PLASTIC REPAIR AND REFINISHING PROCEDURES

As more fenders, bumper covers, dashboards and interior trim panels need to be repaired and refinished, technicians have made **SEM** “The Right Choice” for their plastic repair and refinishing needs.

In the past, technicians could not start the repair until they identified the plastic from which the damaged part was made. **SEM** eliminates this step by identifying three basic plastic categories: flexible, rigid and extra rigid, and then prescribes specific procedures and necessary products for repairing each type of plastic.

FLEXIBLE PLASTICS
PUR Polyurethane
TPUR Thermoplastic Polyurethane
RIM Reaction Injection Molded Urethane
And similar plastics

EXTRA RIGID PLASTICS
SMC Sheet Molded Compound
FRP Fiberglass Reinforced Polyester
PC/ABS
HPA Honda Polymer Alloy
PPO/PA Rigid Polymer Alloy
GTX Alloy blend of nylon
And similar plastics

RIGID PLASTICS
ABS Acrylontrile Butadiene Styrene
E/P-TPO Ethylene/Propylene Thermoplastic
PC Polycarbonate
PP Polypropylene
TPO Thermoplastic Olefi
TPE Thermoplastic Elastomer
UP Polyester Thermoset
EPDM Ethylene Propylene Diene Monomer
And similar plastics

I-CAR® | INDUSTRY TRAINING ALLIANCE™

REPAIRING FLEXIBLE AND RIGID PLASTIC

MATERIALS

3833( ) SCUFF & CLEAN & gray scuff pads

3835( ) PLASTIC & LEATHER PREP
& lint free towels or
4040( ) ZERO VOC SURFACE CLEANER
& lint free towels

77713 XXX BUMPER STRIPPER
or 39913 URETHANE BUMPER STRIPPER

Grinder with 24 grit disc

70006 PLASTIC REPAIR REINFORCING TAPE

INSTRUCTIONS

1 Clean first with **3833( ) SCUFF & CLEAN** and a gray scuff pad. Rinse with water and dry.

2 Clean with **3835( ) PLASTIC & LEATHER PREP** using a clean lint free towel and wiping in one direction. Or, apply **4040( ) ZERO VOC SURFACE CLEANER** and clean with a lint free towel until dry. If contamination still exists after cleaning, water will bead on the surface. Repeat until beading no longer occurs.

TECH TIPS

Wiping in one direction will remove contaminants from the surface, rather than smearing contaminants around.

NOTE: If the part to be repaired has been refinished, use **77713 XXX BUMPER STRIPPER or 39913 URETHANE BUMPER STRIPPER** to remove the refinish material

3 Cut or grind away ragged edges. Sand with 80 grit paper 2-3" around damaged area.

4 At low RPM, using a 24 grit disc, gradually "V" groove or dish out the damaged area.

5 Reinforce large holes with **70006 PLASTIC REPAIR REINFORCING TAPE**. In such cases, clean the back side of the repair as outlined in steps 1 and 2. Cut or grind away ragged edges. Grind 3-4" around the damaged area using a 24 grit disc at low speed. Lay **70006** over the damaged area. Dispense repair material 2-3" beyond the repair area. Use a putty knife or spreader and press repair material firmly into repair area to eliminate air pockets.

INSTRUCTIONS

6 Fill the front side of the repair area with repair material. Use a putty knife or spreader and press firmly into repair area to eliminate air pockets. Overfill repair material higher than surrounding area to allow for sanding.

FEATURES OF SEM REPAIR MATERIALS

- State of the art epoxy technology adheres to substrates other repair materials cannot.
- Superior adhesion for a strong and long lasting repair.
- Does not shrink or pinhole which speeds up the repair process.
- Excellent sanding and feather edge qualities for flawless repairs
- Saves money and time - no adhesion promoter necessary.

7 Allow repair material to cure for 15-20 minutes before sanding with 80 grit paper. Finish sanding with 180 grit paper.

8 For slight imperfections, reapply a skim coat of repair material, **40482 BUMPER BITE**. Re-sand with 180 grit sandpaper and clean with **3835( ) PLASTIC & LEATHER PREP**.

9 Apply refinishing system of choice. See pages 6-7 for details.

MATERIALS

For **ABS, TPO, PP, PPO, EPDM, TEO** or **TPE** use:

39767 PROBLEM PLASTIC REPAIR MATERIAL
or 68422 MINI-MAX BUMPER REPAIR MATERIAL

For **PUR, RIM** or **TPUR** use:

39847 MULTI-PLASTIC REPAIR MATERIAL

180 grit sand paper

180 grit sand paper & 40482 BUMPER BITE

TECH TIPS

If the type of plastic being repaired is unknown, grind the plastic with a 24 grit disc at high speed. If the plastic begins to smear and melt, use **39767 PROBLEM PLASTIC REPAIR MATERIAL** or **68422 MINI-MAX BUMPER REPAIR MATERIAL** to complete your repair. If the plastic is flexible and powders when you grind it, use **39767 or 39847** to complete the repair.

REPAIRING EXTRA RIGID PLASTIC

MATERIALS

3833( ) SCUFF & CLEAN & gray scuff pads

3835( ) PLASTIC & LEATHER PREP
& lint free towels or
4040( ) ZERO VOC SURFACE CLEANER
& lint free towels

80 grit sand paper & a grinder with 36-40 grit disc & 3835( )PLASTIC & LEATHER PREP
& lint free towels

70006 PLASTIC REPAIR REINFORCING TAPE
& 39337 DOOR SKIN & SMC ADHESIVE
or 39907 NON-SAG FAST SET ADHESIVE
or 4050( ) QUICK SET 50

Application Guns Available:
70019 1.7 OZ MANUAL APPLICATOR GUN
70039 UNIVERSAL PNEUMATIC APPLICATOR GUN
71119 UNIVERSAL MANUAL APPLICATOR GUN

INSTRUCTIONS

1 Clean thoroughly with **3833( ) SCUFF & CLEAN** and a gray scuff pad. Wipe off with a damp towel and dry.

2 Clean with **3835( ) PLASTIC & LEATHER PREP** using a clean, lint free towel and wiping in one direction. Or, apply **4040( ) ZERO VOC SURFACE CLEANER** and clean with a lint free towel until dry.

NOTE: Use caution during cleaning process to avoid saturating exposed fibers with water or solvent.

3 Sand with 80 grit 2-3” around damaged area. Using a 36-40 grit disc, gradually “V” groove or dish out the damaged area making a gradual taper 1 ½” wide leaving no sharp edges. Blow off to remove dust and clean again with **3835( ) PLASTIC & LEATHER PREP**. Blow off again to ensure surface is completely dry.

NOTE: For cosmetic repairs, skip to step 6. For structural repairs, such as a puncture, continue to step 4.

4 Large holes should be reinforced with **70006 PLASTIC REPAIR REINFORCING TAPE** or a backer panel made from scrap SMC, fiberglass or similar plastic. Cut and fit scrap material to be used as a backer panel, making certain the original contour of the panel being repaired is followed as closely as possible. Grind bonding surfaces with 36 grit disc. Bond backer panel in place with **39337 DOOR SKIN & SMC ADHESIVE, 39907 NO-SAG FAST SET ADHESIVE** or **4050( ) QUICK SET 50**. **39907**, **39337 or 4050( ) MUST BE USED FOR STRUCTURAL REPAIRS.**

39337 DOOR SKIN & SMC ADHESIVE
A non-sag, two component adhesive for bonding door skins to door frames as well as SMC to SMC and SMC to metal.
Working time: 25-30 minutes

39907 NON-SAG FAST SET ADHESIVE
A fast bonding material for most plastics that works as a multi-purpose adhesive for when quick setting is needed.
Working time: 2-3 minutes

4050( ) QUICK SET 50
A fast curing, general purpose urethane adhesive designed for automotive plastic repair.
Working time: 45-60 seconds

INSTRUCTIONS

5 Clean out all excess adhesive from the area to be filled. This is most easily done just after set time with a scraper or razor blade. Otherwise, carefully grind out with a 36-40 grit disc. If this material is not removed, it could cause swelling commonly known as a "bull's eye" or "halo".

6 Mix a 1" ribbon of cream hardener with a golf ball sized amount of **39542 CARBO FILL**. Do not over catalyze or mix more than can be used in 3-5 minutes. Mix thoroughly to a uniform color.

MATERIALS

Grinder with 36-40 grit disc

39542 CARBO FILL

FEATURES OF 39542 CARBO FILL

- Prevents swelling for invisible repairs.
- Resists staining and shrinkage.
- Easy to sand formulas save time and labor.
- Quick cure time – sand in only 10-15 minutes.

Formulated for exceptional cosmetic and structural repair for SMC, FRP, HPA and PPO/PA. **Carbo Fill** eliminates the risk of swelling the substrate, which is typically viewed as a "bull's eye" or "halo" by providing the same expansion and contraction characteristics as the original substrate. **39542** is carbon fiber enriched for extra strength and durability.

7 Fill repair area with chosen repair material. Use a putty knife or spreader and press firmly into repair area to eliminate air pockets. Apply repair material higher than surrounding area to allow for sanding.

8 Allow repair material to cure for 10-15 minutes before sanding with 80 grit paper. Finish sanding with 180 grit paper.

9 For slight imperfections, reapply a skim coat of repair material and finish sanding with 180 grit sandpape .

10 Apply refinishing system of choice. See pages 6-7 for details

MATERIALS

3835( )PLASTIC & LEATHER PREP
& lint free towels or
4040( ) ZERO VOC SURFACE CLEANER
& gray scuff pads

or

3913( ) FLEXIBLE PRIMER SURFACER or
420( )3 HIGH BUILD PRIMER SURFACER

38203 GUIDE COAT BLACK

320 - 400 grit sand paper

INSTRUCTIONS

1 Blow off surface. Clean with **3835( ) PLASTIC & LEATHER PREP** using a clean, lint free towel and wiping in one direction. Or, use **4040( ) ZERO VOC SURFACE CLEANER** and scrub with a clean gray scuff pad. Rinse with water and dry.

2 To fill sand scratches and prepare the surface for painting, apply **3913( ) FLEXIBLE PRIMER SURFACER**, **420( )3 HIGH BUILD PRIMER SURFACER** per directions.

	Flexible	Easy to Sand	High Build	Plastics	Metal and Aluminum	Water Based
3913( )	●	●		●		
420( )3	●	●	●	●	●	

3 Allow primer to dry according to directions. Apply **38203 GUIDE COAT BLACK** per directions.

38203
GUIDE COAT BLACK

Gives the autobody technician a visual guide to a smooth surface when sanding most primer surfacers.

4 Dry sand with 320-400 grit paper. Blow off surface and tack clean with a tack cloth.

NOTE: Do not wet sand.

INSTRUCTIONS

5 After priming and sanding, apply the paint system of choice.

When additional flexibility is required, **SEM** offers **39728 SUPER SEM FLEX**. **39728** is universal and is compatible with most major paint companies' materials.

SEM BUMPER COATER AEROSOLS are available in many OEM colors to match most contrasting domestic and foreign bumpers.

MATERIALS

3910( ) FLEXIBLE BUMPER COATER or
3910( )-LV LOW VOC FLEXIBLE BUMPER COATER

TECH TIPS

If the plastic part is too damaged to repair, aftermarket parts or OEM replacements may be used. Many of these parts are made from TPO, PP, EPDM and similar thermoplastics. **7772( ) XXX ADHESION PROMOTER** and **3986( ) PLASTIC ADHESION PROMOTER** promote adhesion of topcoat materials to these problem plastics ensuring a quality repair.

DUPLICATING A TEXTURED FINISH

3985( ) TEXTURE COATING allows you to duplicate the original finish on plastic bumpers, instrument panels, dashes, consoles and other textured and vinyl parts. Textures ranging from a very fine, almost undetectable pattern to a heavy or wavy effect can be achieved simply by altering the distance to the surface, the speed of application, or when applied with a spray gun, the fluid tip size.

When applying **TEXTURE COATING** with either a spray gun or aerosol, it is important not to pull or release the trigger or valve over the surface being textured. This can result in an inconsistent texture. Allow sufficient flash times between coats to avoid losing texture. Once **TEXTURE COATING** is dry to touch, lightly sand area with a gray scuff pad or 400 grit sandpaper to achieve uniform texture.

TEXTURE COATING must be topcoated. **3985( )** is compatible under most topcoats, but best results are achieved when used with **SEM COLOR COAT** or **BUMPER COATERS**.

SEM SCHOOL

SEMSchool

The better trained you are, the more profit your shop turns. That's why we offer comprehensive training programs to our customers. **SEM School**, a nationally known training program, is available at no charge to professionals who use and sell SEM products.

BUMPER TAB REPAIR

MATERIALS

3833( ) SCUFF & CLEAN & gray scuff pads

3835( ) PLASTIC & LEATHER PREP& lint free towels
or 4040( ) ZERO VOC SURFACE CLEANER
& gray scuff pads

3986( ) PLASTIC ADHESION PROMOTER or
7772( ) XXX ADHESION PROMOTER

Drill with 1/8" bit

70007 PLASTIC REPAIR CONTOURING TAPE

4020( ) QUICK SET 20
or 4050( ) QUICK SET 50

Grinder with
36-40 grit disc

INSTRUCTIONS

1 Clean thoroughly with **3833( ) SCUFF & CLEAN** and a clean gray scuff pad. Rinse with water and dry.

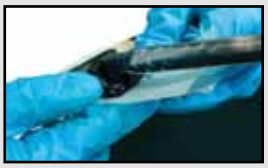
2 Clean with **3835( ) PLASTIC & LEATHER PREP** using a clean, lint free towel and wiping in one direction. Or, apply **4040( ) ZERO VOC SURFACE CLEANER** and clean with a lint free towel until dry.

3 Grind repair area on low RPM with a 36-40 grit disc. Drill 1/8" holes approximately 1/2" apart into the repair area. This will help lock the repair material in place.

NOTE: For application on TPO, EPDM, PP and other similar thermoplastics, use **3986( ) PLASTIC ADHESION PROMOTER** or **7772( ) XXX ADHESION PROMOTER** per directions.

4 Cut a piece of **70007 PLASTIC REPAIR CONTOURING TAPE** twice the length of the repair.

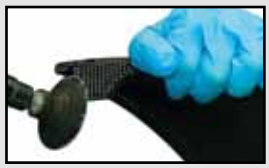
5 Dispense **4020( ) QUICK SET 20** or **4050( ) QUICK SET 50** onto **70007**. Quickly apply **70007** and repair material to the repair area and mold into shape using your hands or a spreader.



NOTE: Work quickly - the repair material will set in 15-30 seconds using 4020( ) and 45-60 seconds using 4050( ). CAUTION: **4020( )** and **4050( )** can get very hot while curing.

6 Allow the repair to cure for 5 minutes before removing plastic film

7 Sand with a 36 grit disc to desired shape and drill as needed.



PLASTIC REPAIR
STANDARD OPERATING PROCEDURE

1 PREP

Clean front and back with **Scuff & Clean** and damp, gray scuff pad. Rinse with water and dry or wipe with a clean, damp cloth until removed. Clean front and back with **SEM Solve, Plastic & Leather Prep** or **XXX Universal Surface Cleaner**. Wipe clean in one direction with dry, lint-free cloth.

2 SAND & DISH

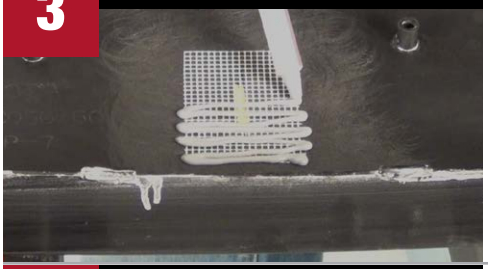
On front side, sand repair area with P80 grit. Dish out damage with P36 grit disc at a low RPM. On back side, grind repair area with P36 grit disc at a low RPM. Blow off surfaces.

ⓘ Paint does not need to be stripped from the repair if it has good adhesion.

! Do not grind too fast and cause plastic to melt.

ⓘ (Optional) Apply **XXX Adhesion Promoter** to all prepped surfaces.

3 REINFORCE & FILL BACK



Mask front side of repair to prevent repair material from flowing through. Apply **Plastic Repair Contouring Tape** (mesh only) to back side. Apply **Dual-Mix™ Multi-Plastic Repair Material** or **Dual-Mix Problem Plastic Repair Material** and cover mesh tape. Spread material firmly. Allow to set.

4 REINFORCE & FILL FRONT

Remove tape from front. Fill front with **Dual-Mix Multi-Plastic Repair Material** or **Dual-Mix Problem Plastic Repair Material.** Spread material firmly and build up higher than panel to allow for sanding. Allow to set before sanding.

5 SAND & SKIM

Sand with P80 grit. Finish with P180 grit. If needed, use a skim coat of **Bumper Bite™ Flexible Glaze**, then sand with P180 – P320 grit.

ⓘ Refer to **Plastic Refinishing SOP** for refinishing steps.

PRODUCT LIST

PREP

Part	Product	Size
38391	Scuff & Clean	Gallon Pump
38398	Scuff & Clean	16 oz. Tube
38371	SEM Solve	Gallon
38373	SEM Solve	20 oz. Aerosol
38374	SEM Solve	Square Quart
38351	Plastic & Leather Prep	Gallon
38353	Plastic & Leather Prep	16 oz. Aerosol
38354	Plastic & Leather Prep	Cone Quart
77721	XXX Adhesion Promotor	Gallon
77723	XXX Adhesion Promotor	16 oz. Aerosol
77724	XXX Adhesion Promotor	Cone Top Quart
77771	XXX Universal Surface Cleaner	Gallon
77774	XXX Universal Surface Cleaner	Quart

REINFORCE & FILL

Part	Product	Size
70007	Plastic Repair Contouring Tape	15' Roll
39767	Dual-Mix Problem Plastic Repair Material	7 oz. Cartridge
39847	Dual-Mix Multi-Plastic Repair Material	7 oz. Cartridge

SAND AND SKIM

Part	Product	Size
40482	Bumper Bite Flexible Glaze	16 oz. Tube