

# **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**

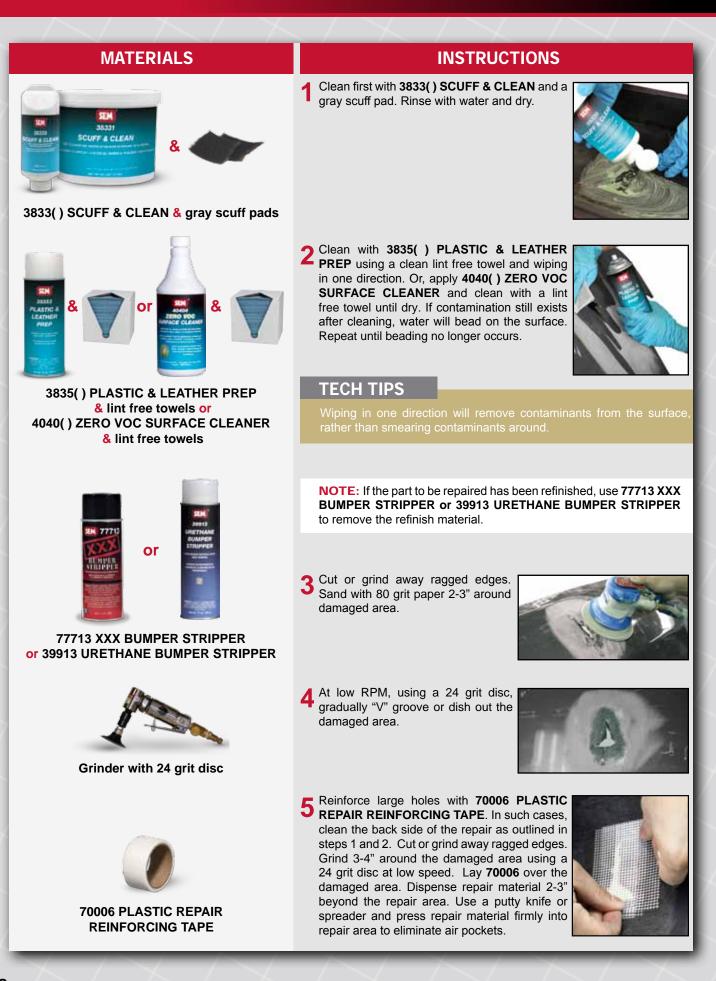
**ABS** Acrylontrile Butadiene Styrene E/P-TPO Ethylene/Propylene Thermoplastic **PC** Polycarbonate **PP** Polypropylene **TPO** Thermoplastic Olefin **TPE** Thermoplastic Elastomer **UP** Polyester Thermoset



**EPDM** Ethylene Propylene Diene Monomer And similar plastics



# **REPAIRING FLEXIBLE AND RIGID PLASTIC**



#### **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



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

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



39847 MULTI-PLASTIC REPAIR MATERIAL





#### **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**



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

# 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.

#### **FEATURES OF 39542 CARBO FILL**

area to allow for sanding.

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 en-

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

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

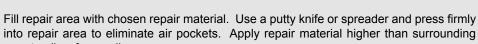




39542 CARBO FILL







# REFINISHING



## **INSTRUCTIONS**

MATERIALS

 COMP

**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 3910()-LV LO

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

DATE

OEM colors to match most contrasting domestic and foreign bumpers.

#### **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()XXXADHESION PROMOTER** and **3986() PLASTIC ADHESION PROMOTER** promote adhesion of topcoat materials to these problem plastics ensuring a quality repair.



#### **DUPLICATING A TEXTURED FINISH**

Stess Stess FEXTURE CONTING **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.

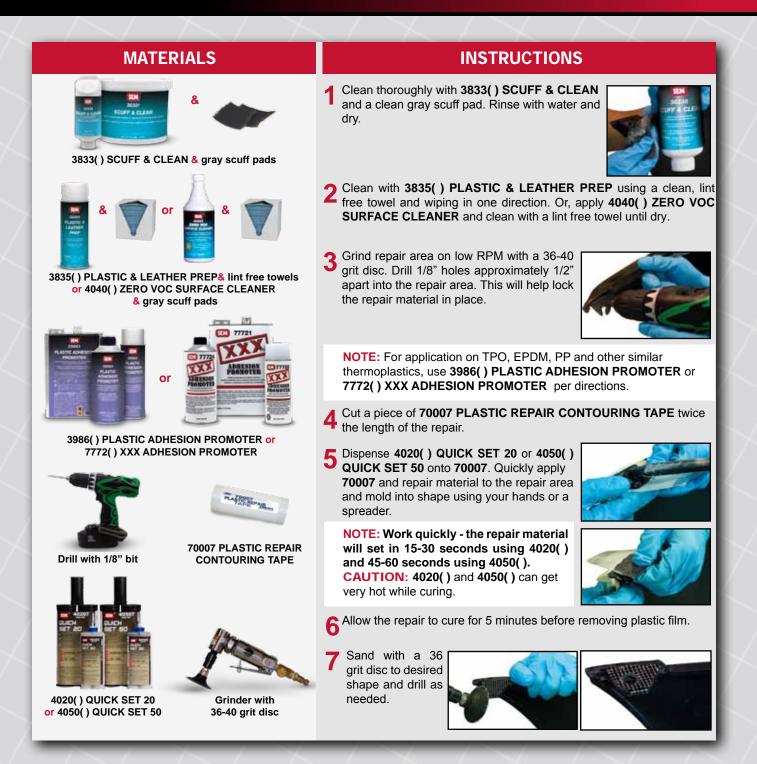
TEXTURE COATING must be topcoated. **3985(**) is compatible under most topcoats, but best results are achieved when used with **SEM COLOR COAT** or **BUMPER COATERS**.

## SEM SCHOOL



The better trained you are, the more profit your shop turns. That's why we offer comprehensive training programs to our customers.

# **BUMPER TAB REPAIR**



# PLASTIC REFINISHING STANDARD OPERATING PROCEDURE

SEM

1 PREP & PRIME	<ul> <li>If damage is present, refer to Plastic Repair Standard Operating Procedure first.</li> <li>Clean with Scuff &amp; Clean and a damp, gray scuff pad. Rinse with water and dry with clean, lint-free cloth. Clean with SEM Solve, Plastic &amp; Leather Prep or XXX Universal Surface Cleaner. Wipe clean in one direction with clean, lint-free cloth. Prime as per instructons.</li> </ul>
2 GUIDE COAT & SAND	Apply <b>Guide Coat Black</b> or <b>Premium Powder</b> <b>Guide Coat</b> to dried primer. Sand with P320 – P400 grit. Finish sanding with P600 grit.
3 ADD TEXTURE IF NEEDED	Apply <b>Texture Coating</b> or <b>Chip Guard</b> as per instructions.
4 PAINT	Apply <b>Bumper Coater™</b> , <b>Factory Pack™</b> or other automotive paint per instructions.



PKEF	•	
Part	Color	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 Top Quart
77771	XXX Universal Surface Cleaner	Gallon
77774	XXX Universal Surface Cleaner	Quart



#### **HIGH-BUILD PRIMER AEROSOLS**

Part	Color	Size
42003	Black	20 oz. Aerosol
42013	Gray	20 oz. Aerosol
42023	Beige	20 oz. Aerosol
42033	Rose	20 oz. Aerosol
42043	White	20 oz. Aerosol
See back side for complete list of Primers.		

#### **PRODUCT LIST**



#### **GUIDE COAT**

Part	Product	Size
38203	Guide Coat Black	16 oz. Aerosol
38253	Premium Powder Guide Coat	16 oz. Aerosol



#### TEXTURE

Part	Product	Size
39853	Texture Coating	20 oz. Aerosol
39854	Texture Coating	Quart
39793	Heavy Texture Chip Guard	20 oz. Aerosol
39803	Clear Chip Guard	20 oz. Aerosol
39804	Clear Chip Guard	Cone Top Quart
39813	Satin Black Chip Guard	20 oz. Aerosol
39814	Satin Black Chip Guard	Quart



#### PAINT

Part	Product	Size
39101	Bumper Coater - Black	Gallon
39104	Bumper Coater - Black	Quart
39101-LV	Low VOC Bumper Coater Black	Gallon
39104-LV	Low VOC Bumper Coater Black	Quart
	Bumper Coater - 17 Colors	16 oz. Aerosol
	Factory Pack - 40 Colors	16 oz. Aerosol
<u> </u>		

See back side for available **Bumper Coater** and **Factory Pack** aerosol colors.



#### (i) CHECK LOCAL VOC REGULATIONS TO ENSURE COMPLIANCE OF ALL PRODUCTS IN YOUR AREA. ALWAYS WEAR OSHA REQUIRED (PPE) PERSONAL PROTECTION EQUIPMENT TO ENSURE YOUR SAFETY.



# PLASTIC REFINISHING standard operating procedure i product list continued

#### PRODUCT LIST



#### **FLEXIBLE PRIMER SURFACER**

Part	Size	
39131	Gallon	
39133	16 oz. Aerosol	
39134	Quart	



#### WATERBORNE **FLEXIBLE PRIMER SURFACER** Part Size

39221 Gallon



#### **HIGH-BUILD PRIMER SURFACER**

Part	Color	Size
42003	Black	20 oz. Aerosol
42013	Gray	20 oz. Aerosol
42023	Beige	20 oz. Aerosol
42033	Rose	20 oz. Aerosol
42043	White	20 oz. Aerosol



#### **WORLD CLASS<sup>™</sup> WATERBORNE FLEXIBLE PRIMER**

Part	Size
50184	Quart



# WORLD CLASS<sup>™</sup> 4.2 VOC HS URETHANE PRIMER

Part	Product	Size
50151	HS Urethane Primer	Gallon
50154	HS Urethane Primer	Quart
50444	4.2 VOC Air Dry Activator	Cone Top Quart
50446	4.2 VOC Air Dry Activator	Half Pint
50454	4.2 VOC Fast Activator	Cone Top Quart
50456	4.2 VOC Fast Activator	Half Pint
50464	4.2 VOC Medium Activator	Cone Top Quart
50466	4.2 VOC Medium Activator	Half Pint
50474	4.2 VOC Slow Activator	Cone Top Quart
50476	4.2 VOC Slow Activator	Half Pint



#### **BUMPER COATER™ AEROSOLS** 16 OZ AEROSOLS

Part	Color
39023	Med. Driftwood Metallic
39073	Gloss Silver
39083	Gloss Black
39103	Flexible Black
39153	Charcoal
39163	Med. Smoke
39173	Dk. Smoke
39183	Med. Gray
39193	Dk. Gray
39253	Med. Titanium Metallic
39263	Dk. Titanium Metallic
39273	Charcoal Metallic
39283	Lt. Titanium Metallic
39293	Honda Black
39413	Med. Platinum Metallic
39423	Med. Quartz Metallic
39583	Lt. Charcoal



#### **FACTORY PACK**<sup>™</sup>

16 OZ AEROSOLS	
Part	Color
19013	Ford TS Silver Frost
19023	Ford YZ White
19033	Ford CX Dk Shadow Grey
19043	Ford G2 Redfire Pearl
19053	Ford FL Torreador Red Metallic
19063	Ford G3 Pueblo Gold
19073	Ford E4 Vermillion
19083	Ford DX Dk Blue Pearl
19093	Ford YN Silver Metallic
19103	Ford UA Black
19133	Honda B537M Atomic Blue
19143	Honda B92P Black Pearl
19163	Honda NH700M Alabaster Silver
19173	Honda YR538M Desert Mist Metallic
19183	Honda B536P Royal Blue Pearl
19193	Honda NH737M Polished Gray Metallic
19203	Honda R81 Milano Red
19213	Honda R525P Tango Red
19223	Honda NH578 Taffeta White
19233	Honda YR573M Mocha Metallic
19253	Toyota 1C0 Millenium Silver
19263	Toyota 1C8 Lunar Mist Metallic
19273	Toyota 1E3 Phantom Gray
19283	Toyota 040 Super White
19293	Toyota 202 Black
19303	Toyota 1D4 Titanium
19313	Toyota 4Q2 Desert Sand Pearl
19323	Toyota 056 Natural White
19353	Toyota 3R3 Red Pearl
19363	Toyota 1G3 Magnetic Gray Pearl
19373	GM WA8554 White
19393	GM WA9260 Victory Red
19403	GM WA8624 Olympic White
19423	GM WA8555 Black
19433	GM WA994L Lt Tarnished Silver
19443	GM WA519F Galaxy Silver Metallic
19453	GM WA929L Cashmere
19463	GM WA722J Dk Blue Metallic
19473	GM WA382E Pewter Metallic
19483	GM WA316N Gold Mist Metallic

# SEM BUMPER COATER **New & Improved Formula**

SEM

BUMPER COATER

SEM

39104-LV LOW VOC FLEXIBLE BUMPER COATE

- Superior adhesion to a variety of substrates
- Great for flexible or rigid substrates

SEM 39104 FLEXIBLE BUMPER COATER

- Multi-directional comfort tip
- Many OEM matched colors
- Excellent hiding
- Easy to apply



SEM

39101

FLEXIBLE

BUMPER COATER

es skin inpritation / 3.785 I

**ESION** 

REQUIRED!

EADY TO

SEM

39101-LV

LOW VOC FLEXIBLE

BUMPER COATER



**BUMPER COATER** is designed to recondition most automotive plastic bumpers and cladding. All colors have been formulated to match OEM standards and can be directly applied to metal, aluminum, TPO, PP and other problem plastics.

## PREPARATION



*For metal and aluminum:* clean surface with **3837() SEM SOLVE**. Sand surface with 320-400 grit sandpaper and clean again with **3837()**.

*For plastics:* clean surface thoroughly with **3833()** SCUFF & CLEAN, rinse with water and dry. Next, clean with **3835()** PLASTIC & LEATHER PREP.

## APPLICATION



#### **BUMPER COATER Aerosols**

Shake can vigorously for one minute after mixing ball rattles to ensure coloruniformity and to prevent clogging.Coats:2-3 lightDistance:6-8"Flash time:5-10 minutes between coats



#### 3910() and 3910()-LV FLEXIBLE BUMPER COATER

Stir thoroughly. Air Pressure: 8-10 psi at the cap with HVLP equipment

30-35 psi for non-HVLP equipment

Coats: 2 medium wet

Flash time: 5-10 minutes between coats

**NOTE:** To remove imperfections, allow first coat to dry for 15-30 minutes and then lightly sand with 400 grit paper before applying second coat.

**NOTE:** Do not rush to reinstall the part. **BUMPER COATER** adhesion improves with time. Full hardness obtained in 48 hours.



# SEM BUMPER COATER MAEROSOLS

These colors are representations only. Spray a test panel to ensure proper color.

# **OEM BUMPER COLORS** NO ADHESION PROMOTER REQUIRED



## TRIM PAINT AEROSOLS EXCELLENT ADHESION, NO PRIMER NEEDED



39033 Charcoal Trim Met. 39



**39063** Gloss Trim Black **39068** = Pint



**39143** Trim Black **39144** = Quart **39141** = Gallon **39144-LV** = 2.8 VOC Compliant Quart **39141-LV** = 2.8 VOC Compliant Gallon

# HIGH BUILD PRIMER SURFACER AEROSOLS EXCELLENT ADHESION, FILM BUILD & FLEXIBILITY

<b>42003</b> Black	<b>42013</b> Gray	<b>42023</b> Beige	42033 Rose	<b>42043</b> White

# SELF ETCHING PRIMER AEROSOLS EXCELLENT ADHESION TO BARE METAL PRIOR TO PRIMING

**39673** Black **39674** = Quart **39671** = Gallon

**39683** Gray **39684** = Quart **39681** = Gallon **39693** Green **39694** = Quart **39691** = Gallon



# SEM PLASTIC REPAIR

For complete instructions, refer to RAB-2.

Check local VOC regulations to ensure compliance in your area



**CLEAN & PREP** 

Clean front and back with Scuff & Clean.

Clean front and back with Plastic & Leather Prep or Zero VOC Surface Cleaner.



**SAND & GROOVE** 

Sand with 80 grit sandpaper.

Using a grinder, dish out damaged area with 36 grit disc at a low RPM.

Grind back of repair area with a 36 grit disc at a low RPM.



#### **SAND & SKIM**

Sand Dual-Mix Multi-Plastic Repair Material with 80 grit sandpaper. Then finish with 180 grit sandpaper.

If needed, use a skim coat of Bumper Bite<sup>™</sup> Flexible Glazing Putty.

Sand with 180 grit paper, and finish with 320 grit paper.



Sand with 320 - 400 grit sandpaper. Finish sanding with 600 grit sandpaper.

#### PRODUCT LIST



**PREP & PRIME** 

Clean with Plastic & Leather Prep. Dry with a lint free cloth.

Prime with Flexible Primer Surfacer, High Build Primer Surfacer or World **Class<sup>™</sup> Waterborne Flexible Primer.** 



**REINFORCE & FILL** 

Reinforce large holes and cracks by applying Plastic Repair Contouring Tape to the back of the repair. Spread a layer of **Dual-Mix**<sup>™</sup> Multi-Plastic Repair Material to cover all of the tape.

Fill the front side repair with **Dual-Mix** Multi-Plastic Repair Material. Spread material firmly and build up higher than panel to allow for sanding.



**GUIDE COAT BLACK** Apply Guide Coat Black to dried primer.



If texture is needed, apply Texture Coating in light coats. If texture is not needed, skip to step 9.

5



PAINT

SEM Bumper Coater<sup>™</sup> and Factory Pack<sup>™</sup> aerosols are available in many **OEM Colors.** 

19013+	Factory Pack	16 oz. Aeroso
38203	Guide Coat Black	16 oz. Aeroso
38331	Scuff & Clean	Gallo
38338	Scuff & Clean	Pin
38351	Plastic & Leather Prep	Gallo
38353	Plastic & Leather Prep	16 oz. Aeroso
38354	Plastic & Leather Prep	Cone Top Quar
39023+	Bumper Coater Aerosols	16 oz. Aeroso
39131	Flexible Primer Surfacer	Gallo
39133	Flexible Primer Surfacer	16 oz. Aeroso

9134	Flexible Primer Surfacer	Quart
9847	Dual-Mix Multi-Plastic Repair Material	7 oz. Cartridge
9853	Texture Coating	20 oz. Aerosol
9854	Texture Coating	Quart
0401	Zero VOC Surface Cleaner	Gallon
0404	Zero VOC Surface Cleaner	Quart
0482	Bumper Bite Flexible Glazing Putty	16 oz.Tube
0184	World Class Waterborne Flexible Primer	Quart
0007	Plastic Repair Contouring Tape	Tape 15' roll

# PLASTIC REPAIR STANDARD OPERATING PROCEDURE

SEM

PREP	Clean front and back with <b>Scuff &amp; Clean</b> and damp, gray scuff pad. Rinse with water and dry or wipe
	with a clean, damp cloth until removed. Clean front and back with <b>SEM Solve</b> , <b>Plastic &amp; Leather Prep</b> or <b>XXX Universal Surface Cleaner</b> . 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.
	<ul> <li>Paint does not need to be stripped from the repair if it has good adhesion.</li> </ul>
	Do not grind too fast and cause plastic to melt.
	<ul> <li>(Optional) Apply XXX Adhesion Promoter to all prepped surfaces.</li> </ul>
3 REINFORCE & FILL BACK	Mask front side of repair to prevent repair material from flowing through. Apply <b>Plastic Repair</b> <b>Contouring Tape</b> (mesh only) to back side. Apply <b>Dual-Mix™ Multi-Plastic Repair Material</b> or <b>Dual-Mix Problem Plastic Repair Material</b> and cover mesh tape. Spread material firmly. Allow to set.
4 REINFORCE & FILL FRONT	Remove tape from front. Fill front with <b>Dual-Mix</b> <b>Multi-Plastic Repair Material</b> or <b>Dual-Mix Problem</b> <b>Plastic Repair Material.</b> Spread material firmly and build up higher than panel to allow for sanding. Allow to set before sanding.
5 SAND & SKIM	<ul> <li>Sand with P80 grit. Finish with P180 grit. If needed, use a skim coat of <b>Bumper Bite™ Flexible Glaze</b>, then sand with P180 – P320 grit.</li> <li>(i) Refer to <b>Plastic Refinishing SOP</b> for refinishing steps.</li> </ul>

## **PRODUCT LIST**



PREF	)	
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** Product Part Size

70007	Plastic Repair Contouring Tape	15' KOll
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

