

# Uniform Procedures For Collision Repair

# RF01S—Surface Preparation

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v.3.3



## 1. Description

This procedure describes methods for preparing repaired or replaced steel 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 steel 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
- 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) sanders
- paint thickness gauge
- spray gun system
- appropriate spray facility



### 4.2 Materials

The use of these materials is included in this procedure:

- conversion coating
- metal conditioner
- wax and grease remover
- primer-sealer
- primer-surfacer
- epoxy primer
- self-etching primer
- wash 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

Check the paint film thickness in the repair areas with a paint thickness gauge. If the average thickness exceeds 250 microns (10 mils), plan to sand, **media** blast, or use chemicals to remove the excess finish, to allow refinishing without exceeding the paint maker's film thickness recommendations. All remaining substrates must be in good condition.





## 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 **NIOSH**-approved 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.
- Wash hands after handling materials.

### 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.
- Be aware of sharp edges on new sheet metal.
- Use vacuum sanding equipment, when available.



## 7. Environmental Safety

### 7.1 Hazardous Materials

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

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## 7. Environmental Safety (cont'd)

### 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 spray 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 Machine Sanding

To protect the vehicle when machine sanding:

- Keep the sander moving on the surface.
- Keep the sander flat on large panels or surfaces.
- Remove dirt caught between the finish and the sandpaper.
- Do not machine sand too close to trim and moldings.
- Do not machine sand style lines or panel edges.
- Protect or remove trim, decals, glass, and emblems. See **RF11**.
- Do not remove **body filler**.

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## 8. Vehicle Protection (cont'd)

- Avoid removing any **zinc coating**.
- Use vacuum sanding equipment, when available.
- Immediately protect any bare metal from **flash corrosion**. See **9.4**.



## 9. Repair Procedure

### 9.1 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 the proper wax and grease remover, as recommended by the paint maker.

### 9.2 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 and **grit** for the surface. Follow the paint and abrasive product makers' recommendations.
- 4. Sand the surface, keeping the repair area as small as possible.
- 5. Change to progressively finer grits to remove any sandscratches.
- 6. Perform a solvent test to identify sensitive substrates. See **9.3**.

### 9.3 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.
- 3. Check the cloth for material transfer.
- 4. Check the substrate layers for softness.

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## 9. Repair Procedure (cont'd)

- 5. If there is material transfer or the substrates are soft, correct the condition, as recommended by the paint and vehicle makers.
- 6. If the substrates are sound, metal-treat any bare spots and apply **undercoats**. On a new part, **scuff-sand** the entire part before applying undercoats. See **9.4** and **9.5**.

### 9.4 Metal Treatment

Immediately treat bare metal surfaces to protect them from flash corrosion. To treat bare metal surfaces:

- 1. Clean the repair area with the proper wax and grease remover, as recommended by the paint maker.  
Note: If a self-etching, epoxy, or wash **primer** that does not require a metal conditioner or conversion coating will be used, go to **9.5**.
- 2. Apply metal conditioner and conversion coating, as required. Follow the paint maker's recommendations.
- 3. Apply undercoats.

### 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 or vehicle maker's recommendations.
- 3. Apply the proper primer, following the paint or vehicle maker's recommendations.
- 4. Reprime if further surface leveling is necessary.
- 5. Sand the repair area and prepare blend areas, following the paint and vehicle makers' recommendations.
- 6. Remove and replace all contaminated masking materials before applying final topcoats.
- 7. Proceed with the finish application.

### 9.6 Preparing A New Part

To prepare a new part for finishing:

- 1. Wash the part with a pH-neutral soap and water. Rinse and wipe dry.
- 2. Clean the part with the proper wax and grease remover as recommended by the paint maker.

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## 9. Repair Procedure (cont'd)

- 3. If the part is not primed, apply metal treatment and undercoats, following the paint, vehicle, or part maker's recommendations. See **9.4** and **9.5**.
- 4. If the part is primed, perform a solvent test, following the paint, vehicle, or part maker's recommendations. See **9.3**.



## 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 greater than 250 microns (10 mils)
- 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