



# 3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A

## Technical Data Sheet

### Product Description

3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A is a gray, aluminum filled two-component epoxy adhesive with cure at room temperature or with additional heat to form a tough bond. It has excellent adhesion to many metal, composite, and plastic substrates.

### Key Features

- 100% solids
- Excellent adhesion to metals
- Good void filling properties
- Thick paste consistency
- Ideal for repairing holes, dents and cracks in metal
- Outstanding environmental resistance
- 45 minute work life

### Typical Properties

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

	Part B	Part A
Chemistry	Epoxy	Amine
Color	Gray	Amber
Typical Uncured Density	10.8 lb/gal	7.9 lb/gal)
Mix Ratio by Weight	2	1
Mix Ratio by Volume	3	2
Work Life at 75°F (24°C)	Approximately 45 Minutes	
Full Cure	30 Minutes @ 200°F (93°C) 5 Hours @ 150°F (67°C) 7 Days @ 75°F (24°C)	
Time to Handling Strength	8 to 12 hours	
Shore D Hardness	75 to 80	
Thermal Conductivity	0.2229 BTU/Hr/Ft <sup>2</sup> /°F/Ft @ 96°F (36°C)	

## Typical Product Performance

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

### Aluminum to Aluminum Bonds Overlap Shear

The following data shows typical values obtained with 3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A in aluminum overlap shear bonds. All specimens were 2024-T3 bare aluminum panels which had been FPL etch. Bonds were cured as described in the table under 2 psi (13.8 kPa) with no additional pressure. Sample preparation and testing was conducted per ASTM D1002.

Test Temperature	Result (psi)	Result (MPa)
-67°F (-55°C)	1400	9.6
75°F (24°C)	2000	13.8
180°F (82°C)	500	3.4

### T-Peel Strength

The following data shows typical values obtained with 3M™ Scotch-Weld™ Epoxy Adhesive EC-1751 B/A in aluminum T-Peel bonds. All specimens were 2024-T3 bare aluminum panels which had been FPL etch. Bonds were cured as described in the table under 2 psi (13.8 kPa) with no additional pressure. Sample preparation and testing was conducted per ASTM D1876.

Test Temperature	Result (piw)	Result (N/mm)
75°F (24°C)	4	0.70

## Typical Product Application

### Aluminum Surface Preparation

A thoroughly cleaned, dry, grease-free surface is essential for maximum performance. Cleaning methods which will produce a break free water film on metal surfaces are generally satisfactory. Optimized FPL performed per ASTM D2651-01 and phosphoric acid anodization performed per ASTM D3933.

### Fiber Reinforced Epoxy Laminate Surface and Plastic Surface Preparation

Abrade surfaces to be bonded with 180 grit sandpaper or a Scotch-Brite® General Purpose Hand Pad 7447 (do not cut through resin into reinforcing fibers). Wipe with clean rag or paper towel soaked with Ketone type solvent such as methyl ethyl ketone (MEK)\*. Thoroughly dry the surface before application of the adhesive. A cleaned, dry, contamination free surface is essential for maximum performance. For repeatable results the epoxy adhesive and the surfaces should have a temperature between 68-77°F (20-25°C).

### Mixing and Application

Mix thoroughly by weight or volume in the proportions specified in the typical properties section. Mix approximately 15 seconds after a uniform color is obtained. For maximum bond strength, apply product evenly to both surfaces to be joined. Application should be made within 45 minutes. Large quantities and/or higher temperatures will reduce this working time.

### **Adhesive Cure Conditions**

Join the adhesive coated surfaces and allow to cure at 60°F (16°C) or above until firm. Up to 200°F (93°C) can be used to accelerate the cure.

### **Clean Up Epoxy Adhesive**

Uncured epoxy adhesive can be wiped with solvent e.g. MEK \*. Cured material can be cleanly removed mechanically.

\*Note: When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use. Use solvents in accordance with local regulations.

### **Storage and Shelf Life**

The shelf life for Scotch-Weld EC-1751 B/A is 24 months from date of shipment when stored between 60°F and 80°F (16°C and 27°C) in original unopened container.

### **Precautionary Information**

Refer to Product Label and Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501, and visit [www.3M.com/sds](http://www.3M.com/sds).

### **For Additional information**

In the U.S., call toll free 1-800-235-2376, or fax 1-800-435-3082 or 651-737-2171. For U.S. Military, call 1-866-556-5714. If you are outside of the U.S., please contact your nearest 3M office.

### **Authorization to Use**

Ensure products meet all applicable specifications, standards, and maintenance manual requirements for the platform being worked on and validate all aircraft approvals against current technical documentation.

These products are manufactured under a 3M Quality Management System registered to the AS9100 standard.



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