



# Composite & Metal Bonding

## Adhesive - 35

08219

Technical Data

May 2018

3M Part Numbers	3M Part Descriptor
08219	3M™ Composite & Metal Bonding Adhesive - 35

**Product Description** 3M™ Composite & Metal Bonding Adhesive is a two-part urethane adhesive designed for the bonding of SMC/FRP, steel and aluminum in similar and dissimilar bonding operations of non-structural components.

- Features**
- Designed for professional aftermarket collision repair use
  - 35 minute Work Time
  - 90 minute Clamp Time
  - Direct to Metal Application

**Typical Physical Properties** NOTE: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

<b>Container</b>	200mL Duo Syringe Cartridge	
<b>Base</b>	Urethane	Curative
<b>Density lbs./Gallon (Approx.)</b>	11	11
<b>Color</b>	Green	White
<b>Flash Point</b>	144°F (62°C)	
<b>Viscosity (CPS) Brookfield Viscometer</b>	15,000 to 27,000	
<b>Solids Content (Approx.)</b>	100%	
<b>Consistency</b>	Viscous Liquid (unmixed)	
<b>Service Temperature</b>	-40°F to 180°F (-40°C to 82°C)	

**Typical Performance Properties** The following times have been determined with ambient air temperature and substrate temperature @ 73°F (23°C) and are considered typical values.

**WORK TIME:**

35 minutes

**CLAMP TIME:**

90 minutes

**CURE TIME:**

3 hours

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## Product Uses

General bonding operations of non-structural components such as door skins and SMC/FRP (traditional fiberglass) panels. 3M™ Composite & Metal Bonding adhesives works well when a shorter work and clamp time are required and may be used with squeeze type resistance spot welding in weld bonding operations.

Use with the following accessories:

- 3M™ Manual Applicator (PN 08571 or PN 08117)
- 3M™ Pneumatic Applicator (PN 09930)
- 3M™ Static Mix Nozzle (PN 08193, 6-bag)
- 3M™ Static Mix Nozzle (PN 08194, 50-box)

**For professional use only. Not intended for retail sale.**

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## Performance Properties

The following times have been determined with ambient air temperature and substrate temperature @ 73°F (23°C) and are considered typical values.

### WORK TIME:

35 minutes

### CLAMP TIME:

90 minutes

### SAND TIME:

3 hours

### CURE TIME:

3 hours

NOTE: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Lap Shear, SMC	1730 PSI	ASTM D3163
Lap Shear, Metton®	1555 PSI	ASTM D3163
Tensile	<b>3020 PSI</b>	ASTM D638-10
Elongation	<b>75%</b>	ASTM D638-10

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## Directions for Use

### COMPOSITE SURFACE

1. Clean the surface with a VOC compliant surface cleaner to remove any contaminants prior to the start of operations.
2. Abrade the surface to remove any existing adhesives and/or damaged composite material, use grade 80 abrasive.
3. Blow off or vacuum the surface to ensure proper adhesion.
4. Dry fit parts prior to application of adhesive.
5. Install the cartridge into the applicator, remove the collar and plug, discard a small amount of adhesive to a disposable surface and reinstall the nozzle and collar.
6. Apply the adhesive to one mating flange and join the parts together clamping in place for 90 minutes @ 73°F (23°C). Do not over clamp.

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## Directions for Use, cont.

7. DO NOT apply polyester body filler directly to the adhesive.

### WELD THROUGH

NOTE: For weld through operations (prior to welding the panel(s) make test welds on scrap parts to assure proper welding machine settings).

1. Remove surface contamination on all sides of weld flanges using an abrasive (bare metal must be exposed).
2. Apply adhesive to all bare metal between weld flanges (brush or spread to cover all bare metal).
3. Apply a ¼ inch (6mm) bead to one side of the joint to ensure “squeeze out”.
4. Mate parts together and clamp in place.
5. Be sure to use a shunt clamp and start welds near the clamp.
6. Begin squeeze type resistance spot welding process immediately and complete prior to work time expiration.

### BARE METAL BONDING

1. Clean the surface with a VOC compliant surface cleaner to remove any contaminants prior to the start of operations.
2. Abrade all mating flanges to expose bare metal using suitable abrasive such as grade 50 to 80 or a non-woven coarse grade surface conditioning disc or belt as required.
3. Blow off and re-clean the surface to ensure proper adhesion.
4. Dry fit the parts together to ensure proper fit up.
5. Insert the cartridge into the applicator and remove the collar and plug. Discard a small amount of material to a disposable surface and reinstall the nozzle and collar.
6. Apply the adhesive to both mating flanges and brush or spread the adhesive to cover all bare metal. Apply a 1/4 inch (6mm) bead to ensure one side of the joint to ensure “squeeze out”.
7. Mate the pieces together and clamp in place for 90 minutes @ 73°F (23°C). Do Not over clamp.
8. Remove clamps and proceed with repair as per standard repair procedures. Do Not apply polyester body filler directly to adhesive.

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## Applications

General purpose automotive bonding of non-structural panels including door skins and SMC/FRP composite panels.

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## Storage and Handling

Store at room temperature. Rotate stock on a “first-in-first-out” basis. When stored at the recommended conditions in original, unopened containers, this product has a shelf life of 12 months. Use in a well-ventilated area.

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## Precautionary Information

Before using this product, please reference Product Label and/or Safety Data Sheet for Health and Safety Information. Note: Laws controlling the acceptable amounts of Volatile Organic Compounds (VOCs) vary by state, and in some cases by locality. For surface preparation and clean-up activities, consult federal, state and local regulations regarding use of products containing VOCs in your area.

**IMPORTANT NOTE:** There are many factors that can affect an individual repair, so the technician and repair facility need to evaluate each specific application and repair process and determine what's appropriate. 3M recommends referring to relevant vehicle repair and OEM guidelines prior to starting all repairs.

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## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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## Product Use

Many factors beyond 3M's control and uniquely within the user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a purpose and suitable for user's method of application.

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