the February 2008 CD.
- Our labor department will create a repair scenario for the “Pillar, body lock” which also have corresponding refinish for this vehicle. A refinish operation for 1.0 hours on the lock pillar has been added to the 2005 Chrysler 300 on g/gn/s 355/S. This operation will be available on the March 2008 CD.

CLEAR COAT UNDAMAGED PANEL

SPECIAL NOTATION:

Calculations for clear coating an undamaged panel are based upon the outer surface only and should not include additions for underside, inside or edges of the clear-coated panel. There should be no overlap deduction between refinished or clear-coated panel(s), nor should this procedure be applied towards the maximum clear coat allocation. Clear coating may be necessary for adjacent body panel(s) to nearest break point (See G 8). The following formula may be considered in the event of this type of procedure is required on an undamaged panel:

- Each clear coated panel(s)  
  40% of panel’s Base Refinish Time

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G36
GUIDE TO ESTIMATING

BASIC COLOR COAT APPLICATION - Continued

DOES NOT INCLUDE (continued):
- Cover/mask trunk/compartment to prevent overspray
- Cover/mask entire exterior of vehicle to prevent overspray damage
- Cover/mask interior of vehicle to prevent overspray damage
- Edge refinishing
- Grind, fill, & smooth welded seams (up to 150 grit sandpaper)
- Paint or material costs
- Prime & block (high build/primer-filler)
- Test spray-out panel
- Tinting Primer-Sealer
- Tinting to achieve color match
- Undertone refinishing
- Wad, grind, or sanding damage to adjacent panels
- Wet sanding

BAGGING (Cover Entire Vehicle Exterior)

Published refresh times include time necessary to mask exterior or surface adjacent to the refresh area to a perimeter of 36 inches, or 3 feet. When the process of perimeter masking is substituted for an entire vehicle bagging procedure, then no additional time should be added. If entire vehicle bagging is used along with perimeter masking, then the following formula may be considered:

APPLY AND REMOVE VEHICLE COVER (BAGGING)
- Add 0.2 each time a cover is applied and removed

CLEAR COAT FINISHES
(Base Coat/Clear Coat)

SPECIAL NOTATION:
The following items or operations were not considered during the development of any published basic refresh operation times. If any of these items or operations are required, they should be considered by the estimator. Calculations should be made after deduction for overlap and additions for underside and edges, if required.

- First major panel:
  - Add 70% to refresh time
- Each additional panel:
  - Add 45% to refresh time

INCLUDED:
- All components clear coated during a single, continuous procedure
- Apply clear coat
- Clean spray gun (one time)
- Mix clear coat (one time)
- Tack wipe surface (when required)

DOES NOT INCLUDE:
- Any component clear coated as a separate procedure
- Any operation previously excluded in “Refinish Time Premise” and/or “Basic Color Coat Application” groups
- Material costs
- Test spray-out panel

THREE-STAGE FINishes
(Base/Mica/Clear Coat)

SPECIAL NOTATION:
The following items or operations were not considered during the development of any published basic refresh operation times. If any of these items or operations are required, they should be considered by the estimator. Calculations should be made after deduction for overlap and additions for underside and edges, if required (if three-stage finish from factory).

- First major panel:
  - Add 70% to refresh time
- Each additional panel:
  - Add 45% to refresh time

INCLUDED:
- Back tape opening (handle, lock cylinder, mirror)
- Mask/khloe gap between adjacent panels up to foam tape (overspray)
- Mask glass opening
- Mask/protect grille radiator opening (overspray)
- Retrieve accurate color information, including paint chip

DOES NOT INCLUDE:
- Any component clear coated as a separate procedure
- Any operation previously excluded in “Refinish Time Premise” and/or “Basic Color Coat Application” groups
- Material costs
- Test spray-out panel

CLEAR COAT UNDAMAGED PANEL

SPECIAL NOTATION:
Calculations for clear coating an undamaged panel are based upon the outer surface only and should not include additions for underside, inside or edges of the clear-coated panel. There should be no overlap deduction between refinished or clear-coated panel(s), nor should this procedure be applied towards the maximum clear coat allocation. Clear coating may be necessary for adjacent body panel(s) to nearest break point (see G.8). The following formula may be considered in the event this type of procedure is required on an undamaged panel:

- Each clear coated panel( )
  40% of panel’s Base Refinish Time

Footnotes found in a chapter contain vehicle-specific information. The content of footnotes is in addition to, and takes precedence over, information in the Guide to Estimating pages for the operation indicated.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G36
DEG INQUIRY #3523

Inquiry Description
Roof Rail
Section6_AreaVehicle Roof Rail
Section6_Issue Summary
Missing refinish time for the roof rail. Part # 612130C040
Section6_SuggestedAction
Create a refinish and blend time.

Resolution Description
Estimated UM Release Date: 09/04/2012
Estimated DVD Release Date: 09-2012
MOTOR Publication Fix Date: 10-2012
Proposed Resolution: MOTOR Stated:
After review, an estimated worktime of 5.0 hours and an estimated refinish time of 1.1 hours has been applied to the Roof Rail.

## DEG DATABASE INQUIRY

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<th>Year Make Model</th>
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<th>Origination Date</th>
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### Inquiry Description

- **Roof Rail**
  - **AreaVehicle// ROOF RAIL**
  - **IssueSummary//NO REFINISH TIME ON ROOF RAIL**
  - **SuggestedAction//ADD REFINISH/BLEND TIME TO ROOF RAILS.**

### Resolution Description

**Estimated Fix August 2011**

- Estimated UM Release Date: 07/15/2011
- Estimated DVD Release Date: 08-2011
- MOTOR Publication Fix Date: 10-2011

- Proposed Resolution: MOTOR stated:
  - In the Roof Sedan and Roof Wagon groups, an estimated refinish time of 1.8 hours has been applied to the Side Rail (outer assembly).

**Mitchell**

**Extension of Clear Coat**

The extension of clear coat formula is intended to be calculated as a percentage of base refinish hours excluding overlap.

It DOES NOT APPLY to eges, jambs, and undersides. No deduction for overlap should be taken.

This formula DOES APPLY to the 2.5 hours maximum clear coat allocation. Should this operation be necessary, the following formula is provided:

**Extend Clear to Adjacent Panel(s)**

Extend clear to adjacent panel(s): Allow .5 per refinish hour (50%) for each panel(s)/refinish area(s) cleared.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Page 18
Procedure Explanation

- Remove and install or mask attached components, trim, stripes or decals on blended panel/area.
- Finish, sand, and buff.

**NOTE:** Blend labor time does not apply to two-tone refinsh or custom non-OEM Refinish. No overlap deduction applies to blended panel(s)/refinish area(s).

**NOTE:** When calculated, the estimate will allocate 40% from the total blend time and apply it to the three stage line item. The total sum of the blend line and the amount allocated in the three stage line will total 70% of the exterior refinish time for the panel being blended.

**Example:** A panel refinish time is 2.0 hrs. When blended, the refinish time for that panel will be displayed as 1.4 (7 per refinish hour). Once calculated, the refinish blend line will be displayed as .8 and .6 (40%) will be allocated to the three stage line.

**Extension of Clear Coat**

In some applications, it may be required to extend the application of clear coat to the nearest panel edge or break point.

The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The extension of clear coat formula is intended to be calculated as a percentage of base refinish hours excluding overlap.

It does not apply to edges, jams, and undersides. No deduction for overlap should be taken.

This formula DOES APPLY to the 2.5 hours maximum clear coat allocation. Should this operation be necessary, the following formula is provided.

**Extend Clear to Adjacent Panel(s)**

Extend clear to adjacent panel(s). Allow .5 per refinish hour (50%) for each panel(s)/refinish area (s) cleared.

**Included Operations**
- Detergent solvent wash
- Wet sand, scuff (Scotch Brite) or rubout (compound) panel and clean for preparation
- Mask existing adjacent panels to 36°
- Apply bonding material if required
- Clean and tack surface
- Apply clear material

**Not Included Operations**
- Repairs existing surface imperfections
- Remove and install or mask attached components, trim, stripes or decals on extended clear panel/area
- Finish, sand, and buff.
- De-nib and finees

**Finish Sand & Buff**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of orange peel and any blemishes that affect paint texture in order to produce a smooth finish to the entire panel surface. This process is not limited to “nib sanding” or “fineas- ing” which is the removal of isolated dirt/dust particles only. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The finish sand and buff formula is intended to be calculated as a percentage of the base refinish hours excluding overlap and clear coat. It does not apply to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refinish time. No deduction for finish overlap should be taken.

**Finish sand and buff outside surface area(s):** Allow .3 per refinish hour (30%) to finish sand and buff each surface area(s).

**De-nib & Finesse**

A labor time formula is provided should it be necessary to perform this operation. This procedure includes the removal of small isolated dust particles (nibs) and the application of a finishing glaze.

The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

The de-nib and finesse formula is intended to be calculated as a percentage of the base refinish hours excluding overlap and clear coat. It does not apply to edges, jams, and undersides. For blended panels, the formula should be applied to the full panel refinish time. No deduction for finish overlap should be taken.

**De-nib and finesse outside surface area(s):** Allow .2 per refinish hour (20%) to de-nib and finesse each surface area(s).

**Mask Vehicle to Prevent Overspray Damage**

The following refinish information is provided should it be necessary to perform these operations as determined by individual job requirements.

**Exterior, Entryways, Engine Compartment and Trunk Openings**

Interior masking may be necessary when refinishing exterior surfaces to stop overspray damage that is not prevented by adjacent panel perimeter masking which includes back taping or application of foam tape. Interior masking may also be used when exterior panels (door, hood, etc.) are removed while applying refinish material. The performance of this operation is NOT INCLUDED in the Mitchell refinish labor time.

**Fig. 1: IDENTIFYING INTERIOR MASKING LOCATIONS**

**NOTE:** The times shown in the illustration are for interior masking of that panel and/or opening. Labor time includes all pillars, jams, weatherstrips, edges, entryways and openings as necessary. Deduct 1 hour overlap for each interior masked adjacent panel and/or opening.

The Mitchell REFINISHING MATERIALS GUIDE has the latest available costs for materials used in single and multi-stage refinishing, and is an accurate source for determining costs.
Negotiation Question #3 – Summary

Pre-determined times for extending clear to the natural breaking has been clearly identified by the Information Providers.
Question 4.
What is it worth?
4. If not, what is it worth?

Answer: Since all of the Information Providers have formulas, there is not a need to use judgment times.

<table>
<thead>
<tr>
<th></th>
<th>AudaExplore</th>
<th>CCC/MOTOR</th>
<th>Mitchell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extending Clear to the Natural Breaking Point</td>
<td>Additional, 20% to clear coat the entire panel</td>
<td>40% of panel’s base refinish time</td>
<td>Allow .5 per refinish hour (50%) for each panel(s)/refinish area(s) cleared. 2.5 hours maximum clear coat allocation.</td>
</tr>
</tbody>
</table>
Additional Thoughts
Additional Thoughts:

- It is recognized that the extending of the clear to the natural breaking point applies to any panel that requires warranty by a paint manufacturer. However, it applies mostly to exterior panels that are exposed to UV rays.

- Keep in mind that paint times are based on the square footage or dimensions of the panel.

- The Information Providers formulas for extending clear to the natural breaking point are a percentage of the basecoat time. If there is not a pre-determined time in the estimating system for the specific component, i.e. a roof rail, submit an inquiry to the DEG website.

- TIP: If you save the P-pages as a PDF and search for terms in the document by going to Edit, then Find or by hitting Ctrl+F.