TECHNICAL FEATURE

Understanding Featheredge, Prime & Block Sand

By Larry Montanez III, CDA and Jeff Lange, PE

What is required to prepare a repaired panel (bodywork area) or the welded area (sectioned or weld flange area) to the condition of a new, undamaged panel in preparation for refinishing?

Still thinking? Well, do not worry; many collision repair specialists and insurance personnel have no idea of how to answer this question. The answer would be the Feather, Prime and Block process or operation. This article will assist in dispelling the myths, explaining the truths and outlining the required not-included procedures to restore a repaired or replaced panel to the condition of a new, undamaged panel.

What Do "They" (Mitchell, Audatex and Motor/CCC Pathways) Say?

The Mitchell Procedural Pages (P-Pages) (Procedure Explanation: P16, Procedure 28 – Refinish Procedure) state:

Feather, Prime & Block: Is the non-included refinish 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 Panel under Estimating Information.*

Welded Panels: (Estimating Information: P3, Labor Categories) Replacement labor times for new panels that are joined by welding include the necessary use of inserts and accepted sectioning guidelines developed by OEMs, I-CAR and TECH-COR. The labor times for welded panels include grinding (dressing), filling (body filler) and final sanding with up to 150-grit sandpaper to match the original panel contour. Labor times do not include the Feather, Prime and Block refinish operation. See *Procedure 28* in *Procedure Explanation* section for information on Feather, Prime and Block.

The Audatex Procedural Pages (P-Pages) (Database Reference Manual: Section 4-4 Refinish Guidelines, Page 160) state:

Feather / Prime / Block: Audatex recognizes that Feather/Prime/Block are required operations in the panel repair process, that occurs after 150-grit to bring the repaired panel to the condition of a new, undamaged panel for the purpose of refinish. Audatex does not provide labor allowance for repaired panels, as this is a judgment time, nor does Audatex provide material allowance for the Feather/Prime/Block process. The determination and assessment for this operation is best provided by the estimate preparer for consideration and allowance during the estimate preparation process.

The MOTOR Information Systems CED P-Pages (Guide to Estimating: Refinishing Procedures, Page G34) state:

Prime & Block: Prime and block (high build/primer-filler) is a required procedure that restores a repaired panel surface from 150-grit to that of a NEW, UNDAMAGED condition. It is MOTOR's position that prime and block is a process best reserved for the judgment of an estimator/appraiser following a thorough on-the-spot evaluation of the specific vehicle and damage in question.

As you can see, all three database systems basically state the same opinion: A panel MUST be restored to that of an NEW, UNDAMAGED PANEL. A NEW, UNDAMAGED PANEL is defined as a component manufactured to the same exact standards as the components installed on new vehicles with a smooth painted surface (e-coat/electrodeposition primer) and a replacement part from the vehicle manufacturer without exterior trim, interior trim or attached components. Let's now look at what exactly is meant by Feather, Prime and Block or Prime and Block.

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Feather, more commonly known as featheredge, is defined as the process of using a pneumatic dual action (DA) sander or a sanding block with 180-grit followed by 220-grit and 320-grit sandpaper to level out the surface in preparation for primer coats.

Prime, more commonly known as priming (or primer), is defined as "the process of the application(s) of etch/acid/wash primer and epoxy primer (depending on the paint manufacturer's recommendations, this application is generally required prior to the application of body filler), primer filler/surface primer and guide coat."

Block, more commonly known as block sanding, is defined as the process of using a sanding block and/or sanding pad to level out the primed surface to be at or near level with the adjacent painted area.

Now that we have defined what the Feather, Prime and Block process means, let's look at the process to perform this procedure. After the body filler and surrounding area is leveled with 150-grit sandpaper, the following not-included procedures are required:

- Sand the surrounding area with a sanding block or DA sander with 180-grit, followed by 220-grit and 320-grit sandpaper.
- Mask off body filler repair area to avoid wetting the body filler.
- Blow off and/or vacuum all dust residue off the vehicle.
- Scuff the surrounding area of the panel with a red scuff pad, water and blend prep paste.
- Wipe the panel with a damp towel and blow dry with clean compressed air. Remove the masking tape over the body filler area.
- Place the vehicle in the spray booth.
- Wipe down all edges with wax and grease remover and ensure you dry the area. Use caution to avoid wetting the body filler.
- Mask all edges and adjacent panels for overspray.
- Cover the vehicle for priming.
- Blow off the vehicle with clean compressed air and wipe the vehicle with a tack rag. ***HOT TIP***: Place a microfiber rag on the panel and feel the body filler to ensure the proper contours and straightness has been achieved. Also, carefully look for any pinholes.
- Mix the acid/etch/washer primer and epoxy primer as per your paint manufacturer's directions (if required and/or necessary).
- Mix the surface primer/filler and apply the required coats as per your paint manufacturer's directions. ***HOT TIP***: After the first coat, visually re-check the panel for proper contours and straightness.
- Bake the primer at the proper temperature for the proper amount of time (bake cycle) as per your paint manufacturer's recommendations.
- After proper cool down, check the primed areas for proper coverage, and then remove the vehicle from the booth.
- Place the vehicle into a repair bay or prep area for Block Sanding. ***HOT TIP***: Leave the masking paper and masking tape in place to keep the sanding sludge from entering the recessed areas and crevices.
- Fill a spray bottle with water or use a hose to wet the panel and lubricate the sand paper and wash away the sludge. ***HOT TIP***: Never use a bucket filled with water, as sludge and debris could come into contact with the repair area and scratch the panel.
- Prepare your sandpaper (220 wet and 320 wet sandpaper) for your sanding block and/or sanding pad. Remember that refinish time starts at 400 wet sandpaper. Now, you are ready for the Block Sanding process.

How does one calculate the Feather, Prime and Block process? As you have read above, all three database companies basically state that for the Feather, Prime and Block process, the determination and assessment is best provided by the estimate preparer for consideration of required labor time and allowance of materials during the estimate preparation process. P&L Consultants LLC and Mike Anderson of **www.CollisionAdvice.com**, among other industry consultants and associations, have been conducting time test studies to determine a fair and reasonable calculation of the Feather, Prime and Block (FPB) process. P&L Consultants has determined that 40 percent (0.4) of the total repair time is sufficient for the FPB process. For example, let's use a 2010 LM X65s SUV (a made-up sports utility vehicle with four doors, a tailgate and a quarter glass with a visible C-Pillar and D-Pillar). The left rear quarter panel was replaced using a sectioning procedure though the C-Pillar, D-Pillar and the rear area of the rocker panel. Let's say that after the technician has completed the welding and dressing procedures of the sectioning areas and the mating flanges, we will now have to calculate the amount of repair time for those areas. The following is an example for explanation of how to calculate the FPB for this vehicle. Now, remember that the repair for the welded areas is included in the replacement time of the panel to 150-grit, but shop materials are *not* included (body filler, sandpaper, etc.).

The following repair times, only for example, are included in the replacement time of the panel to 150-grit, but shop materials are not included:

- Repair to the D-Pillar sectioned area: 1.5 hours
- Repair to the C-Pillar sectioned area: 1.5 hours
- Repair to the rocker panel sectioned area: 1.5 hours

Operation	Material	Body	Refinish
Blow off vehicle		0.1	
Mask off body filler area	$3.00	0.1	
Scuff surrounding area of the panel			0.3
Towel off vehicle and dry		0.2	
Place vehicle in spray booth		0.1	
Mask for Primer	$8.00	0.6	
Car Cover for Primer	$3.00	0.2	
Mix and prepare primer and corrosion resistant primers			0.2
Blow off vehicle and tack	$2.00	0.1	
Bake cycle fuel charge	$4.50		
Feather, Block and Prime			2.6
Totals	$20.50	1.4	3.1

- Weld locations on the wheelhouse, rocker panel, floor pan extension panel/quarter extension and panel quarter panel outer mating flanges: 0.8 hours (only sanding required).

The following repair times and shop materials, only for example, are not included in the replacement time of the panel:

- Burn damage to the wheelhouse inner mating flange: 0.3 hours (only sanding required).
- Burn damage to the rocker panel inner mating flange: 0.3 hours (only sanding required).
- Burn damage to the floor pan extension panel/quarter extension panel inner mating flange: 0.3 hours (only sanding required).
- Burn damage to the rear body panel mating flange inner mating flange: 0.3 hours (only sanding required).
- Burn damage to the inner quarter panel (inclusive of the quarter glass opening area and lock pillar area): 0.3 hours (only sanding required).

The total sum of the repair times for the sectioning areas (body filler applications) and the outer mating flange areas is 5.3 hours. Additionally, the total sum of the burn damage to the inner mating flanges is 1.2 hours and is added to the 5.3 hours, which would be 6.5 hours of total repair hours to 150-grit. P&L Consultants recommends using 40 percent of the repair hours to calculate the amount of time for the FPB process. Six-and-half hours multiplied by 40 percent (6.5 x 0.4) equals 2.6 hours for the FPB process. Now, how would you add this to a damage report (estimate)? See the chart above for an example of how it could be written.

For example, let's use a Labor Rate of $50 for body and refinish labor and a $25 rate for refinish materials.

Body labor	1.4 x $50 = $70
Refinish labor	3.1 x $50 = $155
Paint materials	3.1 x $25 = $77.50
Shop materials	$20.50

The total sum of the above amounts, $323, multiplied by a tax rate of seven percent (for example), would be $22.61. Adding that to $323 would equal $345.61. Based on the definition of Feather, Prime and Block, P-Page logic, estimating practices, required collision repair procedures and industry time test studies – and with a reasonable degree of scientific certainty – the above example of the required procedures to perform the FPB process and the associated procedures to prepare a repaired and/or replaced component for refinishing procedures show evidence to support a total cost of $345.61.

We hope this article has helped you better understand the issue of Feather, Prime and Block. Feel free to contact us at any time if you have any questions.

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