

# 3M

# Fastbond™

# Cylinder Spray Contact Adhesive

## 30NF

Technical Data

June, 2008

### Product Description

3M™ Fastbond™ Cylinder Spray Contact Adhesive 30NF is an industrial grade, high performance water-dispersed, bulk spray adhesive formulated for high strength and high heat resistant bonds. The adhesive is available in convenient, portable, aerosol cylinders.

### Key Features

- Very high solids, very high coverage adhesive.
- 30 minute typical drying time, which can be reduced with hot air, forced air or infrared.
- Excellent heat resistance to help protect bonds.
- Non-flammable in the wet state.
- Post-formable with high immediate bond strength and long bonding range.
- California compliant per SCAQMD Rule 1168.
- **Certified to the GREENGUARD™ Product Emission Standard For Children and Schools<sup>(SM)</sup> 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 4.3: Low Emitting Materials: Flooring Materials
  - Addresses or Contributes to LEED™ EQ Credit 4.4: Low Emitting Materials: Composite Wood and Agrifiber Products
  - 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
- Recognized under UL GSRJ2 file R14485 program for Door Construction Materials (rated up to and including 3 hours).
- Tested and approved for use by Woodwork Institute of California under provisions of ANSI/HP 1983 for Type II adhesive and heat resistance.
- PPAP (Production Part Approval Process) documentation has been issued.
- Bonds most foamed plastics, plastic laminates, wood, plywood and canvas to themselves and to each other.



### NOTE:

- This product must be protected from freezing temperatures.
- 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).
- 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.

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### 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:	Polychloroprene
Solids Content - aerosol (by wt.):	50%
Solids Content - bulk (by wt.):	51%
Color(s):	Neutral, Green
Volatile Organic Compounds (VOC):	77 g/L
Hazardous Air Pollutants (HAPS) % wt. (calculated):	4.6%
SCAQMD Rule 1168 Compliant Contact Adhesive:	Yes
MACT Compliant:	Yes
Flammability:	No

### Available Sizes and Expected Coverage

Cylinder Size Availability	Cylinder Adhesive Net. Wt. (lbs.)	Sq. Ft. Coverage per Wet lb. of Adhesive @ 2.5 gm./sq. ft. (dry wt.):	Sq. Ft. Coverage @ 2.5 gm./sq. ft. (dry wt.):	Sq. Ft. Coverage @ 3.5 gm./sq. ft. (dry wt.):
Large - Disposable	28.5	91	2,588	1,848

### Handling/Application Information

#### Surface Preparation:

For best results, all surfaces to be bonded must be clean, dry and free from dirt, dust, oil, loose paint, wax or grease, etc.

#### Application Temperature:

For best results, the temperature of the adhesive and the surfaces being bonded should be between 60°-80°F (16°-27°C). Temperatures outside this range may affect bonding range and sprayability.

#### Equipment Setup:

Attach the larger flare fitting end to the spray applicator and tighten the nut securely. Check to see that the applicator gun trigger stop/adjusting nut is fully locked against the trigger. Attach the other end of the hose, a smaller flare fitting, to the cylinder valve and tighten securely.

#### Directions For Use:

- 1.) Slowly open the cylinder valve and inspect the connections for any leaks. Tighten if needed.
- 2.) Fully open the valve.
- 3.) Unscrew the trigger stop/adjusting nut away from the trigger 3-4 turns and spray a test pattern. For more adhesive output, continue to screw the nut away from the trigger. For less adhesive output, screw the nut back towards the trigger.
- 4.) Hold the applicator 8-12 inches away from the surface to be sprayed and apply a uniform coat of adhesive.
- 5.) Apply 1-3 even coats of adhesive. (This will depend on the needed coverage for the bonding application.)
- 6.) Allow adhesive to dry completely and then apply sufficient pressure to ensure complete contact.

**Note:** The adhesive generally dries in 30 minutes but will ultimately depend on the coating weight that is applied, the porosity of the substrates being bonded and the temperature and humidity that are present. Heavier coats of adhesive take longer to dry. More porous substrates will dry faster. High humidity will slow drying and high temperatures will speed drying.

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**Handling/Application Information**  
(continued)

<b>Dry Time (minutes):</b>	30
<b>Open Time:</b>	30 minutes – 4 hours

**One Surface Bonding:** 3M™ Fastbond™ Cylinder Spray Contact Adhesive 30NF is not recommended for one surface bonding.

**Two Surface Bonding:** Spray both surfaces and bond within open time.

**Equipment Shut Down:** When not in use – Screw the trigger stop/adjusting nut all the way to the trigger lock position and place applicator in a soapy water solution (to keep the adhesive from drying). For storage – Take off the nozzle tip and completely clean the nozzle and the applicator gun valve seat surface. **Note** – If this is not done, the nozzle/applicator will become clogged with dry adhesive and not spray properly.

**Clean Up:** Wet adhesive can be cleaned with soapy water. Dry adhesive on spray tips and excess adhesive may be removed with 3M™ Adhesive Remover or a solvent such as MEK.\*

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

**Application Equipment Suggestions for Cylinder**

Description	3M ID Number
3M™ Scotch-Weld™ Cylinder Adhesive Applicator (includes 9501 tip)	62-9880-9930-5
3M™ Scotch-Weld™ Cylinder Adhesive Applicator H (includes 4001 tip) – this applicator is for use with 3M™ Scotch-Weld™ Cylinders 94 CA	62-9880-9950-3
3M™ Scotch-Weld™ Cylinder Adhesive Applicator EX (with 18" Extension and 9501 Tip)	62-9880-9940-4
3M™ Scotch-Weld™ Cylinder Adhesive 6 Foot Hose	62-9880-0006-3
3M™ Scotch-Weld™ Cylinder Adhesive 12 Foot Hose	62-9880-0012-1
3M™ Scotch-Weld™ Cylinder Adhesive 25 Foot Hose	62-9880-0025-3
3M™ Scotch-Weld™ Cylinder Adhesive 50 Foot Hose	62-9880-0050-1
3M™ Scotch-Weld™ Cylinder Adhesive 250050 Spray Tip	62-9880-8133-7
3M™ Scotch-Weld™ Cylinder Adhesive 4001 Spray Tip	62-9880-4001-0
3M™ Scotch-Weld™ Cylinder Adhesive 650050 Spray Tip – this nozzle has half the output of the 6501 nozzle	62-9880-8173-3
3M™ Scotch-Weld™ Cylinder Adhesive 6501 Spray Tip	62-9880-6501-7
3M™ Scotch-Weld™ Cylinder Adhesive 730154 Spray Tip – this nozzle minimizes dripping on 3M™ Scotch-Weld™ Cylinder 60 CA	62-9880-7301-1
3M™ Scotch-Weld™ Cylinder Adhesive 9501 Spray Tip	62-9880-9501-4
3M™ Scotch-Weld™ Cylinder Adhesive QSS Spray Tip – this nozzle is needed for 3M™ Scotch-Weld™ Cylinder 70	62-9880-8148-5
3M™ Scotch-Weld™ Cylinder Adhesive T-Fitting	62-9880-8348-1
3M™ Scotch-Weld™ Cylinder Adhesive Hose Swivel	62-9880-7948-9

**Applicator Suggestion:** 3M™ Scotch-Weld™ Cylinder Adhesive Applicator (62-9880-9930-5) is suggested for 3M™ Fastbond™ Cylinder Spray Contact Adhesive 30NF.

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### Application Equipment Suggestions for Cylinder (continued)

#### Nozzle Suggestions:

	4001	6501	9501
<b>Spray Pattern (inches):</b> (see *Note below)	4 - 8	5 - 12	8 - 20
<b>Applications:</b>	General Laminating	General Laminating	General Laminating

\*Note: Spray pattern widths will vary between products, due to formulation and pressure differences.

**Spray Pattern Adjustments:** Unscrew the trigger stop/adjusting nut away from the trigger 3-4 turns and spray a test pattern. For more adhesive output and a wider spray pattern, continue to unscrew the nut away from the trigger. For less output and smaller spray pattern, screw the adjusting nut back towards the trigger. Hold the applicator 8-12 inches away from the surfaces to be sprayed and apply a uniform coat of adhesive. (The smaller the spray pattern, the closer the applicator gun will need to be to the surface).

### 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.**

**Tensile Strength Failure Temperature:** 4 square inch bonds tested with 30 grams hanging in tensile. Temperature is held for 10 minutes and ramped at 10°F increments, until complete failure.

Failure Temperature (°F)
> 300

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

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

Test Temperature	Value
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

#### 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	Value
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.<sup>2</sup> dry.

**Moisture vapor transmission:** MVP rating = 0.0091 perm inches.

### **Cold Weather Warning**

#### **How Cold Weather Affects Cylinders:**

- **THIS PRODUCT WILL FREEZE!**
- **IF IT FREEZES IT CANNOT BE THAWED – IT WILL BE UNUSABLE.**

- 1.) The bulk adhesive in the cylinder will thicken as temperatures get colder.
- 2.) The propellants used will decrease in pressure and, therefore, effectiveness:
  - a. Liquefied hydrocarbon propellants will condense and reduce the effective amount of available pressure in the cylinder. This will adversely affect the spray pattern and, consequently, the overall performance of the adhesive.
  - b. Compressed gas propellants will shrink dramatically in cold weather causing the system to have much less available force to push a thicker bulk adhesive out. The effect will be improper, less controlled spray properties with longer dry times needed.

#### **How to Eliminate Cold Weather Problems:**

- 1.) Store the cylinders in a controlled environment with temperatures between 60°-80°F (16°-27°C). 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°F).
- 2.) Keep cylinders off of cold concrete floors and away from outside walls.
- 3.) Use heat belts or blankets, approved for use with flammable adhesives, to control the temperature of the cylinders.
- 4.) Allow additional time for solvents and propellants to flash off when temperatures are below 60°F (16°C).

#### **If Cylinders Get Too Cold:**

If cylinders arrive cold or have been exposed to temperatures that are causing poor spray properties, move to an area that is heated above 70°F (21°C). The larger the cylinder, the longer it will take for the temperature to equilibrate. Mini (~11 lb.) and Large (~30 lb.) cylinders can be shaken or submerged in hot water to accelerate the warming process.

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### Trouble Shooting – Applicator/Hose Clog

### Applicator – Hose Clog Checklist for 3M™ Fastbond™ Cylinder Spray Contact Adhesive 30NF.

**If the system sprays poorly or won't spray at all:** The sequence below runs through a complete clog into the cylinder valve. If at any time during the sequence the problem is resolved, stop, clean the needed parts, put the system back together, and you are finished.

1. Make sure the cylinder is not empty.
2. Make sure the cylinder valve is open.
3. Close the applicator trigger stop adjusting nut and clean the nozzle tip. (Does it spray now?)
4. Take off the nozzle and try spraying. (Does it spray now?) Clean the nozzle.
5. Shut off the cylinder valve, CAREFULLY and SLOWLY – loosen the applicator gun/hose connection and look for adhesive to squirt out. If adhesive starts to leak out, allow it to slowly continue to do so until it stops. (This will be a little messy, but you will need to bleed off the pressurized adhesive to clean the applicator gun.) The applicator gun has a clog at the valve, stem or inlet area and needs to be cleaned.
6. If nothing leaks out after fully loosening the applicator gun, CAREFULLY remove applicator gun, realizing that the hose may be clogged but could be full of adhesive and pressure depending on where the clog is. (Secure the open end of the hose into a bucket in case the clog releases and the system flushes.)
7. CAREFULLY and SLOWLY loosen the hose connection at the cylinder valve. Look for adhesive to squirt out. If adhesive starts to leak out, allow it to slowly continue to do so until it stops. (This will be a little messy, but you will need to bleed off the pressurized adhesive in the hose). Clean or replace the hose.
8. With everything now isolated from the cylinder, place a bucket in front of the cylinder valve and slowly open it to see if any adhesive comes out. If it does, put the cleaned system parts back together. If it does not, there is something wrong with the cylinder or cylinder valve and it should be returned.

**Solvents that can be used for cleaning nozzle, applicator gun and inside of hose: 3M™ Adhesive Remover, Cyclohexane, Toluene, MEK.\***

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

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

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**Shelf Life** When stored at the recommended conditions in the original, unopened container, this product has a shelf life of 15 months from date of shipment.

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**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.

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**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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