Table of Contents

Introduction ........................................................................................................................................... 2
Definition ............................................................................................................................................... 3
    Photo Documentation ..................................................................................................................... 5
Four Negotiation Questions
    1. Is it required to mask beyond 36” in order to return the vehicle back to pre-accident condition? ................................................................................................................................. 7
        3M Masking Poster ......................................................................................................................... 9
        Collision Repair and Refinishing ................................................................................................. 11
        Masking with Plastic ................................................................................................................... 12
    2. Is masking beyond 36” included in any other labor operation? ............................................. 15
        AudaExplore .................................................................................................................................. 17
        CCC/MOTOR ............................................................................................................................... 20
        Mitchell ........................................................................................................................................ 22
        DEG Inquiry #5041 ..................................................................................................................... 25
    3. Are there pre-determined times in the database for masking beyond 36”? ..................... 27
        CCC/MOTOR ............................................................................................................................... 29
        Mitchell ........................................................................................................................................ 31
    4. What is it worth? ........................................................................................................................... 33
Additional Thoughts ........................................................................................................................... 35
**Introduction**

In response to numerous requests from valued Collision Advice customers across the US, we have created this tool to help explain, justify and negotiate time for repair operations. 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 repair procedures. 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®, Tech Advisor 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®, Tech Advisor and Other Similar Systems
   - Internet
Definition
Definition

Proper masking is key to minimizing the evidence of the repair. Once all panels are primed and replacement panels are properly prepped, masking is the next operation. All surfaces that will not be painted need to be protected from overspray. The materials typically used are:

- Masking tape to outline the repair panels
- Lifting tapes or rope-type materials to lift moldings
- Fine line tapes to make a minimal edge and where two-tone colors meet within a panel
- Papers in various widths matched to the usage (Wide widths for large areas; narrow for smaller areas like openings)
- Plastic car covers
- Spray masking in a liquid, which acts as a barrier that will later wash off with water

The Information Providers include statements that say that masking up to 36 inches from the damage is included in the masking time. However, often collision repair centers need to mask a much greater distance to protect areas of the vehicle from overspray.
Photo Documentation
Photo Documentation
Question 1.
Is it required?
Four Negotiation Questions

1. Is it required to mask beyond 36” in order to return the vehicle back to pre-accident condition?

Answer: Yes, it is required to mask beyond 36” in order to return the vehicle to pre-accident condition.

Answer Documentation:

- 3M offers a Paint Department Procedure poster on General Masking that shows masking beyond 36” is required
- Collision Repair and Refinishing: A Foundation Course for Technicians, by Alfred Thomas and Michael Jund
- “Masking with Plastic” by Tom Ferry, BodyShop Business December 7, 2012
3M Masking

1. **Clean area** – Clean the area with water based cleaner. Wipe area with a solvent prep cleaner. Dry the area. The preferable surface temperature for masking is 60-80° F.

2. **Critical Edge Masking** – Mask the areas that require fineline tape first. Mask the rest of the repair and backup the fineline with creped tape. Protect any nearby moldings with trim masking tape.

3. **Overspray Protection** – Ensure that the car is completely dry prior to applying plastic sheeting. Mask entire vehicle with plastic sheeting. Cut out the repair area with a razor blade. Tape the plastic sheeting directly to critical masking edge.

4. **Masking Removal** – After painting, remove the masking tape at a 90-degree angle to the vehicle’s surface.

Source: www.3MCollision.com
## General Masking

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clean Area</td>
<td>Clean the area with water-based cleaner. Wash area with a solvent prep cleaner. Dry the area.</td>
</tr>
<tr>
<td>2. Critical Edge Masking</td>
<td>Mask the edges that require thinner tape. Mask the rest of the repair and masking the threshold with creased tape. Protect any nearby moldings with thinner masking tape.</td>
</tr>
<tr>
<td>3. Overspray Protection</td>
<td>Ensure the car is completely dry prior to applying plastic masking. Mask entire vehicle with plastic masking, but out the repair area. Use plastic masking over the repair area. Remove the masking directly after masking edges.</td>
</tr>
<tr>
<td>4. Masking Removal</td>
<td>After sanding, remove the masking tape at a 90-degree angle to the vehicle’s surface.</td>
</tr>
</tbody>
</table>

### Think About Your Health

- **3M™ Scotch-Brite™ Sanding Sponge** 3 in. x 5 in. | 9080
- **3M™ Masking Tape Kit, Introductory KIT containing** 5 in., 6 in., 9 in. and 12 in., PN: 9042.
Collision Repair and Refinishing: A Foundation Course for Technicians

292 Collision Repair and Refinishing

time needs to be added. Some individual operations may or may not be necessary depending upon the individual repair job requirements. Such an operation may or may not have a published time. If needed and published, add it. If needed and not established, agree on a time and list it on the damage report.

For example, the “P” page section for the full replacement time (remove and replace or R&R) of a quarter panel includes the removal and reinstallation of the rear windows glass and moldings, the door striker, and the quarter interior trim. See Figure 10-21. It also includes “grind, fill, and smooth welded seams (up to 150-grit sandpaper)” and the rear seat R&I. However, it may NOT include the R&R or R&I of an antenna or the replacement of stripe tape. It is fairly obvious why—not all quarter panels house an antenna nor do all cars have stripe tape decor.

Refinish Operations

Like labor times, refinish times are listed in tenths and hourly increments, and are usually for one color (single-stage finish) applied to new, undamaged OEM replacement parts and components without any trim or other attached parts. Typically, the published crash guide’s refinish times cover the following:

- Solvent wash
- Sanding, cleaning, priming/sealing a panel
- Masking adjacent panels (up to a fixed point, usually 36 inches; areas beyond 36 inches would require a car cover, and/or masking of interior entries and areas such as the engine compartment and trunk openings)
- Mixing paint materials (NOT the cost of the materials, however)
- Preparing, adjusting, and cleaning spray guns and equipment
- Applying color coats
- Removal of masking materials

Types of Finishes

There are different types of OEM finishes, namely single-stage, two-stage, and three-stage finishes. Single-stage consists of a color coat finish that achieves durability and gloss without any “cleancar” or additional paint steps added. The two-stage—also called basecoat/cleancar—consists of a color coat and layer(s) of cleancar. The three-stage finishes consist of three steps—the color coat, the cleancar, and an additional step sandwiched between the two, a mid-coat—which is basically a suspension or color with silica or aluminum particles. The particles, covered in the final stage by the cleancar layer, give the finish a frosted appearance or glow.

As with labor operations, there are “P” pages for refinishing operations, along with allotted times, additions, and sometimes subtractions to the published allowances.

Calculations and Operations

As stated earlier, the basic refinish time allotment is for single-stage refinishing. If cleancar (two-stage) needs to be calculated, the typical guideline allotment is to have 0.4 (24 minutes) added to the time for the first major panel or soft bumper cover. The guides list what a “major panel” is (i.e., fender, hood, rocker panel). Additional panels would typically have 0.2 (12 minutes) added to each of them—after any applicable “overlap” is first deducted. The three-stage refinish also carries a formula for calculation of additional time(s); typically, the first major three-stage panel would have 0.7 (42 minutes) added to it, followed by 0.4 (24 minutes) for additional panels.

Overlap exists in refinishing operations as well as the other repair operations mentioned previously. The standard deduction for refinish overlap is 0.4 for each adjacent panel to the previous panel painted NOT counting the first one, as there is no overlap taken for the first major panel refinished and 0.2 for each non-adjacent panel refinished. See Figure 10-22.

Refinish times are NOT intended for complete vehicular refinishing, nor are they necessarily complete when addressing used or repaired panels. Operations necessary to refinish repaired and/or used panels (i.e., the removing or tapping off of glass, door handles, and other trim, and/or featheredge/primer/surface application and masking procedures) are typically not included in refinish times.

Other operations that are typically not included but may need to be accomplished are tinting (adjusting the color by adding or subtracting portions of tint to a particular paint formula), blending into undamaged adjacent panels, and final buffing, polishing, and/or color sanding to eliminate imperfections and/or match textures. These operations—including two-tone painting (the operation in which panel[s] are painted two different colors)—carry specific formulas in order to calculate them accordingly.

Some parts may need to be refinished in part before being installed on a vehicle. Examples include fender edges (“edging”), undersides of deck lids and hoods (sometimes finished with a variation of the exterior finish color that may or may not be cleancar), and doors jams. These times are also additions to published refinish times.

Additional refinishing-type operations and materials that may or may not need to be addressed on the damage report include undercoating and corrosion-protectant materials (i.e., cavity wax, weld-thru primers) and seam sealers which seal up welded areas to prevent fumes from entering a passenger compartment, as well as stop corrosion from attacking welds.

Blending and Spot (or Partial) Painting

With some colors and/or textures, it may be necessary to “blow-in” or blend paint into undamaged adjacent panels in order to “fool the human eye” into thinking there is an absolutely seamless, flawless color match. Blend time formulas are provided in the guides, and usually include time to blend

“Masking with Plastic” by Tom Ferry

Masking With Plastic

I’ve basically done and seen it all after more than 35 years in the collision repair business, and I want to share some techniques with you that you may have never tried before. Let me show you how to mask a car for paint using only plastic.

Advantages
I’ve always liked reading trade magazine articles on painting techniques. In the past, I always noticed the way people masked off cars with paper. That was me a couple years ago... before plastic. We used 36-inch paper all taped together – what torture that was! Before car wrap, I used painters’ 12×12 drop cloths.

The first advantage masking with plastic has over paper is speed. Second, it eliminates dust better. The majority of painters use plastic mask for most of the car anyway, then use paper around the edges. They typically don’t mask the outer edge fully, which leaves a place for specks of dirt to hide. Plastic saves on tape, too, plus dirt can’t hide like it can in the folds created by paper. When you stretch the plastic tight, you leave no place for dirt or specks of whatever to hide and pop out onto your paint job.

You can realize another benefit from plastic when you’re masking a van with lots of windows. You just simply cut it out – there’s no going back and forth to the masking machine. Also, some windows are either too big or too small for the size of the paper. On a large side window, the paper might be too short or long, which forces you to either use up a lot of 2-inch tape or add more paper, taking up time and tape. With plastic already stretched over the entire job, it’s already in place and ready to cut to size.

With paper, you’re using all kinds of different sizes: 12-inch, 16-inch, 36-inch, etc. With plastic, you’re not jumping from size to size and don’t have to think about it. There’s way less reloading of tape and paper on your paper machine.

Here are the steps I use when masking with plastic:

1. Prep all the panels as you normally would. Then, cover the car with plastic, stretching it down to
within 2 inches of the tire bottoms. Then, use 2-inch tape to stick the plastic to the tires. If the tape won’t stick because of tire dressing, just pass the tape around to the back of the tire where it will stick.

2. Using a new razor blade, carefully cut out the plastic around the area to be painted. You will also use the plastic to mask the windows. This takes practice, but you’ll get the hang of it after awhile.

3. Painters’ biggest fear when using plastic is that the paint will flake off the plastic and get into the job. To avoid this, I first spray all the panels plus two feet around them with adhesion promoter – just as far as the overspray might land. Needless to say, you should not put adhesion promoter on the primer area you will use sealer on. I usually put on two full wet coats of adhesion promoter using my paint gun. The rattle cans just have too much orange peel for panels.

4. Let it go through the booth cycle, flash and then bake for five minutes. You’re now ready to paint as usual. After baking your clear or after air-dry, you can demask the car without any worry of the paint products flaking off the plastic.

**Extensive Testing**

I’ve done extensive testing of this method (stretching, blowgun testing, etc.) and have had no problems whatsoever. Another advantage is that all your wheel openings are masked off so no dirt can pop out from them. With the plastic stretched very tight and taped in a few spots on the opposite side of the car, there’s no place for dirt to hide.

I still use paper from time to time for some three-stage blends, but very little any more. You generally use plastic wrap anyway, then tape around the edges with paper and around the paper outer edges. I work on a commission basis, so I make more money with whatever makes the job come out faster with no dust. As with any new technique, there’s a learning curve, but after you get it down pat, you’ll never mask off a car with paper again.

If masking with plastic wasn’t superior in every way to masking with paper, I wouldn’t do it. And my boss loves it because I use less tape and paper. A friend of mine who works as a mechanic at a dealership stopped by my shop the other day and said, “That’s a great way to mask off a car!” He then ribbed the other guy who paints on occasion and asked him why he doesn’t mask with plastic as well. I can tell you that he just doesn’t like change.

Question 2. Is it included?
2. Is masking beyond 36” included in any other labor operations?

Answer: No, it is not included based on the following documents from the information providers.

Answer Documentation:

1. The Information Providers state that masking beyond 36” is not included in any other labor operation.
   - AudaExplore – “Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 36 inches surrounding the panel and masking of glass within a panel.”
   - AudaExplore – “Second or third bagging or masking of vehicle.”
   - CCC/MOTOR – Cover/mask entire exterior of vehicle to prevent overspray damage.
     Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G36
   - Mitchell – “Mask adjacent panels up to 36 inches or substitute with cover vehicle (bag) complete.”
     Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16
   - Mitchell – “Subsequent vehicle bagging when required: add .2 hour for each application & removal.”
     Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16

2. There is also a DEG Database Task Force Inquiry that says that masking beyond 36” is not included in any other labor operations.
   - DEG Database Inquiry #5041 - AudaExplore: “The Audatex time for protecting the vehicle is included in the panel refinish times. Audatex does not break out incremental times for these operations.”

The original source documents follow.
Section 4-5 Refinish Operations

Two-Stage

Included Operations:

- Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 36 inches surrounding the panel and masking of glass within a panel.


Section 4-5 Refinish Operations

Two-Stage

NOT Included:

- Second or third bagging or masking of vehicle.

Section 4-5 Refinish Operations

Refinish Operations

Audaexp refinish labor generally includes time to perform all operations necessary to accomplish refinish for new and undamaged OEM or equivalent panels. Audatex refinish labor begins at 320 - 400 grit (dry) or 500 - 600 grit (wet) as this is the starting point for refinish of a new, undamaged panel. Audatex refinish times are for single panels unless otherwise noted.

Two-stage

**Included Operations:**
- Move car
- Review estimate/work order
- Get paint code
- Order paint
- Get paint
- Gather materials, equipment and tools**
- Clean equipment and materials
- De-wax and degrease
- Prepare to sand
- Dual action sand*
- Hand/2-wet sand
- Mix, apply, and flash primer (for adhesion and sealing)
- Application of guide coat*
- Block sand*
- Water wash and clean panel with solvent
- Blow dry clean panels
- Prepare to spray
- Clean booth

**Welded panel operations

- Body operations
  - Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 36 inches surrounding the panel and masking of glass within a panel. This includes using backtaping and/or foam tape to close out the gap between panels. If backtaping and/or foam tape does not adequately prevent overspray from entering the jamb areas, any additional masking to protect the interior and jambs is a not included operation (labor only) See Not Included “masking” operation

  - and paint application
  - Mix and apply flash, additives
  - Tack wipe
  - Mix color, spray test panel, compare to vehicle
  - Initial tint, spray test panel, let down, compare to vehicle (included in refinish time, not setup)
  - Apply and flash color
  - Inspect job and paint
  - Clean gun; color
  - Add flex additive** (when required, labor only)
  - Tack wipe (between color and clear when required)
  - Apply flash clear coat
  - Mix clear coat**
  - Clear, Clean gun**

**Included in setup

*Welded panel operations

NOT Included:
- Body work
- Spot putty
- Panel stripping (see Panel Stripping section, page 151)
- Additional preparation or cleaning of new, unpainted panels (i.e., bumper covers)
- Removal of release agents from raw, unpainted plastic components (i.e., bumper covers)
- Moulding R&I
- Parts R&I
- Painting of stripes
- Adhesive removal
- Masking of interior surfaces/entryways, engine compartment and trunk openings. Interior masking may be performed when necessary to ensure prevention of overspray damage that may not be prevented by adjacent panel perimeter masking (including backtaping or application of foam tape). Interior masking may be considered when exterior panels (doors, hoods, etc.) are removed and refinished See Included “protect interior” operation
- Mask mouldings
- Spray additional test panel
- Blending into adjacent panels (see Blending, page 146)
- Color Sand and Buff (see page 149)
- Chipguard application (see page 147)
- Gravel guard (see Chipguard, page 147)
- Additional time for two-tone (see page 147)
- Additional time for three-stage (see page 145-146)
- Custom finishes
- Tint primer or clear coat
- Application of e-coat equivalent
- Application of “high build” primer
- Undercoating
- Metal preparation and corrosion protection beyond those listed in Included Operations (i.e. cavity wax)
- Final wash
- Hazardous waste removal
- Any special coatings applied to luggage compartment
- Second or third bagging or masking of vehicle
- Paint and materials

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Masking Beyond 36° Negotiation Tool
Version 3.0, January 4, 2016
Section 4-5 Refinish Operations

Refinish Operations

AudaRef finish labor generally includes time to perform all operations necessary to accomplish refinish for new and undamaged OEM or equivalent panels. AudaRef finish labor begins at 320 - 400 grit (dry) or 500 - 600 grit (wet) as this is the starting point for refinish of a new, undamaged panel. AudaRef finish times are for single panels unless otherwise noted.

Two-stage

Included Operations:
- Move car
- Review estimate/work order
- Get paint code
- Order paint
- Get paint
- Gather materials, equipment and tools
- Clean equipment and materials
- De-wax and degrease
- Prepare to sand
- Dual action sand*
- Hand/wet sand
- Mix, apply, and flash primer (for adhesion and sealing)
- Application of guide coat*
- Block sand*
- Water wash and clean panel with solvent
- Blow dry clean panels
- Prepare to spray
- Clean booth
- Booth operations
- Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 35 inches surrounding the panel and masking of glass within a panel. This includes using backlapping and/or foam tape to close out the gap between panels. If backlapping and/or foam tape does not adequately prevent overspray from entering the jam areas, any additional masking to protect the interior and jambs is a not included operation (labor only). See Not Included “masking” operation
- Basic corrosion protection provided by primer/sealer and paint application
- Mix and apply flash, additives
- Tack wipe
- Mix color, spray test panel, compare to vehicle
- Initial tint, spray test panel, let down, compare to vehicle (included in refinish time, not setup)
- Apply and flash, color
- Inspect job and paint
- Clean gun, color
- Add flex additive** (when required, labor only)
- Task wipe (between color and clear when required)
- Apply flash clear coat
- Mix clear coat**
- Clear: Clean gun**
- **Welded panel operations

NOT Included:
- Body work
- Spot putty
- Panel stripping (see Panel Stripping section, page 151)
- Additional preparation or cleaning of new, unprimed panels (i.e., bumper covers)
- Removal of release agents from raw, unprimed plastic components (i.e., bumper covers)
- Moulding R/I
- Strip R/I
- Parts R/I
- Painting of stripes
- Adhesive removal
- Masking of interior surfaces/entryways, engine compartment and trunk openings. Interior masking may be performed when necessary to ensure prevention of overspray damage that may not be prevented by adjacent panel perimeter masking (including backlapping or application of foam tape). Interior masking may be considered when exterior panels (doors, hoods, etc.) are removed and refinished. See Included “protect interior” operation
- Mask mouldings
- Spray additional test panel
- Blending into adjacent panels (see Blending, page 149)
- Color Sand and Buff (see page 149)
- Chipguard application (see page 147)
- Gravel guard (see Chipguard, page 147)
- Additional time for two-tone (see page 147)
- Additional time for three-stage (see page 145-146)
- Custom finishes
- Tint primer or clear coat
- Application of e-coat equivalent
- Application of “high build” primer
- Undercoating
- Metal preparation and corrosion protection beyond those listed in Included Operations (i.e. cavity wax)
- Final wash
- Hazardous waste removal

Any special coatings applied to luggage compartment
Second or third bagging or masking of vehicle

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CCC/MOTOR

BASIC COLOR COAT APPLICATION

DOES NOT INCLUDE

• Cover/mask entire exterior of vehicle to prevent overspray damage.

Source: CCC/Motor Guide to Estimating, Rev. 9-14, Page G36
Does Not Include: (continued)
- Cover/mask trunk/compartment to prevent overspray
- Cover/mask entire exterior of vehicle to prevent overspray damage

Bagging (Cover Entire Vehicle Exterior)
Published refinish times include time necessary to mask exterior surface adjacent to the refinish 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 refinish 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 refinish time
- Each additional panel:
  - Add 60% to refinish time

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

Does Not Include:
- Any component clear coated as a separate procedure
- Any operation previously excluded in “Refinish Time Premiere” 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(s)
  - 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.
Included Operations

- Mask adjacent panels up to 36 inches or substitute with cover vehicle (bag) complete.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16

Not Included Operations

- Subsequent vehicle bagging when required: add .2 hour for each application & removal.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16
**Procedure 28—Refinish Procedure**

**Refinish General Information**

**Complete Refinish**

Refinish times in this Guide pertain to NEW, UNDAMAGED PARTS and are not intended for calculating complete vehicle refinish—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: "Major refinish paint manufacturers 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 — DuPont — Sherwin Williams — BASF — PPG

**Repaired/Used Panels**

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

**Feather, Prime & Block**

Is the Not Included refinish operation that completes bodywork repair from 15 minutes to 90 minutes to the condition of a new undamaged panel, and the point at which refinish 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 of 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 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 area, or to the area that borders the undamaged panel. Clear coat is then applied to the entire blended panel.

**Major Panels**

Major panels are those listed: FRONT HEADER, FENDER, HOOD, COWL, TOP, DOOR, ROCKERS, ROOF, PICKUP CAB CORNER, PICKUP CAB BED FRONT, PICKUP BED SIDE, VAN SIDE, VAN REAR CORNER, ENGINE LID, LUGGAGE LID, LIFT GATE, REAR RATE, TAIL GATE, REAR BODY

**Overlap**

Deduct 6 hour from refinish 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 right front door 2.5 hours minus 4 hour overlap for a total of 4.6 hours.

**Non-adjacent major panel example:** Right front fender 2.5 hours (full time) and left front fender 2.5 hours minus 2 hour overlap for a total of 4.6 hours.

**Non-overlap deductions for valance panel, pillars, door (jambs, underside of hood, underside of luggage lid) or underside of gate, inner panels, filler panels, soft bumper covers or bond-in finish panels.**

**NOTE:** Refinish times are for outside surfaces only unless stated otherwise placed under a data added or bolded colored."
Procedure Explanation

Bumper Assembly O/I
Included Operations

- Remove and install assembly
- Disassemble and replace damaged parts
- Replace or transfer parts attached except those listed in Not Included Section
- Assemble and install
- Adjust alignment to vehicle

Not Included Operations

- Removal bumper
- Remove and replace impact absorbers or mounting arms
- Remove and install optional accessories (example: trailer hitch, trailer connection)
- Remove and install adhesive exterior trim; add to clean and retape
- Remove and install new exterior trim; deduct one-half of R&R time
- Install stripes, decals, transfers or overlays

Procedure 28—Refinish Procedure

Refinish General Information

Complete Refinish

Refinish times in this Guide pertain to NEW, UNDAMAGED PARTS and are not intended for calculating complete vehicle refinish—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: “Major refinish paint manufacturers 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.”

DUPLI-CLAD BY RESIN

Repair/Used Panels

Labor times related to refinished 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 refinish time. The steps required for refinish a repaired and/or used panel may vary from those required for a new panel depending on the condition of the repaired and/or used panel.

Feather, Prime & Block

Is the Not Included refinish operation that completes bodywork repair from 150 grit smoothness to a feathered condition on a new undamaged panel, and the point at which refinish 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 refinished area of a damaged panel to obtain full coverage of undamaged, and blending that color into the original panel 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 panel. This refinish process minimizes color mismatch.

Blend for Color Match

Blending is defined as applying color without necessarily to cover undamaged, 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 area, or to the area that borders the adjacent undamaged panel(s). Clear coat is then applied to the entire blended panel.

Major Panels

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

BACK, QUARTER, PICKUP BED FRONT, PICKUP BED SIDE, VAN SIDE, VAN REAR CORNER, ENGINE LID, LUGGAGE LID, TOP GATE, REAR RAIL, TAIL GATE, REAR BODY

Overlap

Deduct 1 hour from refinish time for each ADJACENT MAJOR PANEL and deduct 1 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 right front door 2.5 hours minus .5 hour overlap for a total of 4.6 hours.

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

No overlap deductions for valance panel, pillars, door jambs, underside of hood, underside of luggage lid or underside of gate, inner panels, filler panels, soft bumper covers or bolt-on finish 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
- Surf panel and clear
- Mask adjacent panels up to 3 inches or substitute with cover vehicle (tarp complete)
- Prime or seal as required
- Final sanding and cleaning
- Mix materials
- Adjust spray equipment
- Apply color
- Clean paint 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

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 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 coats 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 appropriate.

Important Reminder: The cost of paint and materials is not included in refinish time.

NOTE: Greige Guard application and appropriate refinish may be necessary beyond the actual replacement area to achieve a “testure” match. It may be necessary to trim or otherwise modify non-exterior colors applied to undercoats, edges and jambs for which there is no paint 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 refresh hour (20%) for plastic components that come from the manufacturer/supplier in a raw/unprimed state.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16
DEG Inquiry #5041

Inquiry Description

Issue Summary
Your p- page for refinish states:"Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 36 inches surrounding the panel and masking of glass within a panel. This includes using backtaping and/or foam tape to close out the gap between panels. If backtaping and/or foam tape does not adequately prevent overspray from entering the jamb areas, any additional masking to protect the interior and jambs is a not included operation. (labor only) What is the definition of each of these task?

Suggested Action
There are a lot of variables in your definition of protecting the car from over spray. These activities (36" surrounding the panel, masking, bagging) can take different amounts of time. Could you please define them seperately.

Resolution Description
The Audatex time for protecting the vehicle is included in the panel refinish times. Audatex does not break out incremental times for these operations.

## DEG Database Inquiry

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### Inquiry Description

**Protect Exterior**

- Section3.AreaVehicle
- Entire vehicle
- Section3.PageNum
- 166
- Section3.IssueSummary
- Your p-page for refinish states: "Protect exterior of vehicle from overspray utilizing all acceptable methods of bagging, masking, masking up to 36 inches surrounding the panel and masking of glass within a panel. This includes using backtaping and/or foam tape to close out the gap between panels. If backtaping and/or foam tape does not adequately prevent overspray from entering the jamb areas, any additional masking to protect the interior and jams is a not included operation. (labor only) What is the definition of each of these tasks?"

**Section3.SuggestedAction**

There are a lot of variables in your definition of protecting the car from overspray. These activities (36" surrounding the panel, masking, bagging) can take different amounts of time. Could you please define them separately.

### Resolution Description

**IP Explanation**

The Audatex time for protecting the vehicle is included in the panel refinish times. Audatex does not break out incremental times for these operations.

---

Question 3.
Is there a pre-determined time?
3. If not, are there pre-determined times for masking beyond 36”?

Answer: Some Information Providers provide a formula for masking beyond 36”.

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<th>AudaExplore</th>
<th>CCC/MOTOR</th>
<th>Mitchell</th>
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<td>No formula</td>
<td>Add 0.2 each time a cover is applied and removed</td>
<td>Add 0.2 hr for each application and removal</td>
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<td>When perimeter masking is substituted for vehicle bagging, no additional time</td>
<td>1st bagging is included</td>
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</table>
Apply and Remove Vehicle Cover (Bagging)

- Add 0.2 each time a cover is applied and removed.

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
- Undercoat refinishing
- Wade, grind, or sanding damage to adjacent panels
- Wet sanding

BAGGING (Cover Entire Vehicle Exterior)

Published refresh times include time necessary to mask exterior 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

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 40% to refresh time
- Each additional panel:
  - Add 20% to refresh time
- Maximum time allocation: 2.5 hours

INCLUDED:
- All components clear coated during a single, continuous procedure
- Apply clear coat
- Clean sprayer (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

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/cover 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(s) 40% of panel’s Base Refinish Time

G36

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.
Mitchell

“Subsequent vehicle bagging when required: add .2 hour for each application & removal.”

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16
P16

Procedure Explanation

Bumper Assembly O/H

Included Operations

- Remove and install assembly
- Disassemble and replace damaged parts
- Replace or transfer parts attached except those listed in Not Included Section
- Remove and install or replace: License plate bracket
- Assemble and install
- Adjust alignment to vehicle

Not Included Operations

- Refinish bumper
- Remove and replace impact absorbers or mounting arms
- Remove and install or replace optional accessories (example: trailer hitch, trailer connection)
- Remove and install adhesive exterior trim; add to clean and retape
- Remove and replace adhesive exterior trim; deduct one-half of Lab time
- Install stripes, decals, transfers or overlays

Procedure 28—Refinish Procedure

Refinish General Information

Complete Refinish

Refinish times in this Guide pertain to NEW, UNDAMAGED PARTS and are not intended for calculating complete vehicle refinish—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: "Major refinish paint manufacturers 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 — DuPont — Sherwin Williams — BASF — PPG

Repaired/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 refinish time. The steps required for refinishing a repaired and/or used panel may vary from those required for a new panel depending on the condition of the repaired and/or used panel.

Feather, Prime & Block

Is the Not-Included operation that completes bodywork repair from 150 grit smoothness to the condition of a new undamaged panel, and the point at which refinish 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 required area of a damaged panel to obtain full coverage of 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 repair. 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 the area that borders the adjacent undamaged panel(s). Clear coat is then applied to the entire blended panel.

Major Panels

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

BACK, QUARTER, PICKUP BED, FRONT, PICKUP BED SIDE, VAN SIDE, VAN REAR CORNER, ENGINE LID, LUGGAGE LID, LIFT GATE, REAR RATE, TAIL GATE, REAR BODY

Overlap

Deduct 1 hour from refinish time for each ADJACENT MAJOR PANEL and deduct 3 hours 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 right front door 2.5 hours minus 4 hour overlap for a total of 4.6 hours

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

No overlap deductions for valance panel, pillars, door jambs, underside of hood, underside of luggage lid or underside of gate, inner panels, filler panels, soft bumper covers or bolt-on finish 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
- Spout panel and clean
- Mask adjacent panels 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 information and notes are included in the above information.

Finish sand and buff

Subsequent vehicle cleaning when required: add 2 hours for each application and removal

Recoat/Refinish/Bleach/Adhesive removal, Spot Repair

- Removal of protective coatings
- Removal of release agent from OEM raw plastic components (example: non-primed bumper covers) See 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 coats 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 appropriate.

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

NOTE: Grease Guard application and appropriate refinish may be necessary beyond the actual replacement area to achieve a "finish" match. It may be necessary to tint or otherwise modify non-exterior colors applied to undercoats, edges and/or jambs for which there is no paint 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’s supplier in a raw/un-primed state.

Source: Portions Copyright 2012, Mitchell International, Inc. – Mitchell P-Pages, Rev. 10-09. Page 16
Question 4.
What is it worth?
4. If not, what is it worth?

Answer: AudaExplore does not have a formula for masking beyond 36". Therefore, there are several ways including:

- Invoice for materials
- Conduct your own time study:
  - Create a time study form
  - Create a video of the time study
Additional Thoughts
Additional Thoughts

- Consider all of the different types of materials costs, such as plastic covers and spray masking
- Keep in mind that .1 = 6 minutes
- When determining labor times, remember it should be based on “How long it takes the average technician to gather up their tools, equipment, and supplies and perform the task in a safe manner and return their tools, equipment and supplies back to their storage location.”
- 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