3m™ Contact Adhesives

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SERVING INDUSTRY FOR OVER 73 YEARS

3M

Fastbond™ Water-based Adhesives

Take to the water for productivity, performance, profitability, compliance

For your continued success…

now is the time to get into water

For compliance and productivity, now is the time to switch from solvent-based adhesives to water-based.

OSHA, EPA and many local and regional regulations are increasing the pressure to reduce solvent use. And fire insurance rates are increasing.

3M has the track record and powerful technologies for compliance plus productivity, bonding performance, and cost savings.

- **No nPB or methylene chloride solvents, eliminating the time and work of managing a controlled substance**
- **High solids content for cost-effective high coverage, bonding more square footage for less money**
- **Non-flammable in the wet state for easy storage without fireproof cabinets**
- **Dries fast without solvent odor, helping improve worker comfort and thus productivity**
- **Choice of formulations that bond fast and strong with a wide variety of substrates**
- **Choice of spray (including low maintenance gravity feed), roller, or brush application to meet production requirements**

3M™ Fastbond™ Contact Adhesive 30NF

The fast, high strength water-based pioneer

One-part for spray, roller, or brush application

3M™ Fastbond™ Contact Adhesive 30NF complies with California South Coast Air Quality Management District Rule 1168 requirements for contact adhesives. For that reason and others, Fastbond™ Contact Adhesive 30NF has been chosen for more than 40 years as a fast, powerful replacement for solvent-based adhesives in a variety of applications:

- Bond particle board, plywood, plastic laminate and other rigid materials in cabinet and woodworking shops and elsewhere.
- Bond EPS insulation inside metal doors and refrigeration units
- Secure rubber flooring in buses and headliners in boats
- Bond fabric to drywall and felt to wood in speakers

Laminate stays put during post forming.

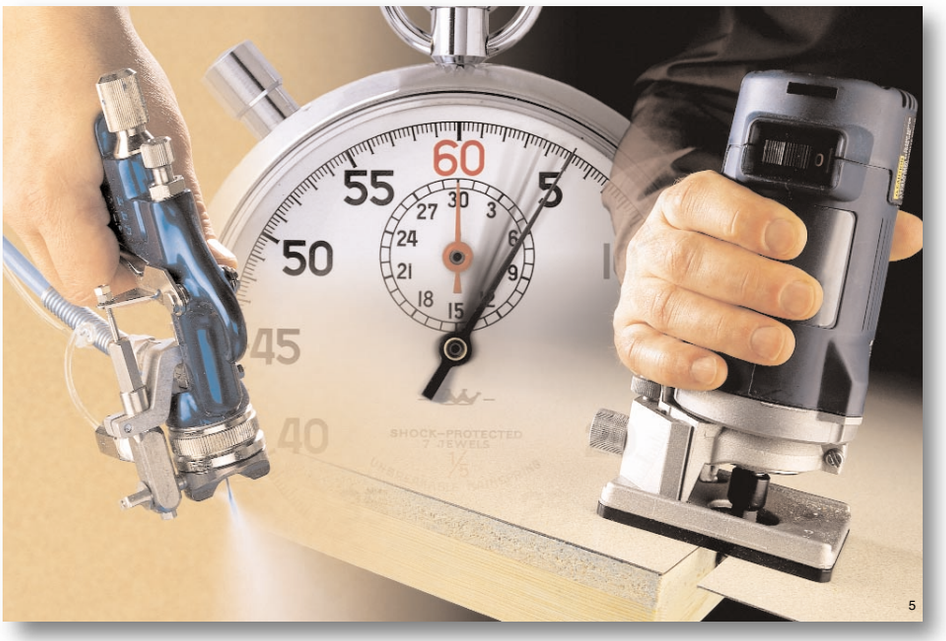
For these and other applications, 30NF combines multiple advantages for productivity and end use reliability:

- Long bonding range of up to 4 hours for assembly at your own pace
- High immediate bond strength for fast throughput
- Ultimate shear strength of 480 psi for reliability exceeding many solvent-based adhesives
- High solids for more economical use of adhesive (up to 3.5x more coverage than a typical solvent-based product)
- Heat-activatable for fast post forming
- Heat resistance meets the test standards in the Manual of Millwork of the Woodwork Institute of California

3M™ Fastbond™ Contact Adhesive 2000NF

From spray to trim and post forming in seconds

For applications ranging from countertop lamination to marine carpet bonding and interior automotive trim, 3M™ Fastbond™ Contact Adhesive 2000NF helps accelerate production speed of rigid and soft laminations beyond most water-based and conventional solvent-based systems.



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- Bonding range up to 2 hours for flexibility in speed of assembly
- Immediate handling strength for fast throughput
- Ultimate shear strength of 350 psi for reliability exceeding many solvent-based adhesives
- High solids for more economical use of adhesive (up to 3.5x more coverage than a typical solvent-based product)
- Resistance to the temperatures found in truck shipping and warehouses
- Two-part low pressure spray mixed outside of nozzle to resist plugging and help reduce overspray
- Heat activatable for fast post forming

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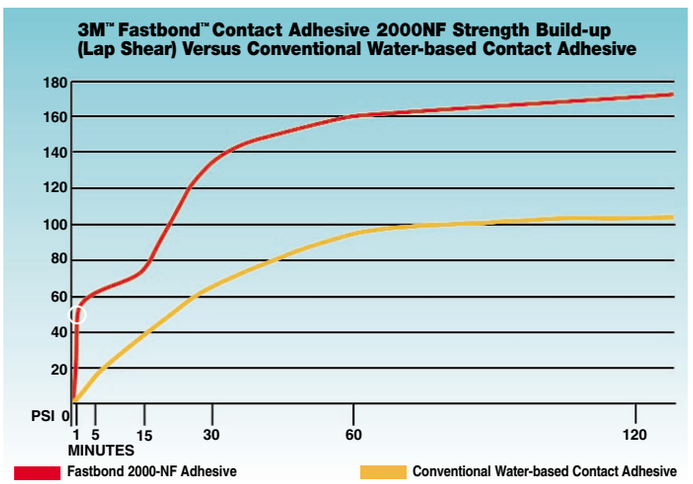
Versatility to bond plastic laminate, plastics, particle board, plywood, flexible urethane and latex foams, partition fabrics, carpeting, painted metal, and more throughout a modular office.



NOTE: The values above are typical and should not be used for specification purposes. User should test for specific application suitability.

After only one-minute, 3M™ Fastbond™ Contact Adhesive 2000NF reaches 50 psi on a birch-to-birch overlap bond.

Benefits of neoprene adhesive

All 3M™ Fastbond™ Contact Adhesives are neoprene-based for such characteristics as excellent resistance to aging, rapid strength build-up, long bonding range, excellent resistance to continuous load stress, and good resistance to heat, water, and chemicals.

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3M™ Fastbond™ Foam Adhesive 100

Fast-tacking contact adhesive to hold seams and curves in seconds

Spray one-part 3M™ Fastbond™ Foam Adhesive 100 to bond foam to foam and fiber fill, foam to wood, fiber fill to fabric, and more in bedding, furniture, upholstery, and other applications. Hold foam to foam in 15 seconds or bond immediately when used with activator.

Photo courtesy of Four Seasons Mfg.

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- 20-minute bonding range for repositioning after initial tack to meet various assembly requirements
- Foam-tearing strength after complete setting (foam fails before the bond line)
- High solids for more economical use of adhesive (up to 4x more coverage than a typical solvent-based product)
- Non-dimpling, soft bond line for finished product aesthetics and a smoother, more comfortable feel
- Spray at low pressure to reduce misting and overspray

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Neoprene-based formulation bonds leather to foam with foam-tearing strength and a soft bond line that complements the leather's suppleness.

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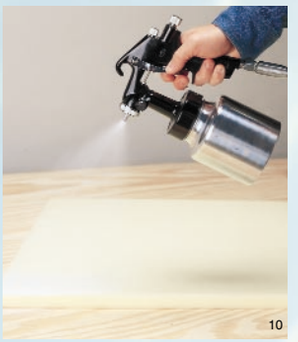

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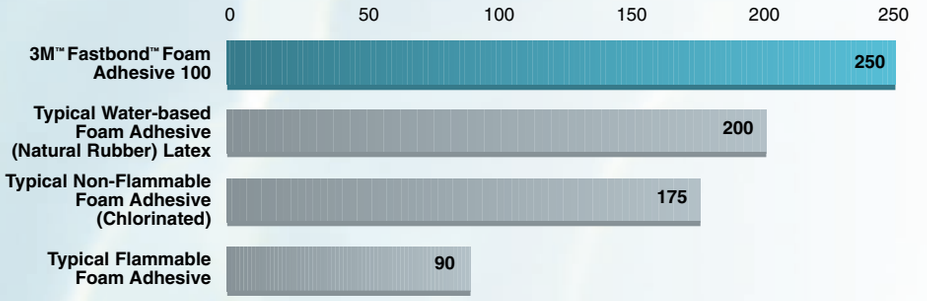
For easy bullnose fabrication in a compound cushion, 3M™ Fastbond™ Foam Adhesive 100 bonds a lighter density foam around a higher density core. High tack holds in seconds.

Heat Resistance (°F)



Basis: Two spray applied knife edge pinch bonds were made with 1.2 lb/cu ft density polyurethane foam cut into 4 inch cubes, one 4" x 4" face of each foam cube was bonded to itself 30 seconds after application using approximately 5 seconds of manually applied hand and finger pressure, the bonded foam cubes were then dried 24 hours at 70°F ambient conditions, the bonded specimens then placed in a heated oven for a period of 24 hours at various temperatures. Heat resistance, as indicated here, is the highest temperature measured at which the seams of both specimens held together and showed no visual evidence of failure anywhere along the seams.

3M™ Fastbond™ Insulation Adhesive 49

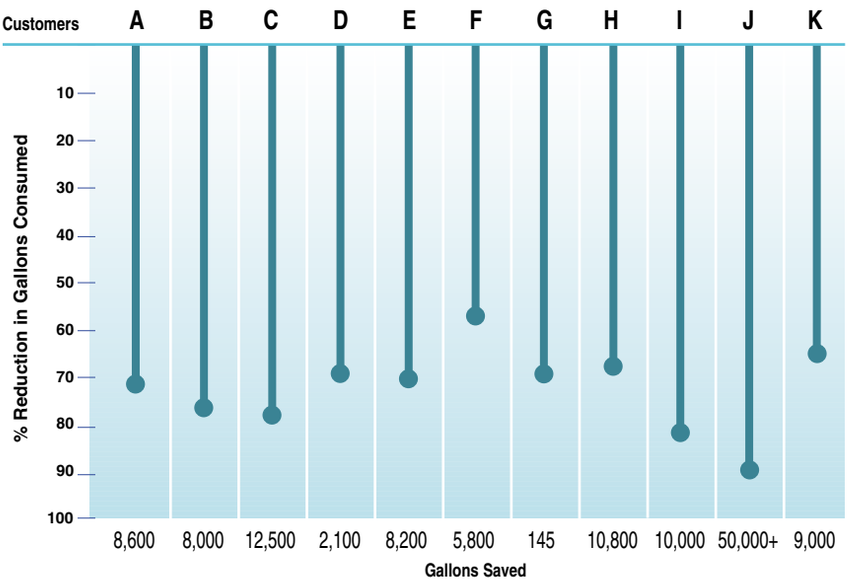
One surface, pressure sensitive formulation for speed and convenience

3M™ Fastbond™ Insulation Adhesive 49 is a fast tacking, pressure sensitive formulation for bonding fabric, insulation, and other lightweight materials to themselves, or to metal, wood, and other substrates. Spray, roll, or brush to only one surface and cut time to half that of two surface applications.

With instant tack and high coverage, bonding insulation into HVAC systems, appliances, and walk-in coolers is easy and economical.

- Sticks instantly like tape with strength enough for immediate shipping
- Long bonding range of up to 30 days for delayed assembly
- High solids for more economical use of adhesive with proprietary chemistry to help reduce adhesive consumption
- Low viscosity for simple dispensing with low maintenance systems
- UL component recognition MAGW2 file MH 6288

Reduction in Gallons



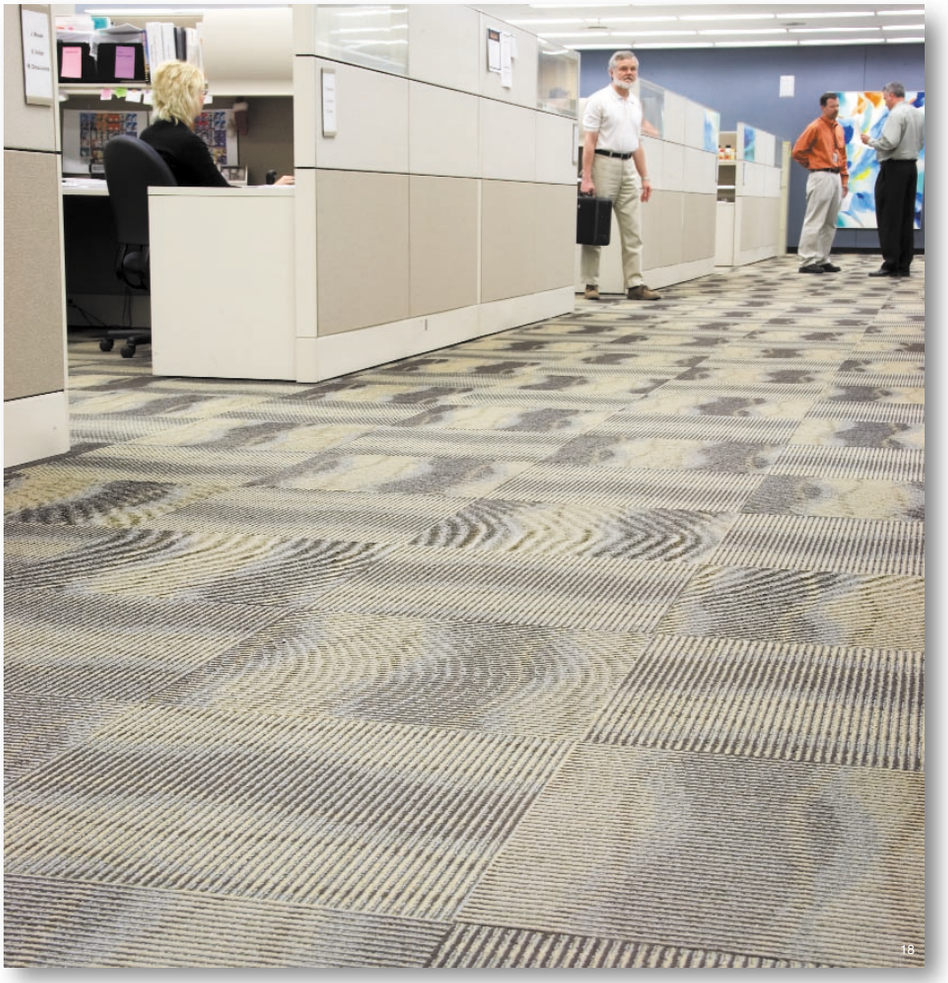
In this graph, no matter if the account is big like J or small like G, they save more than 50% in adhesive consumption.

This data was gathered by follow-up visits to customers who recently switched to 3M™ Fastbond™ Adhesive 49. Each customer had a similar application of bonding insulation for HVAC. Coverage may vary on a given application. Each customer must trial the product to assess the actual benefit.

3M™ Fastbond™ Pressure Sensitive Adhesive 4224NF

Pressure sensitive formulation for easy carpet installation, repositioning, and removal

Applied with a roller, brush, or trowel, 3M™ Fastbond™ Pressure Sensitive Adhesive 4224 is a permanently pressure sensitive adhesive to hold various types of carpet and backings to most common floor surfaces. Applies like latex paint to save 40-50% application time compared to mastic adhesives.



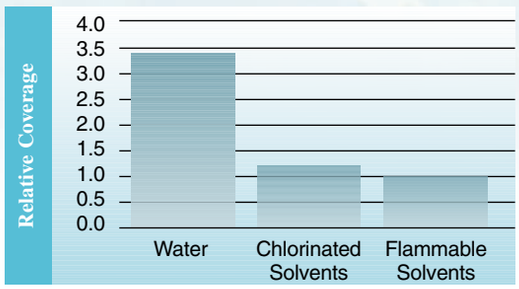
- Aggressive tack grabs almost instantly and holds securely
- Bond strength resists the stresses of foot traffic, yet carpet removes easily when necessary without tearing or delaminating
- Covers up to 3x more area per gallon than mastic adhesive for a better return on your adhesive investment
- Plasticizer resistant formulation holds vinyl and polypropylene backings for the long term
- Floor cleaning is convenient with hot water and ammonia-based wax stripper

With long bonding range of up to 30 days, adhesive can be applied to large areas before installing the carpet.

To replace damaged carpet or access under floor spaces, carpets can be easily lifted and replaced.

Bottom line for all 3M™ Fastbond™ Water-based Adhesives – more usable adhesive per gallon

Carrier	Water	Chlorinated Solvents	Flammable Solvents
% Solids	50%	15%	20%
Density (lbs/gal)	9.1	10.8	6.7
lbs. of adhesive/gal	4.6	1.6	1.3
Relative coverage	3.4	1.2	1.0
Issues		Toxicity	Flammability



Take to the water and take solvents out of your business.

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Solutions through service...

3M representatives are located throughout the United States, Canada, and 50 other countries for sales assistance.

For technical service, a highly trained team is ready to help you evaluate adhesives for specific applications.

A national authorized distributor network provides sales assistance and local product availability.

3M™ Fastbond™ Water-based Adhesives at a Glance

Contact Adhesives

Product/ Color	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Application Method	Bonding Range	Overlap Shear Strength (PSI)		Peel Strength (PIW)	Packaging
							75°F (24°C)	180°F (82°C)	75°F (24°C)	
30NF/ Green and neutral	• Long bonding range with high immediate bond strength • Economical high coverage • Meets MIL-A-24179A, Type I	50%	None	Thin liquid	Spray, roller, brush	Up to 4 hours	480(1)	60(1)	5.9(2)	Quart, gallon, 5-gallon pail, drum, tote
30H/ Green	• High viscosity version of 30NF for roll coating	50%	None	Medium liquid	Spray, roller, brush, roll coat	Up to 4 hours	480(1)	60(1)	5.9(2)	Drum, tote
2000NF/ Black, blue light orange, and neutral	• Water-dispersed, activated adhesive • Immediate bonding and handling strength without forced drying	49%	None	Thin liquid	Co-Spray	Up to 2 hours	350(1)	50(1)	4.1(2)	5-gallon box and pail, drum, tote
100/ Lavender and neutral	• One-part, fast setting with neoprene base • Bonds many porous substrates to porous or non-porous substrates	47%	None	Very thin liquid	Spray	Up to 20 minutes	NA	NA	1.1(2)	5-gallon box and pail, drum, tote

(1) Birch plywood to birch plywood @ 0.1 inches/minute separation rate. (2) Canvas to cold rolled steel @ 2.0 inches/minute separation rate.

Insulation and Carpet Adhesives

Product/ Color	Description	Solids Weight (Approx.)	Flash Point (Closed Cup)	Consistency	Application Method	Bonding Range	Peel Strength (PIW) 75°F (24°C)	Packaging
Insulation Adhesive 49/Clear	• Fast tacking, high performance pressure sensitive adhesive for lightweight materials • Low VOCs • UL component recognition MAGW2 file MH 6288	55%	None	Thin	Spray, brush, roller	30 days plus	3.0(1)	5-gallon box and pail, drum, tote
Pressure Sensitive Adhesive 4224NF/ Blue and clear	• Permanently pressure sensitive with aggressive tack • Plasticizer resistant • Low VOC content	40%	None	Thick liquid	Spray, brush, roller, trowel, coater	30 days plus	4.4(1)	5-gallon pail, drum

(1) Primed polyester to steel @ 2.0 inches/minute separation rate.

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

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Industrial and Transportation Business
Industrial Adhesives and Tapes Division

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Scotch-Weld™

Neoprene Contact Adhesive

5 (Green and Light Yellow)

Technical Data **November, 2006**

Product Description

3M™ Scotch-Weld™ Neoprene Contact Adhesive 5 is a sprayable contact adhesive which may be used to bond many high-pressure plastic laminates to wood, particle-board, metal and other surfaces.

Features

- Sprayable.
- Fast drying.
- 60 minute bonding range.
- Excellent resistance to plastic flow (creep).

Special Note

When bonding wood veneers, success is dependent on many variables such as environmental conditions, bonding process, type of base material, type of veneer, adhesive type and top coat finishing systems to name a few. It is the user's responsibility to thoroughly test any adhesive for its suitability in bonding wood veneers. It is also recommended to follow the veneer manufacturers recommendation and industry guidelines.

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.

Viscosity (approx.)	175-350 cps
Brookfield Viscometer	RVF #2 spindle @ 20 rpm @ 80°F (27°C)
Solids (by wt.)	18-21%
Base	Polychloroprene
Color	Green, Light Yellow
Net Weight (approx.)	6.4-6.8 lbs./gal.
Flash Point (TCC)	-14°F (-25°C)
Solvent	Petroleum distillate, acetone, toluene and n-hexane
Coverage (approx.)	233 sq. ft. per gallon (@ 2.5 gms./ft.^{2} dry wt.)

3M™ Scotch-Weld™
Neoprene Contact Adhesive
5 (Green and Light Yellow)

Handling/ Application Information

Directions For Use

Note: Read and follow precautions before using this product.

Surface Preparation

1. For best results all surfaces to be bonded should be dry and free from dirt, dust, oil, loose paint, wax, grease, etc.
2. Oil, grease and other contaminants can be removed by wiping with a solvent such as methyl ethyl ketone.*****
3. If used for decorative laminate, laminate should have reached moisture equilibrium for the shop conditions.

Working Temperature

1. The temperature of the adhesive and surfaces to be bonded should be at 65°F (18°C) or above.
2. Warm the can of adhesive by placing in a warm room, not in stove, oven or other possible ignition source.
3. If the room must be warmed, turn off the heater before opening container.
4. Leave heater off until all vapors are gone.

Application

1. Stir thoroughly before using.
2. Apply adhesive generously in a uniform film on both surfaces with either a fiber or animal hair brush, or pour and spread with paint roller (solvent resistant texturing type).
3. Porous surfaces may require 2 coats of adhesive.
4. A glossy film when completely dry indicates adequate adhesive.
5. Dull spots after drying indicate not enough adhesive; these spots must have another coat.

Assembly

1. Allow to dry until adhesive is no longer tacky (5-10 minutes).
2. Position surfaces carefully before assembly.
3. No adjustment is possible after contact.
4. Spacers such as dowels or strips of laminate, may be used to prevent premature adhesive/adhesive contact and bonding.
5. Slide out the spacers and apply uniform pressure, working toward the edges.
6. A 3 in. roller used with maximum body pressure should be used to help ensure adequate contact and bonding, especially on the edges.
7. Bonded assemblies can be machined, trimmed or finished immediately after bonding.

Drying Time

1. Drying time depends on temperature, humidity, air movement and porosity of materials bonded.

Cleanup

1. Excess adhesive may be removed with a solvent such as methyl ethyl ketone.*****

*****When using solvents, extinguish all ignition sources, including pilot lights, and follow manufacturer's precautions and directions for use.

3M™ Scotch-Weld™
Neoprene Contact Adhesive
5 (Green and Light Yellow)

Application Equipment Suggestions

Note: Appropriate application equipment enhances 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.

1. **Pumping:** A 2:1 divorced design pump is suggested. Packings and glands, in contact with the adhesive, should be Teflon®.
2. **Pressure Pot:** Any stainless steel or galvanized pressure pot with A.S.M.E. rating is acceptable to use with 3M™ Scotch-Weld™ Neoprene Contact Adhesive 5.
3. **Spray Equipment:**

Spray Gun	Air Cap	Fluid Tip	Atomizing Air Pressure	Approximate Air Requirement*	Fluid Flow**
Binks 62, 2001, 95	66PH	63BSS (.046")	85 psi	24 CFM	7.5 fl. oz./min.
DeVilbiss JGA, MSA	777	FX (.042")	85 psi	24 CFM	6 fl. oz./min.

Note: These adhesives are not recommended for Airless Spraying.
*3 H.P. Compressor for intermittent use.
5 H.P. Compressor for continuous use.
**To Measure Fluid Flow: Pressurize fluid source only; pull trigger, flow material into measuring device for 60 seconds, increase or decrease fluid source pressure to obtain desired fluid flow.

4. **Hoses:** All material hoses should be nylon or PVA lined.
5. **Brush/Roller:** Typical brushes/rollers designed for oil-based paint may be used.

Typical Adhesive Performance Characteristics

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

Peel Strength – Canvas/Steel

Time @ 75°F (24°C)	Test Temp.	Value (lbs./in. width)
1 day	75°F (24°C)	10
3 days	75°F (24°C)	12
5 days	75°F (24°C)	14
7 days	75°F (24°C)	18
2 weeks	75°F (24°C)	18
3 weeks	75°F (24°C)	19
after 3 weeks	-30°F (-34°C)	16.5
after 3 weeks	180°F (82°)	7

Overlap Shear Strength – 1/8" Birch/Birch

Time @ 75°F (24°C)	Test Temp.	Value (lbs./in. width)
2 weeks	75°F (24°C)	480
3 weeks	75°F (24°C)	482
after 3 weeks	-30°F (-34°C)	1060
after 3 weeks	180°F (82°)	65
after 3 weeks	225°F (107°C)	38

3M™ Scotch-Weld™
Neoprene Contact Adhesive
5 (Green and Light Yellow)

Storage

Best storage temperature is 60-80°F (16-27°C). Higher temperatures reduce normal storage life. Lower temperatures cause increased viscosity of a temporary nature. Rotate stock on a “first in, first out” basis.

Shelf Life

When stored at the recommended temperature in the original, unopened container, this product has a shelf life of 15 months.

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.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M’s control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user’s knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user’s method of application.

Warranty and Limited Remedy

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Limitation of Liability

Except where prohibited by law, 3M and seller will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

ISO 9001:2000

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 standards.

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Industrial Business
Industrial Adhesives and Tapes Division

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Recycled Paper
40% pre-consumer
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Scotch-Weld™
Neoprene Contact Adhesive
10

Technical Data **November, 2006**

Product Description

3M™ Scotch-Weld™ Neoprene Contact Adhesive 10 is a multi-purpose contact adhesive which may be used to bond plastic laminate, aluminum, steel, wallboard, wood, masonry, rubber and canvas.

Features

- Roll or brush-applied.
- Fast drying.
- Adhesion to a wide variety of materials.
- Excellent resistance to plastic flow (creep).
- 60 minute bonding range.
- Meets the specification requirements of MMM-A-121, MMM-A-130B, and A-A-1936A.

Special Note

When bonding wood veneers, success is dependent on many variables such as environmental conditions, bonding process, type of base material, type of veneer, adhesive type and top coat finishing systems to name a few. It is the user's responsibility to thoroughly test any adhesive for its suitability in bonding wood veneers. It is also recommended to follow the veneer manufacturers recommendation and industry guidelines.

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.

Viscosity (approx.)	450-700 cps
Brookfield Viscometer	RVF #2 spindle @ 20 rpm @ 80°F (27°C)
Solids Content (by wt.)	21-25%
Base	Polychloroprene
Color (wet and dry)	Light Yellow
Net Weight (lbs./gal.)	6.9 ± 0.2 lbs.
Flash Point (TCC)	-14°F (-25°C)
Solvent	Petroleum distillate, acetone, toluene and n-hexane
Coverage (approx.)	288 sq. ft. per gallon (@ 2.5 gms./ft.^{2} dry wt.)

Handling/ Application Information

Directions For Use

Note: Read and follow precautions before using this product.

Surface Preparation

1. For best results, all surfaces to be bonded should be dry and free from dirt, dust, oil, loose paint, wax, grease, etc.
2. Oil, grease and other contaminants can be removed by wiping with a solvent such as methyl ethyl ketone.*****
3. If used for decorative laminate, laminate should have reached moisture equilibrium for the shop conditions.

Working Temperature

1. The temperature of the adhesive and surfaces to be bonded should be at 65°F (18°C) or above.
2. Warm the can of adhesive by placing in a warm room, not in stove, oven or other possible ignition source.
3. If the room must be warmed, turn off the heater before opening container.
4. Leave heater off until all vapors are gone.

Application

1. Stir thoroughly before using.
2. Apply adhesive generously in a uniform film on both surfaces with either a fiber or animal hair brush, or pour and spread with paint roller (solvent resistant texturing type).
3. Porous surfaces may require 2 coats of adhesive.
4. A glossy film when completely dry indicates adequate adhesive.
5. Dull spots after drying indicate not enough adhesive; these spots must have another coat.

Assembly

1. Allow to dry until adhesive is no longer tacky (5-10 minutes).
2. Position surfaces carefully before assembly.
3. No adjustment is possible after contact.
4. Spacers such as dowels or strips of laminate, may be used to prevent premature adhesive/adhesive contact and bonding.
5. Slide out the spacers and apply uniform pressure, working toward the edges.
6. A 3 in. roller used with maximum body pressure should be used to help ensure adequate contact and bonding, especially on the edges.
7. Bonded assemblies can be machined, trimmed or finished immediately after bonding.

Drying Time

1. Drying time depends on temperature, humidity, air movement and porosity of materials bonded.

Cleanup

1. Excess adhesive may be removed with a solvent such as methyl ethyl ketone.*****

*****When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Application Equipment Suggestions

Note: Appropriate application equipment enhances 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.

1. **Brushes:** Use fiber or animal hair brushes. Do not use nylon or other synthetic fibers.
2. **Rollers:** Use solvent resistant paint rollers, designed for applying oil based paints.

Typical Adhesive Performance Characteristics

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

Peel Strength: Peel bonds of cotton duck (canvas) to cold rolled steel were tested at a peel angle of 180°F at two inches per minute separation rate.

Time @ 75°F (24°C)	Test Temp.	Value (lbs./inch width)
1 day	75°F	10
3 days	75°F	13
5 days	75°F	17
1 week	75°F	19
2 weeks	75°F	22
3 weeks	75°F	23
3 weeks	-30°F	28 (substrate failure)
3 weeks	180°F	9

Overlap Shear Strength: Overlap shear strength on birch plywood to itself tested at 0.1 inches per minute separation rate.

Time @ 75°F (24°C)	Test Temp.	Value (psi)
2 weeks	RT	430 (substrate failure)
3 weeks	RT	433 (substrate failure)
3 weeks	-30°F	676 (substrate failure)
3 weeks	180°F	111
3 weeks	225°F	70

Storage

Best storage temperature is 60-70°F (16-27°C). Continuous exposure to higher temperatures may cause some increase in viscosity. Quality is not affected until the adhesives becomes thickened so that it is difficult or impossible to spread. 3M™ Scotch-Weld™ Neoprene Contact Adhesive 10 will not freeze, but continuous exposure to low temperature will cause a considerable increase in viscosity. After storage at low temperatures and before using, the adhesive must be thawed and stirred vigorously until the entire container regains its original viscosity. The thawing process should be done at approximately room temperatures, never at elevated temperatures. Several days may be required for thawing – particularly with larger containers. Rotate stock on a "first in-first out" basis.

Shelf Life

When stored at the recommended conditions in the original, unopened container this product has a shelf life of 15 months.

3M™ Scotch-Weld™
Neoprene Contact Adhesive
10

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.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Warranty and Limited Remedy

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ISO 9001:2000

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 standards.

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Industrial Adhesives and Tapes Division

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Fastbond™

Contact Adhesive 30-NF • 30H-NF

Technical Data **September, 2005**

Features

- Water-dispersed, sprayable contact adhesives. High immediate bond strength, long bonding range. Non-flammable in the wet state. Post-formable and heat resistant.
- Bonds most foamed plastics, plastic laminate, wood, plywood, and canvas to themselves and to each other.
- 3M™ Fastbond™ Contact Adhesive 30 has been tested and approved for use by the Woodwork Institute of California under the provisions of ANSI/HPMA HP 1983 for Type II adhesive and the heat resistance test set forth in its Manual of Millwork.
- Fastbond contact adhesive 30 is recognized under the Component Program Underwriter's Laboratories, Inc. Component Recognition Program Guide GSRJ2, File R14485, Door Construction Materials. For use with swinging type fire doors of the hollow metal and steel composite types rated up to and including 3 hours.
- PPAP (Production Part Approval Process) documentation has been issued for 3M™ Fastbond™ Contact Adhesive 30H.

Note: These products are not recommended for drywall laminating or for bonding metal surfaces (unless metal surfaces are completely dried by force drying and protected from moisture).

Special Note

When bonding wood veneers, success is dependent on many variables such as environmental conditions, bonding process, type of base material, type of veneer, adhesive type and top coat finishing systems to name a few. For un-backed wood veneers, water based contact adhesives are not recommended. It is the user's responsibility to thoroughly test any adhesive for its suitability in bonding wood veneers. It is also recommended to follow the veneer manufacturers recommendation and industry guidelines.

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.

Product	**3M™ Fastbond™ Contact Adhesive 30**	**3M™ Fastbond™ Contact Adhesive 30H**
Base:	Polychloroprene	Polychloroprene
Color:	Green, Blue (Wet), Green (Dry) Neutral, White (Wet), Clear (Dry)	Blue (Wet), Green (Dry)
Net Weight:	8.9 - 9.3 lbs./gal.	8.9 - 9.3 lbs./gal.
Solids (by wt):	47-51%	45-50%
Solvent:	Water, less than 5% Toluene and Methanol	Water, less than 5% Toluene and Methanol
Flash Point:	None – Setaflash® closed cup tester	None – Setaflash® closed cup tester
Coverage: (@ 3 gms./ft.^{2} dry wt.)	680 sq. ft./gal.	680 sq. ft./gal.
Viscosity: Brookfield Viscometer:	200-750 cps RVF #2 sp. @ 20 rpm @ 80°F	5500-9500 cps RVF #4 sp. @ 20 rpm @ 77°F

Handling/Application Information

Directions For Use:

1. **Surface Preparation:** Surfaces must be clean, dry and dust free. Wiping with a solvent such as 3M™ Scotch-Grip™ Solvent No. 3 will aid in removing oil and dirt.***** Temperature of adhesive and surfaces during fabrication should be at least 65°F (18°C). If used for decorative plastic laminates, the laminate should have reached moisture equilibrium for the shop conditions.

2. **Application:** Apply a uniform, generous coat of adhesive to both surfaces with a nylon brush, roller (texturing type), or spray. One coat is usually sufficient on most surfaces. Dull spots when dry indicate insufficient adhesive. Very porous material may require more than one coat. (Allow adhesive to dry completely between coats.) A uniform, glossy film indicates sufficient adhesive.

3. **Coverage:** Coverage is dependent upon porosity of the substrate and the method by which the adhesive is applied. Use 3.0-3.5 gms/ft^2 of dry adhesive per surface for wood, particle board and high pressure laminates with the adhesive applied by spray or roller. More adhesive (lower coverage) is recommended if very soft wood, fabrics, foams, etc. are to be bonded, or if the adhesive is applied by brushing.

4. **Drying Time:** The adhesive dries sufficiently in 30 minutes under normal temperatures and humidities to make bonds. High humidity will slow the drying; high temperature will speed the drying. After the adhesive is dry the bond must be completed within four hours.

5. **Assembly:** Spacers, such as dowels or strips of laminate, may be used to help prevent premature adhesive to adhesive contact and bonding prior to positioning. Slide out the spacers and apply uniform pressure, working toward the edges.

   A 3 in. wide (maximum) roller with maximum body pressure should be used to help ensure adequate contact and bonding, especially on edges. Bonded assemblies may be machined, trimmed, etc. immediately after bonding. The use of a pinch or nip roll is preferred for optimum performance.

6. **Cleanup:** If adhesive has not dried, clean equipment with water containing a small amount of detergent.****** Adhesive cannot be cleaned off rollers or brushes after it has dried.

*****When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

******Cleaning solution: One pint of cleaner to five gallons of water. Flush with clean water.

Application Tips for Using 3M™ Fastbond™ Contact Adhesive 30-NF

(1) Working Temperature: The adhesive and both surfaces to be bonded should be 65°F (18°C) or above at the time of bonding. After storage at low temperature and before using, the adhesive must be warmed to room temperature. Do not place in oven or on stove; bring to temperature by placing in a warm room. If this is not done, the open time and other working properties of the adhesive may be adversely affected.

Handling/Application Information *(continued)*

(2) Use Enough Adhesive: It is important to remember that it is difficult to use too much adhesive, but you can have problems if you don't use enough. 3M™ Fastbond™ Contact Adhesive 30 must be applied to both surfaces. Adhesive can be applied by spray (see Application Equipment Suggestions), brush or a texturing type roller.

Non-porous surfaces should require only one coat, while porous surfaces may require two coats. Wherever you use more than one coat, be sure to let the adhesive dry completely between coats. Hardwoods, tempered hardboard and decorative laminates are non-porous. Soft woods, untempered hardboard, plywood and plaster are typical porous surfaces which may require two coats.

Note: 3M water-dispersed contact adhesives should never be thinned.

(3) Let Adhesive Dry Completely: Under normal temperature and humidity conditions, Fastbond contact adhesive 30 will dry in approximately 30 minutes. In very warm, low humidity conditions, drying may take as little as 10-15 minutes. Lower temperatures and higher humidity mean slower drying. When the adhesive coating completely loses its milky appearance and becomes clear it is ready to bond. You have four (4) hours after the adhesive is dry in which to complete the bonding job. You can bond as soon as it is dry, but the longer you wait the stronger the initial bond will be.

To speed drying, infrared heat lamps may be used. When force drying is used, assembly and bonding must be completed while one or both of the bonding surfaces is warm. If both surfaces are cold, reheat either or both before bonding.

If your two surfaces do not grab onto each other immediately when brought into contact, the adhesive has dried too long or not enough adhesive was applied. In either case, another coat of adhesive over each surface will remedy the problem.

(4) Apply Pressure Thoroughly: Bonding is immediate upon contact. Sustained pressure is not required, but good uniform pressure must be applied to every square inch of the surface. Apply pressure by using heavy body pressure on a small (not over 3") hand "J"-roller. The use of a pinch roll is preferred for optimum performance.

Note: Rolling pins and other wide rollers are unsatisfactory because they bridge low spots and because they distribute the pressure over too large an area.

(5) Assembling: Position the surfaces carefully before assembly. No adjustment is possible after the adhesive films make contact. Use the paper slip sheet method or spacers to position large pieces.

(6) Finishing: Bonded assemblies can be machined, trimmed and finished

Handling/Application Information *(continued)*

immediately after bonding.

(7) Cleaning: Brushes or rollers which are to be reused should be wrapped with plastic wrap to keep adhesive wet as complete cleaning is difficult.

Note: Never pour solvent onto a bonded surface; it will attack the adhesive line and weaken the bond. Just wipe with cloth dampened in solvent or cleaner such as 3M™ Citrus Base Cleaner.***** Turpentine will not dissolve the adhesive.

*****When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Application Equipment Suggestions

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.

1. Air Atomizing Spray Equipment

Hand Held Spray Applicators	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement	Fluid Flow*
Binks 2001SS, 95	66SD	65SS	10-15 psi	6 scfm @ 20 psi	9-12 fl. oz./min.
DeVilbiss MSA-510	#30	FF	10-15 psi	6 scfm @ 20 psi	9-12 fl. oz./min.
H.V.L.P. (high volume, low pressure)					
Binks Mach 1	95P	94F	30 psi	11 scfm @ 30 psi	9-12 fl. oz./min.
Automatic Spray Applicators					
Binks No. 95A	66SD	65SS	10-15 psi	6 scfm @ 20 psi	9-12 fl. oz./min.
H.V.L.P. Mach 1A	95P	94F	30 psi	11 scfm @ 30 psi	9-12 fl. oz./min.

*To measure fluid flow: Pressurize fluid source only; pull trigger; flow material into measuring device for 60 seconds; increase or decrease fluid source pressure to obtain desired fluid flow.

Note: Low pressure, air operated piston pumps should not be used with these products.

2. Pressure Pot: Polyethylene liner. Dip tube and fittings should be plastic or stainless steel.

3. Pumping Equipment: 1 in. plastic diaphragm pump with Teflon® checks and diaphragms such as manufactured by Warren Rupp Co.

4. Filter: (pump output) Graco model 12 (stainless steel) with filter bag #521-264 or equivalent.

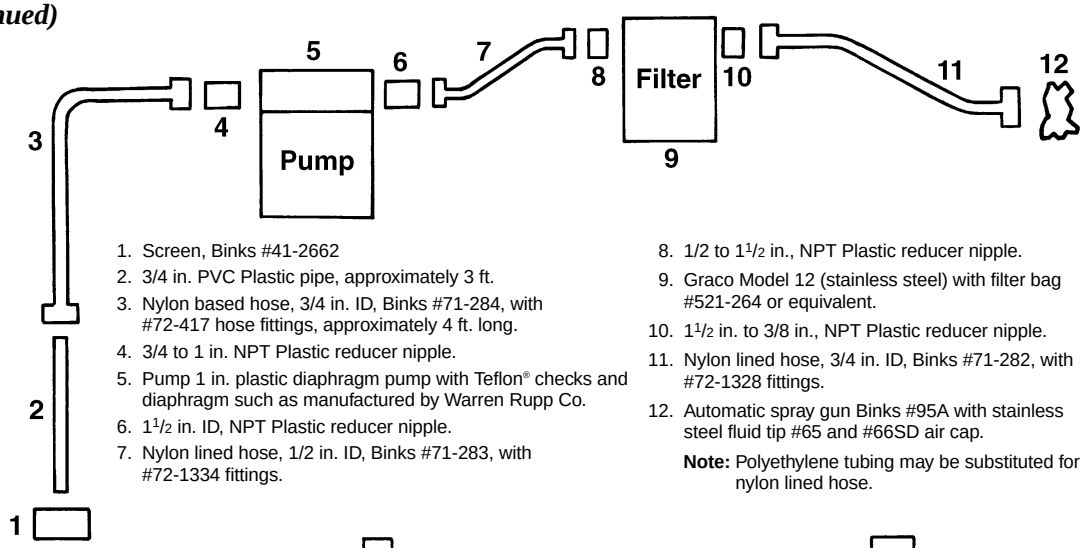
5. Airless Spray: This product can be airless sprayed. Fluid tips ranging from .018 in. to .031 in. at fluid pressures up to 1,100 psi are normally used.

6. Hoses: All material hoses should be nylon or polyethylene lined with plastic or stainless steel fittings.

7. Roll Coating: 3M™ Fastbond™ Contact Adhesive 30H may be coated with a machine type roll coater such as manufactured by Black Bros., Mendota, IL. Roll covering should be urethane with 24 grooves per inch for most applications.

Application Equipment Suggestions *(continued)*

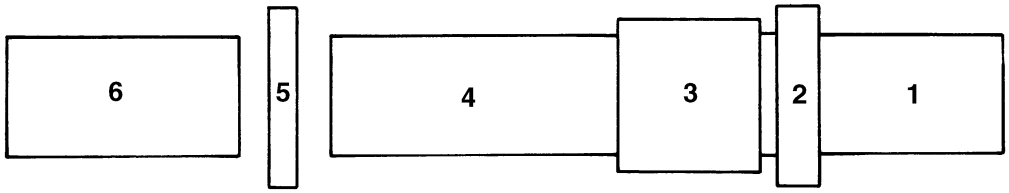
Typical Automatic Spray System



1. Screen, Binks #41-2662
2. 3/4 in. PVC Plastic pipe, approximately 3 ft.
3. Nylon based hose, 3/4 in. ID, Binks #71-284, with #72-417 hose fittings, approximately 4 ft. long.
4. 3/4 to 1 in. NPT Plastic reducer nipple.
5. Pump 1 in. plastic diaphragm pump with Teflon® checks and diaphragm such as manufactured by Warren Rupp Co.
6. 1 1/2 in. ID, NPT Plastic reducer nipple.
7. Nylon lined hose, 1/2 in. ID, Binks #71-283, with #72-1334 fittings.
8. 1/2 to 1 1/2 in., NPT Plastic reducer nipple.
9. Graco Model 12 (stainless steel) with filter bag #521-264 or equivalent.
10. 1 1/2 in. to 3/8 in., NPT Plastic reducer nipple.
11. Nylon lined hose, 3/4 in. ID, Binks #71-282, with #72-1328 fittings.
12. Automatic spray gun Binks #95A with stainless steel fluid tip #65 and #66SD air cap.

Note: Polyethylene tubing may be substituted for nylon lined hose.

Typical Laminating Line



1. Conveyor: Conveyor should be adjusted to give the required drying time. For example, a conveyor speed of 10 feet per minute with a 10-foot long oven will give a drying time of 60 seconds.
2. Reciprocating Spray Machine and Spray Booth.
3. Drying Oven.
4. Lay-Up Area.
5. Nip Rolls.
6. Take Off Table.

Start Up, Maintenance and Shut Down for Automatic Spray Lines:

Water-based adhesives differ from solvent based adhesives in two major respects:

1. Dried water-based adhesive will not dissolve in the wet adhesive.
2. The presence of water in the system creates the potential for corrosion of or reaction with certain metals, such as copper, brass, steel, aluminum, etc.

As a result, *extra care* is required to assure proper functioning of spray equipment. The attached schematic of a suggested spray system, start-up procedure for this system, and suggested maintenance program, were developed with the properties of 3M water-based adhesives in mind.

Start-Up Procedure for Air Atomizing Spray System with Rupp Pump

1. Connect pump to piping system. Flush lines and pipes with hot, soapy water***** to remove possible contaminants before attaching pump or spray gun. Flush thoroughly with clean water. Blow out excess water. Do not connect fluid line to spray applicator.
2. If pump has not been supplied with air regulator, attach regulator and gauge to air inlet of pump.
3. Close air inlet valve on pump and attach regulator inlet to air supply.
4. Adjust regulator to “0” pressure reading on the gauge.
5. Open air inlet valve all the way and tighten lock nut.
6. Insert suction tube in adhesive so that inlet to tube is at bottom of container.
7. Direct end of fluid hose into a waste container.
8. Start pump by increasing regulated inlet air pressure (approximately 5 psi will be required).
9. Run pump until all traces of air are out of the system and adhesive is flowing in a steady, uninterrupted stream.
10. Shut off pump by reducing inlet air pressure to “0” psi or disconnecting inlet air line from regulator.
11. Immediately connect fluid hose to spray applicator.
12. Turn on pump and manually trigger applicator a few times to purge air from applicator.
13. Set flow rate of spray applicator by increasing or decreasing inlet air pressure to pump (normally 5-30 psi).
14. Adjust atomizing air pressure and fan air to obtain desired spray pattern (normally 10-20 psi).

*****Cleaning solution: One pint detergent to five gallons of water. Flush with clean water.

Application Equipment Suggestions *(continued)*

Maintenance Program

1. **Filter:** Follow the manufacturer's instructions for disassembling filter. Remove dirty filter bag and replace with clean bag. Do not allow adhesive to dry. Reassemble filter immediately.
2. **Pump:** To remove pump from system for cleaning, disconnect fluid line at outlet of pump and insert threaded plug into fluid line to prevent drying of adhesive. Remove suction line from adhesive and place in 5 gallons of soapy water.**** Flush through the pump. Disconnect siphon line at inlet to pump and invert pump to allow water to drain out. Follow disassembly instructions to remove manifold, diaphragms and valves. Soak these parts in 3M™ Adhesive Remover or equivalent until adhesive has been sufficiently loosened and can be rubbed off.* Dry parts overnight at room temperature or 2 to 3 hours at 120°F (49°C) before reassembling pump. Do not install parts until all odor is gone. If pump must be returned to service quickly, a second set of diaphragms and valves should be purchased and installed while the first set is being cleaned. To put the pump back into operation, follow steps 6 through 12 in Start-Up Procedure.
3. **Spray Applicator:** Should the fluid tip become plugged, shut off pump by reducing inlet air pressure to "0" psi, or disconnect inlet air. Manually trigger applicator to relieve pressure in fluid lines. Remove tip, wipe any particles from fluid needle with damp cloth and immediately install a clean fluid tip. (Note: Fluid tips must be stainless steel.) Do not allow adhesive to dry in applicator or tip. Plugged tip may be rinsed in water and soaked in mineral spirits, followed by brushing with stiff bristle brush to remove adhesive. Air caps which become coated with adhesive should be replaced with clean caps. Soak adhesive coated caps in mineral spirits to clean.*

*When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

**Cleaning solution: One pint cleaner to five gallons of water. Flush with clean water.

Attention:

1. **Do not use fluid lines that have previously been used with solvents whether flammable or non-flammable.**
2. **Do not use "rubber" lined hose. Hose should be either flexible polyethylene or nylon lined. All hose and pipe fittings should be plastic or stainless steel. DO NOT use copper, aluminum, brass or steel fittings.**
3. **A pressure pot may be used in place of the pump. In this case, a polyethylene bag liner should be used. Also the DIP TUBE AND FITTINGS SHOULD BE CHANGED TO PLASTIC OR STAINLESS STEEL.**

Typical Adhesive Performance Characteristics

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

	T-Peel Strength Canvas/Canvas		Overlap Shear Strength 1⁄8" Birch 1⁄8" Birch	
Test Temp.	**Time @ 75°F**	**Value (lbs./inch width)**	**Test Temp.**	**Value (psi)**
75°F (24°C)	1 Day	25	-30°F (-37°C)	1100
75°F (24°C)	3	35	75°F (24°C)	480
75°F (24°C)	5	30	180°F (82°C)	60
75°F (24°C)	7	20	200°F (93°C)	30
75°F (24°C)	2 wks.	20	225°F (107°C)	40
75°F (24°C)	3 wks.	15		
-30°F (-37°C)	3 wks.	5		
150°F (66°C)	3 wks.	10		
180°F (82°C)	3 wks.	10		

Flatwise Tensile Test: High pressure laminate/particle board.
Test speed = 0.05 in./min.

Test Temperature	3M™ Fastbond™ Contact Adhesive 30-NF
75°F (24°C)	*113 psi
150°F (66°C)	55 psi
180°F (82°C)	30 psi
200°F (93°C)	27 psi

*Particle board failure

Activation of Pre-Applied Adhesive

Sections of high pressure laminate were sprayed with adhesive, dried, and then stored at 75°F (24°C). Each month for nine months a piece of pre-coated laminate was bonded to birch plywood that had been sprayed with adhesive and allowed to dry for 10 minutes. The bonds were made in a pinch roller and then aged 3 weeks before testing.

1/8 in. Birch/High-Pressure Laminate Shear Strength (lbs./sq. in.)

Aging Period Months	Test Temp. 75°F (24°C)	Test Temp. 150°F (66°C)	Test Temp. 180°F (82°C)
Control	265	130	30
3	315	140	80
6	305	150	75
9	285	125	50

Note: Pre-applied adhesive must be kept free of dust and dirt. Pre-applied adhesive can also be activated with 3M™ Scotch-Grip™ Contact Adhesives 5 and 1357.

Surface Flammability

Test conducted in accordance with ASTM E-286-69 "Surface Flammability of Building Materials" using an eight (8) foot tunnel furnace.

Test Results	Fastbond contact adhesive 30-NF
Flame Spread Index	0
Fuel Contributed Index	0
Smoke Density Index	16.1

Note: No flaming or odor emissions were present during testing. Adhesive application amount was 2.95 gm./ft.^{2} dry.

Moisture vapor transmission: MVP rating = 0.0091 perm inches.

Storage

Best storage temperature is 60-80°F (16-27°C) for maximum storage life. Higher temperatures reduce normal storage life. Lower temperatures cause increased viscosity of a temporary nature. These water-based contact adhesives will become unusable with prolonged storage below 40°F (4°C). Rotate stock on a "first-in, first-out" basis.

Shelf Life

When stored at the recommended temperature in the original, unopened container, these products have a shelf life of 15 months.

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this product.

Product Use

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3M Fastbond™ Foam Adhesive 100 Neutral and Lavender

Technical Data **April, 2003**

Product Description

3M™ Fastbond™ Foam Adhesive 100 is a one-part, water-dispersed, fast setting adhesive. This neoprene-based product bonds many porous substrates to porous or non-porous substrates with minimal dry time. Adheres to many types of flexible polyurethane foam, latex foam fabric, polyester fiberfill, wood, plywood, particleboard and many plastic and metal surfaces.

Features/Advantages

Features	Advantages
• Water-dispersed	• Non-flammable in the wet state
• High solids	• High coverage
• One component	• Simplified dispensing
• Neoprene-based	• High heat resistance
• Low pressure sprayable	• Reduces misting and overspray
• Non-dimpling	• Soft bondlines

Note: This product is designed to be applied between two substrates. Application to substrates that results in direct exposure of the adhesive to light may result in eventual discoloration of the exposed adhesive. Direct exposure can be controlled by proper spray application. Adhesive may soak through very thin fabrics.

Not recommended for exterior bare metal surfaces unless metal surfaces are completely dried by force drying and protected from moisture.

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.

Base Polymer	Polychloroprene (neoprene)
Viscosity	10-40 cps (Brookfield RVF #1 sp @ 20 rpm)
Solids (by weight)	45-49%
Color	100 Neutral - White (semi-transparent when dry) 100 Lavender - Lavender (wet and dry)
Density	9.0-9.4 lbs. per gallon
Flashpoint	None (Setaflash closed cup tester)
Coverage (approx.)	1000 sq ft per gallon (@ 2 grms/sq ft dry wt)
pH	8.4-9.0
Set Time	15 seconds
Bonding Range	20 minutes

Fastbond™
Foam Adhesive
100 Neutral and Lavender

Application Equipment Suggestions

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

Low to Medium Volume Applications				
Equipment Type	**Equipment Example***	**Air Cap**	**Fluid Tip**	**Atomizing Air Pressure****
Siphon Gun	Critter Siphon Gun #118	N/A	N/A	10 psi
Gravity Feed Gun	Binks Model 95G	66SD	65 SS (.059")	6 psi
	Binks M1-G	93P	94 (.055")	10 psi

Medium to High Volume Applications				
Equipment Type	**Equipment Example***	**Air Cap**	**Fluid Tip*****	**Atomizing Air Pressure****
Pressure Fed Hand Held Spray Guns	Binks 2001 SS	63P	63 SS (.028")	10 psi
	Binks 95	63P	63 SS (.028")	10 psi
	Binks Cub SL	25	25 T (.025")	10 psi

*Systems other than those listed can be used with 3M™ Fastbond™ Foam Adhesive 100. Existing spray equipment can also be adapted. Fluid hoses used previously with solvent-based adhesive or cleaning compounds must be replaced with new hose. Be sure to follow the equipment manufacturer's precautions, directions for use, and recommendations for such equipment. For additional information, contact your local 3M representative.

**Starting air pressure on regulator. Adjust up or down based on application requirements.

*** Also available are 2 piece fluid tips as replacements fluid tips. These 2 piece tips allow for easier cleaning with less chance of adhesive contamination of the air passages in the spray gun.

For additional information, contact your local 3M representative.

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
1 inch plastic diaphragm pump with Teflon™ checks and diaphragms. All pumps should be short stroked for pump longevity. For additional information, contact your local 3M representative.

Filter (pump output)
Graco model 12 (stainless steel) with filter bag #521-264 or equivalent.

Hoses
All fluid hoses should be nylon or polyester lined. Hose fittings should be stainless steel or plastic. The typical fluid hose length @ 1/4 inch i.d. should be 15 to 25 ft. Use of larger fluid hose i.d. or lengths less than 15 ft. will result in loss of fluid pressure control. Use of smaller fluid hose I.D. lengths greater than 25 ft. can result in product coagulation in the line.

Note: Do not use fluid lines that have been previously used with solvent.
Do not use air operated piston pumps with these products.

Fastbond™
Foam Adhesive
100 Neutral and Lavender

Handling/Application Instructions

Directions for Use:

Note: When using 3M™ Fastbond™ Foam Adhesive 100, it is required that at least one of each pair of substrates to be bonded be porous or water permeable.

1. **Surface Preparation:** Use only on clean, dry surfaces. Contamination of surfaces with oil, grease or release agents will prevent good, strong bonds.
2. **Application:** Adhesive does not require agitation before use. Adjust the spray equipment to give a fine, mist-like spray pattern. Spray a uniform, light coat of adhesive to **both** surfaces holding spray applicator 10-15 inches from surface.
3. **Coverage:** Coverage will depend on foam density, surface porosity of substrates, and strength of adhesive bond required. Typically one gallon of adhesive will cover up to 1000 square feet of substrate surface at a coating weight of approximately 2 dry grams of adhesive/sq. ft. In all cases, user evaluation will be required to determine the optimum coverage levels.

   Note: Application of adhesive at coating weights above 2 dry grams/sq. ft. or using a coarse spray pattern may result in longer activation times.
4. **Activation Time:** The adhesive activates sufficiently to permit making foam/foam bonds within 15 seconds after application. Bonds of foam or fabric to smooth, non-porous surfaces such as plastic or metal will require longer activation times. Bonds may be made up to 20 minutes after application depending on ambient temperature and humidity conditions. See Note above.
5. **Assembly and bonding:** For foam bonding and foam fabrication, pressure sufficient to compress the foam should be applied to the bond line by manual or mechanical methods. Bond the adhesive coated surfaces with sufficient pressure to ensure good contact across the entire adhesive bond line.
6. **Cleanup:** Wet adhesive may be removed with water containing a small amount of detergent.* Dry adhesive may be removed with a combination of 3M™ Citrus Base Cleaner or equivalent and mechanical systems such as wire brushing or 3M™ Scotch Brite™ pads.**

   Dry adhesive cannot be removed from porous surfaces such as foams or fabrics. Flush the adhesive wetted surfaces of spray equipment with water containing a small amount of detergent.* Follow with a flush of clean water.

***Cleaning Solution: One pint of detergent to five gallons of water.

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

Fastbond™
Foam Adhesive
100 Neutral and Lavender

Typical Adhesive Performance Characteristics

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

Heat Resistance: After air drying 24 hours, 4-inch cube knife edge foam bonds made with 3M™ Fastbond™ Foam Adhesive 100 on 1.2 lb./cu. ft. density urethane foam specimens withstood operating temperatures at 230°F (110°C) for 24 hours without showing any signs of failure along the bonded seams. The adhesive exhibited no indication of attacking or deteriorating the foam and the bondlines remained strong and flexible.

Peel Adhesion: Peel bonds of cotton duck (canvas) to various substrates were tested at a peel angle of 180 degrees at two inches per minute separation rate at a temperature of 77°F (25°C). The value listed is the average force required to peel the canvas from the substrates in pounds per inch of bond width (PIW).

Foam Tear: Polyurethane foam of 1.2 lb./cu. ft. density was bonded to various substrates at a dry coating weight of 2-3 gms./sq. ft. After bonds were made they were air-dried at ambient temperature for 24 hours. At the end of the drying period, an effort was made to pull the foam from the surface of the substrate. It was noted if the adhesive released from the substrate or if there was tearing of the foam.

Substrate	Peel Adhesion (PIW)	Foam Tear
ABS	2.0	Yes
Polyethylene	1.5	Yes
Polypropylene	0.9	Yes
PVC	1.9	Yes
Aluminum	1.1	Yes
Galvanized Steel	1.1	Yes
Cold Rolled Steel	1.1	Yes

Fog Test Results 3M™ Fastbond™ Foam Adhesive 100 Neutral*

GM 9505P (110c/38c-6 hrs/16 hrs-RT) Fog Number > 60 = pass			
Sample	**#1**	**#2**	**#3**
Actual	134.2 134.8 135.3 134.6	147.4 146.8 147.2 147.2	147.3 147.8 147.5 147.7
	134.4	**147.3**	**147.5**
fog #	87	96	96

***Important:** These Fog Test Results apply to 3M™ Fastbond™ Foam Adhesive 100 Neutral only. Because of the lavender dye, 3M™ Fastbond™ Foam Adhesive 100 Lavender does not pass the GM 9505P Fog Test.

Fastbond™
Foam Adhesive
100 Neutral and Lavender

Storage

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

Shelf Life

When stored at the recommended temperature in the original, unopened container, this product has a shelf life of 12 months from date of shipment.

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.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/adhesives. Address correspondence to: 3M Industrial Adhesives and Tapes Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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ISO 9002

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Scotch-Weld™

Neoprene High Performance Contact Adhesive

1357 • 1357-L

Technical Data **November, 2006**

Product Description

3M™ Scotch-Weld™ Neoprene High Performance Contact Adhesive can be used to bond most rubber, cloth, metal, wood, foamed glass, paper honeycomb, decorative plastic laminates and many other substrates.

Features

- Long bonding range.
- Excellent initial strength.
- High heat resistance.
- 3M™ Scotch-Weld™ Neoprene High Performance Contact Adhesive 1357 meets the specification requirements of MMM-A-121 and MIL-A-21366A.

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.

Product	3M™ Scotch-Weld™ 1357	3M™ Scotch-Weld™ 1357-L
Viscosity (approx.):	200-450 cps	35-65 cps
Brookfield Viscometer:	RVF #2 Sp. @20 rpm@80°F (27°C)	RVF #1 Sp. @20 rpm@80°F (27°C)
Solids content (by wt.):	23 - 27%	17 - 19%
Base:	Polychloroprene	Polychloroprene
Color:	Gray/Green, Light Yellow	Gray/Green
Net weight (approx.):	6.6 - 7.0 lbs./gal.	6.6 - 6.8 lbs./gal.
Flash point (T.C.C.):	-14°F (-26°C)	-14°F (-26°C)
Solvent:	petroleum distillate, acetone, MEK, toluene, n-hexane	petroleum distillate, acetone, MEK, toluene, n-hexane
Coverage (approx.) @ 2.5 gms (dry wt.)/ft.^{2}:	308 ft.^{2}/gal.	219 ft.^{2}/gal.
Suggested Application Method(s):	Spray, brush, roll or flow	Automatic spray

3M™ Scotch-Weld™
Neoprene High Performance Contact Adhesive
1357 • 1357-L

Handling/Application Information

When bonding wood veneers, success is dependent on many variables such as environmental conditions, bonding process, type of base material, type of veneer, adhesive type and top coat finishing systems to name a few. It is the user's responsibility to thoroughly test any adhesive for its suitability in bonding wood veneers. It is also recommended to follow the veneer manufacturers recommendation and industry guidelines.

Directions For Use:

1. **Surface Preparation:** Remove all dust, dirt, oil, grease, wax, loose paint, etc. Wiping with solvent such as Methyl Ethyl Ketone (MEK) will aid in preparing the surface for bonding.*****

2. **Application Temperature:** For best results the temperature of the adhesive and surfaces to be bonded should be at least 65°F (18°C). If stored below 30°F (-1°C), warm-up to room temperature in a warm room only (do not exceed 120°F (49°C) followed by thorough agitation).

3. **Application:** Stir or agitate well before using for optimum results. Apply 2.5 gms to 3.5 gms/ft.^{2} dry weight to each surface. Unusually porous surfaces will require more adhesive.

4. **Drying Time:** The adhesive dries in about 10 minutes. High humidity will slow drying-high temperatures speed the drying. This adhesive has a bonding range of approximately 30 minutes when applied to both bond surfaces under conditions of 70°F (21°C) and 35% R.H. If the adhesive becomes too dry, apply another thin coat of adhesive to one surface, allow to become slightly tacky, and bond.

   Relative humidity above 50% can cause blushing (condensation of moisture on surface) and a false bond. To avoid this, we recommend a force drying temperature of 180-220°F (82-104°C). Force drying will also help remove the solvent more rapidly.

5. **Assembly:** Spacers, such as dowels or strips of laminate, may be used to help prevent premature adhesive/adhesive contact and bonding prior to positioning. Slide out of the spacers and apply uniform pressure, working toward the edges. A 3 in. roller used with maximum body pressure should be used to help ensure adequate contact and bonding, especially on edges. The use of a pinch roll is preferred for optimum performance. Bonded assemblies may be machined, trimmed, etc. immediately after bonding.

6. **Cleanup:** Adhesive residue of 3M™ Scotch-Weld™ Neoprene High Performance Contact Adhesive 1357 and 1357-L may be removed from exposed surfaces with solvents such as Methyl Ethyl Ketone (MEK), or 3M™ Citrus Base Industrial Cleaner.***** For flushing fluid lines use MEK.

*****When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

3M™ Scotch-Weld™
Neoprene High Performance Contact Adhesive
1357 • 1357-L

Application Equipment Suggestions

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.

1. **Pumping:** A 2:1 divorced design pump is suggested. All material hoses should be nylon or PVA lined. Packings and glands in contact with the adhesive should be Teflon®.

2. **Spray:**

Spray Applicator	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement*	Fluid Flow**
DeVilbiss JGA, MSA	777	FX (.042")	80 psi	18½ CFM	6 fl. oz./min.
Binks No. 95 or 2001	63PH	63BSS (.046")	80 psi	23 CFM	6 fl. oz./min.

These adhesives are not recommended for Airless Spraying.

*5 H.P. Compressor for continuous use.

**To Measure Fluid Flow: Pressurize fluid source only; pull trigger, flow material into measuring device for 60 seconds, increase or decrease fluid source pressure to obtain desired fluid flow.

3. **Brush/Roller:** Typical brushes/rollers designed for oil-based paint may be used.

Typical Adhesive Performance Characteristics

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

3M™ Scotch-Weld™ Neoprene High Performance Contact Adhesive 1357 and 1357-L

180° Peel Strength–Canvas/Steel			Overlap Shear Strength–1/8" Birch/Birch		
Time @75°F (24°C)	Test Temp.	Value (lbs./in. width)	Time @75°F (24°C)	Test Temp.	Value (lbs./sq./in.)
1 day	75°F (24°C)	16	after 2 wk.	75°F (24°C)	452
3 days	75°F (24°C)	31	after 3 wk.	75°F (24°C)	536
5 days	75°F (24°C)	42	after 3 wk.	-30°F (-34°C)	964
7 days	75°F (24°C)	26	after 3 wk.	180°F (82°C)	199
2 wk.	75°F (24°C)	24	after 3 wk.	225°F (107°C)	158
3 wk.	75°F (24°C)	23			
after 3 wk.	-30°F (-34°C)	13			
after 3 wk.	150°F (66°C)	18.5			
after 3 wk.	180°F (82°C)	12			

3M™ Scotch-Weld™
Neoprene High Performance Contact Adhesive
1357 • 1357-L

Storage

Store product at 60-80°F (16-27°C) for maximum storage life. Higher temperatures can reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. Rotate stock on a "first in-first out" basis.

Shelf Life

When stored at the recommended conditions in the original, unopened container, 3M™ Scotch-Weld™ Neoprene High Performance Contact Adhesive 1357 and 1357-L have a shelf life of 15 months.

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.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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ISO 9001:2000

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Fastbond™

Contact Adhesive 2000-NF and Spray Activator #1

Technical Data **August, 2005**

Product Description

3M™ Fastbond™ Contact Adhesive 2000-NF with Spray Activator #1 is a water-dispersed, high solids, activated adhesive which provides immediate bonding capabilities and handling strength without forced drying equipment for most applications.

Features

- Immediate bonding without heat.
- Immediate handling strength.
- Bonds flexible polyurethane and latex foams, plastic laminate, wood, plywood, particle board, fabrics, fiber, aluminum, galvanized steel and many plastics.
- Post-formable and heat resistant.
- Co-sprayed with plural component, external mix spray systems – no premixing, no limited pot life.
- Available in blue, light orange or neutral color.

Note: Not recommended for bonding bare steel surfaces (unless force dried and protected from moisture). Primed or painted steel surfaces must be thoroughly tested for corrosion and compatibility with Fastbond contact adhesive 2000-NF and spray activator #1 before use.

Note: This product is designed to be applied between two substrates. Application to substrates that results in direct exposure of the adhesive to light may result in eventual discoloration of the exposed adhesive. Direct exposure can be controlled by proper spray application. Adhesive may soak through very thin fabrics.

Special Note

When bonding wood veneers, success is dependent on many variables such as environmental conditions, bonding process, type of base material, type of veneer, adhesive type and top coat finishing systems to name a few. For un-backed wood veneers, water based contact adhesives are not recommended. It is the user's responsibility to thoroughly test any adhesive for its suitability in bonding wood veneers. It is also recommended to follow the veneer manufacturers recommendation and industry guidelines.

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.

	3M™ Fastbond™ Contact Adhesive 2000-NF	3M™ Fastbond™ Spray Activator #1
Viscosity (approx.)	200-750 cps	Water thin
Brookfield Viscometer	RVF #2 sp. @ 20 rpm @ 80°F (27°C)	
Solids (by weight)	47-51%	15-19%
Base	Polychloroprene	Inorganic Salt
Color(s)	Blue, Light Orange or Neutral	Clear
Net Weight	8.9-9.3 lbs./gal.	9.4-9.8 lbs./gal.
Flash Point (Setaflash® closed cup tester)	None	None
Coverage @ 3 gms./ft.^{2} dry weight	690 ft.^{2}/gal. (including activator)	Included in adhesive
Application Method	Co-Spray	Co-Spray
Co-Spray Ratio	15 parts	1 part
pH	10-11	4.4-5.4

Application Equipment Suggestions

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:

When hand spraying, plural component (co-spray) applicators are used. These applicators spray activator and adhesive through separate fluid nozzles with mixing occurring outside the spray applicator.

For automatic spray systems, separate spray applicators are used for the activator and adhesive, with the applicators aimed so the spray patterns converge and mix together before reaching the substrate.

Note: Premixing of the adhesive and activator prior to spraying is NOT possible and makes the adhesive unusable.

Hand Held Spray Applicators	Air Cap	Fluid Nozzle	Atomizing Air Pressure	Approximate Air Requirement
Binks Mach 1PC H.V.L.P.	91 PC	94F (.055")	15-30 psi	6 scfm @ 15 psi
Graco Optimizer 2K H.V.L.P.	188-754	185-702 (.055")	25-35 psi	6 scfm @ 15 psi
Mattson Cross-Fire H.V.L.P.	81270	82017 (.050")	15-30 psi	6 scfm @ 15 psi
DeVilbiss Pro Bond 2K	28L	FF (.055")	25-35 psi	6 scfm @ 15 psi

Automatic Spray Applicators	Air Cap	Fluid Nozzle	Atomizing Air Pressure	Approximate Air Requirement
Binks Mach 1PC H.V.L.P.	91 PC	94F (.055")	15-30 psi	6 scfm @ 15 psi
Binks Mach 1A H.V.L.P. (Adhesive)	91 P	94F (.055")	15-30 psi	11 scfm @ 30 psi
Binks Mach 1A H.V.L.P. (Activator)	91 P	90F (.030")	15-30 psi	11 scfm @ 30 psi
Binks 21, 61, 95A (Adhesive)	66SD-3	65SS (.059")	15-30 psi	6 scfm @ 15 psi
Binks 21, 61, 95A (Activator)	66S	63SS (.028")	10-15 psi	3.4 scfm @ 30 psi
DeVilbiss AGX (Adhesive)	30	FF (.055")	15-30 psi	6 scfm @ 20 psi
DeVilbiss AGX (Activator)	30	G (.028")	10-15 psi	6 scfm @ 20 psi
DeVilbiss AGXV H.V.L.P. (Adhesive)	33A	FF (.055")	15-30 psi	12 scfm @ 30 psi
DeVilbiss AGXV H.V.L.P. (Activator)	33A	G (.028")	10-15 psi	6 scfm @ 20 psi

TO MEASURE FLUID FLOW

Hand Held Applicators: Pressurize adhesive source only. Direct adhesive fluid nozzle into a measuring device. Pull trigger and flow material into measuring device for 60 seconds. Increase or decrease fluid source pressure to obtain desired fluid flow. The fluid flow of the activator should be adjusted to 15 to 1 ratio when co-sprayed. The measurement can be done by either weight or volume.

Automatic Applicators: Pressurize adhesive fluid source only. Activate trigger and flow adhesive into measuring device for 60 seconds. Increase or decrease fluid pressure to obtain desired fluid flow. When adhesive fluid flow is correctly adjusted repeat the process with the activator spray applicator, setting fluid flow to one-fifteenth of the adhesive fluid flow. The measurement can be done by either weight or volume.

Application Equipment Suggestions *(continued)*

Material Supply:

Pressure Pots

Adhesive and Activator: For best results, use stainless steel pressure pots. Non-stainless pressure pots may be used if used with plastic liner and the dip tube and fittings are changed to plastic or stainless steel.

Pumps

Adhesive: Use a 1 inch plastic bodied, double diaphragm pump with Teflon® diaphragms and ball checks. It is suggested that all diaphragm pumps are short stroked by the manufacturer before use. Do not use piston type reciprocating pumps, or diaphragm pumps smaller than 1 inch. When using diaphragm pumps the use of a bag type fluid filter is recommended on the output of the pump. A filter such as the Graco Model 12 part number 915-518 with a 300 micron filter bag part number 521-264 or equivalent is suggested.

Fluid regulators cannot be used with this adhesive. Fluid pressure is controlled by the pump pressure.

Activator: A 1:1 or 2:1 pogo or piston type reciprocating pump is suggested. All pump parts in contact with activator must be plastic or stainless steel.

Diaphragm pumps and fluid regulators can be used (stainless steel or plastic on all wetted components).

Hoses

All fluid hoses should be nylon or polyethylene lined. Hose fittings should be stainless steel or plastic.

Note: Do not use fluid lines that have previously been used with solvent whether flammable or nonflammable.

Handling/Application Information

When using 3M™ Fastbond™ Contact Adhesive 2000-NF with Spray Activator #1, it is required that at least one of each pair of substrates to be bonded be porous or water permeable.

Surface Preparation

Surfaces must be clean, dry and dust free.

Spray Mix Ratio of Activator to Adhesive

It is recommended that Fastbond contact adhesive 2000-NF be spray mixed with spray activator #1 at a ratio of 15 parts adhesive to 1 part activator (by weight or volume). When activated, slight adhesive transfer should occur when adhesive film is touched immediately after spraying.

Application

Use a plural nozzle, external mix spray applicator to mix adhesive with activator to achieve proper mix of Fastbond contact adhesive 2000-NF and spray activator #1. (Refer to Application Equipment Suggestions above for additional information about spray equipment.) Spray apply a uniform coat of mixed adhesive to both surfaces. (See coverage section.) One coat should usually be sufficient for both surfaces. Be sure to overlap the spray pattern slightly with each pass of the spray applicator to ensure complete activation of adhesive and uniform coverage.

A uniform dull film indicates sufficient mixture of Fastbond contact adhesive 2000-NF and spray activator #1.

Handling/Application Information *(continued)*

Coverage

Approximately 690 sq. ft./gal. sufficient to apply 345 sq. ft. of bonded surface on most substrates such as decorative laminate and particle board. Optimum performance is obtained using 2.5-3.5 grams/sq. ft. dry adhesive on each surface.

Note: Coverage will vary depending on the porosity of substrates and strength of adhesive bond desired. For decorative laminate to particle board, optimum performance is obtained at 2.5-3.5 grams of dry adhesive per square foot applied to each surface. Depending on the user's performance requirements, less adhesive is suggested if fabrics, foams, etc. are to be bonded. In all cases, user's evaluation will be required to determine the optimum coverage levels.

Activation Time

With proper mixing of adhesive and activator and depending on ambient conditions, adhesive activates sufficiently to make bonds within 5-15 seconds after application. Depending on ambient conditions and substrates, bonds should be made within (2) hours. While bonds may be made immediately, the optimum initial strength will be obtained by allowing the adhesive to dry the same amount of time as the previous adhesive (solvent) type.

Assembly

For foam bonding and foam fabrication, pressure may be applied to the bond by manual or mechanical methods. Bond adhesive coated surfaces with sufficient pressure to assure good contact across adhesive bond line. For decorative laminates, spacers such as dowels or strips of laminate may be used to help prevent premature adhesive/adhesive contact and bonding prior to positioning. Slide out the spacers and apply uniform pressure working toward the edges. A 3 inch roller used with maximum body pressure should be used to help ensure adequate contact and bonding especially on the edges. Bonded assemblies may be machined, trimmed, etc. immediately after bonding. The use of a pinch roll is preferred for optimum performance.

Cleanup

Work Surface: If adhesive has not activated, clean surfaces with water or with a small amount of liquid detergent followed with a cleaner such as 3M™ Citrus Base Cleaner or equivalent. Dried, activated adhesive may be cleaned with a combination of cleaner and mechanical systems such as wire brushing.

Spray Equipment: Flush adhesive portion of spray equipment with cold water containing a small amount of detergent* followed by a flush with clean water. The activator portion of spray equipment should be flushed with clean water (no detergent).

***Cleaning Solution:** One pint of detergent to five gallons of water.

Typical Adhesive Performance Characteristics

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

Overlap Shear Strength (ASTM D 1002)

1/8 inch birch to 1/8 inch birch. Adhesive co-spray applied and bonded immediately with nip roll pressure. Bonds tested after aging 3 weeks @ 75°F (24°C) and 50% R.H. at a separation rate of 0.2 in./min.

Test Temp.	Value (psi)
-30°F (-37°C)	1000
75°F (24°C)	350
180°F (82°C)	50
200°F (93°C)	40
225°F (107°C)	30

Overlap Shear Rate of Strength Build-Up (ASTM D 1002)

1/8 inch birch to 1/8 inch birch. Adhesive co-spray applied and bonded immediately with nip roll pressure. Bonds aged at 77°F (25°C)/50% R.H. and 90°F (32°C)/90% R.H. for indicated time and then tested at a separation rate of 0.2 in./min. at 75°F (24°C).

Time	Value (psi) 77°F (25°C)/50% R.H. Aged	Value (psi) 90°F (32°C)/90% R.H. Aged
1 min.	55	55
15 min.	75	75
30 min.	130	160
60 min.	160	180
90 min.	165	190
2 hours	170	190
4 hours	230	215
8 hours	260	255
24 hours	290	315
3 days	320	340
7 days	350	350
14 days	350	350
21 days	350	350

Flatwise Tensile Strength (ASTM C 297)

High pressure laminate to particle board. Adhesive co-sprayed applied and bonded immediately with nip roll pressure. Bonds aged for 3 weeks @ 75°F (24°C)/50% R.H. and then tested at a separation rate of 0.05 in./min.

Test Temp.	Value (psi)
75°F (24°C)	84
180°F (82°C)	25
200°F (93°C)	25
225°F (107°C)	25

Foam to Foam Heat Resistance

A pinch bond (knife edge) of 4 inch thick urethane foam (1.2 lb./ft.^{3}) was made co-spraying adhesive and bonding immediately with hand pressure. The bond was then immediately placed in a 160°F (91°C) oven for 3 months.

Test Result
- No opening or separation of pinch bond.
- No degradation or hardening of adhesive bondline.

Storage

Best storage temperature is 60-80°F (16-27°C). Higher temperatures reduce normal storage life. Lower temperatures cause increased viscosity of a temporary nature. This water-dispersed adhesive will become unusable with prolonged storage below 40°F (4°C). Rotate stock on a "first in, first out" basis. Protect from freezing.

Shelf Life

When stored at the recommended temperature in the original, unopened container, these products have a shelf life of 15 months from date of shipment.

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this product.

Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Warranty and Limited Remedy

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Limitation of Liability

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ISO 9001:2000

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