

Plastic Panel Information and Repair

Specifications

Repair Materials - Flexible Plastic Part

Thermoset Plastic Type	Type of Repair	Recommended Repair Material	Availability
Most flexible and semi flexible plastic*	Most repairs*	GM Goodwrench Compoxy Repair Material (GM P/N 12377980* or equivalent)	GM Dealer/ Retailer
		CMR-8 Composite Repair Material, P/N 82091 or equivalent	Refer to local paint supplier
* TPO, TEO, (Polyolefin Plastics) require the application of GM P/N 1052364 polyolefin adhesive primer before the GM P/N 12377980 repair compound is applied.			

Repair Materials - Rigid Plastic Part

Thermoset Plastic Type	Type of Repair	Recommended Repair Material	Availability
Most rigid plastic parts	Cosmetic filling	GM Goodwrench Structural Bonding Epoxy (GM P/N 12345726 or equivalent)	GM Dealer/Retailer
		Sikkens Polystop LP or equivalent polyester repair putty	Refer to a local paint supplier
Most rigid plastic parts	Cosmetic repair; Adhesive bonding	GM Goodwrench Structural Bonding Epoxy (GM P/N 12345726 or equivalent)	GM Dealer/Retailer
		Lord Fusor SMC Body Panel Repair Adhesive or equivalent	Refer to local paint supplier
Most rigid plastic parts	Adhesive bonding	GM Goodwrench Structural Bonding Epoxy (GM P/N 12345726 or equivalent)	GM Dealer/Retailer
		Dynatron Dyna-Weld Plio Grip or equivalent (OE structural adhesive)	Refer to local paint supplier
Most rigid plastic parts	Adhesive structural* bonding	GM Goodwrench Structural Bonding Epoxy (GM P/N 12345726 or equivalent)	GM Dealer/Retailer
Most rigid plastic parts	Adhesive bonding Structural bonding	US Chemical and Plastic System 2000 Structural Adhesive P/N 82007B = 30 min P/N 82014B = 9 min	Refer to local paint supplier or US Chemicals customer service 1-800-321- 0672
* Structural adhesive bonding may require the use of a pneumatic applicator, A8-37479-1A, or equivalent, to speed the application of the GM12345726 epoxy.			Kent-Moore 1-800-GM-TOOLS

Repair Instructions

Plastic Panels

Repair Procedure

Important: Follow these guidelines when performing SMC repairs:

- Clean, scuff, and solvent wipe all the areas to be repaired.
 - For added strength and durability, V-groove and reinforce at least one side of SMC joints using a tacky mesh tape or equivalent.
 - When partial panel replacement is performed, use 2 inch backing patches made from SMC or E-coated steel, as a reinforcement for all the butt joints.
1. Scuff the area where repair is to be performed.
 2. Clean the bond area with a lint-free rag using a water-based cleaner.
 3. Cracks in SMC should be grooved and reinforced on at least 1 side using a tacky mesh tape or equivalent.
 4. Sectioning joints require backing strips 50 mm (2 in) wide, which can be cut from leftover pieces of SMC.
 5. Apply a thin coat of Goodwrench Structural Bonding Epoxy GM P/N 12345726, or equivalent, to the entire joint area extending across the cut lines and across the backing strip.
 - Use tacky mesh tape or an equivalent reinforcement matting.
 - Allow to cure according to the adhesive manufacturer's recommendations.
 6. Shape and refinish the repair areas as necessary to resemble the original appearance.

Bonding Procedure

Important: Use the following procedure when bonding undamaged SMC to epoxy-coated steel.

1. Prime all the bare metal areas with an anti-corrosion material. Refer to GM 4901 Refinish Manual for approved materials.
 - Some paint manufacturers recommend a pre-primer when bonding to epoxy.
 - Always refer to the paint manufacturer's recommendations.
 - Do not combine paint systems.
2. Clean the bond area with a lint-free rag using a water-based cleaner.
3. Scuff both surfaces to be bonded using a scuff pad such as 3M's Scotch-Brite Red scuff pad P/N 07447 or equivalent.

4. Ensure that the surface is clean and dry before applying the adhesive.
 - Use compressed air.
 - Do not wipe the surface with a hand or a rag.
5. Determine whether the adhesive is applied to the vehicle or the replacement panel.
6. Apply a consistent adhesive bond to the prepared surfaces.
7. Mechanically retain the panel in place in order to wet out the adhesive along the entire bonding surface.
8. Allow the area to cure according to the adhesive manufacturer's recommendations.

General Plastic Repair Instructions

The following procedures should be followed when repairing all types of thermoset plastic:

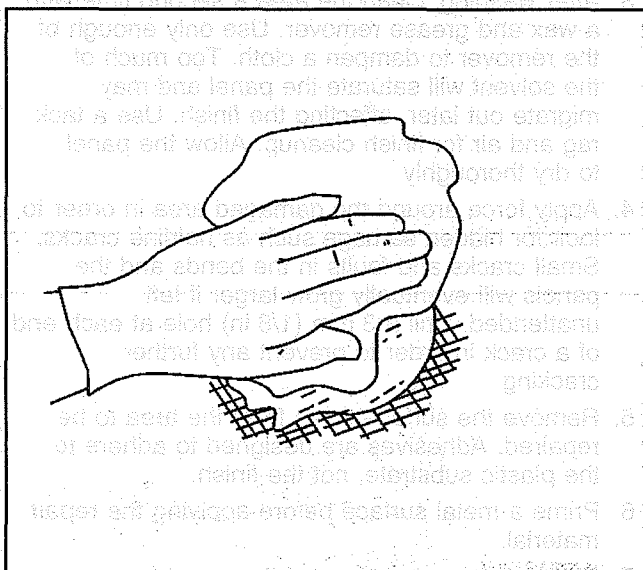
1. Use the supplies and the repair materials from the same manufacturer. Do not intermix systems. Mixing materials from different manufacturers can produce unsatisfactory results.
2. Clean the inner and outer surfaces of the repair area with a soap impregnated scouring pad in order to remove any dirt or mold release agent. A mold release agent is used during manufacturing in order to prevent the part from sticking to the mold. This release agent may be present in large enough concentrations to affect adhesion.
3. After washing, clean the area a second time with a wax and grease remover. Use only enough of the remover to dampen a cloth. Too much of the solvent will saturate the panel and may migrate out later, affecting the finish. Use a tack rag and air for finish cleanup. Allow the panel to dry thoroughly.
4. Apply force around the damaged area in order to look for hidden damage such as hairline cracks. Small cracks and faults in the bonds and the panels will eventually grow larger if left unattended. Drill a 3 mm (1/8 in) hole at each end of a crack in order to prevent any further cracking.
5. Remove the surface finish from the area to be repaired. Adhesives are designed to adhere to the plastic substrate, not the finish.
6. Prime a metal surface before applying the repair material.
7. Repair the inner surface of the panel first.
8. When using a mat reinforcement to repair the inner or outer surface of a panel, inspect that there are no strands of the mat left uncovered or unsaturated with the repair material. If exposed, the mat may act as a wick and draw moisture into the repair area, affecting the integrity and the finish.

9. Inspect the rear of the damaged panel for tool clearance. If accessing the repair with a saturation roller, a grinder, or a sander is impossible, do the repairs by hand.
10. Align the damaged or spliced area with a brace and clamps if the damage is severe. For a smaller repair, use a heavy tape on the outer surface in order to maintain the alignment until the inner repair material has cured.
11. If welding is necessary, do not allow the flame or the welding heat to come into direct contact with the plastic body panels. Protect the surrounding area with a fire retardant fabric. Several layers of aluminum foil make an excellent heat shield if not in direct contact with the flame.
12. Inspect the rear side of the work area before making repairs in order to avoid possible damage to wires, motors, etc.
13. Fiberglass parts will not yield or take a set as with steel parts, thus they cannot be straightened. If poor alignments are suspected, due to a collision or other damage inspect the steel reinforcements for damage and replace or repair them before repairing the plastic parts.
14. Save any useful size pieces of repair material when cleaning up the work area. These pieces can be used for reinforcing smaller repair areas.
15. Force dry Structural Bonding Epoxy with heat. Heat speeds the cure time and increases the bond strength. Follow the manufacturer's curing recommendations.

Gouge or Puncture Repair

When the fiberglass laminate is not pierced through or the damage extensive, the damaged area can be repaired using the following procedure:

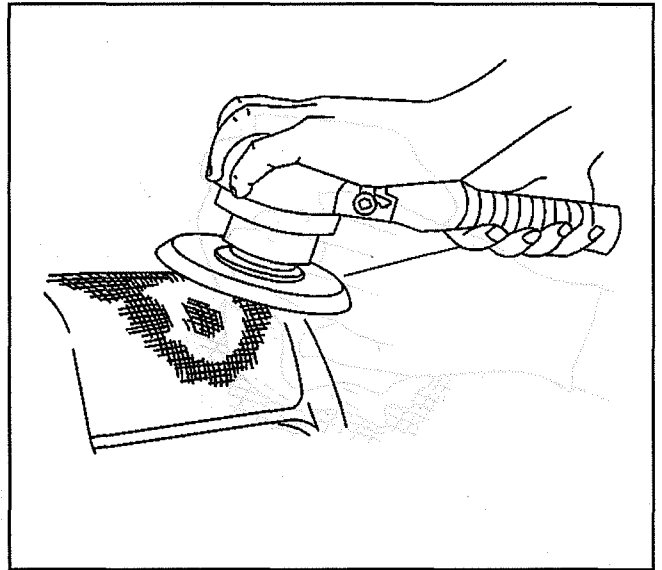
1. Clean and inspect the damaged area. Refer to *General Plastic Repair Instructions*.
2. Finish the cleanup using a tack rag and air.



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3. Sand the damaged area down to the fiberglass laminate.

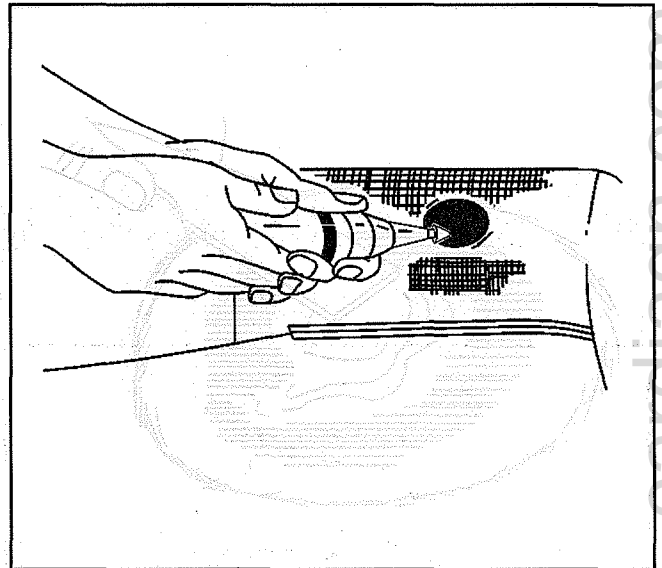
Use a sander with a vacuum attachment in order to minimize dust.



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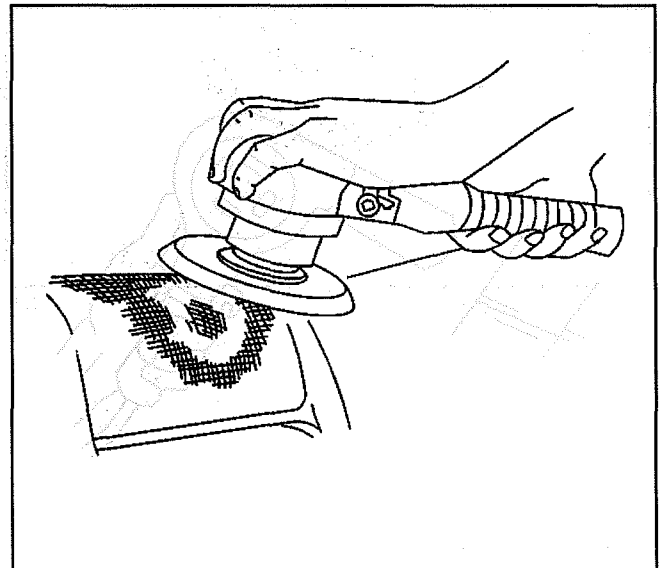
4. Grind or file the edges of the damaged area in order to form a dish.

The side of the dish should have a pitch for a maximum bonding surface.

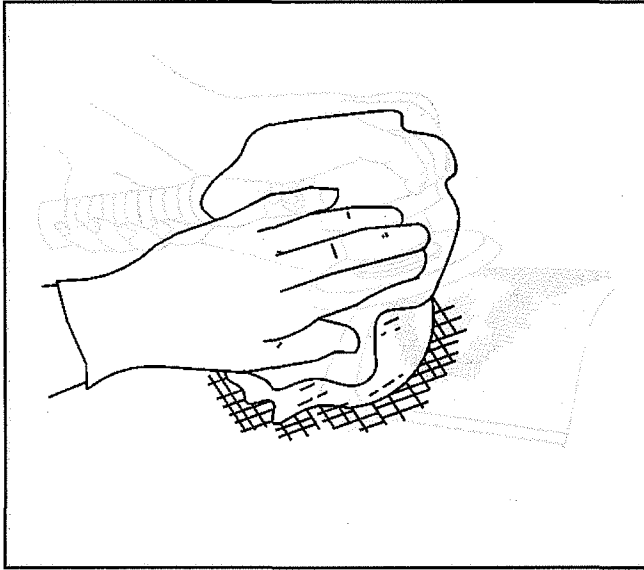


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5. Scuff sand the area surrounding the damaged area in order to provide a good bonding surface.



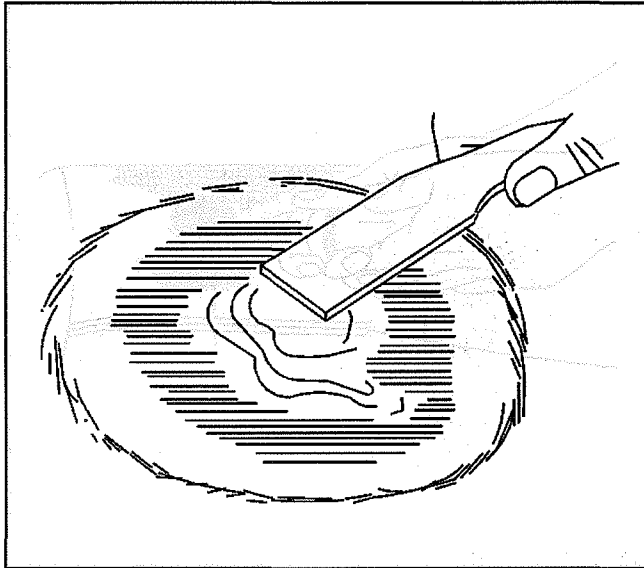
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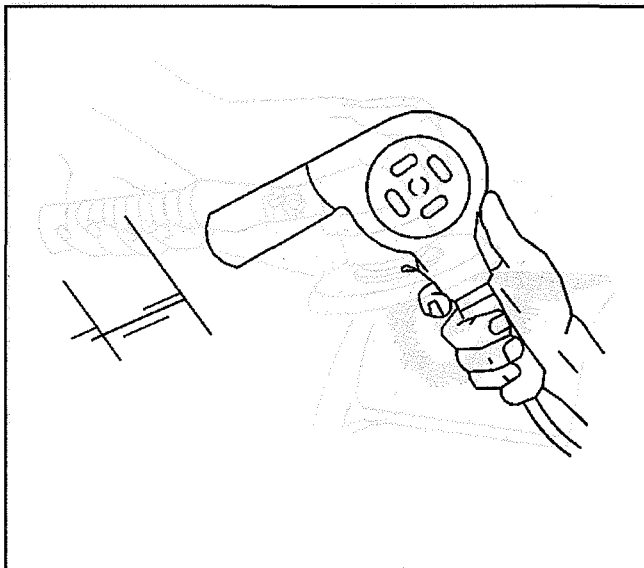
6. Clean the repair area again using a water based wax and grease remover.
7. Finish the cleanup using a tack rag and air.



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8. Mix the recommended repair material. Refer to *Repair Materials - Flexible Plastic Part* or *Repair Materials - Rigid Plastic Part*.
9. Apply the repair material to the damaged area until the repair is slightly higher than the surrounding area.

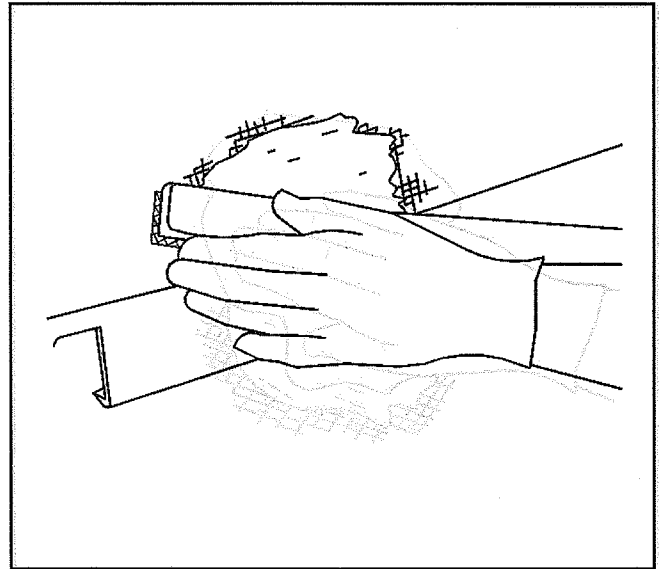


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10. Cure the repair material. Follow the manufacturer's recommendations.

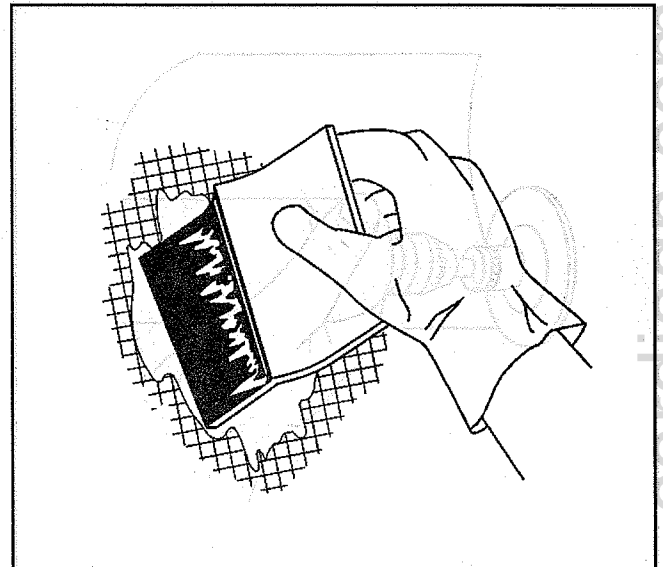
11. Rough out the surface using a #80 grit disc on a D A sander or a curved-tooth body file.



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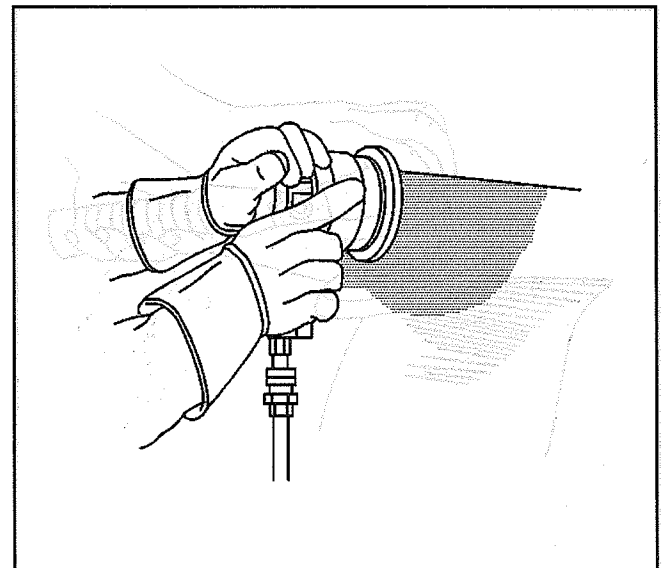
12. Apply a polyester type material, to provide a uniform surface for sanding, such as Silkens Polystop LP, or equivalent.



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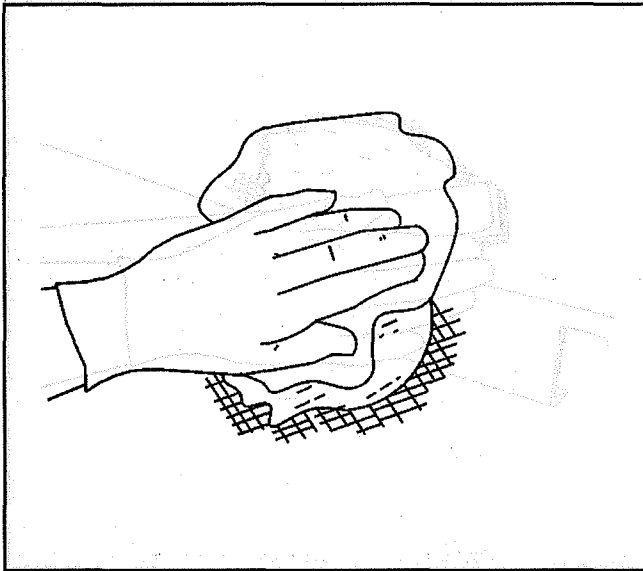
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13. Finish sand with a dual action random orbital sander.
14. Prime and refinish as necessary. Refer to GM 4901 M-D for a listing of approved materials. Follow the procedures recommended by the material manufacture.



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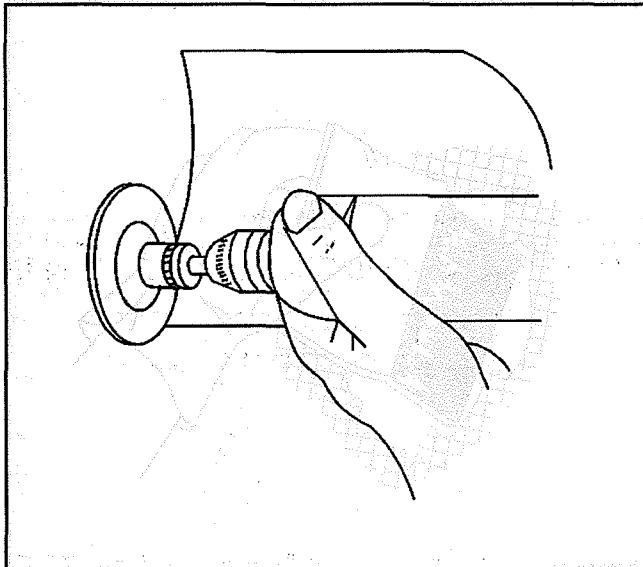


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Panel Replacement - Partial

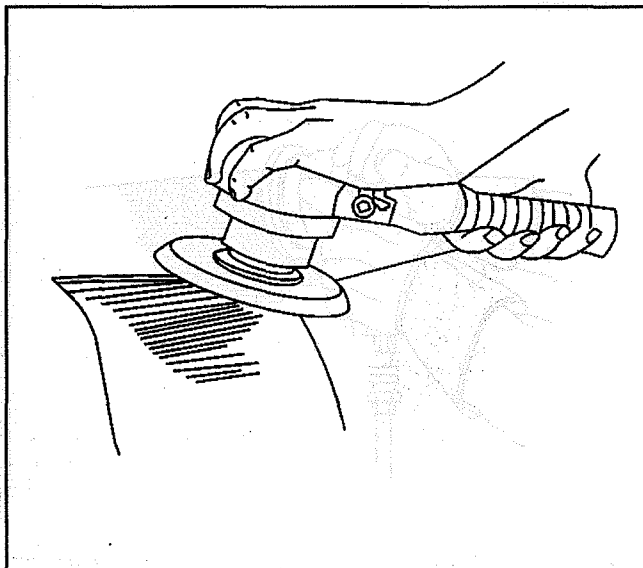
When you splice a replacement panel or a portion of a replacement panel to an existing panel, use the following procedure:

1. Clean and inspect the damaged area. Refer to *General Plastic Repair Instructions*.



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2. Cut the damaged area and/or the replacement panel to the appropriate size so that the panel fills the opening.

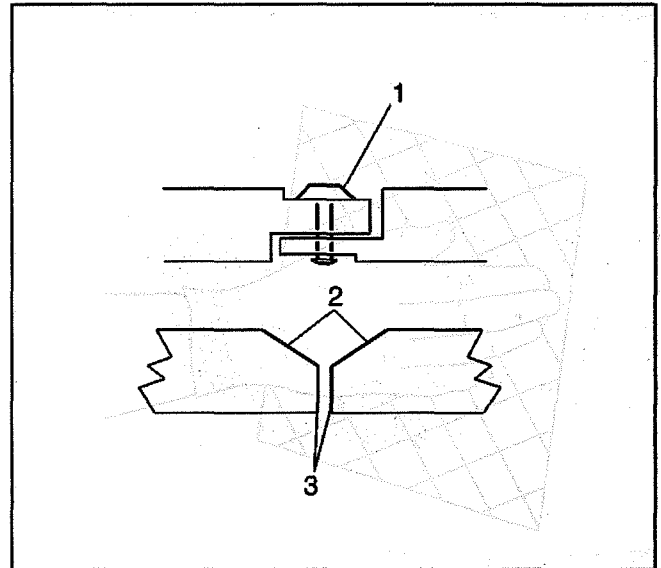


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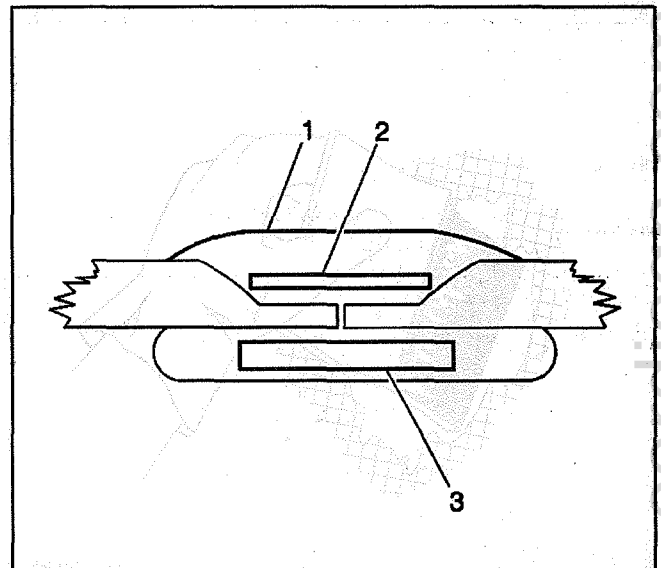
3. Scuff sand the damaged area and the replacement panel's mating surfaces.

4. Fit the panel to the opening:

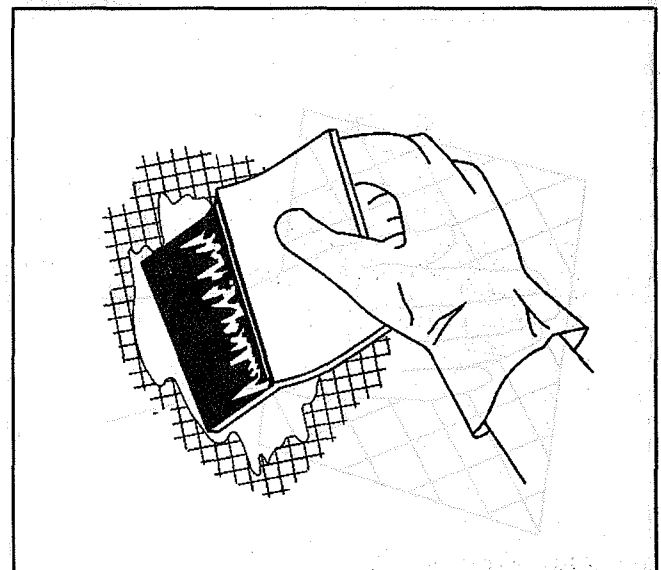
- If the bonding strips are exposed, mechanically attach (1) and bond the strips together.
- If the bonding strips are not exposed, cut or grind the edge of the panels in order to form a good butt joint (3). Then bevel the edges (2) to about 30 degrees in order to form a dished butt joint.



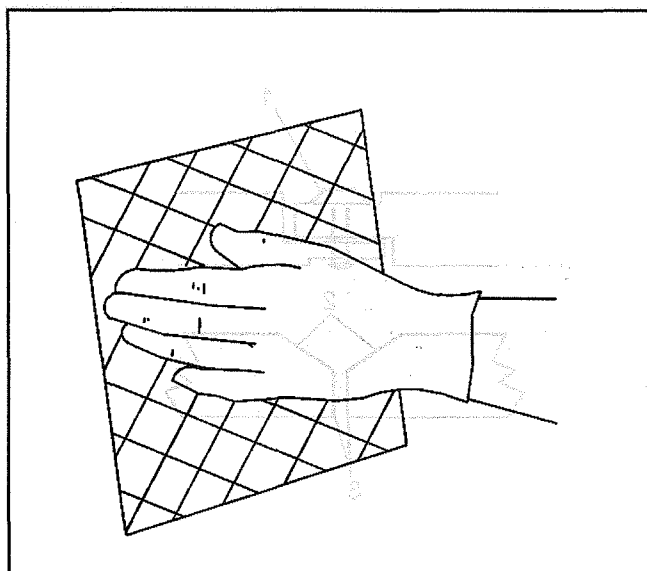
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5. Install a backing patch (3). Refer to *Backing Patch Fabrication*.

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6. Mix and apply, follow the manufacture's instructions, a light coat of the repair material to the outside of the damaged area.

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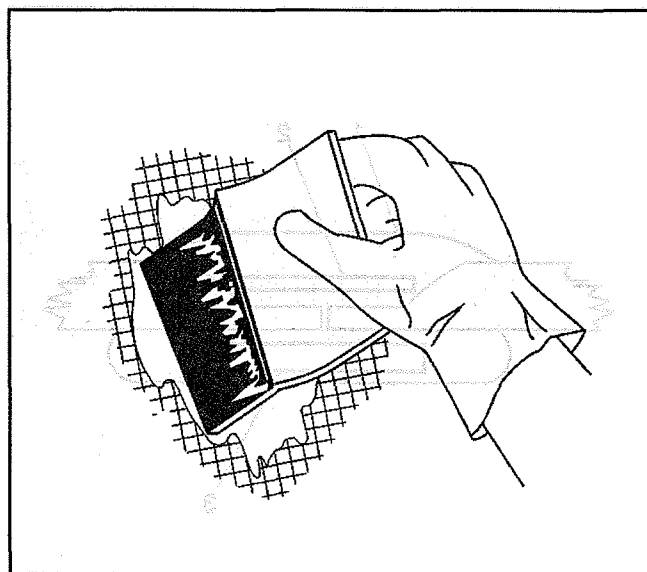


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7. Lay a piece of reinforcement mat into the repair material.

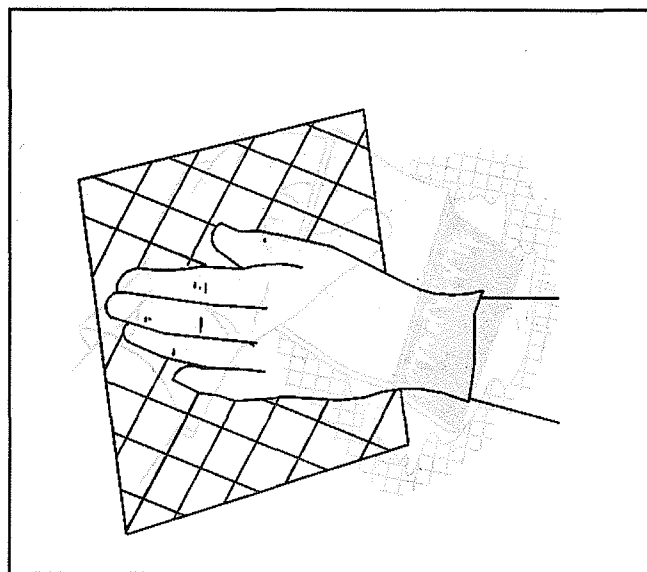
- The mat should extend 38–51 mm (1.5–2.0 in) beyond either side of the repair area.
- All of the mat must be at a level below the final finished surface.

8. Using an applicator, saturate and remove any trapped air from the repair area.



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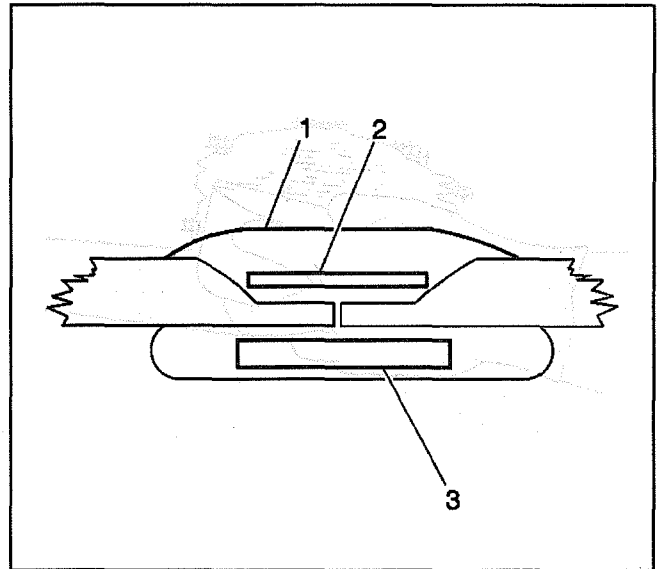
9. Apply a second coat of the repair material in the same manner.



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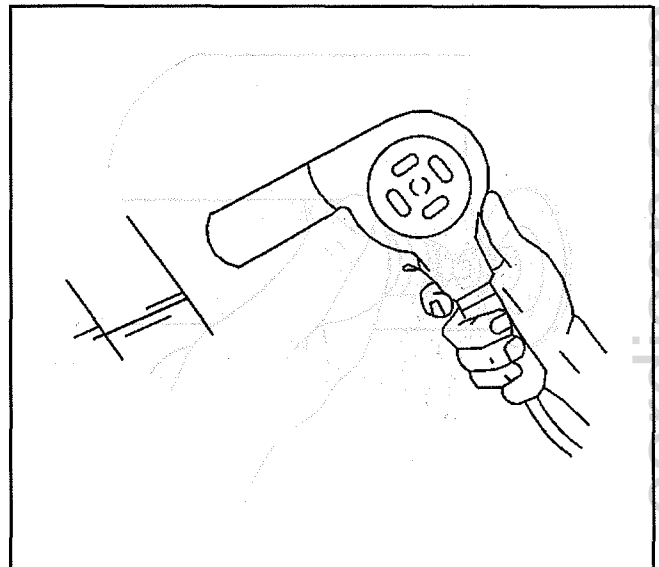
10. Lay a second piece of mat into the repair area in the same manner.

11. Apply the final layer or repair material in the same manner until the repair material (1) is at a level slightly higher than the surrounding area.



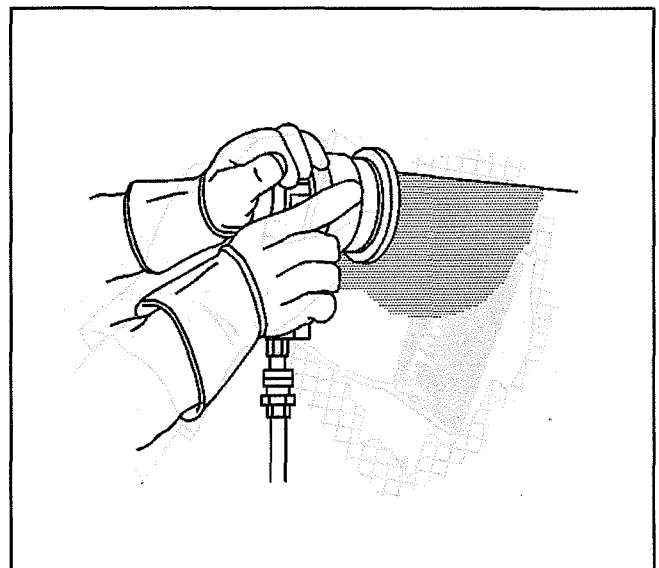
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12. Cure the material according to the manufacturer's instructions.
13. Apply and cure additional layers as needed.

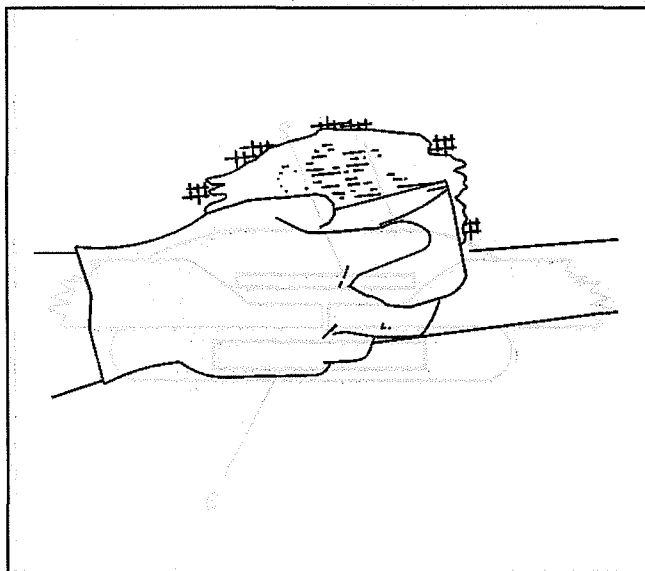


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14. Rough out the surface using a #80 grit disc on a D A sander.

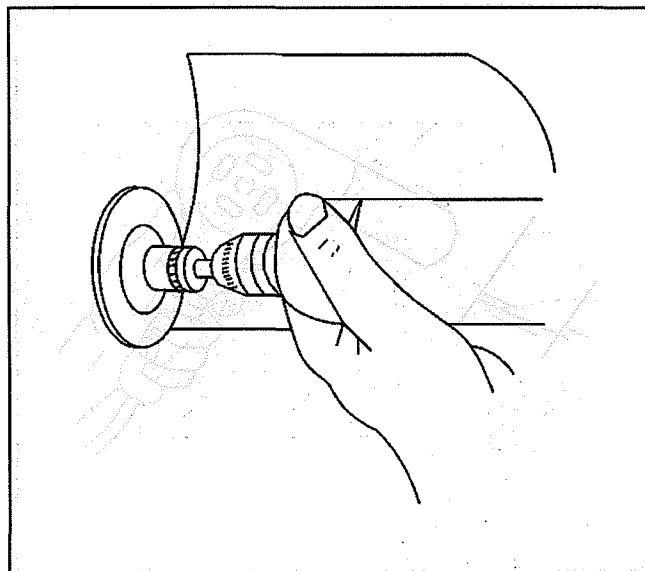


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15. Apply a polyester type material to provide a uniform surface for sanding, such as Silkens Polystop LP, or equivalent.
16. Prime and refinish as necessary. Refer to GM 4901 M-D for a listing of approved materials. Follow the procedures recommended by the material manufacturer.



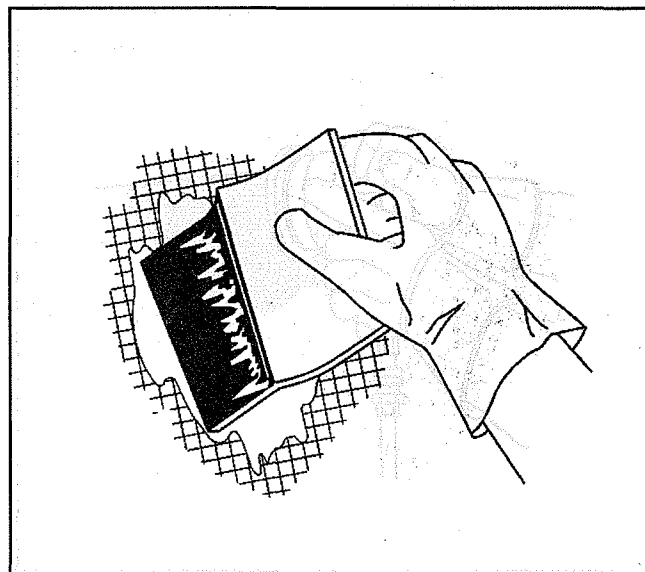
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Panel Replacement - Complete

Removal Procedure

Important: Wear safety equipment when you work with plastic.

1. Cut a large window in the panel to be replaced to gain access to the bond adhesive.
 - Cut only deep enough to cut through the panel being replaced.
 - Most SMC plastic panels are 3 mm (0.125 in) thick.
2. Use a heat gun to soften the bonding adhesive.
3. Cut through the adhesive bond with a putty knife.
4. Remove the damaged panel.



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Installation Procedure

1. Use a scraper in order to remove all the old adhesive.
2. Wash the bonding surfaces with soap and water. DO NOT use a solvent.
3. Install the proper bonding material to the bond surface. Refer to *Repair Materials - Rigid Plastic Part* or *Repair Materials - Flexible Plastic Part*. Large panels require a pneumatic applicator to speed the application of the fast curing adhesive.
4. Position the panel.
5. Clamp the panel with vise grips, or equivalent.
6. Cure the repair. Follow the repair material manufacture's recommendations.

Backing Patch Fabrication

Before proceeding, refer to *General Plastic Repair Instructions* and *Plastic Repair Precautions*.

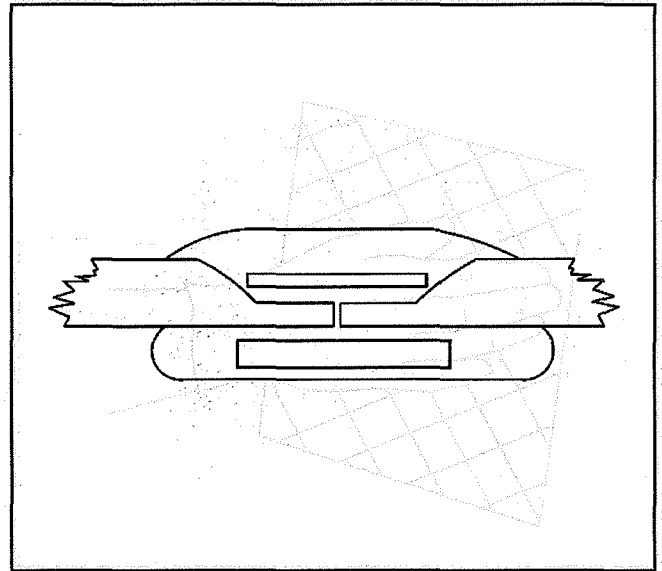
The following are three methods of fabricating a backing patch:

- Method 1: Fabricating a patch directly on the back of the damaged area. Layers of repair material and glass cloth mat are applied one at a time to a clean and sanded surface.
- Method 2: Cutting a patch from a scrap piece of a replaced panel.
- Method 3: Fabricating a patch on the outside of the damaged area to be reapplied to the inside of the damaged area.

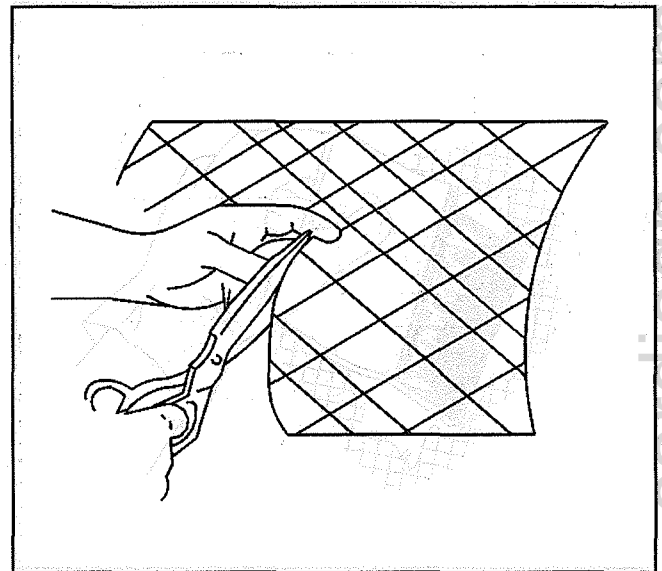
Any method can be used, but one method may be easier than another depending on the given situation. Read over each of the following methods in order to decide which will work best in a given situation.

Method 1

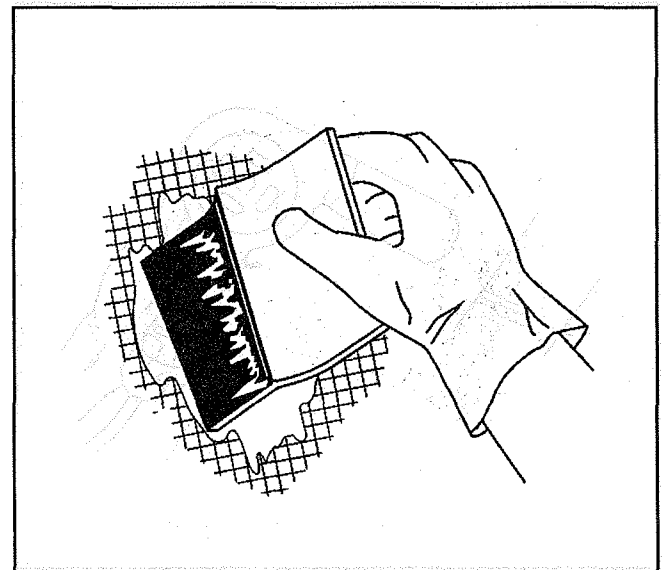
1. Cut a piece of the reinforcement mat, to the desired shape, so that the mat overlaps all sides of the back of the damage area by 38–51 mm (1.5–2.0 in).
2. Determine the proper repair material. Refer to *Repair Materials - Flexible Plastic Part* or *Repair Materials - Rigid Plastic Part*.
3. Mix the repair material according to the manufacturer's instructions.
4. Apply, follow the manufacturer's instructions, a skim coat of the repair material to the back of the damaged area.



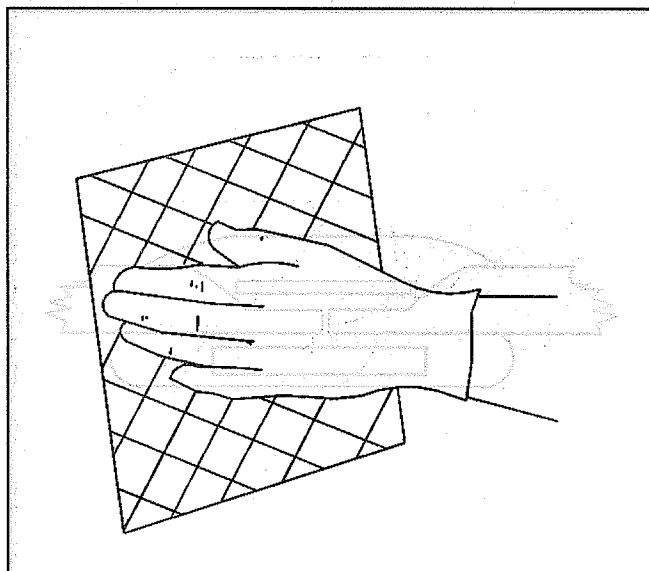
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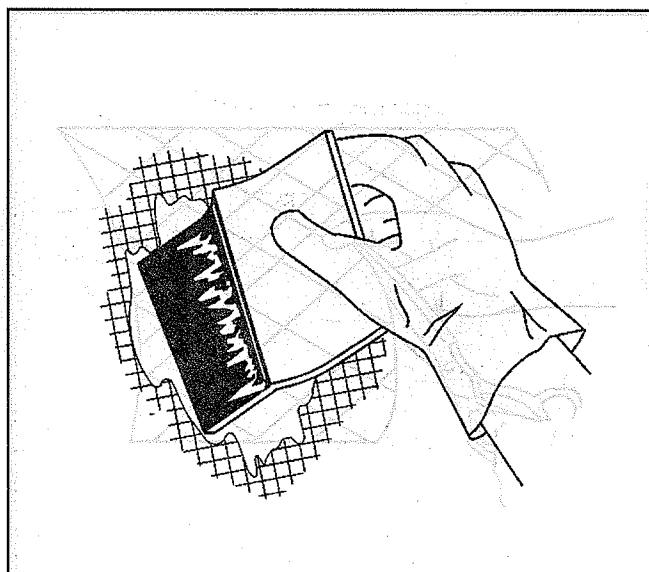
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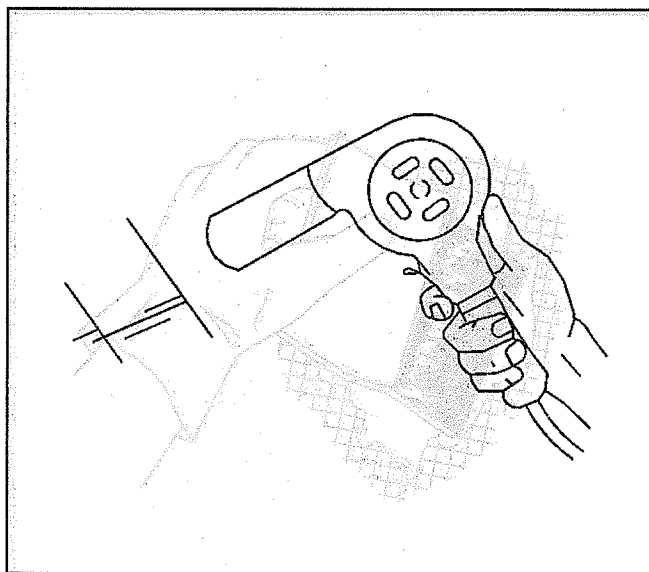
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5. Lay the pre-cut piece of reinforcement mat into the skim coat of the repair material.

- Use the applicator in order to press the mat until saturated.
- Inspect for exposed fibers or trapped air.

• Method 1: Fabricating a patch directly on the back of the damaged area. (Layers of repair material and glass cloth mat are applied one at a time to a clean and sanded surface.)

• Method 2: Cutting a patch from a scrap piece of a replaced panel.

• Method 3: Fabricating a patch on the outside of the damaged area to be resplined to the inside of the damaged area.

Any method can be used, but one method may be easier than another depending on the given situation. Read over each of the following methods in order to decide which will work best in a given situation.

6. Apply additional skim coats as needed to strengthen.

1. Cut a piece of the reinforcement mat to the desired shape, so that the mat overlaps all sides of the back of the damaged area by 38-61 mm (1.5-2.0 in.).

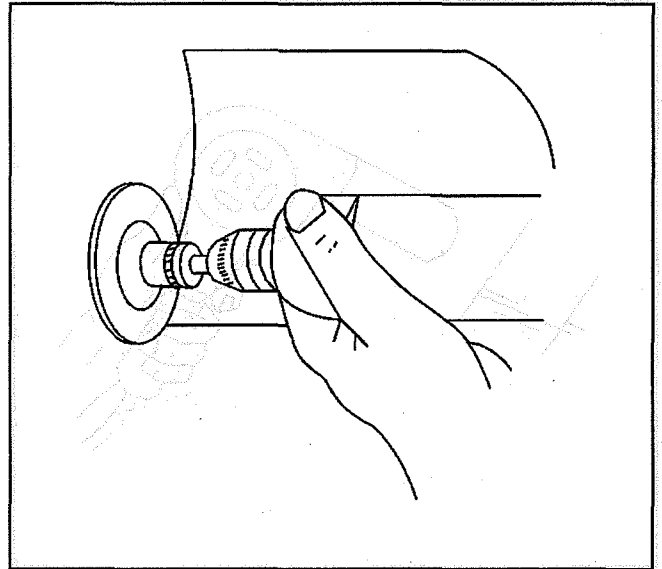
7. Allow the material to cure according to the manufacturer's instructions.

8. Allow the repair area to return to room temperature.

2. Get Repair Material.
3. Mix the repair material according to the manufacturer's instructions.
4. Apply the repair material according to the manufacturer's instructions. a skim coat of the repair material to the back of the damaged area.

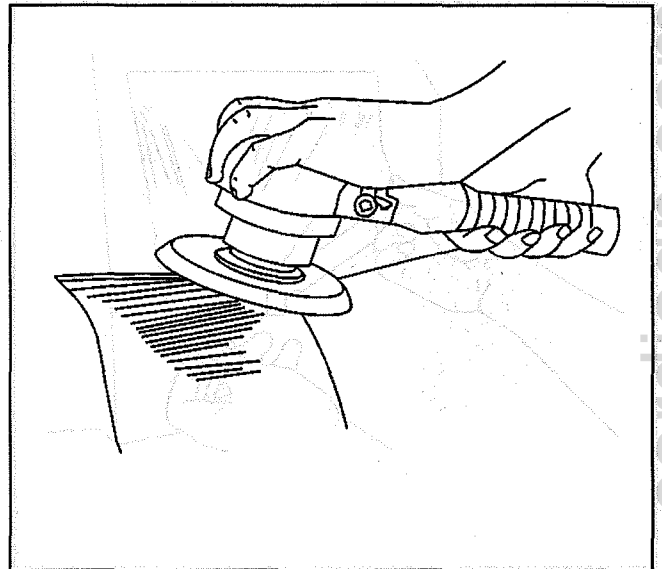
Method 2

1. Cut a patch from a scrap piece of a replaced panel so that the patch overlaps all sides of the damage area by 38–51 mm (1.5–2.0 in).



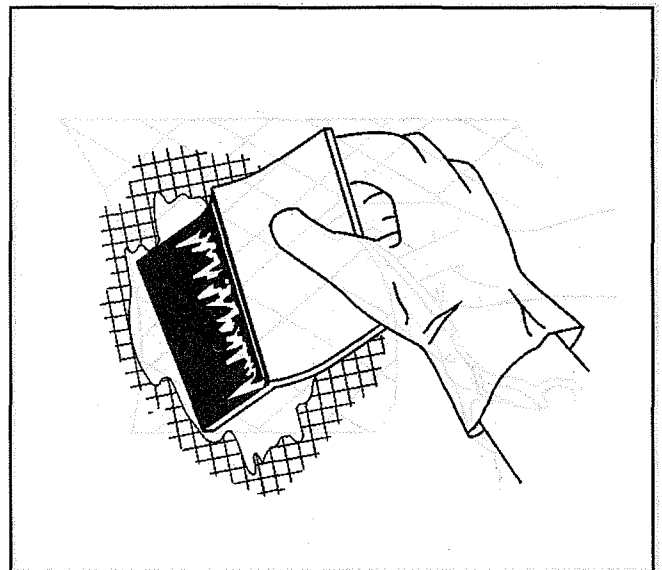
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2. Sand and clean the surface of the patch in order to remove any paint or finish material which could prevent proper bonding.
3. Determine the proper repair material. Refer to *Repair Materials - Flexible Plastic Part* or *Repair Materials - Rigid Plastic Part*.
4. Mix the repair material according to the manufacturer's instructions.

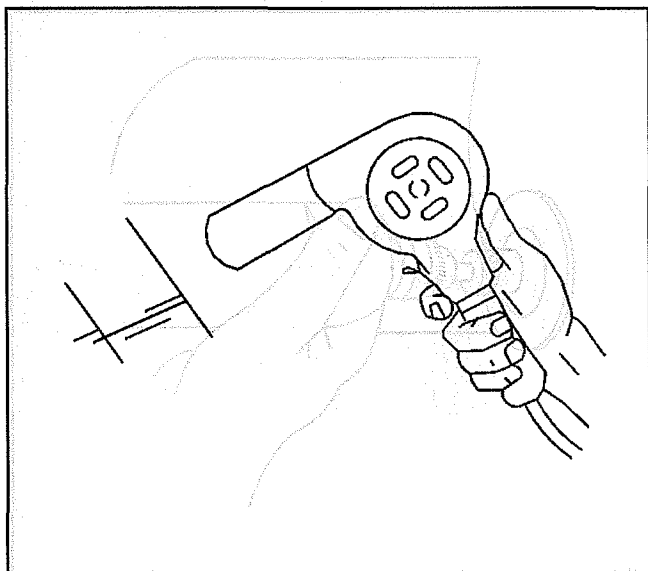


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5. Apply, follow the manufacturer's instructions, a skim coat of repair material to the back of the damaged area.
6. Install the patch:
 - 6.1. Align the patch over the damage on the back of the panel.
 - 6.2. Clamp or prop the patch onto the panel.
 - 6.3. Cover with repair material any voids or gaps at the edges of the patch that could allow entry of water or chemicals.

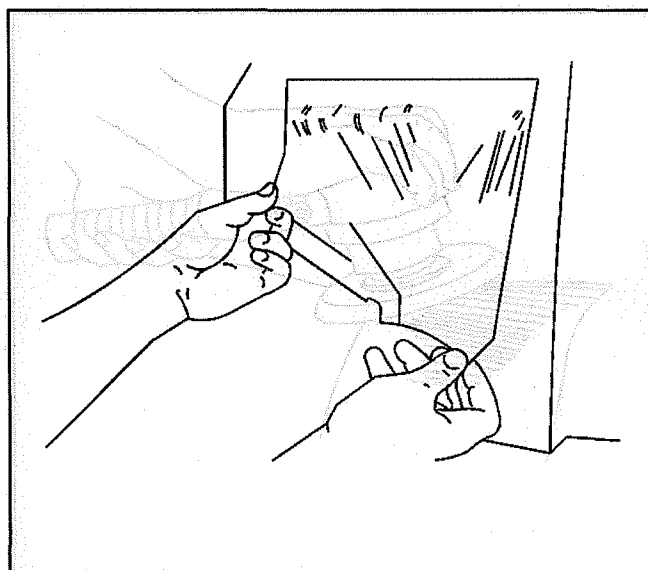


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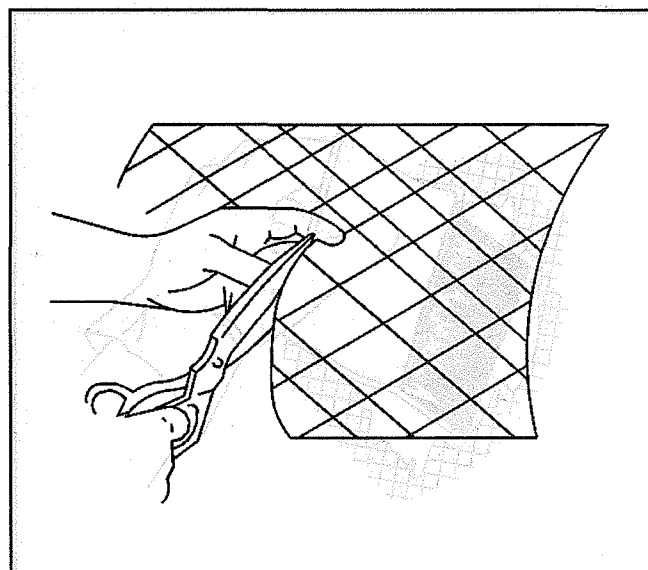
7. Cure according to the manufacturer's instructions.
8. Remove the clamp or the prop when curing is complete.



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Method 3

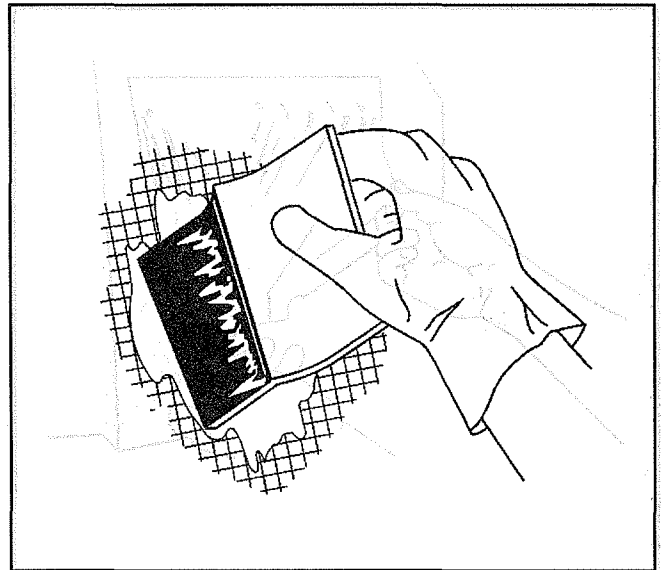
1. Cut a piece of wax paper or polyethylene film material such as that used to wrap food:
 - 1.1. Cut the material to extend about 75 mm (3 in) beyond the repair area.
 - 1.2. Tape the material to the outside of the repair surface.



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2. Cut a piece of the glass cloth mat to the desired shape, extending the mat 38–51 mm (1.5–2.0 in) beyond the repair area.

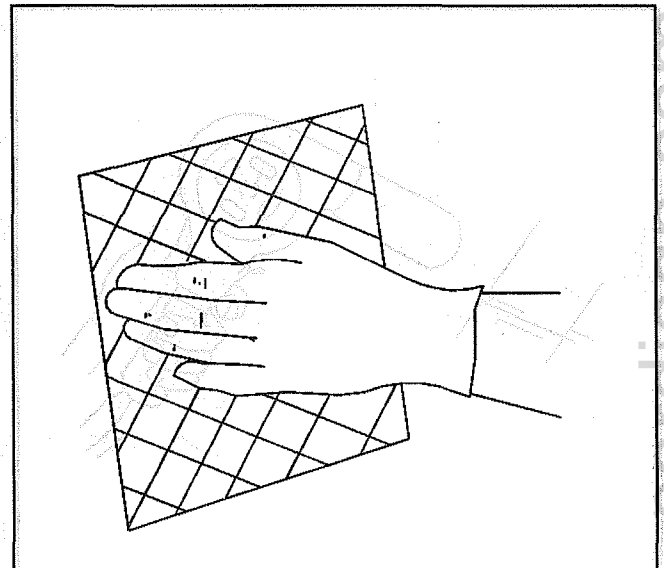
3. Determine the proper repair material. Refer to *Repair Materials - Flexible Plastic Part* or *Repair Materials - Rigid Plastic Part*.
4. Mix the repair material according to the manufacturer's instructions.
5. Apply, follow the manufacturer's instructions, a layer of the repair material.



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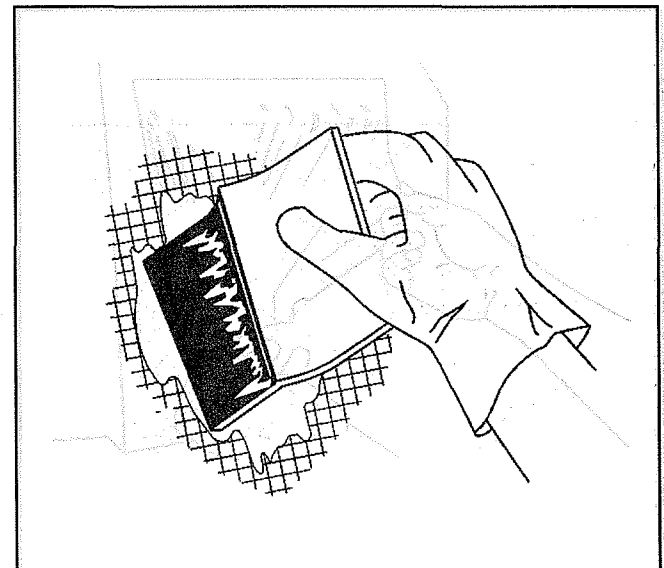
6. Place a layer of the mat over the repair material.
7. Smooth out any wrinkles in the mat. Follow the contour of the panel.



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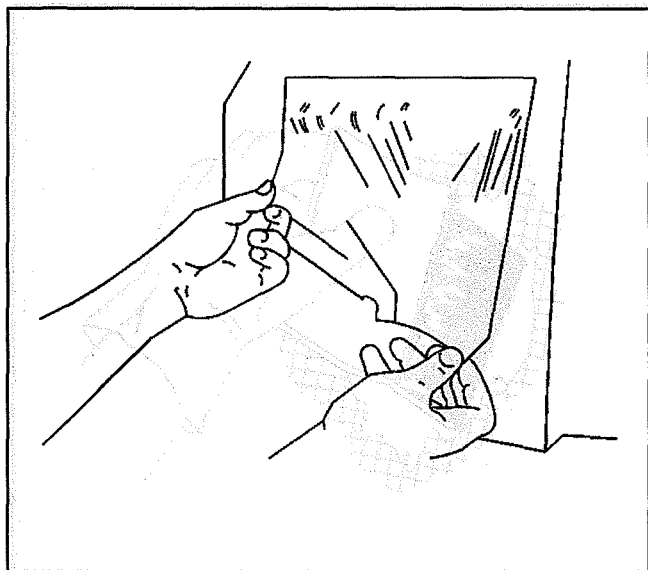
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8. Apply a coat of repair material.

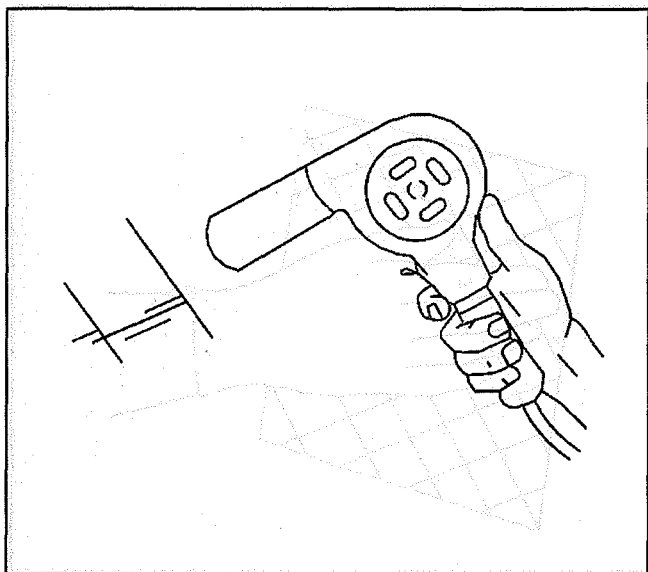


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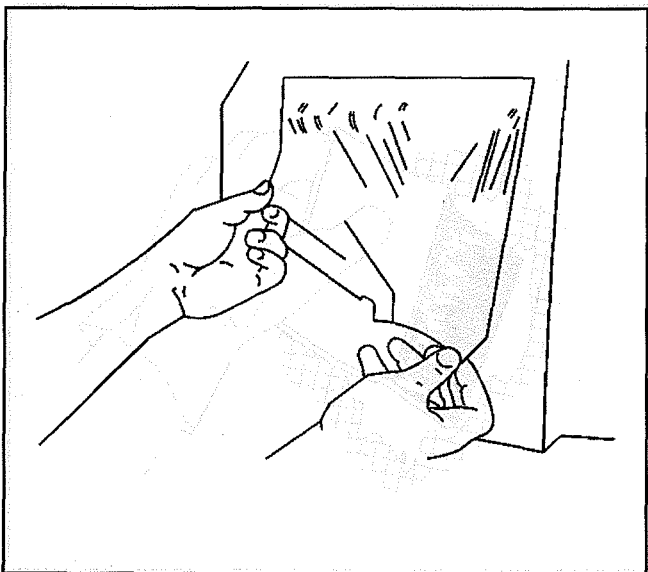
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9. Cover the repair material with the wax paper or polyethylene.
10. Press against the wax paper with a saturation roller or squeegee in order to ensure saturation of the mat and to remove any air bubbles.
11. Continue applying layers as before as needed to strengthen.
12. Form the patch to match as close as possible the surface of the panel.

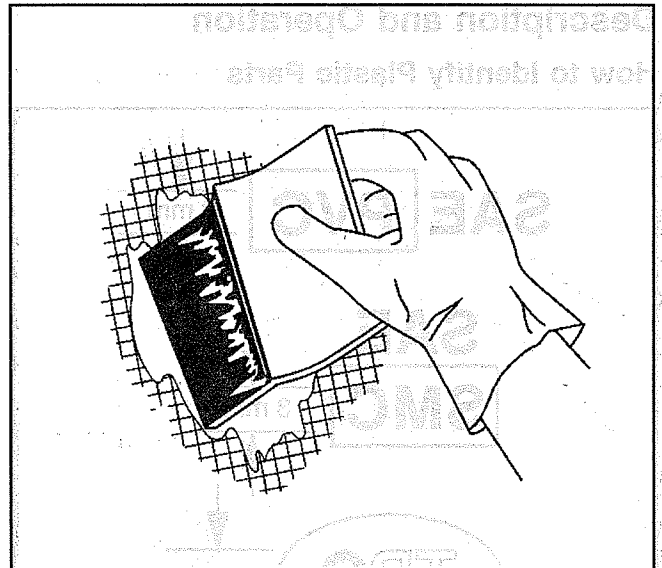
13. Cure according to manufacturer's instructions.
14. Allow to return to room temperature.
15. Pop off the patch.

16. Remove the wax paper or polyethylene.

17. Apply a skim coat of repair material.

18. Install the patch:

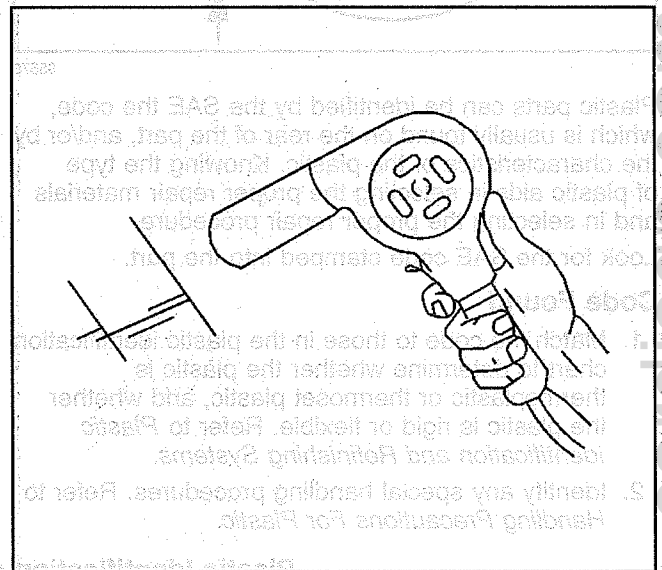
- Align the patch over the damage on the back of the panel.
- Clamp or prop the patch onto the panel.
- Cover with repair material any voids or gaps at the edges of the patch that could allow entry of water or chemicals.



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19. Cure according to the manufacturer's instructions.

20. Remove the clamp or the prop when curing is complete.

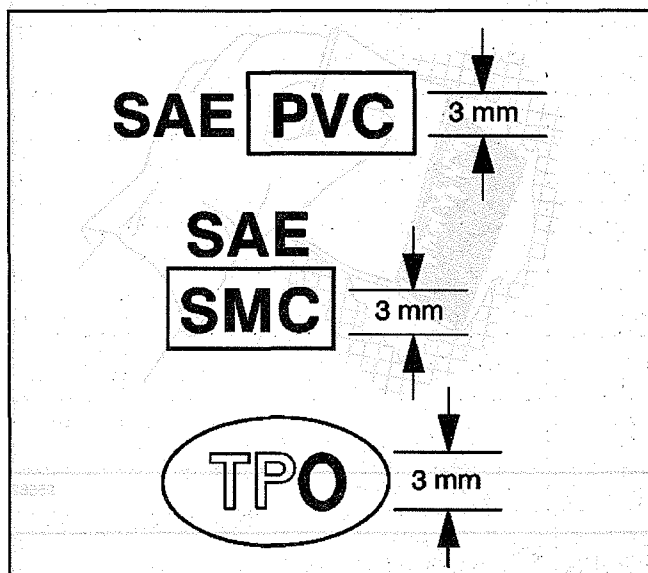


193342

Identifying Symbol - Old Symbol in ()	Identifying Symbol - New Symbol	Chemical Composition or Plastic Family Name	Typical Area(s) Where Part is Used	Examples of Part Names	Type of Plastic
ABS	ABS	Acrylonitrile Butadiene-Styrene	Ammeter Support, Console, IPC, Steering Column Bracket, Jacket, Trim Molding	ABS, Absall, Apac, Cycloac, Dyl, Kralastic, Lustran	Thermoplastic
ABS + PC	ABS + PC	Acrylonitrile Butadiene-Styrene + Polycarbonate	Instrument Panel, IPC	Bayblend, Cycloac, KHA, Poloy	Rigid
ABS/PVC	ABS/PVC	ABS/Vinyl (Soft)	Head Rest Cover, Instrument Panel Pad, Trim Molding/Panel	ABS Vinyl	Flexible, Vinyl
EPDM	EPDM	Estyrene Propylene Diene Monomer	Body Panel, Bumper, Trapped Strip	EPDM, Nordel	Rigid
EVA (EVA)	EVA (EVA)	Ethylene/Vinyl Acetate	Head Rest Cover, Mido Soft Trim	Evaex, Microthane	Flexible
PA	PA	Polyamide	Headlamp Bezels, Quarter Panel, Extension, Exterior Finish Trim Panels	Nylon, Capron, Zyl, Rilsan, minlon, Vydane, Wellant	Rigid

Description and Operation

How to Identify Plastic Parts



95570

Plastic parts can be identified by the SAE the code, which is usually found on the rear of the part, and/or by the characteristics of the plastic. Knowing the type of plastic aids in selecting the proper repair materials and in selecting the proper repair procedure.

Look for the SAE code stamped into the part.

Code Found

1. Match the code to those in the plastic identification chart to determine whether the plastic is thermoplastic or thermoset plastic, and whether the plastic is rigid or flexible. Refer to *Plastic Identification and Refinishing Systems*.
2. Identify any special handling procedures. Refer to *Handling Precautions For Plastic*.

No Code Found

Important: Do not use a plastic burn test in order to distinguish the types of plastics. The burn test produces vapors that are harmful to you.

Perform one or both of the following tests to determine if the part is thermoplastic (polyolefin) or thermoset (non-polyolefin).

Float Test

1. Cut a shaving of plastic from the back of the part. The shaving should be free of mold release agents and paint.
2. Place the shaving in a container of water.
 - Thermoplastic (polyolefin) floats
 - Thermoset (non-polyolefin) sinks

Abrasion Test

- Sand a spot near the damaged with Grade 36 Roloc Disc.
- Thermoplastic (polyolefin) material melts or frays when sanded.
- Thermoset (non-polyolefin) material sands cleanly.

Thermoplastic and thermoset plastics can be either rigid or flexible. Thermoplastic plastic parts are best repaired with a hot iron plastic material-feed welder, but are usually replaced. Thermoset plastic can be repaired with epoxy or other more rigid two package repair material.

- For rigid thermoset repair materials refer to *Repair Materials - Rigid Plastic Part*.
- For flexible thermoset repair materials refer to *Repair Materials - Flexible Plastic Part*.
- For general repair instructions refer to *General Plastic Repair Instructions*.

Plastic Identification and Refinishing Systems

Identifying Symbol - Old Symbol in ()'s	Chemical Composition or Plastic Family Name	Typical Area(s) Where Part is Used	Examples of Common/Trade Names	Type of Plastic
ABS	Acrylonitrile/Butadiene- Styrene	Armrest Support, Console, IPC, Steering Column Bracket/ Jacket, Trim Molding	ABS, Absafil, Abson, Cycolac, Dyel, Kralastic, Lustran	Thermoplastic
ABS + PC	Acrylonitrile/Butadiene- Styrene + Polycarbonate	Instrument Panel, IPC	Baybland, Cycoloy, KHA, Proloy	Rigid
ABS/PVC	ABS/Vinyl (Soft)	Head Rest Cover, Instrument Panel Pad, Trim Molding/Panel	ABS Vinyl	Flexible, Vinyl
EPDM	Ethylene Propylene Diene Monomer	Body Panel, Bumper Impact Strip	EPDM, Nordel	Rigid
EVA (EVAC)	Ethylene/Vinyl Acetate	Head Rest Cover, Misc Soft Trim	Elvax, Microthane	Flexible
PA	Polyamide	Headlamp Bezels, Quarter Panel Extensions, Exterior Finish Trim Panels	Nylon, Capron, Zytel, Rilsan, minion, Vydine, Welland	Rigid

Plastic Identification and Refinishing Systems (cont'd)

Identifying Symbol - Old Symbol in ()'s	Chemical Composition or Plastic Family Name	Typical Area(s) Where Part is Used	Examples of Common/Trade Names	Type of Plastic
PA, PAG, PAGG	Polyamide	Exterior Finish Trim Panel, Headlamp Bezel, Quarter Panel Extension	Capron, Minlon, Nylon, Rilsan, Vydine, Wellamid, Zytel	Rigid, Thermoset
PA + PPE	Polyimide + Polyphenylene Ether	Exterior Trim, Fender	GTX	Rigid, Thermoset
PBT + TEEE (PBTP + EEBC)	Polybutylene, Terephthalate + Ether, Ester Block Compound	Fascia, Rocker Panel Molding	Bexloy M	Rigid
PC	Polycarbonate	Interior Rigid/Hard Trim Panel, Valance Panel	Calibre, Lexan, Merlon	Rigid, Thermoset
PC + PETP	Polycarbonate + Polybutylene, Terephthalate	Bumper Fascia	Macroblend, Valox, Xenoy	Flexible, Thermoset
PE	Polyethylene	Fuel Tank Shield, Inner Fender Panel, Interior Trim Panel, Seat Belt Cover, Spoiler, Valance	Alathon, Dylan, Foriflex, Hi-fax, Hosalen, Marlex, Paxon	Rigid, Thermoplastic
PF	Phenol- Formaldehyde	Ashtray	Amberol, Bakelite, Durez, Genal, Phenolic, Plyophen, Resinox	Rigid, Thermoset
PP	Polypropylene	Bumper Fascia, Cowl Panel, Deflector Panel, Door Panel, Inner Fender, Interior Molding, Kick Panel, Load Floor, Radiator Shroud, Wheel Cover	Azdel, Daplen, Escorene, Marlex, Novolen, Oleflo, Profax, Tenite	Flexible, Thermoplastic
PPE (PPO)	Polyphenylene Ether	Bezels, Chromed Plastic, Headlamp Door, Ornaments	Noryl, Oleflo, Prevex	Rigid, Thermoset
PS	Polystyrene	Dash Panel, Door Panel	Durathon, Dylan, Lustrex, Polystyrol, Styron	Flexible, Soft
PUR	Polyurethane, Thermoset (Unsaturated)	Bumper Fascia, Filler Panel, Front/Rear Body Panel	Bayflex, Castethane, RIM, RRIM	Thermoset
PVC	Polyvinyl Chloride (Vinyl)	Interior Soft Trim, I/P Skins, Roof Cover	Geon, Pliovic, Unichem, Vinoflex, Vinyl, Vinylite	Flexible, Vinyl
SAN (SA)	Styrene- Acrylonitrile	Center Console, Glove Box Door, Interior Trim Panel	Foracryl, Lustran, Tyril	Rigid
TEO (EP, EPM, TPO)	Ethylene/ Propylene (Rubber)	Air Dam, Bumper Fascia, Valance Panel	EPI, EPII, TPO, TPR (Thermoplastic Rubber)	Flexible, Thermoplastic
TPO	Thermal Plastic oletin	Bumper Covers	TPO	Flexible Thermoplastic
TPU (TPUR)	Polyurethane, Polyolefin	Bumper Fascia, Gravel Deflector, Soft Filler Panel, Window Molding	Estane, Pellethane, Roylar, Toxin	Flexible, Thermoplastic
UP	Polyester/ Thermoset	Air Scoop, Air Spoiler, Fascia Extension, Hood, Instrument Housing, Rear Compartment Lid, Roof, Ventilation Grid	Fiberglass, Premi-glas, Selectron, SMC, Vibrinmat	Rigid, Thermoset

For symbols not listed in this table, contact the Society of Automotive Engineers, 400 Commonwealth Drive
Warrendale, PA 15096-0001

Handling Precautions For Plastic

Abbreviation	Material Name	Heat Resisting Temperature C (F)	Resistance to Gasoline and Solvents	Other Cautions
AAS	Acrylonitrile acrylic rubber styrene	95 (203)	Avoid gasoline and solvents	Avoid brake fluid
ABS	Acrylonitrile butadiene-styrene resin	90 (194)	Avoid gasoline and solvents	Avoid brake fluid
AES	Acrylonitrile ethylene styrene	90 (194)	Avoid gasoline and solvents	Avoid brake fluid
FRP	Fiber reinforced plastics	170 (338)	Gasoline and most solvents are harmless	—
PA, PAG, PAGG	Polyamide (nylon)	150 (302)	Gasoline and most solvents are harmless	Avoid immersing in water
PBT	Polybutylene terephthalate	140 (284)	Gasoline and most solvents are harmless	—
PC	Polycarbonate	120 (248)	Avoid gasoline and solvents	—
PE	Polyethylene	80 (176)	Gasoline and most solvents are harmless	Flammable
PMMA	Polymethyl methacrylate	90 (194)	Avoid gasoline and solvents	Avoid brake fluid
POM	Polyacetal	120 (248)	Gasoline and most solvents are harmless	Avoid battery acid
PP	Polypropylene	90 (194)	Gasoline and most solvents are harmless	Flammable
PPC	Polypropylene composite	115 (239)	Gasoline and most solvents are harmless	Flammable
PPE	Polyphenylene ether	110 (230)	Avoid gasoline and solvents	—
PUR	Polyurethane	90 (194)	Gasoline and most solvents are harmless	Avoid brake fluid
PVC	Polyvinyl chloride	90 (194)	Gasoline and most solvents are harmless if wiped up quickly	Toxic when burned
TPE	Thermoplastic elastomer	80 (176)	Avoid gasoline and solvents	—
TPR	Thermoplastic rubber	80 (176)	Avoid gasoline and solvents	—

Plastic Repair Precautions

Adhere to the following precautions during thermoset plastic repair:

1. Apply protective cream to any exposed skin in order to prevent skin irritation.
2. Wear rubber gloves.
3. Wear safety glasses when using compressed air and when sanding.
4. Immediately remove any mixture that comes into contact with skin. The mixture hardens quickly.
5. Wear an air supplied respirator or dust mask when grinding or sanding.
6. Use a sander with a vacuum attachment whenever possible in order to control any dust.
7. Wash skin with cold water in order to alleviate minor skin irritation from glass and resin dust.
8. Do not get any of the repair material on clothing.
9. Use repair materials in a well-ventilated area. The repair materials may produce toxic fumes.
10. Follow the repair material manufacturer's instructions.
11. Close all containers after use. Dirt or moisture contamination of the repair material can result in an unsatisfactory repair.