

Aluminum Repair Procedures

Aluminum Repair Matrix

	Corrosion Prevention and Protection	Surface Preparation	Metal Working
Personal Protective Equipment	Wear latex, nitrile or fabric gloves dedicated to aluminum repair to prevent surface contamination from skin contact. See #1 below. Please note that you need to read and understand each product label and SDS for important health and safety information regarding PPE. This section relates only to not cross-contaminating surfaces, not to the full PPE gear required for each type of repair.		
Shop Environment	Use segregated repair areas for aluminum repairs according to OEM recommendation and follow all OSHA guidelines.		
Hand Tools	Use separate hand tools designed for aluminum repairs (e.g., hammers, dolleys, clamps, files, drill bits, saw blades, etc.).		
	HEAT USAGE: Heat is recommended when straightening aluminum to avoid over stretching and cracking of the panel. Aluminum has a much lower melting point than steel and care must be taken to avoid permanent damage. Generally, a propane torch is sufficient to reach the 400°F area. It's best to follow OEM recommendations for specific temperatures.		
Pneumatic Tools	Use air tools dedicated to aluminum repairs OR tools that have been thoroughly cleaned with compressed air to remove any steel particles. See #2 below.		
Abrasives	Use separate piece of abrasive on dissimilar substrates. See #2 below.	Do not use grinding or sanding abrasives coarser than grade 80.	
Adhesives	Apply and spread adhesives to cover all prepared metal surfaces. Use wipes dedicated to aluminum substrates. Ensure proper squeeze out and tooling of squeeze out to cover all metal surfaces.	Prepare bonding surfaces using grade 80 abrasive or equivalent Scotch-Brite™ abrasive grade. See #4 below.	Use caution when heating the panel near bonded joints. See #5 below.
	HEAT USAGE: Replace: Use heat to de-bond observing OEM temperature limits. Repair: Use caution when applying heat near bonded joints to avoid bond failures. See #3 below.		
Sealers	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply tight coat into seam. Tool to match OEM appearance.	Follow product use recommendations for DTM or non-DTM seam sealers.	—
Coatings	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply 3M™ Rust Fighter-I to panel interior prior to final assembly.	Remove loose debris, abrade and properly clean prior to coating application.	Apply 3M™ Rust Fighter-I to panel interior prior to final assembly.
Filler & Glaze	Follow standard surface preparation procedures. Use wipes dedicated to aluminum substrates. Apply filler or glaze within 1 hour. See #4 below.	Prepare surface using grade 80 abrasive or equivalent Scotch-Brite graded abrasives. See #4 below.	

Visit www.3MCollision.com for more SOPs and videos.

Note: Statements and recommendations within this matrix should be considered general practices. Follow specific OEM recommendations, when they exist.

1 Skin contact with open substrates can leave contamination that leads to corrosion.	2 Cleaning tools thoroughly and using separate abrasive will help prevent the possibility of galvanic corrosion caused by incidental contact of dissimilar metals.	3 To de-bond 3M™ Panel Bonding adhesive, panel must be heated to above 400°F.	4 Oxidation forms immediately on exposed aluminum. Accumulated oxidation is detrimental to bond strength. After 1 hour of exposure, re-abrade aluminum surface to maximize bond strength.	5 Panel bond adhesive degradation begins at 300°F or higher. Use caution and heat indicators to monitor panel temperature when applying heat near bonded joints.
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Individual Product Instruction and Safety Information

For individual product instructions and applicable precautions see product labels and associated literature for the individual product at www.3MCollision.com

For product material safety data sheets see www.3MCollision.com

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IMPORTANT NOTE: There are of course many factors and variables that can affect an individual repair, so the technician and repair facility need to evaluate each specific application and repair process, including relevant vehicle, part and OEM guidelines, and determine what is appropriate for that repair.



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