



CHEVROLET MOTOR DIVISION
General Motors Corporation
Chevrolet Service Department



Chevrolet Dealer Service Information Bulletin

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Date:

Subject: FABRIC ROOF COVER REPAIRS

Attn: Service Manager

To: ALL CHEVROLET DEALERS

Certain types of fabric roof cover damage can be repaired without replacing or removing the fabric roof cover.

The repair techniques outlined in this bulletin are currently being taught by Fisher Body Instructors (Program No. 175) at the thirty (30) General Motors Training Centers. It is recommended, where possible, that these classes be attended before attempting repairs so as to develop the necessary skill to obtain the best results from the techniques outlined in this bulletin.

Attached are specific repair procedures and materials needed to effectively repair:

- A. Cuts, tears, scuffs or gouges through backing.
- B. Minor cuts or scuffs to, but not through fabric backing.
- C. Stained or discolored.
- D. Wrinkles, bubbles or blisters.

A. CUTS, TEARS, SCUFFS OR GOUGES THROUGH BACKING

Graining Tool - Make a graining tool out of plastic body filler. The graining tool is made by taking a plastic impression of the vinyl cover grain. Select a scrap piece of fabric roof cover material of the same grain design. If a suitable piece of fabric roof cover material is not available, a flat undamaged area of the roof cover to be repaired near the windshield or back window opening can be used.

To assure a clean sharp impression, thoroughly remove all dirt, road film, wax and other foreign materials from the impression area selected using a detergent cleaner. Wipe the area with a clean dry cloth. Allow the surface to complete drying while the mold compound is being mixed.

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Using a non-porous mixing surface, mix the plastic body filler according to instructions on label.

Note: A porous mixing surface, such as cardboard, paper, etc., will absorb the hardening agent. This will upset the balance of hardener-to-plastic and cause failure of the mold material to cure.

With a thin-bladed tool, spread the mold compound on the previously prepared surface. Maintain about a 1/8" thick application. The width should be 2" to 2-1/2" and a minimum length of 6". Avoid trapped air in the mixture by starting in the center and paddling the material toward the outer edges. Immediately after application of the mold material, cover the mold compound with a scrap piece of vinyl material, cloth side down by applying light finger pressure to the vinyl material. If mixed in proper proportions (compound-to-hardening agent), the mold should cure in 10 to 15 minutes. If necessary, heat can be applied to accelerate the curing process.

After curing, the entire mold can be removed from the vinyl cover. With a pair of shears, trim off the excess vinyl backing and any area of the mold material that does not have a satisfactory grain impression. This condition may exist around the outer edges of the mold where the material is too thin to pick up the full impression of the grain design. After trimming, the graining die is ready for use.

Surface Preparation

1. Using a soft lint-free cloth, wipe the area around the repair area with a solvent type vinyl cleaner. It is important that the edges of the vinyl material are not allowed to absorb the cleaner. This condition could lead to poor adhesion between the edges of the material and the filler, when applied. Also, when heat is later applied to cure the filler, the trapped solvents will be forced to escape through the partially filled repair area and may cause bubbling of the filler material. As an extra precaution, heat should be applied to the area to drive out the solvent materials. Three or four slow passes of the heat gun, at a distance of 2" from the end of the nozzle to cover, should be sufficient.

CAUTION: Some vinyl cleaners (solvent type) can cause damage to acrylic finishes. Therefore, the normal precautions should be observed to protect adjacent painted surfaces.

Note: On extremely dirty fabric roof covers, preclean entire roof cover using a liquid detergent.

2. Using a razor blade, scalpel knife, or other suitable sharp object, trim the damaged area to remove all frayed edges. For ideal filling, the damaged area should be a minimum width of 1/8". This size opening is the minimum working area needed within the cut. With sufficient working area, the filling process is easier and quicker. A slight tapering or feathering angle on the edge of the top material provides more surface for the filler to adhere to.

Assuming that the impact object causing the damage did not create a stretched condition in the top material (the correction used to shrink the vinyl material is covered in Procedure "D"), the damage is ready for the filler material.

Vinyl Patching Compound - The vinyl patching compound is applied using a pallet knife. The compound must be applied in thin layers for proper curing. The first layer is applied, cured thoroughly with the heat gun; the second applied, cured; the third applied and cured and so on until the compound is built up to the surrounding surface level. (Proper use of the heat gun is described in the next step.)

The vinyl patching compound should not be allowed to work its way between the cover and the roof panel, or extend above the surrounding surface of the vinyl. Either situation will cause a humped or raised condition in the repair area which, if not corrected, will be very obvious after the color is applied.

IMPORTANT: On the final application of vinyl patching compound, apply a limited amount of heat to the repair area to semi-cure the material. While the patch is hot, bridge the pallet knife across the repair area and firmly press flush with the adjacent area; complete curing of compound material.

Use of Heat Gun - After each filling layer has been applied, the heat gun is used to thoroughly cure the filler. Thorough curing is important because the adhesion of the filler is effective only when it is in a fully cured state. When the filler is first applied, its appearance is that of a milky substance. When the material is thoroughly cured, it becomes almost clear or transparent.

The practice of thin applications is most important since it directly affects the curing process. Repeated thin applications cure very quickly, thoroughly, and reduce the need for prolonged heat application. The heat application should be concentrated as nearly as possible on the filled area. Restricting the heat to this immediate area reduces the possibility of overheating a large area of the cover. Overheating of the cover will result in some loss of grain texture. When the heat temperature at the cover reaches 240 degrees, the vinyl material begins to soften and "move", thus affecting the grain structure.

To avoid overheating during the curing operation, careful attention should be given to the vinyl being exposed to the greatest heat. As the heat is applied and the temperature of the vinyl rises, the vinyl will begin to assume a glossy appearance. When this occurs, the vinyl has reached its top working temperature. Further heating will cause the grain loss.

Graining Operation

1. When the last application of the filler material has been cured, the graining operation should be performed. This operation should follow closely so that the vinyl does not have time to cool between the last curing and the graining operation.

Using the heat gun, apply heat directly on the repair area. Continue applying heat until the vinyl begins to become glossy. At this temperature or slightly lower, successful graining can be achieved. Further application of heat will result in loss of grain and could possibly create blisters in the vinyl material.

Note: The ideal time to perform the embossing step is just before the gloss begins to appear on the vinyl. This judgement can be developed through practice on scrap pieces of vinyl materials.

2. After heat has been applied, press the graining die into the soft vinyl. If possible, graining should be accomplished on the first try. Additional graining operations in the same area create a confused appearance in the pattern. This condition will tend to highlight the area that has been worked.

To minimize this loss of pattern uniformity during graining, two precautions are necessary:

- a. Work the vinyl up to the proper temperature.
- b. Apply pressure to the back of the graining die in such a manner that the effort is spread evenly over the entire area to be grained.

When a repair area covers a large distance, several applications of the graining die will be necessary. On each application, cover as much area as practical. The objective is to prevent a "choppy" appearance, which would develop with a large number of small impressions.

Color Application - When graining has been completed, the repair is ready for the application of color. Except for masking, no additional preparations are required.

Thoroughly mix the vinyl color according to the instructions on the can. When color is to be sprayed from an aerosol can, test the atomization by spraying several small spots on a piece of paper; then, apply the vinyl color to the repair area with two or three light passes. Use a "fanning" motion to produce a "feathering" condition on the perimeter of the spot repair. This, combined with the irregular surface formed by the cover grain, will assist in producing a satisfactory blending appearance. If wet coats only are applied, a distinct "color-break" line will highlight the repair area.

No specific build up of color is required; when hiding has been achieved, the color application is sufficient. After each color coat (pass) is applied, pause sufficiently for the material to flash before proceeding with the next coat.

Cuts Along Drip Rails - In cases where damage extends down into the drip rail, or under adjacent halo or reveal moldings, it may be more practical to pull the cover away from the roof panel in order to perform the repair. This is best accomplished by removing the retainer or molding which would interfere in the partial removal of the cover, and then applying heat in the area to be pulled free. The vinyl adhesive will react from the heat and with gentle, even pressure the cover can be worked loose from the top. Extreme caution is necessary so that no additional damage is created during this operation.

A metal panel is used as a backup to provide a working surface. The metal panel can be held in place to the roof panel by tape. Tape can also be used to hold the cover in position on the panel while repairs are being performed. The patching material will not adhere to metal, therefore, the metal panel provides a convenient means of backing the repair operation.

The repair procedure used to complete this repair is the same as previously described.

1. Clean the damaged area.
2. Trim the ragged edges.
3. Apply the filler in thin layers and cure.
4. Regrain the filled area.
5. Recolor the repair area.

When completed, the support panel is removed, vinyl adhesive is applied to the roof panel as needed, and the cover is reinstalled. Retainers and/or moldings are reinstalled.

B. MINOR CUTS OR SCUFFS TO, BUT NOT THROUGH, THE VINYL ROOF COVER FABRIC BACKING

Many small cuts (knife type) or scuffs can be repaired without the use of patching compound material. These are damages where the cover backing is not disturbed, and almost all of the vinyl material remains available for reworking. These repairs are performed using a soldering pencil (connected to a variable transformer) to soften the vinyl and work it back into position over the damaged area. With proper heat, the vinyl is re-fused, re-grained with the tip of the soldering pencil and after necessary color touch-up, a permanent repair is produced.

The success of this operation is dependent on the close control of the heat produced by the iron and the skill developed by the operator.

CAUTION: Over heating the vinyl with the iron will cause blisters in the vinyl or scorch light colored materials.

The heat of the iron is determined by the variable transformer. Normally, a #70 setting on the control will maintain the proper heat of the electric soldering pencil. However, due to the different types and wattages of heating elements used in soldering pencils, operators would try their particular unit on a sample piece of vinyl to determine proper settings before proceeding with the actual repair.

C. STAINED OR DISCOLORED FABRIC ROOF COVERS

Depending upon severity, stained or discolored fabric roof covers can be restored to original finish by spot repairing or completely refinishing the roof cover using normal spray techniques.

Mask off adjacent panels to protect painted surface during cleaning and painting operations. Thoroughly clean vinyl surface to remove all traces of dirt, wax, oil, silicone and other impurities with a solvent type cleaner such as, prepsol, pre-kleano or equivalent.

Apply vinyl paint per labeled instructions. Color coating of fabric roof cover will not cause grain loss if applied according to directions.

D. WRINKLES, BLISTERS AND BUBBLES

The correction of wrinkles, blisters or bubbles in the cover material can be accomplished by either a shrinking process or by partially removing the cover in the affected area and repositioning to draw the wrinkle out of the material. The latter method would be required to correct the more serious cases of wrinkles, while the shrinking method would be the practical approach for less severe wrinkles as well as blisters and bubbles.

Shrinking can be performed in two ways:

1. Pierce each wrinkle, blister or bubble with a small needle and apply heat directly to the affected area with a heat gun.

CAUTION: Keep heat gun in motion when applying heat to roof cover material. Over heating of vinyl will cause grain loss and permanent damage to the roof cover material.

When the material has warmed, it will begin to draw. At this point, the cover should be pressed against the roof panel. The heat will cause shrinking and reactivate the cement under the cover. The pressure on the top material will re-establish adhesion between the cover and the top.

2. This approach resembles a clothes-pressing operation. Spread a wet shop towel over the affected area. Using a home type laundry iron, pass the iron across the towel until towel becomes dry. If the iron used has heat control settings, the control should be set on "wool". Higher heat could permanently damage vinyl. The iron cannot be used without the towel, since direct contact between the iron surface and the cover would result in distorting the cover grain pattern and create an objectionable gloss on the cover surface.

As in the previous method, the iron creates sufficient heat to draw the cover material and reactivate the cement. The pressure of the iron against the cover is sufficient to effect re-cementing of the cover to the top in the affected area.

REPAIR MATERIALS AND DESCRIPTION

1. Plastic Body Filler and Hardener - for making a graining tool consisting of a grain impression of the fabric roof cover material.
2. Liquid Detergent Cleaner - all-purpose cleaner for removal of surface dirt, grease, dust, etc.
3. Vinyl Cleaner (Solvent Type) - for removal of wax, silicone, oil, etc. from repair area (prepsol, Pre-kleano or equivalent).
4. Vinyl Repair Patching Compound - a heat curing milky appearing heavy-bodied plastisol for repairing cut, gouged or torn vinyl roof cover material (Rinshed Mason #863 vinyl repair patching compound, Uticolor vinyl patching compound or equivalent).
5. Vinyl Repair Paint - a durable waterproof, weather resistant and pliable vinyl coating for repairing and refinishing vinyl coated fabric (matching colors are available in aerosol and quart containers; Rinshed Mason, Uticolor or equivalent sources).
6. Pallet Knives - a small trowel used for applying vinyl repair patching compound (available at artist supply stores).
7. Heat Gun - used for curing vinyl repair patching compound (preferably 500° to 700° heat range).
8. Variable Transformer and Electric Soldering Pencil with Small Soldering Tip - for repairing minor nicks and cuts where the vinyl backing has not been disturbed. (Variable transformers or motor speed controls are available at electronic supply houses.)

NOTE: All of the above material may be purchased from your local paint supplier or jobber.

PARTS AND LABOR DATA - Approximate Flat Rate Time

1. Small cuts which require the use of the soldering knife only are .3 hr. operations.

QUA.	PART NO.	PART DESCRIPTION	P	FC	L	T	OPERATION NO.	TIME
			27	X			01 1340 91	.3

- Cuts and other damage which requires the use of vinyl filler material are .5 hr. operations.

QUA.	PART NO.	PART DESCRIPTION	P	FC	L	T	OPERATION NO.	TIME
				27	X		01 1340 92	.5

NOTE: The above flat rate time allowances have been established for damaged areas of approximately 1" to 1-1/2" in length or for a damaged area (tear) of 90° extending 1" in each direction. Larger repair areas could consume additional repair time.

- All spot repairs have a material allowance of 1/8 quart.
- Complete color coat of the fabric roof cover is estimated at 1.0 hr. with a material allowance of 1 quart.

QUA.	PART NO.	PART DESCRIPTION	P	FC	L	T	OPERATION NO.	TIME
				27	X		01 1340 93	1.0

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Camaro Research Group