

Plastics Repair

Material

Item	Specification
Plastic Bonding Adhesive TA-9	—



WARNING: Always wear protective equipment including eye protection with side shields, and a dust mask when sanding or grinding. Failure to follow these instructions may result in serious personal injury.



WARNING: Always refer to Material Safety Data Sheet (MSDS) when handling chemicals and wear protective equipment as directed. Examples may include but are not limited to respirators and chemically resistant gloves. Failure to follow these instructions may result in serious personal injury.

1. In deciding whether to repair or install a new component, follow these guidelines.
 - Is a part readily available?
 - Can the damaged part be economically returned to its original strength and appearance, or will the labor cost exceed the cost of a new component?
 - Will repair provide for the fastest, highest quality repair?
2. **NOTICE:** Never apply solvents such as lacquer thinner or reducer at any stage of plastic repair. Solvents, cleaners and water are absorbed by many types of plastics and by the glass fibers used for reinforcements. If this occurs, the plastic may swell in the area of repair and cause the repair to fail. Remove cleaners and water quickly and use air and heat to speed up drying.

NOTICE: During the repair of many plastics and particularly polyolefin plastics, an adhesion promoter must be applied to the substrate to allow repair materials and paint to bond correctly. Reapplication is required when grinding or sanding through the sealer or primed layers.

NOTE: When possible, it is recommended to carry out as much of the plastic repair as possible on the vehicle. Parts mounted on the vehicle are held in correct alignment throughout the repair. Attempting to repair the part off the vehicle may cause misalignment. This could lead to failure of the repair.

Select the correct repair method by identifying the type of plastic being repaired. For additional information, refer to [Plastics Identification](#) in this section to determine the type of plastic being repaired.

3. **NOTE:** Always refer to the manufacturer's label directions for the type of repair materials, fillers and bonding agents being used as they are material specific.

Determine whether a reinforcement piece is needed as a backer on large repairs.

- Construct a reinforcement piece from a scrap piece of the type of plastic being repaired and follow manufacturer's label directions for the type of system being used.
- When repairing Sheet-Molded Composite (SMC), a reinforcement piece can be constructed using several layers of glass cloth saturated with resin or structural adhesive. The weave of the cloth or screening should be loose enough to allow the resin to thoroughly penetrate. Reinforcement should cover the entire area of damage and extend outward beyond the damage or joint area.

Sheet-Molded Composite (SMC) Panel Repair

NOTE: The following procedure applies to repair of structural cracks and large gouges. If damage is cosmetic, use of reinforcing cloth may not be necessary.

1. Panels to be repaired should be dry and at room temperature 18°C (65°F) to 24°C (75°F) prior to carrying out any repairs. Both sides of the panel must be thoroughly cleaned before sanding or grinding.
2. Cover the break in the **SMC** (front and back) with masking tape. This protects the damaged area from absorbing the prep cleaner and eliminates wicking of the cleaner through the fibers into the **SMC**.
3. Remove all waxes, silicones, dirt and road oils from the area surrounding both sides of the damaged area with a plastics wax and grease remover.
 - Remove the tape and sand the back of the repair area with an angle grinder, Dual Action (D/A) sander or by hand using 80-grit sandpaper. Remove all dust with a vacuum and tack cloth.
4. Create a reinforcing patch using a piece of scrap **SMC** that conforms well to the back of the damaged area or form a patch from fiberglass cloth.
 - Cut a section of cloth large enough to cover the repair, plus 25.4 mm (1 in) around the repair area.
 - Cut a section of plastic film backing approximately 25.4 mm (1 in) larger than the cloth. Lay the plastic on a smooth, flat surface where it will be used to create a pyramid patch.
5. Follow manufacturer's directions and apply plastic repair adhesive to the plastic film backing and smooth with plastic spreader to recommended thickness. Place the pre-cut fiberglass cloth on the adhesive-coated plastic film. Cover the cloth with a coat of repair adhesive and spread to the recommended thickness.
6. Apply the prepared patch to the backside of the panel and compress. Follow manufacturer's instructions for adhesive cure. Remove plastic film after adhesive cures and sand as necessary to remove roughness.
7. Remove masking tape from the front side of damaged area and grind down to the backing patch. Use an angle grinder with a 30- to 40-grit wheel. Make a gradual taper in the area, this will prevent bull's-eyes or read-through in the finished repair. Sand prepared area with a **D/A** sander or hand-sand with 80-grit sandpaper.
8. Build a pyramid patch using fiberglass cloth or equivalent and plastic repair adhesive. Following manufacturer's directions, apply patch to damaged area.
9. Rough-grind area to remove excess adhesive. Sand repair area with 80-grit sandpaper, making sure to cut slightly below the **SMC** finished surface. This will allow for a finish coat of plastic body repair material.
10. Apply a finish coat of plastic repair filler material per manufacturer's directions.
11. Finish-sand, prime and topcoat using Ford-approved paint systems.

Thermoplastic Compounds

1. In deciding whether to repair or install a new component, follow these guidelines.
 - Is a part readily available?
 - Can the damaged part be economically returned to its original strength and appearance, or will the labor cost exceed the cost of a new component?
 - Will repair provide for the fastest, highest quality repair?
2. **NOTE:** The following steps are to be used as a guideline. Depending on what brand of adhesives or patch materials are used, procedures may vary slightly.

Thoroughly clean the damaged area with wax and grease remover formulated for use with plastics.

3. Hand sand the repair area with 80-grit sandpaper and remove any foreign material with compressed air.
4. Apply a plastics adhesion promoter per label directions to the repair area.
5. For small repairs, a plastic adhesive filler can be applied to the damaged area. Follow manufacturer's directions and build layers to form a thickness above the damaged area. This will allow the area to be sanded smooth.

6. To repair large holes or cracks, measure and cut a piece of fiberglass cloth or equivalent 25.4 mm (1 in) larger than the crack or hole.
 - Apply plastic repair adhesive to the damaged area and immediately apply fiberglass cloth into plastic adhesive for reinforcement. Apply additional plastic repair adhesive for strength and shape as required.
7. Contour and shape the repair as necessary with a [D/A](#) sander. Avoid sanding through the repair.
8. Finish-sand the area and carry out any required paint operations using Ford-approved paint systems.

Tab Repair — Bumper

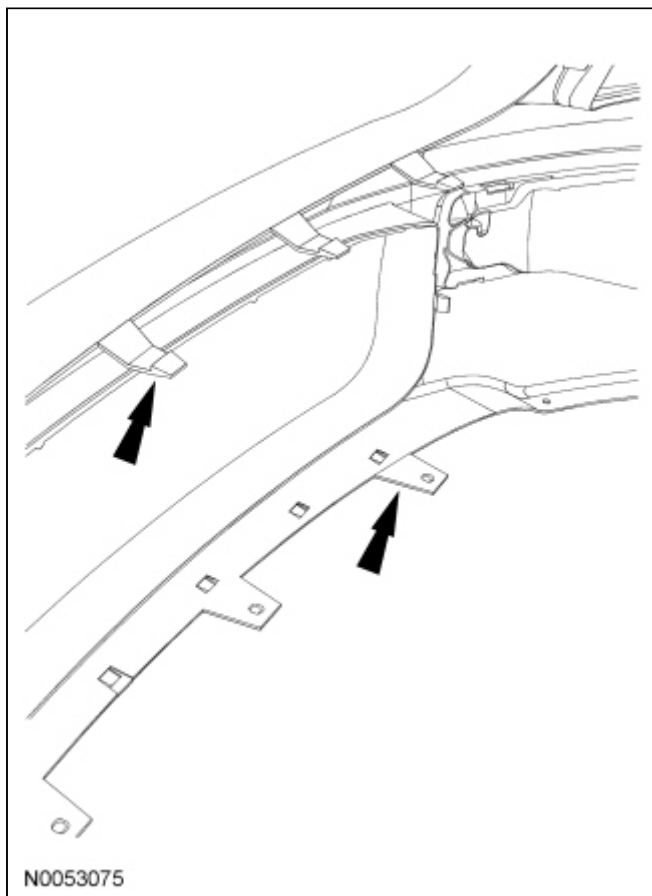
1. **NOTE:** Inspect the bumper cover to determine if part of it can be repaired to an acceptable level of quality of appearance, fit and durability. Will labor and material cost of the repair meet or exceed the cost of a new replacement bumper cover? If the bumper cover is determined to be repairable, proceed to the following steps.

NOTE: The following steps are to be used as a guideline. Depending on what brand of adhesives or patch materials are used, procedures may vary slightly.

Remove the affected bumper. For additional information, refer to [Section 501-19](#).

NOTE: Illustration is not vehicle specific.

2. Clean the broken tab(s) with a plastics wax and grease remover.



3. Hand sand the repair area with 80-grit sandpaper and remove any foreign material with compressed air.
4. Apply a plastics adhesion promoter per label directions to the repair area.
5. Measure and cut a patch of fiberglass cloth or equivalent large enough to form the front of the tab, then

slope back in a wedge shape approximately 51 mm (2 in) from original tab.

6. Prepare the repair adhesive cloth patch per manufacturer's instructions and apply to the affected area.
 - Immediately position the plastic repair material patch to form the tab shape.
 7. Allow appropriate cure time and shape the repair tab using a small angle sander. Use extreme care to not sand through the exterior surface.
 8. Carry out any required paint repair operations to the bumper cover using Ford-approved paint systems.
 9. Reassemble and install the bumper cover. For additional information, refer to [Section 501-19](#).
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