



1. Description

This procedure describes methods for preparing repaired or replaced plastic parts for refinishing. Inspection and evaluation requirements are also included.



2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality surface preparation of plastic parts. This procedure is intended for use by professionals who are qualified through training and experience.



3. Referenced Documents

The following documents are considered part of this procedure by reference.

3.1 Procedures

HM01	Hazardous Materials
PS01	Personnel Safety
RF11	Masking
RF21	Finish Removal
RF41	Finish Application
RF81	Finish Defects

3.2 Other Information

Equipment-specific information
Product-specific information
Vehicle-specific repair information



4. Equipment And Material Requirements

4.1 Equipment

The use of this equipment is included in this procedure:

- vacuum sanding system
- dual-action (DA) sander
- spray gun system
- appropriate spray facility
- respiratory protection

4.2 Surface Preparation Materials

The use of these materials is included in this procedure:

- plastic cleaner
- wax and grease remover
- adhesion promoter
- primer-sealer
- primer-surfacer
- epoxy primer
- flex agent
- plastic adhesion promoter
- plastic adhesion-promoting primer
- pH-neutral soap and water

Use only one product system throughout the refinishing process.



5. Damage Analysis

5.1 General Damage

To obtain proper adhesion and prevent bridging of the paint film, some parts may have to be lifted or removed in the area to be refinished.

5.2 Substrate Condition

Substrate condition information is in **RF81**.

5.3 Film Thickness

Plastic parts are sensitive to excessive film build. Determine the film thickness on a refinished part by reading the paint layers at a featheredged area. If there is excess finish, plan to remove the excess by sanding, using the proper chemical remover, or media blasting. Remove enough of the finish to allow for refinishing without exceeding the paint maker's recommended film thickness.



6. Personnel Safety

6.1 General Safety

General safety information is in **PS01**.

6.2 Safety With Finishing Materials

To prevent injury when working with finishing materials:

- Wear the proper respirator. A properly fitted, positive-pressure, fresh air-supplied respirator is required when working with materials that contain isocyanates.
- Wear solvent-resistant gloves and a paint suit to avoid skin contact with solvents or vapors.
- Wear eye protection when mixing or applying paint materials.
- Do not eat, drink, or smoke in the work area.
- Do not store flammable materials near heat or ignition sources.
- Do not use thinner, gasoline, or other solvents to clean hands, etc.
- Work in a well-ventilated area.

Follow the paint maker's recommendations when cleaning and wiping plastics, to avoid the build-up of static electricity and the possibility of fire.

6.3 Safety When Machine Sanding

To prevent injury when machine sanding:

- Wear protective clothing, goggles, gloves, and a NIOSH-approved particle respirator or dust mask.
- Work in a well-ventilated and well-lighted area.
- Direct the dust away from the face and toward the floor.
- Be aware of the air hose or electrical cord location at all times.
- Do not stand in water.
- Use vacuum sanding equipment, when available.



7. Environmental Safety

7.1 Hazardous Materials

Hazardous material safety information is in **HM01**.

7.2 Finishing Materials

These refinishing materials may be considered hazardous waste and should be disposed of following environmental regulations:

- cloth and paper wiping rags that contain finishing materials
- masking containing overspray, including liquid masking
- paints and other coating materials
- containers with residues
- solvents, such as gun-cleaning solvents
- spray area filters, when filled with overspray
- sanding dust and sludge

7.3 Volatile Organic Compounds (VOCs)

To limit the release of VOCs:

- Use high-transfer spray equipment.
- Use enclosed spray gun cleaners.
- Use low-VOC paint and cleaning products.
- Secure and close all containers when not in use.

In addition, follow any record-keeping requirements and other local VOC regulations.



8. Vehicle Protection

8.1 Adjacent Areas

Protect adjacent areas while preparing a substrate for refinishing. See **RF11**.

8.2 Cleaning Products

Use caution when cleaning plastics to avoid damaging the substrate. Do not clean plastic parts with strong solvents such as lacquer thinner. Follow the paint, vehicle, or part maker's recommendations for proper cleaning.

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8. Vehicle Protection (cont'd)

8.3 Machine Sanding

To protect the vehicle when machine sanding:

- Keep the sander moving on the surface.
- Remove dirt caught between the finish and the sandpaper.
- Do not machine sand style lines or panel edges.
- Avoid using coarse grits on flexible plastic parts.
- Protect or remove trim, decals, glass, and emblems. See **RF11**.
- Do not remove body filler.
- Use vacuum sanding equipment, when available.



9. Repair Procedure

Spot repairs are difficult to make on plastic parts. It is usually necessary to refinish an entire panel or refinish to a well-defined break line.

9.1 Identification Of Plastic

To identify the type of plastic:

- Look for an ISO code molded on the part.
- Use information from the vehicle maker.
- Perform a sanding or flexibility test.

9.2 Surface Cleaning

To clean the repair area before sanding:

1. Wash the repair area with a pH-neutral soap and water. Rinse and wipe dry.
2. Clean the repair area with a low-VOC plastic cleaner. Some product makers may recommend using a wax and grease remover to remove heavy amounts of silicone dressings from the surface before using the plastic cleaner.

9.3 Surface Preparation

To prepare the repair area:

1. Remove or lift exterior trim, hardware, stripes, decals, etc. from the repair area, as necessary to obtain proper adhesion and prevent bridging.
2. Protect any areas that should not be sanded.
3. Choose a sanding method for the surface. Follow the paint and abrasive product makers' recommendations.

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9. Repair Procedure (cont'd)

- 4. Sand the surface, keeping the repair area as small as possible.
- 5. Change to progressively finer grits to remove the sandscratches.
- 6. Perform a solvent test to identify sensitive substrates. See **9.4**.

9.4 Solvent Test

To perform a solvent test:

- 1. Wet a cloth with a strong, slow solvent.
- 2. Hold the cloth on a featheredged area for 30–60 seconds. On a new part hold the cloth on a primed area. Avoid contact with bare plastic to prevent solvent absorption.
- 3. Check the cloth for material transfer.
- 4. Check the substrate layers for softness.
- 5. If there is material transfer or the substrates are soft, correct the condition, as recommended by the paint, vehicle, or part makers.
- 6. If the substrates are sound, apply undercoats. See **9.5**. On a new part, scuff-sand the entire part before applying undercoats. See **9.6**.

9.5 Applying Undercoats

To apply undercoats:

- 1. Mask adjacent areas to protect the vehicle from overspray.
- 2. Thoroughly clean the surface, following the paint, vehicle, or part maker's recommendations.
- 3. Apply the proper primer, following the paint maker's recommendations. Bare plastic may require an adhesion promoter or plastic adhesion-promoting primer.
- 4. Reprime if further surface leveling is necessary.
- 5. Sand the repair area and prepare blend areas, following the paint, vehicle, or part maker's recommendations.
- 6. Proceed with the finish application. Remove all contaminated masking materials before applying final topcoats.

9.6 Preparing A New Part

To prepare a new part for refinishing:

- 1. Identify the type of plastic.
- 2. Wash the part with a pH-neutral soap and water. Rinse and wipe dry.
- 3. Clean the part with a recommended plastic cleaner.
Note: Some paint or vehicle makers recommend baking non-primed plastic parts, to force out mold release agents before cleaning.
- 4. If the replacement part is not primed, apply undercoats, following the paint, vehicle, or part maker's recommendations. See **9.5**.

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9. Repair Procedure (cont'd)

- 5. If the part is primed, perform a solvent test, following the paint, vehicle, or part maker's recommendations. See **9.4**.
- 6. Protect any areas that should not be sanded.
- 7. Continue the finish application.



10. Use Of Recycled (Salvage) Parts

10.1 Condition Of Salvage Parts

Inspect the finish on salvage parts for these defects:

- surface defects
- unsound paint film
- film thickness exceeding 250 microns (10 mils)
- stress cracks
- improper previous repairs or refinishing

Prepare the part for refinishing. See **9.1**. If the finish must be removed, see **RF21**.



11. Inspection And Testing

11.1 Inspection Of Prepared Areas

Inspect prepared areas for these conditions:

- removal or lifting of all tight fitting parts that would result in the bridging of the paint film
- smooth and level primed surfaces
- proper preparation of the surrounding areas to be refinished
- clean surface
- proper sanding

Correct any defects.