

Technical Data Sheet

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

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive 1751 B/A is a gray, aluminum filled, two-part, room temperature curing structural adhesive.





Product Features

- Excellent adhesion to metals
- Good void filling properties
- Ideal for repairing holes, dents and cracks in metal


Technical Information Note

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



Typical Mixed Physical Properties

Property	Values	Additional Information
Open Time (min)	45 min	View 
Notes: Max time allowed after applying adhesive to a substrate before bond must be closed and fixed. Cure times approximate and depend on adhesive temperature. Hotmelts: The approx. bonding range of a 1/8" bead of molten adhesive on a non-metallic surface.		
Worklife, 100g mixed	45 min	View 
Temp C: 23C Temp F: 73F		
Time to Handling Strength	8 to 12 hr	View 
Temp C: 23C Temp F: 73F		
Time to Full Cure	7 day	View 
Temp C: 23C Temp F: 73F		


Typical Physical Properties

Property	Values	Additional Information
Color	Gray	View 
Test Name: Cured		

Typical Uncured Physical Properties

Property	Values	Additional Information
Base Color	Gray	
Accelerator Color	Amber	
Base Viscosity	145 s	View 
Notes: Time to deliver 20 gms@ 50 psi thru a 0.10in orifice		
Accelerator Viscosity	125 s	View 
Notes: Time to deliver 20 gms@ 50 psi thru a 0.10in orifice		
Base Resin	Modified Epoxy	
Accelerator Resin	Modified Epoxy	
Base Net Weight	10.8 lb/gal	
Accelerator Net Weight	7.9 lb/gal	
Mix Ratio by Volume (B:A)	3:2	
Mix Ratio by Weight (B:A)	2:1	

Typical Cured Characteristics

Property	Values	Additional Information
Shore D Hardness	77	View 
Test Method: ASTM D2240		
Temp C: 23C		
Temp F: 73F		

Typical Performance Characteristics

Property	Values	Additional Information
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Overlap Shear Strength

2400 lb/in²View 

Test Method: ASTM D1002

Dwell/Cure Time: 7.0
Dwell Time Units: day
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Steel
Surface Preparation: Solvent Wipe

Notes: All aluminum data were developed on .063-inch thick 2024 T-3 clad aluminum and all steel data on .035-inch cold rolled steel. Test specimens were 1/2-inch overlap, 1-inch wide, pulled at a testing rate of .1-inch/min.

T-Peel Adhesion 7day 23C FPL Etched Aluminum

4 lb/in width

View 

Test Method: ASTM D1876

Test Name: T-Peel Adhesion
Dwell/Cure Time: 7.0
Dwell Time Units: day
Temp C: 23C
Temp F: 73F
Substrate: FPL Etched Aluminum

Notes: 2 psi applied during dwell

T-Peel Adhesion 7day 23C Steel

5 lb/in width

View 

Test Method: ASTM D1876

Test Name: T-Peel Adhesion
Dwell/Cure Time: 7.0
Dwell Time Units: day
Temp C: 23C
Temp F: 73F
Substrate: Steel
Surface Preparation: Solvent Wipe

Notes: 2 psi applied during dwell

Storage and Shelf Life

Store products at 60-80°F (15-27°C) for maximum storage life.

Rotate stock on a “first in-first out” basis. 3M™ Scotch-Weld™ Epoxy Adhesive 1751 B/A has a storage life of 24 months from date of manufacture in unopened containers.

Automotive Disclaimer

Select Automotive Applications: This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3).

Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

Bottom Matter

3M
Industrial Adhesives and Tapes Division
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550

Trademarks

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Handling/Application Information

Directions for Use

1. For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. The amount of surface preparation depends on the required bond strength and the environmental aging resistance desired by user. See surface preparation section.
2. Use gloves to minimize skin contact with adhesive.
3. This product consists of two parts. Mix thoroughly by weight or volume in the proportions specified in the Uncured Properties Section. Mix approximately 15 seconds after a uniform color is obtained.
4. For maximum bond strength, apply product evenly to both surfaces to be joined.
5. Application to the substrates should be made within 45 minutes. Large quantities and/or higher temperatures will reduce this working time.
6. Join the adhesive coated surfaces and allow to cure at 60°F (16°C) or above until firm. Up to 200°F (93°C), will speed curing.

7. The following times and temperatures will result in a full cure:

Cure Temperature Time

75°F (24°C) 7 days

150°F (67°C) 120 minutes

200°F (93°C) 30 minutes

8. Keep parts from moving until handling strength is reached. Contact pressure is necessary. Maximum shear strength is obtained with a 3-5 mil bond line.
9. Excess uncured adhesive can be cleaned up with ketone type solvents.* Adhesive coverage: A 0.005 in thick bondline will yield a coverage of 320 sqft/gallon.

*Note: When using solvents, extinguish all ignition sources and follow manufacturer's precautions and directions for use.

Surface Preparation

For high strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. The amount of surface preparation depends on the required bond strength and the environmental aging resistance desired by user.

The following cleaning methods are suggested for these common surfaces:

Steel:

1. Wipe free of dust with oil-free solvent such as acetone, isopropyl or alcohol solvents.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with solvent to remove loose particles.
4. If a primer is used, it should be applied within 4 hours after surface preparation.

*Note: Read and follow component supplier's environmental, health and safety recommendations prior to preparing this etch solution.

Aluminum:

1. Vapor Degrease: Perchloroethylene condensing vapors for 5-10 minutes.*
2. Alkaline Degrease: Oakite 164 solution (9-11 oz./gallon water) at 190°F ± 10°F (88°C ± 5°C) for 10-20 minutes. Rinse immediately in large quantities of cold running water.
3. Acid Etch: Place panels in the following solution for 10 minutes at 150°F ± 5°F (66°C ± 3°C).

Sodium Dichromate 4.1-4.9 oz./gallon

Sulfuric Acid, 66°Be 38.5-41.5 oz./gallon

2024-T3 aluminum (dissolved) 0.2 oz./gallon minimum

Tap Water as needed to balance

4. Rinse: Rinse panels in clean running tap water.
5. Dry: Air dry 15 minutes; force dry 10 minutes at 190°F (88°C) ± 10°F (5°C).
6. If primer is to be used, it should be applied within 4 hours after surface preparation.

Plastics/Rubber

1. Wipe with isopropyl alcohol.*
2. Abrade using fine grit abrasives.
3. Wipe again with isopropyl alcohol.*

Glass

1. Solvent wipe surface using acetone or methyl ethyl ketone (MEK).*

2. Apply a thin coating (0.0001 in. or less) of primer such as 3M™ Scotch-Weld™ Structural Adhesive Primer EC-3901 to the glass surfaces to be bonded and allow the primer to dry before bonding.

*Note: When using solvents, extinguish all ignition sources and follow manufacturer's precautions and directions for use

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/p/d/b40066470/
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=1751 B/A

Family Group

Link Tags:

[1751 B/A](#)

Products	Open Time (min)	Color	Time to Handling Strength	Shore D Hardness
1751 B/A	45 min	Gray	8 to 12 hr	77

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

Precautionary Information

Refer to Product Label and Material 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.

Information

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