



Technical Data Sheet

3M™ Fastbond™ Insulation Adhesive 49

Product Description

3M™ Fastbond™ Insulation Adhesive 49 is a water-based, high solids, fast tacking, pressure sensitive adhesive for bonding lightweight materials like fiberglass insulation, felt, shoddy, paper and other materials to metal and many other surfaces.

Product Features

- Water-based, non-flammable in the wet state.
- Spray, brush, or roll apply.
- High coverage.
- Instant tack on fiberglass insulation.
- Permanently pressure sensitive with aggressive tack.
- Recognized by Underwriters Laboratories, Inc., Component Recognition Category MAGW2 (Adhesives, Insulation), File Number MH 6288.
- Certified to GREENGUARD® Product Emission Standard For Children and Schools(SM) for low emitting interior building materials:
 - ° Addresses or Contributes to LEED® EQ Credit 4.1: Low Emitting Materials: Adhesive and Sealants
 - ° Addresses or Contributes to LEED® EQ Credit 4.5: Low Emitting Materials: Furniture and Furnishings
 - ° Addresses or Contributes to LEED® EQ Credit 4.6: Low Emitting Materials: Ceiling and Wall Systems

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 Physical Properties

Property	Values	Additional Information
Solids Content by Weight	53 to 57 %	
Color	Milky White (wet), Clear (dry)	
Flash Point	None °F	View
Notes: Closed Cup		
Flash Point	None °C	View
Notes: Closed Cup		
Coverage	824 sq ft/gal	View
Notes: 2.5 gms. ft² [dry wt.]; For most HVAC applications. Coverage for other applications may be lower.		
Viscosity	450 to 650 cP	

View 

Notes: Brookfield Viscometer RVF #3 Sp. @ 20 rpm

pH	4.1 to 4.5
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Flammability (Wet)	Non-Flammable
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Flammability (Dry)	Combustible
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Overlap Shear Strength	53 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Glass

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	57 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Cold Rolled Steel

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	51 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: 2024 T3 Aluminum

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	52 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Clad Aluminum

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	52 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Stainless Steel

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	34 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: High Density Polyethylene (HDPE)</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		
Overlap Shear Strength	39 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: Polypropylene (PP)</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		
Overlap Shear Strength	53 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: High Impact Polystyrene</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		
Overlap Shear Strength	56 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: Polyvinyl chloride (PVC)</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		
Overlap Shear Strength	50 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: ABS</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		
Overlap Shear Strength	57 lb/in ²	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Substrate: Polycarbonate (PC)</p>		
Overlap Shear Strength	52 lb/in ²	View 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Acrylic (PMMA)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	12 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: Neoprene Rubber

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Overlap Shear Strength	14 lb/in ²	View 
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Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Substrate: EPDM Rubber


Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

Typical Uncured Physical Properties

Property	Values	Additional Information
Base	Acrylate	


Net Weight	8.25 lb/gal	
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Typical Performance Characteristics

Property	Values	Additional Information
Flame Spread	1.8	View 

Test Method: ASTM E84

Notes: Tunnel test results; Test at a roverage rate of 800 sqft/gal; UL Requirement: Less than 25

Smoke Developed Index	4	View 
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Test Method: ASTM E84

Notes: Tunnel test results; Test at a roverage rate of 800 sqft/gal; UL Requirement: Less than 50

180° Peel Adhesion	26 oz/in	View 
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Dwell/Cure Time: 44.0
Dwell Time Units: hr

Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Glass

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

48 oz/in

View 

Dwell/Cure Time: 45.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Cold Rolled Steel

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

37 oz/in

View 

Dwell/Cure Time: 47.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: 2024 T3 Aluminum

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

45 oz/in

View 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Clad Aluminum

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

51 oz/in

View 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Stainless Steel

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

8 oz/in

View 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: High Density Polyethylene (HDPE)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

35 oz/in

View 


Dwell/Cure Time: 48.0

Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Polypropylene (PP)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

90 oz/in

[View](#) 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Polystyrene (High Impact)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

72 oz/in

[View](#) 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Polyvinyl chloride (PVC)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

75 oz/in

[View](#) 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: ABS

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

83 oz/in

[View](#) 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Polycarbonate (PC)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion

62 oz/in

[View](#) 

Dwell/Cure Time: 48.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 50%RH
Substrate: Acrylic (PMMA)

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.


180° Peel Adhesion

21 oz/in

[View](#) 

Dwell/Cure Time: 48.0
 Dwell Time Units: hr
 Temp C: 23C
 Temp F: 72F
 Environmental Condition: 50%RH
 Substrate: Neoprene Rubber

Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.

180° Peel Adhesion	16 oz/in	View 
<p>Dwell/Cure Time: 48.0 Dwell Time Units: hr Temp C: 23C Temp F: 72F Environmental Condition: 50%RH Substrate: EPDM Rubber</p> <p>Notes: Adhesive was tested in 180° (angle) peel, overlap shear, and dead load strength by first applying a 6 mil (wet thickness) coating of adhesive to a primed polyester film. After drying, bonds were made to various substrates.</p>		

Typical Environmental Performance

Property	Values	Additional Information
Humidity Resistance	As above, 1.5 lb. per cubic foot density fiberglass was bonded to galvanized steel and aged for 60 days at 140°F (60°C) and 95-100 percent relative humidity. Bond strength sufficient to tear fiberglass was observed after aging.	
Wet Strength	Adhesive was spray applied on 6 in x 12 in x 1.0 in pieces of 1.5 lb. per cubic foot density fiberglass insulation at the recommended coverage level. After 1 minute of drying at room temperature, the fiberglass was bonded (using hand pressure) to 6 in x 12 in galvanized steel panels pre-bent to form a 90° angle. The wet strength of the adhesive was sufficient to hold the fiberglass in place.	
Temperature Resistance	The bonded panels above were allowed to air dry for 24 hours and then they were placed in 127°F (53°C) oven for 15 minutes. The temperature was then raised 18°F (8°C) every 10 minutes until 325°F (162°C) was achieved. No failure of the fiberglass to the substrate was observed within this temperature range.	
Accelerated Aging	Adhesive was spray applied to pieces of 1.5 lb. per cubic foot density fiberglass insulation at the recommended coverage rate. The fiberglass was then bonded to galvanized steel panels and allowed to air dry for 24 hours. After drying, the bonded panels were aged in a 320°F (160°C) oven	

for 60 days. Bond strength sufficient to tear fiberglass was observed after aging.

Storage and Shelf Life

Protect from freezing! Best storage temperature is 60–80°F (15–27°C). Higher temperatures reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. This water-based adhesive will become unusable with prolonged storage below 40°F (4°C). Rotate stock on a “first in, first out” basis.

When stored at recommended temperature in the original, unopened container, this product has a shelf life of 18 months from date of manufacture.

Industry Specifications

- Recognized by Underwriters Laboratories, Inc., Component Recognition Category MAGW2 (Adhesives, Insulation), File Number MH 6288.
- Certified to GREENGUARD® Product Emission Standard For Children and Schools(SM) for low emitting interior building materials:
 - ° Addresses or Contributes to LEED® EQ Credit 4.1: Low Emitting Materials: Adhesive and Sealants
 - ° Addresses or Contributes to LEED® EQ Credit 4.5: Low Emitting Materials: Furniture and Furnishings
 - ° Addresses or Contributes to LEED® EQ Credit 4.6: Low Emitting Materials: Ceiling and Wall Systems

Automotive Disclaimer

Automotive Applications: This product is an industrial product and has not been designed or tested for use in certain automotive applications, including, but not limited to, automotive electric powertrain battery or high voltage applications. This product does not fully adhere to typical automotive design or quality system requirements, such as IATF 16949 or VDA 6.3. This product may not be manufactured in an IATF certified facility and may not meet a Ppk of 1.33 for all properties. The product may not undergo an automotive production part approval process (PPAP). Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer’s automotive application and for conducting incoming inspections before use of the product. Failure to do so may result in injury, death, and/or harm to property. No written or verbal statement, report, data or recommendation by 3M related to automotive use of the product shall have any force or effect unless in an agreement signed by the Technical Director of 3M’s Automotive Division. Customer assumes all responsibility and risk if customer chooses to use this product in an automotive electric powertrain battery or high voltage application, and 3M will not be liable for any loss or damage arising from or related to the 3M product or customer’s use of the product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity or recall costs), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability. In no event shall 3M be liable for any damages in excess of the purchase price paid for the product.

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Bottom Matter

3M
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St. Paul, MN 55144-1000
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Trademarks

3M, Fastbond and Scotch-Weld are trademarks of 3M.

Handling/Application Information

Application Equipment

Note: Appropriate application equipment can enhance adhesive performance. We suggest the following application equipment for the user’s evaluation in light of the user’s particular purpose and method of application.

Air Atomizing Spray Equipment

Spray Guns

Note: Gravity fed systems are preferred to minimize fluid shear.

¹Air cap and fluid tip combination available from U.S. Legends, Inc.

²Starting air pressure on regulator. Adjust up and down based on application requirements.

Pressure Pots

Stainless steel pressure pots recommended. Non-stainless may be used with plastic liners if dip tube and fittings are changed to plastic or stainless steel.

Pumping Equipment

Due to the shear sensitivity of this product pumping is not recommended. If pumping is under consideration please consult with your local 3M sales representative.

Filter (Between Gun and Fluid Source)

The use of a 40-mesh stainless steel strainer is suggested to filter any impurities or dried adhesive that may have entered the system.

Hoses

Hoses used with pressure pots should be nylon or polyester lined. For gravity feed systems a clear PVC hose with a 0.5" inside diameter is adequate. Avoid using fluid hoses that have previously been used with solvent.

Brushes and Rollers

Typical brushes and rollers designed for use with latex paints may be used.

Directions for Use

Setting Up the 3M™ Fastbond™ Insulation Adhesive 49 Container for Dispensing: Suggested equipment for dispensing is outlined in the section under Application Equipment. If using open head drums or totes it is suggested that one check for dried skins on the surface and remove them prior to using the product. For containers using a flexible poly bag skinning should not occur. For hook up considerations the outlet for the various containers are:

Schutz tote – 2" male cam lock

EZ-Bulk tote – 1.5" FNPT

Drum – 2" FNPT or 3/4" FNPT

Hedwin Box uses a 38 MM 400 finish screw on cap

Applications: Adhesive may be applied by spray, brush or paint roller. Apply a uniform, generous coat of adhesive to one of the surfaces to be bonded (porous surface preferred.) Very porous material may require more than one coat. (Allow adhesive to dry completely between coats).

Coverage: Coverage is dependent upon porosity of the substrate and the method by which the adhesive is applied. To bond fiberglass insulation, apply the adhesive to the insulation in a uniform pattern at a coverage rate between 1.0 -2.0 dry gms./sqft (2000 sqft to 1000 sqft/gallon). (Additional adhesive may be required for heavier materials).

Drying: Allow adhesive to dry until the surface becomes tacky. The insulation may then be bonded using hand pressure. Bonded parts may be handled immediately.

Cleanup: Wet adhesive may be removed using soapy water. For dry adhesive removal, use 3M™ Scotch-Weld™ Solvent No. 3 (Methyl Ethyl Ketone), or 3M™ Citrus Base Cleaner, or isopropyl alcohol.*

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

Surface Preparation

Surfaces must be clean, dry and dust free. Remove all dirt, dust, oil, grease, wax, loose paint, etc. to ensure proper adhesion.

References

Property	Values
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3m.com Product Page

https://www.3m.com/3M/en_US/p/d/b40069462/

Safety Data Sheet SDS

https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=49

Family Group

Link Tags:

• 49

Products

Color

49

Milky White (wet), Clear (dry)

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

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

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