



Fastbond™

Industrial Adhesive

4213-NF

Technical Data

September, 2010

Product Description

3M™ Fastbond™ Industrial Adhesive 4213-NF is a white, water dispersed adhesive for bonding many fabrics, supported vinyl, wood, leather and most porous materials. Exhibits outstanding clarity when dry. Neither prone to discolor with age nor stain substrates. **Note:** Not recommended for exterior applications.

Features

- Water dispersed
- Brush, roll or flow apply
- FDA acceptable ingredients

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.): Brookfield Viscometer	2500-5000 cps. RVF #4 sp. @ 20 rpm @ 80°F (62°C)
Solids Content (approx.):	54-60%
Base:	Synthetic Resin
Color:	White (Wet) Clear (Dry)
Net Weight (approx.):	9.0 lbs./gal.
Flash Point:	None
Solvent:	Water
Coverage (1 mil dry film):	760 ft ² /gallon

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Handling/Application Information

Directions for Use

- **Surface Preparation:** Surfaces must be free of dust, dirt, grease, oil, mold release materials and other contaminants.
- **Application Temperature:** For best results, the temperature of the adhesive and the surfaces being bonded should be at least 65°F (18°C).
- **Application:** Porous surfaces or porous surface to non-porous surface: Brush, roll or flow a uniform coat of adhesive to both surfaces. Not recommended for use on two non-porous surfaces.
- **Bonding:** Join within 5 minutes, clamp or apply moderate pressure.
- **Drying Time:** Allow to dry for at least 30-45 minutes before handling.
- **Cleanup:** Wet adhesive may be removed with warm water.

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.

- **Brushes and rollers:** Brushes and rollers designed for use with latex paint may be used. Keep brushes and rollers wet between uses by wrapping in plastic wrap or aluminum foil.

PRODUCTION TYPE SPRAY EQUIPMENT 2:1 PUMP					
Spray Gun	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement*	Fluid Flow**
DeVilbiss JGA, MBC or AGB	770	FX	80-100 psi	19 CFM	6-8 fl. oz./min.
Binks No. 62, No. 18 or No. 61	63PH	63B	80-100 psi	22 CFM	6-8 fl. oz./min.
LOW VOLUME SPRAY EQUIPMENT					
DeVilbiss JGA	30	FX	75 psi	14 CFM	4 fl. oz./min.
Binks No. 18 or 62	65P	63B	75 psi	14 CFM	4 fl. oz./min.
<p>Note: This adhesive is not recommended for Airless Spraying. *3 H.P. Compressor for intermittent use. (2 H.P. for low volume) 5 H.P. Compressor for continuous use. (3 H.P. for low volume) **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.</p>					
<p>All material hoses should be nylon or PVA lined. Packings and glands in contact with the adhesive should be made of PTFE.</p>					

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Typical Performance Characteristics

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180° Peel Strength – Canvas/Steel			Overlap Shear Strength – 1/8 in. 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)	15	after 3 wk.	-30°F (-37°C)	744
3 days	75°F (24°C)	24	after 3 wk.	75°F (24°C)	488
5 days	75°F (24°C)	30	after 3 wk.	150°F (66°C)	180
7 days	75°F (24°C)	35	after 3 wk.	180°F (82°C)	136
2 wk.	75°F (24°C)	35	after 3 wk.	200°F (93°C)	87
3 wk.	75°F (24°C)	27	after 3 wk.	225°F (107°C)	78
after 3 wk.	-30°F (-37°C)	15			
after 3 wk.	150°F (66°C)	20			
after 3 wk.	180°F (82°C)	14			

180° Peel Strength – Supported Vinyl/Wood			Overlap Shear Strength – Wood/Wood		
Time @ 75°F (24°C)	Test Temp.	Value (lbs./in. width)	Time @ 75°F (24°C)	Test Temp.	Value (lbs./sq. in.)
2 days	75°F (24°C)	8-15		75°F (24°C)	500

Storage

Store product at 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. Protect from freezing. Rotate stock on a “first in-first out” basis.

Shelf Life

When stored at the recommended temperatures in the original, unopened container, this product has a shelf life of 15 months from date of shipment by 3M.

Certifications

Toxic Substance Control Act (TSCA):

All components of this product are listed on the TSCA inventory.

Food and Drug Administration (FDA):

The dry ingredients of this product are acceptable as Indirect Food Additives according to Title 21 Code of Federal Regulations 175.105 (adhesives).

FDA Listed Ingredients:

Dry ingredients are listed as indirect food contact additives when used in food packaging with minimal opportunity for exposure. See 21 CFR 175.105.

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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.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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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.



Industrial Adhesives and Tapes Division

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10% post-consumer

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Printed in U.S.A.

©3M 2010 78-6900-9948-2 (9/10)