

Restoration Support 65 San Jose Unibody (Undercarriage)

This is an ongoing project of mine I expect to be continually updating as new information is documented, studied and discovered.

During this year at the Milpitas/San Jose plant there were a number of different colored products applied to the undercarriage of these cars as well as different patterns and applications of sealers and sound deadener applications. .

Some pictures used in this document are from original cars assembled at the same plant BUT from a different year - they do illustrate the proper steps and finishes.

NOTE: The following is not a substitute for what you may find on your un-restored original car but instead is offered as a help for those owners and restorers that are starting with a car that has been stripped, damaged, has a prior restoration or has been cleaned to the point where many of the original details have been lost.



Body Prep prior to sealers and paint

- The unibody was assembled from subassemblies, on a pair of moving skids that were attached at eight different locations. Four of these attachments passed through the body and were tightened from above to hold the body tightly to the skids, in the interior and trunk areas, which produce round bare areas from above from the attachment hardware. Visible on a completed car from below, this process resulted in eight round sections (showing the galvanized metal of those panels) on the finished product. (Page 6)
- Next a limited number of bolt on items were attached to the completed unibody including doors, L shaped fender brackets (attached to each A pillar) and trunk lid.
- Since it's unseen after car is assembled and its not part of the undercarriage, I have skipped the specific details of interior sealing of seams and sound deadener applications to the quarter panel and inner door surface in these instructions to focus on the visible portions of the completed vehicle. I did choose to include a few of the finer details in one section of this article.

1- Seam sealer applied to the seams

- Body - Areas like drip rails, A pillars, cowl pinch weld, door jambs and others received a light tan/off white self leveling sealer. The application was such that it left no brush marks as in other applications and different products.

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- Trunk Seams - Seams in trunk were typically finished off using a black brush on sealer (wheel well to floor, taillight panel to lower panels, rear bumper braces). During some production periods the seam from taillight panel to floor was only applied with the chalking gun and not spread with a brush or solvent rag. (Pg. 17)
- Trunk Sound Deadener - Sound deadener was applied to the inner surfaces of each quarter panel, visible from inside the trunk. These were possibly applied at the same work station as the one that applied the sound deadener to the rear wheel wells. The product was applied to the center of the panel after it had been welded to the unibody. Instructions were to stay away from the edges and corners of those panels. (Pg. 17)
- Rear Wheel Well - In the rear wheel wells the sound deadener was applied by a worker standing below the body so overspray was common onto the small sections of floor between the frame rail and wheel housing panel lip as well as onto the frame rail in those areas. In the earlier months the sound deadener was applied before the red oxide primer exterior coat while in later months it was applied after that coat of primer. (Pg. 5)
- There were some very short periods during 65 production at San Jose when the front inner seat belt anchors were sealed at this point with a thin runny sealant applied over and around the attachment bracket. During most of the year no sealer was applied to these areas. No pattern has been identified as of yet in the research though it appears that the majority of cars so far did not receive this sealant.
- Firewall (engine side) - Sealer applied from a chalking gun (not brushed) along the inner fender panel to firewall seam on passenger side. (Pg. 15)

2- Exterior body primed with red oxide

- Undercarriage, was sprayed with a brownish red epoxy primer sealer in a slightly shinny (nothing like red oxide primer) final look. During identified periods of production the red oxide color became lighter, more pale or salmon in tone and tint. During another production period a very dark, almost black tone of epoxy sealer was applied to this same area. The paint/coating, no matter the color, was applied to the undersides of

the car from firewall rearward, stopping approximately four-six inches short of the rear cross member. This coating was applied as the unibody passed over a series of spray jets arranged moving unibody. This process produced multiple drips and runs that collected on the lowest surfaces and edges of the lower body panels. (Pg. 6)

- Next, by hand, the front frame rails and the engine compartment walls were sprayed with red oxide colored epoxy primer from a second source separate from the floor color. This use of two different sources for the red epoxy primer often produced a visible difference that can be seen on original paint car.
 - Interior, trunk and exterior of car are primed with red-oxide next. The interior, door faces, inside of doors (areas such as the bottom of the doors often over looked) is painted red-oxide as was the trunk area and lid.
 - Seams sprayed and sound deadener applied in the interior area of the car.
 - Inner Fenders - In many examples, black seam sealer was applied (brushed) to the inner fender to frame rail seam in the front wheel wells. No consistent pattern (week or months) have been identified yet. In some cases (earlier brush on application may have been missed for some reason) this step was done with a heavy narrow sound deadener application to those seams then overcoated with the normal sound deadener. (Pg. 8)
- 3- Exterior body was next primed with a light gray surface primer. The painters focused mostly on the sides and upper body since that was the most visible surfaces. Little effort was made to coat the lower areas such as rocker panels and other panels so overspray is not typically found on the undercarriage or much in the rear wheel well, door jambs or trunk with this product.

4- Interior paint was next applied, then once dry, masked off to protect those surfaces from the exterior paint application. (Pg. 16)

- Door inner surface - Dash - A pillars were painted interior color. Fastback simulated scoop "fingers" were blacked out from the exterior side of the body. Then these surfaces were masked off and protected from the next primer coat and exterior body color application.

- 5- After the application of the light gray primer the quarter panel extensions, rear bumper guard brackets and rear valance were installed.
- Quarter panel extensions are attached also but spaced out slight from the body using sealant and one retaining nut each side to hold them to the body.
 - Rear valance was attached with two screws only at this point and allowed to hang from those points. Normally the screw holes used were typically the third one in from the ends of the rear valance. This is the one over where the bumper guard or exhaust tip on GT would be located. Because the screws were installed at two different stations typically you will find two different type of screws installed.
- 6- Exterior paint was applied to the inner trunk areas where it could be seen and reached by the painter. Not unusual to have bare surfaces or primer showing in areas such as where the quarter extensions attach at the very top (from the trunk side), bottom of the transition panel between the trunk and rear window or high up over the wheel well housing. (Pg. 17)
- 7- Door jambs and exterior of the car were painted. (Pg. 10) During this process, using the spray guns of the period, a fair amount of over spray and direct application ended up on areas other than the exterior body such as the interior of the car, the rear wheel wells, the bottom of the floors and undercarriage and any panels or details that hung down more than the surrounding ones. Front frame rails would be one example. This process pushed allot of body color overspray onto the bottom surface of the floor pans and the panels over the rearend area.
- Normally the exterior color was applied up to the front edge of the firewall to cowl pinch weld and the cowl/A pillar sections on both sides of the car. At times the painter extended forward with the body color but all would be covered with black later in the process.
 - It should be noted that after the exterior paint was applied the body was tilted/rotated towards the driver's side. This often produced runs on the passenger side wheel well in the trunk that travel from passenger side towards drivers side on the finished vehicle
- 8- Engine compartment and inner fender areas were next painted semi-gloss to satin black. (Pg. 11) On the inside of the engine compartment from the cowl to firewall pinchweld downward the black faded away as the panel bends back toward the junction with the floor pan at the bottom. How far varies depending on the worker, how much they bent over, their height and the effort they put forward on the particular car. (Pg. 11) Black paint was applied to all of the inner fender panels in the engine compartment as well as from the top all brackets and mounts along the bottom of the engine compartment. Examples being the strut rod brackets.
- The top edge of the inner fender panel at the rear edge, where the fender will eventually rest, was masked at the leading edge of the cowl to firewall pinch weld typically. This was done in such a way so as to not normally produce a sharp tapped like edge to the black paint. (Pg. 11)
 - The inner fenders in the wheel wells and radiator support were typically fully painted from the top lip of the panels to the bottom edge of the frame rails. Fading away below and behind the firewall section there. At the rear edge on both sides the black normally stopped where the rear splash shields would later be attached. The radiator support was also typically well covered with black paint down to and including the face of the front cross member. All of the painting of the front frame rails and cross member often produced some overspray onto the low hanging brackets that were seen in the engine compartment.
- 9- Next the pinch welds were blacked out from the front edge at the front wheel well, to the rear valance, surface stopping and restarting at the front and rear edge of the rear wheel well. This stopping and starting produced black paint being applied to the rear wheel well, frame and floor sections in that immediate area. (Pg. 12) During this process at least fifty percent of the spray patten sprayed the undercarriage/floor and any bracket, panel or detail that hung down as well as floor surface closer to the rocker panel. Because angle a shadow from the pinch weld produced immediately behind and inward for a very short distance. Many today use a backwards masking technique or foam tape to produce a straight but soft paint edge to the black out.
- 10- Next sealants were applied to specific locations on the undercarriage. (Pg. 9) The material used was a smooth (no grit) black elastomeric chalk, applied from a gun then spread with a rag soaked in a thinner. Many restorers today

use a 1" brush with all the bristles cut off except for the last quarter of an inch to spread the material in a single pass. The sealant was applied between/on the seam between the floor and rocker panel. Typically 80-90% of the sealant was applied to the floor part of the joint with approximately 10-20% of the product on the rocker section.

11- During the paint process the "small parts" such as fenders, headlight buckets and such were being painted at a separate paint line supplied from the same paint vats as the body paint line. Back sides of these parts received either a direct or indirect application of body color depending on the shape of the outer surface and what surfaces were being painted on the exterior surfaces. Areas such as the rear edge of the fenders were well covered with body color since the area would be visible when the door was in the open position. This allowed for a fair amount of overspray to travel towards the leading edge of the fender. Same result from painting the fender lip, headlight bucket area.

12- Once all of the items were installed to the firewall and before the engine was installed the firewall openings, pass-throughs and attachment points were sealed using what Ford referred to as an adhesive. (Pg. 13) This includes the master cylinder, brake lines and retaining clips, electrical connections, emergency brake and throttle brackets. Only the engine ground strap would not be attached to the firewall at that point in the assembly process and because of that it would not have sealed at firewall attachment point. Typically, with a wand, the worker would apply the sealant while moving the wand from spot to spot sealing and spraying as he went. This practice often produced a connect-a-dot pattern look of the finished product.

- There were periods during 1965 production when the worker applying the firewall sealer also attempted to cover the horn wires at the front surface of the radiator support with the product likely in a effort to make them less visible when viewed through the grill.

- Possibly, at the same station, the sides of the cowl received a small amount of sealer over the antenna seal on the passenger side and over the wire loom retainers/attaching clip ends that are visible on the driver and passenger side cowl surface.

13- Once the car was completely assembled, minus the front wheels and tires, sound deadener was applied to the front wheel wells to seal out water and reduce road noise. Typically the minimum application of sound deadener to the inner fender panels was a single diagonal pass of the application wand (all of this applied from below the car in the pit) from around the front bumper bracket attachment point to the top just in front of the spring cover on the front inner fender panels. Product on the spring cover is not typical but there are examples of product if the car was one where the worker applied a heavy much fuller coat that time.

On the rear inner fender panel from just behind the spring cover diagonally down and reward towards where the frame and the firewall section come together. Multiple passes along this firewall section was done at the same time. This firewall application would normally spill over onto the rear splash shield out towards the seal to fender meeting edge.

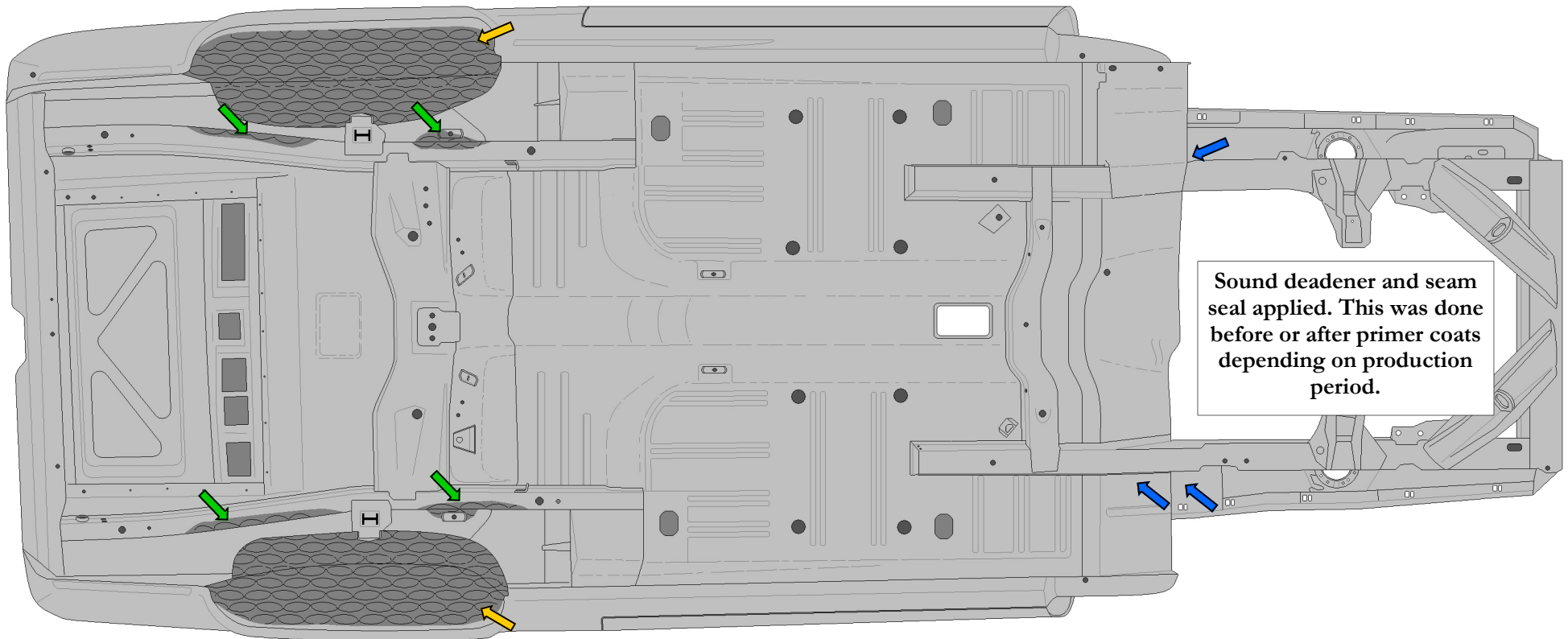
Often an additional application was made or extended onto the back side of the head light bucket of the fender and front splash shield. Workers were instructed to seal the splash shield to fender meeting edge but it was not always done fully. (Pgs. 14)

On some cars (approx 40% of the sampling) the bottom side of the front fender received a single pass of the sound deadener applicator.

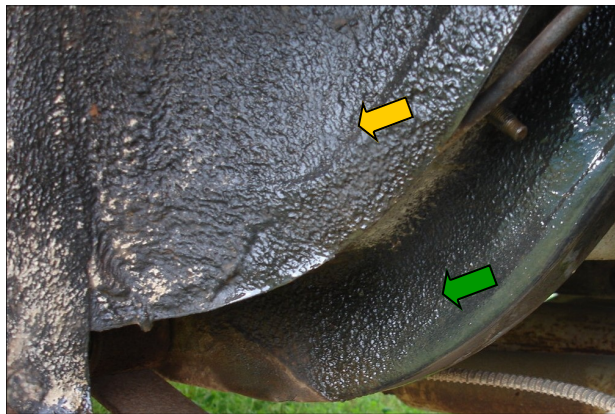
14- The sealant application of the inner fender panels to front frame rails and to the shock towers was inconsistent depending on production period and workers. Most of the time it was brushed on over the seams with a black seam sealant line what was used on the rocker to floor seam, while in some examples, the frame seam was sealed with the spray sealant used to seam between the firewall to outer surface of the rear inner fender panels. On some examples one or more seams were skipped and not sealed. (Pgs. 8)

Now the process in pictures and illustrations.

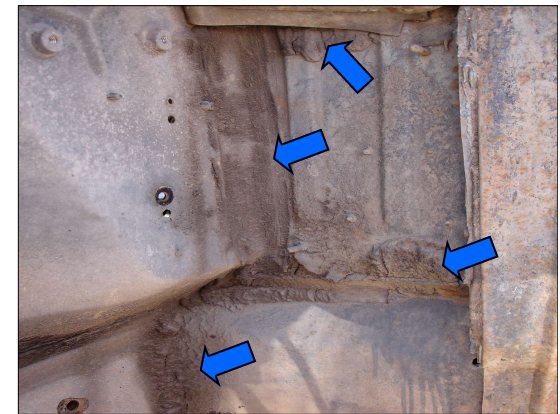
Note: Colored arrows in the following illustrations correspond to the smaller pictures below the illustrations of the unrestored example of the practice or detail.



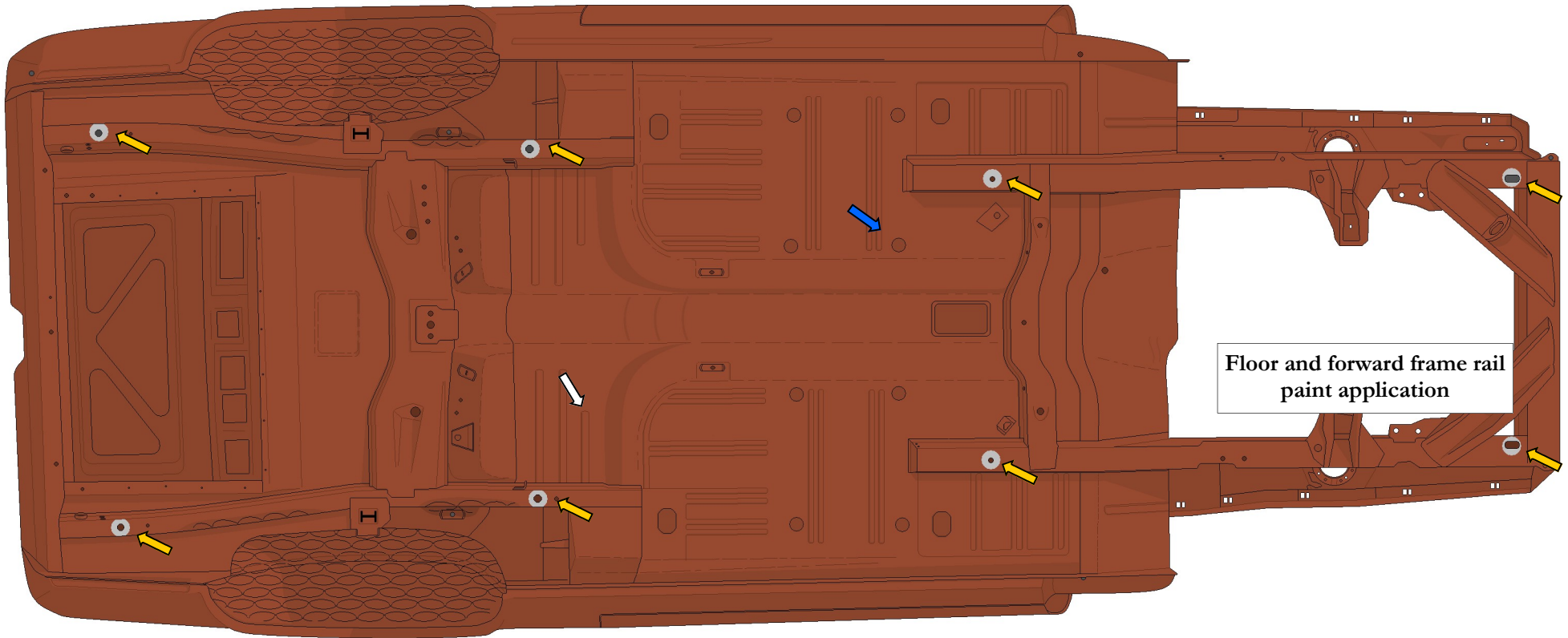
Sound deadener and seam seal applied. This was done before or after primer coats depending on production period.



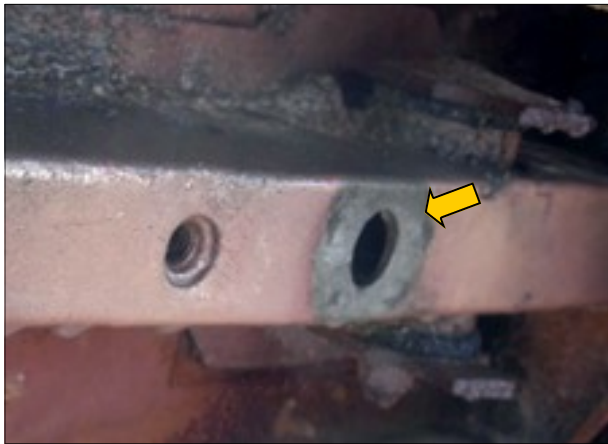
Yellow-Example of sound deadener - Typical application



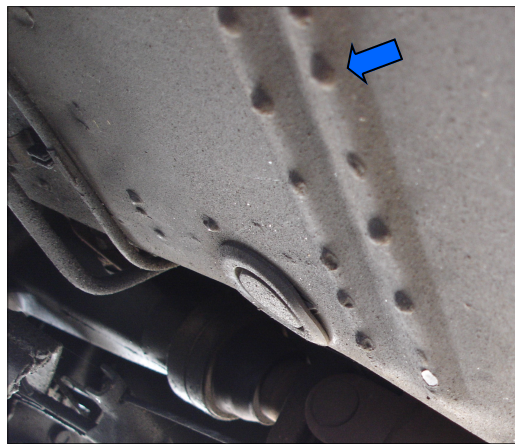
Front wheelwell sealer under/before sound deadener



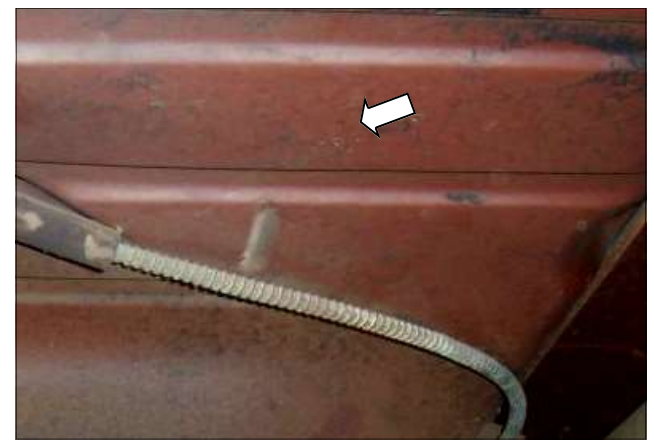
Floor and forward frame rail
paint application



Example of dolly mark



Heavy application produced drips in many areas



Example of overall finish

Variations Of Undercarriage Coating Color

As mentioned in the text section of this article the color and tint of the epoxy primer sealer applied to the unibody from approximately the firewall rearward during 65 San Jose production varied during the year. These patterns related to specific production periods at the plant. Because there are no records of specific fates any of these cars were finally completed its impossible to determine the exact color each was coated one but predictions can be made from the data collected. The colors shown in the accompanying pictures should not be considered exact color matching samples but only for comparison purposes due to the differences in monitor settings, digital files, printer settings and other circumstances.



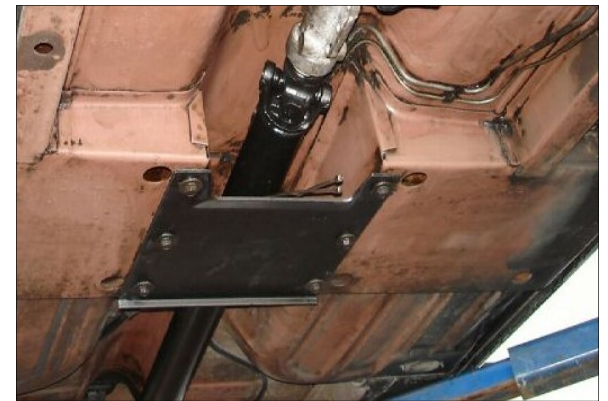
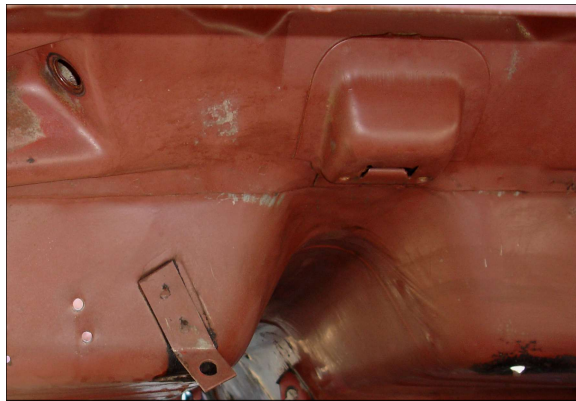
Examples of red oxide to muddy red oxide colored floor coating.

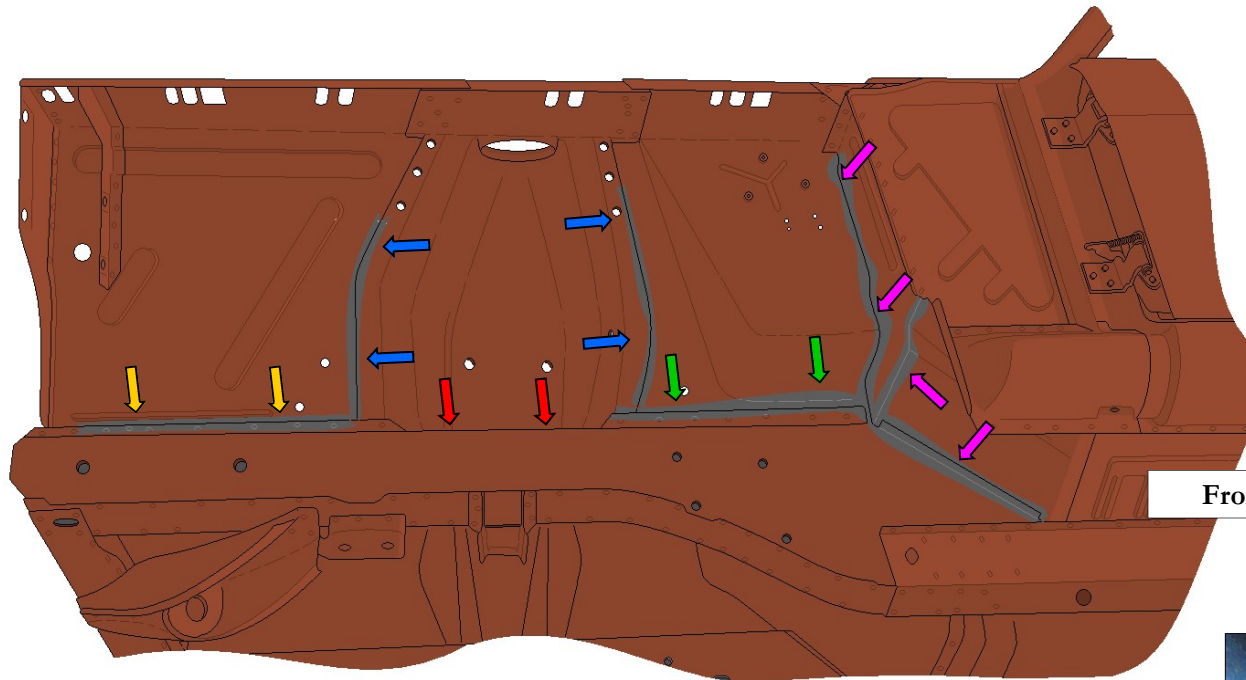


Examples of dark batch colored floor coating.

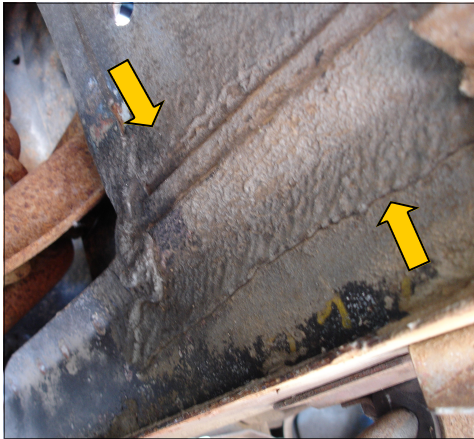


Examples of pinkish/salmon red oxide colored floor coating.

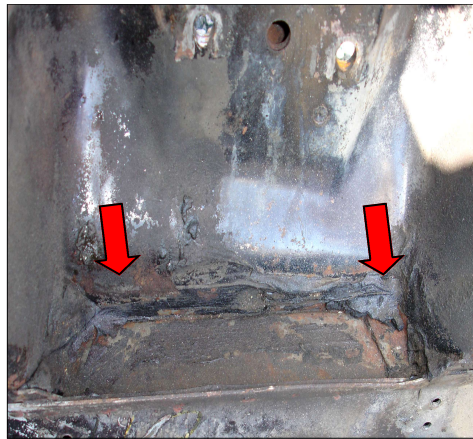




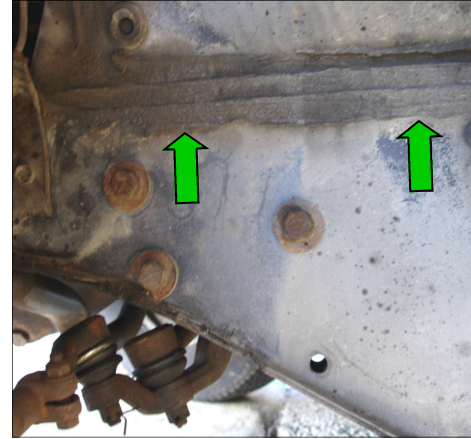
Front wheel well seam sealer



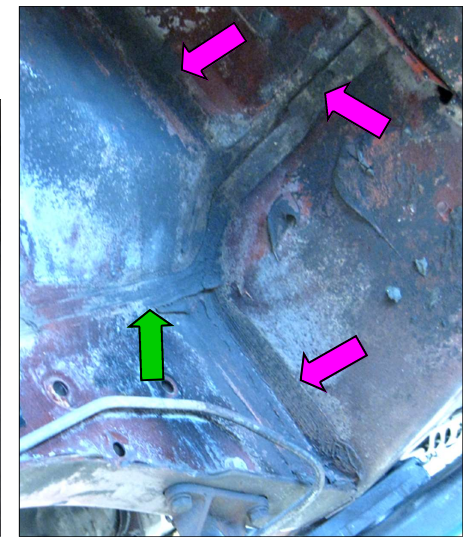
Yellow-Thinly applied, finished with brush along the inner to front frame seam. On late built cars this sealer was skipped or sealed during the sound deadener application step.



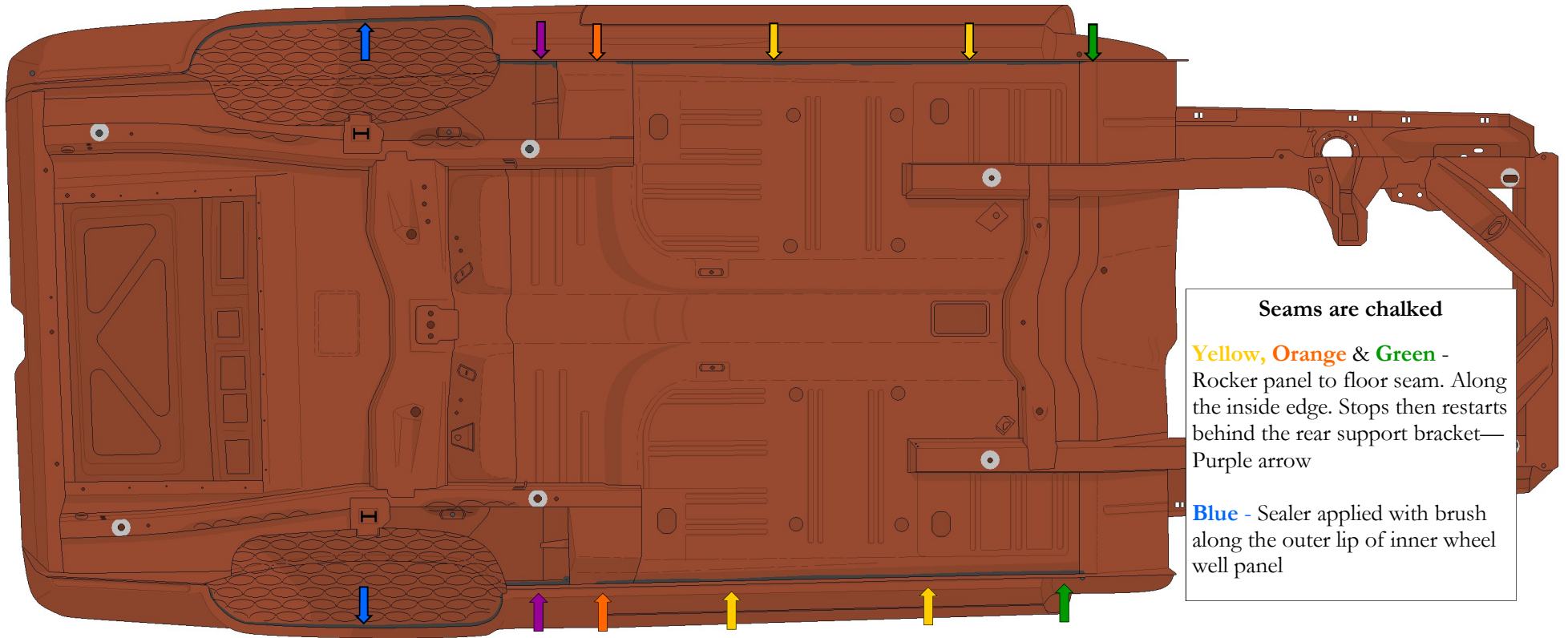
Red- A very thick application of sealer was applied to the valley at the base of the shock tower. **Blue**-Applied to only some of the cars built during the production year often very lightly.



Green-Thinly applied, finished with brush along the inner to front frame seam. On late built cars this sealer was skipped and sealed during the sound deadener application step.



Purple-Heavy seam sealer application. Often filled corner between frame or inner panel to firewall/cowl panel



Seams are chalked
Yellow, Orange & Green -
 Rocker panel to floor seam. Along the inside edge. Stops then restarts behind the rear support bracket—
 Purple arrow
Blue - Sealer applied with brush along the outer lip of inner wheel well panel



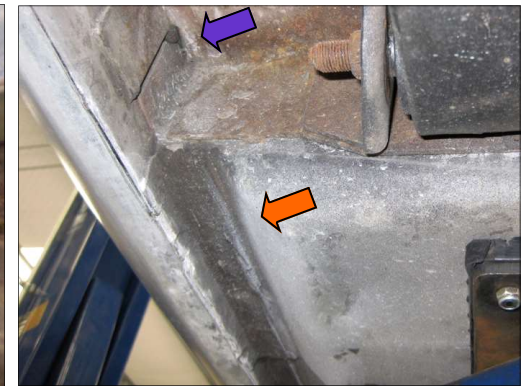
Wheel well lip sealant



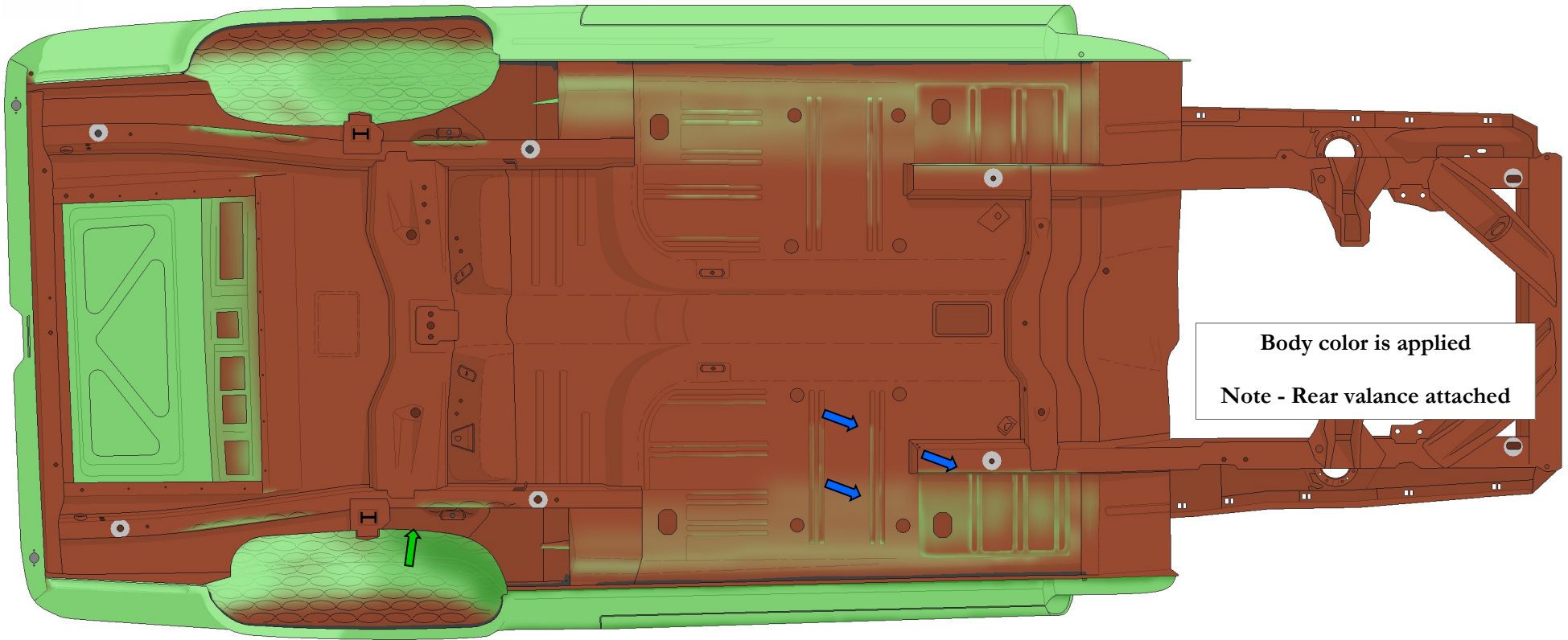
Rocker panel chalking



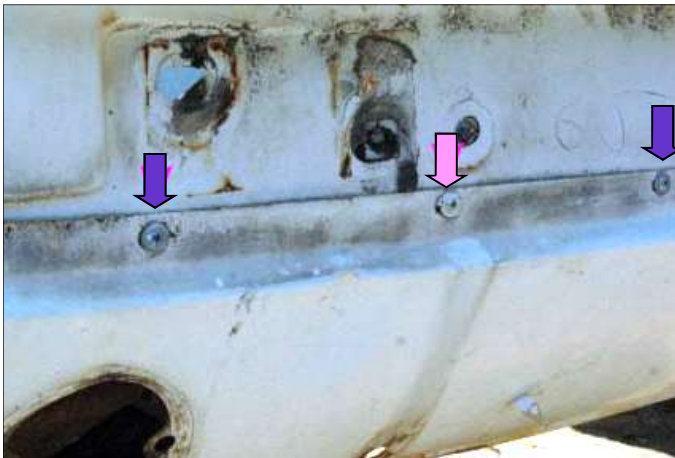
Rocker panel chalking



Rocker panel chalking



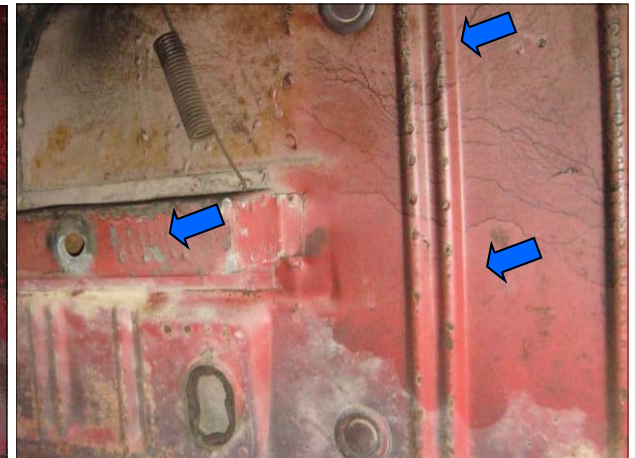
Body color is applied
 Note - Rear valance attached



Rear valance hung by two screws (pink arrow) Others added after body color applied (Purple arrows)

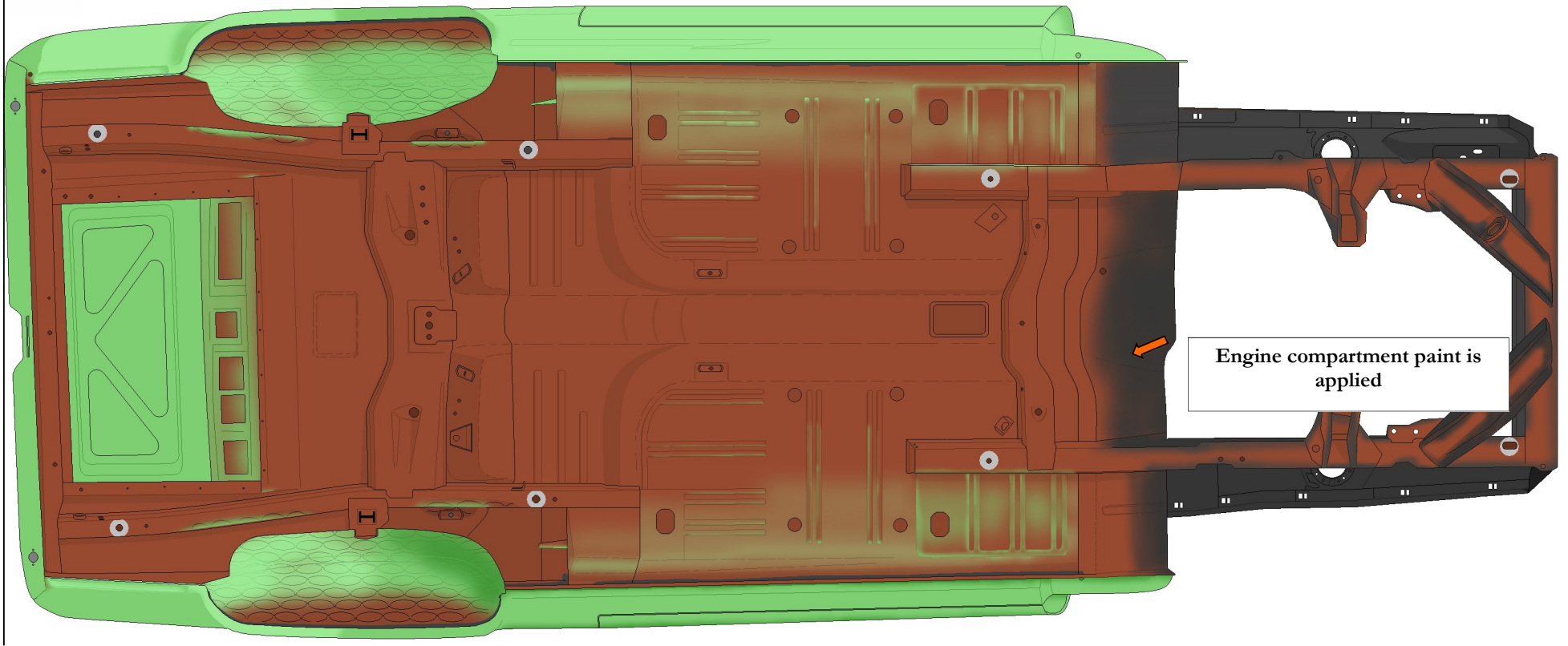


Paint worn from sound deadener in spots from use. Arrow shows nice exterior coat on frame rail

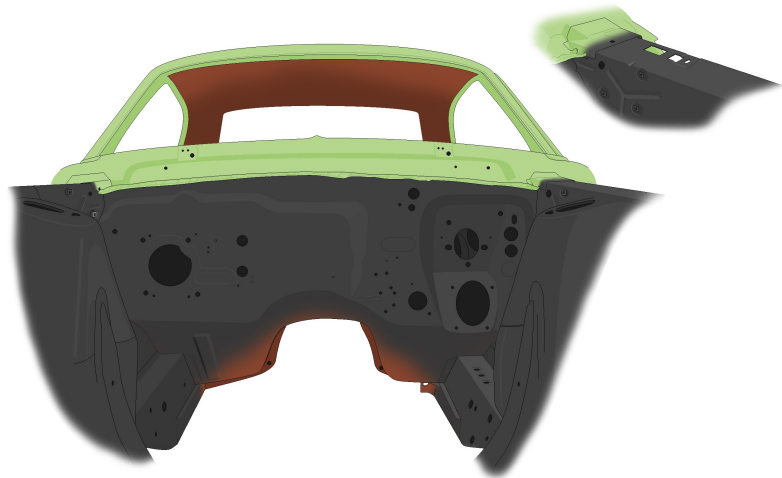


Blue arrow - Body color overspray

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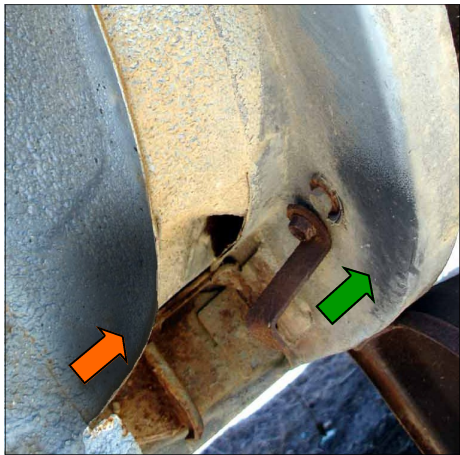
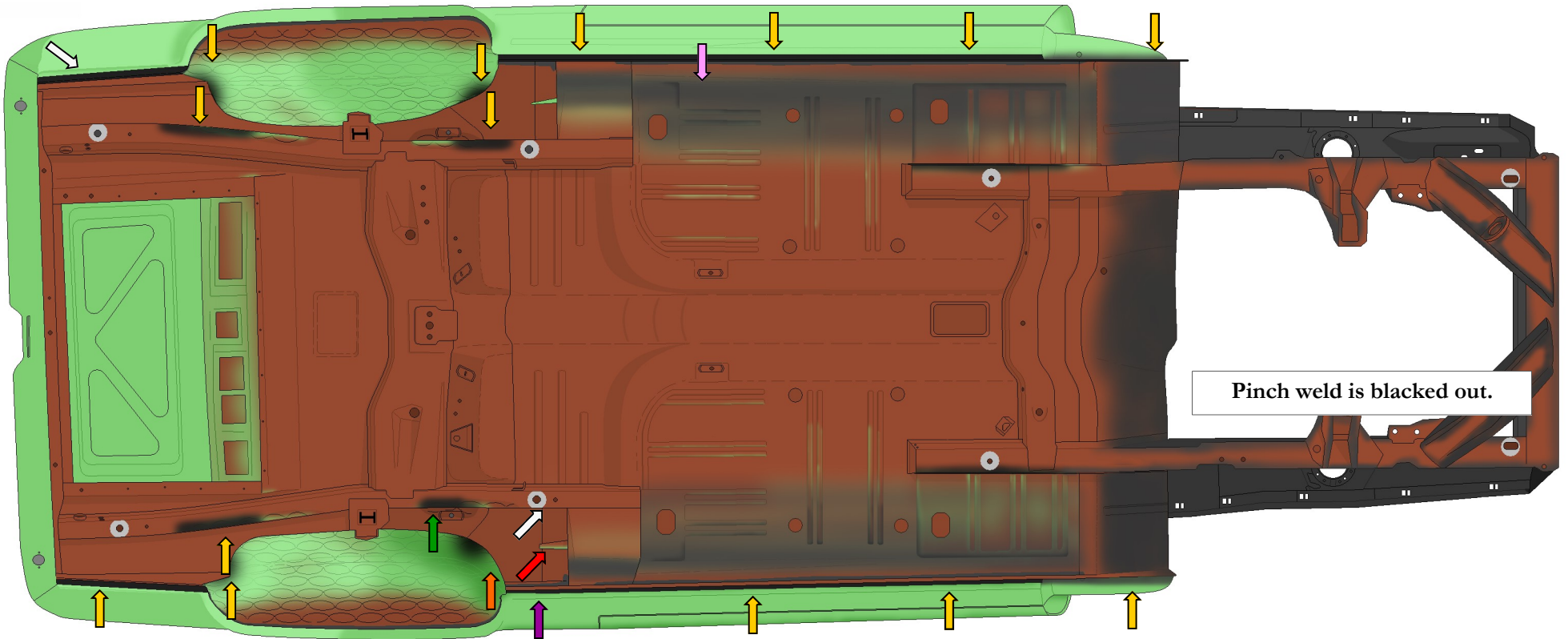
Engine compartment paint is applied



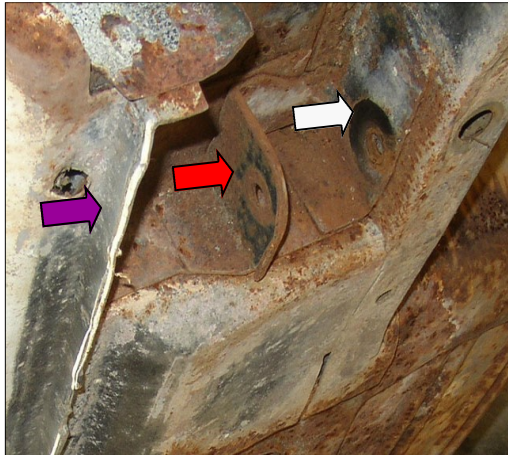
Typical transition/fade of black engine compartment black over firewall red primer.



Typical location of black paint to cowl body color
Soft line—not taped



What is left of the pinch and rear wheelwell black out



Rocker panel pinch weld black-out-often it is not this wide



This car received a heavy (more overspray) coat close to the pinch weld likely due to paint gun angle

Firewall Sealant



Example of typical sealant applied at or around all firewall attachments and pass-through locations. On the right I've highlighted the spray pattern. As you can see the product is a very fine spray similar to what is produced with spray adhesive (adhesive was the term for Ford used for the product). Sealant applied in a continuous spray carried from point to point.

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Front Wheel Well Sound Deadener Applied

Once the car was completely assembled (minus front wheels and tires) sound deadener was applied to the front wheel well. The amount and area covered depended completely on the specific worker that applied it and what they did that day. Application falls between a little and allot with no real identifiable pattern. But all original examples show some on the rear splash shield, firewall section exposed in the wheel well, inner fender panels forward and rearward of the shock tower (normally at a minimum from the lower rear to the top rear edge of the shock/spring cover then from the forward top edge of the shock/spring cover forward and down ward.) and finally on the front splash shield.

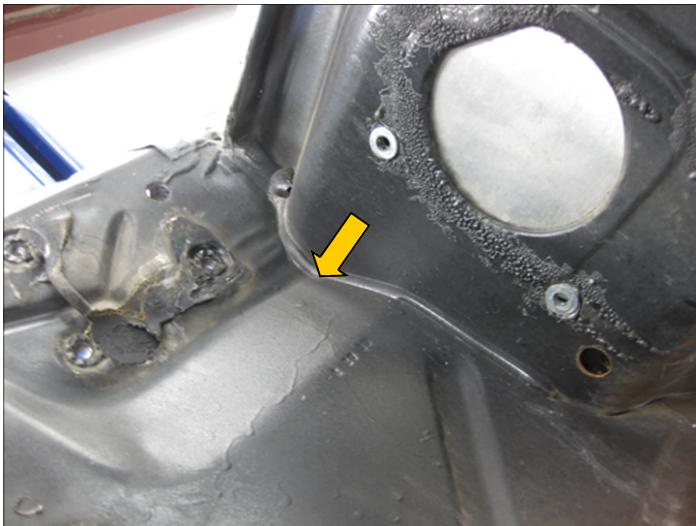
We often see examples were the bottom side of the fender received a single pass with the application wand but not all cars received this. The sound deadener shown in the two (lower center and right) pictures below has changed colors over time and with exposure to the elements and has turned an off white in color but the contrast helps us see the areas originally coated in those examples. Originally it was much darker, as shown in the picture below far left.



Additional Details



The strip of unsprayed chalking was typical along the passenger side of the firewall to rear inner fender panel seam. It normally stops midway down the seam and does not continue further. Likely due to reach issues as it was applied from above.



This bolt originally held a thin opaque plastic strap that held the emergency brake cable (one on each side) up and out of the way as the body was lowered onto the rearend. Once the rearend was in place the worker would reach up pull down on the emergency brake cable, breaking the strap, then install the end of the cable into the backing plate.

PAINTS, COATINGS & NOTES:

Red Oxide Epoxy Base - DP - 74LF then tinted to match. Should be somewhat glossy and smooth when finished not open, flat and or chalky

Seam Sealers & Sound Deadeners

Spectrum Sludge - Used in article

Lord Fusor 805 - Applicator/gun costs possible loaner?

Wurth - Another option for spray but cost of applicator can be an issue

All three can be used as a brush on seam sealer.

For many of the chalking gun style seam sealers a quality elastomeric black smooth no texture product will suffice.

Interior Paint Applied



Inner door mask off pattern



Upper door/interior paint detail



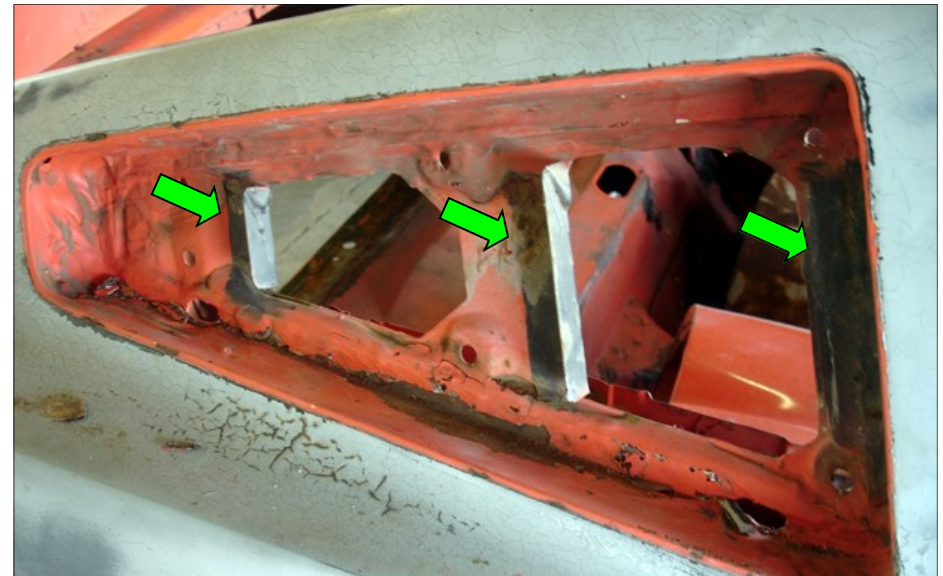
Bottom door edge paint break



Interior/Dash paint details



Interior/Dash paint details

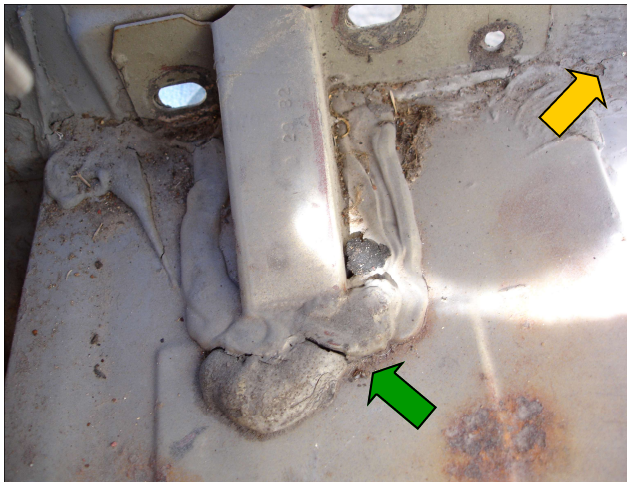


Fastback rear black out detail. What appears to be shadow is a blacked out area
Exterior has been repainted in this example but extractor area not repainted.

Trunk sound deadener and seam sealer application seal applied



Typical sound deadener application onto the inner surface of the quarter panels.



Yellow-Sealant applied then wiped with solvent rag



Green-Chalking applied but not spread or wiped



During periods of time in 65 production at San Jose the taillight panel to rear trunk floor seam sealant was applied much neater and did not require nor get, spread out with a rag as the one in the picture (yellow arrow) was. Instead a neat 1/2" bead is found.

Miscellaneous Paint and Sealant Details

At San Jose on fastback models, workers placed on the trunk lid spring, an clip typically used to secure electrical wires to the body, to the driver's end of the spring. As shown in the pictures.

It's believed that this made the process of installing the trunk lid spring easier and kept the rod from falling out during the process. Because of this, the electrical clip was painted body color along with the surrounding metal as illustrated in the examples to the left. Original unrestored cars with this detail have been found. So far it appears this practice was done on cars built during October 1964 and was stopped sometime between January to March 1965.

