Fastbond™

40 Water Based Liquid Adhesive (formerly 9313) High Viscosity, Roll Coatable, Contact Adhesive

Product Data Sheet

Updated : July 1997
Supersedes : March 1996

Product Description

Fastbond 40 is a flexible, high viscosity water dispersed, roll coatable or sprayable contact adhesive that exhibits outstanding clarity, resistance to discolouration in exposure to ultra-violet, dry light, and ageing. It also has a good durability to washing and dry-cleaning. It has a good early bond and a long bonding range. It has good heat resistance and can be used in post-forming applications. For use on fabric back coating, cardboard, wall board, paper, wood, plaster, plastic laminate, foamed plastics, (polyurethane, polystyrene, polyester) and canvas - to themselves and to each other. For example the bonding of fabric to the front face of a loudspeaker (wood/polyurethane/fabric).

Physical Properties
Not for specification purposes

Base	Polychloroprene	
Carrier	Water (toluene and ethanol less than 5%)	
Viscosity Brookfield RVF spindle 4 at 10 rpm at 26°C	8,000 mPa.s	
Consistency	Medium Syrup	
Solids Content	49%	
Specific Gravity	1.08	
Flash Point	None	
pH	10	
Colour	Wet: White Milky Dry: Clear Translucent	
Shelf Life	15 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	
Bonding Range	30 - 240 minutes depending on substrate porosity and ambient temperature.	

This product is non flammable in the wet state.

Date : July 1997
Fastbond 40 Water Based
Liquid Adhesive

Performance Characteristics

Not for specification purposes

Shear Strength	Alcohol wiped (IPA) + abraded P180 + alcohol wiped. Adhesive brushed on both substrates. Bonded when dry with assembly pressure of 3kg/cm² minimum.	25 x 25 mm overlap shear specimens were prepared and let to dry for 7 days at 23°C and 50% RH and tested at a separation rate of 10mm/min.
Substrate	**Value (MPa)**	
Polyethylene	0.97	
Polypropylene	1.37	
EPDM Rubber	0.15	
PMMA Plastic	1.83	
Polycarbonate	2.20	
PVC Plastic	1.90	
ABS Plastic	1.97	
Polystyrene	1.87	
Pine Wood	3.40	
Oak Wood	3.13	
Plywood	2.10	
Glass	0.73	
Aluminium	1.47	
Steel	2.70	

Peel Strength 180° peel (N/25mm)	Aluminium degreased with MEK, glass and plastics wiped with IPA.		180° peel specimen rigid substrate to cotton duck, 25mm width, dried for 7 days at 23°C, 50% RH before being tested or aged. Testing speed 150mm/min.	
Substrate	**Control (23°C, 7 days)**	**70°C, 30 days**	**40°C, 95% RH, 30 days**	**UV Exposure 30 days**
Glass	10.6	10.8	12.5	0.0
Polypropylene	7.9	14.9	12.8	
PVC	10.6	16.9	15.8	
Aluminium	28.5	46.8	21.3	
Plywood	16.8	26.5	24.0	

T-Peel (N/25mm)	Aluminium degreased with MEK, glass and plastics wiped with IPA.	180° peel specimen rigid substrate to cotton duck, 25mm width, dried for 7 days at 23°C, 50% RH before being tested or aged. Testing speed 150mm/min.
Substrate	**Control (23°C, 7 days)**	
Cotton / Cotton	104.6	

Heat Resistance Deal Load Test (500g): 160°C maximum.	Service Temperature Range: the recommended service temperature is from -40°C to +110°C constant. Exposure to temperatures of up to 130°C are acceptable for short periods. Surface Preparation: MEK + abraded P180 + MEK. Rate of testing 10mm/min.	Steel to cotton duck, 25 x 25 x 25 mm overlap, weight of 500g. 3 dead load specimens placed in an oven at 50°C. Temperature is then increased by 10°C every 15 minutes. Temperature when the last specimen fails is recorded as the maximum temperature.
Test Temperature	**Shear Alu/alu (MPa) 7 days at 23°C/50% RH**	
- 55 °C + 23 °C + 60 °C + 90 °C + 120 °C	7.41 1.87 1.03 0.24 0.08	

Thermal Behaviour	The recommended service temperature is from -40°C to + 95°C, constant. Exposure to temperatures of up to 120°C are acceptable for short periods.

Application Characteristics	Can be applied by roll, brush or sprayed.	**NOTE:** Because the adhesive contains water, pumping and spray equipment should be stainless steel for maximum durability.	Wetted parts of chrome or nickel should also be suitable. PTFE Packings are recommended for pumps. All material hoses should be nylon lined. Do not use PVA hoses.

Spray gun	**Air cap**	**Fluid Tip**	**Air Pressure recommended bars**	**Pressure on the pot (bars)**
Kremlin SKM 18	G2	15	3	0.3
Binks No. 18, 62	63PE	63C	3	0.3
DeVilbiss JGA, 502	704 or 777	F.F	3	0.3

Directions for Use

Surface Preparation:
Surfaces should be clean and dry - remove all dirt, dust, oil, grease, wax, loose paint etc. to assure satisfactory adhesion.

Typical Application:
Apply a uniform coat of adhesive to both substrates (very porous materials may require more than one coat) by using a brush, roller or by spraying. Both surfaces must be coated - and dried out for about half an hour, then join by clamping or applying a moderate pressure. For porous materials (fabrics, cloths, felt etc..) it may require a heavier coat.

An alternative technique to traditional contact bonding may be used when one or both surfaces are porous. Here wet bonding techniques allow initial repositioning with instant bond when very high pressure is applied.

Drying Time:
Depends upon temperature, humidity and air movement. Allow 30 minutes under normal conditions - the bond must be completed within 4 hours.

Clean Up:
Liquid adhesive may be cleaned up using water or soapy water. When dry, 3M Industrial Cleaner, aromatic or ketones solvents are recommended e.g. 3M Solvent No. 2.
NOTE: When using solvents for clean up, it is essential that proper precautionary measures for handling such materials be observed.

To prevent blocking of hoses etc. it can be beneficial to use water at pH10 - this can be achieved by adding an alkali e.g. sodium hydroxide to tap water.

Storage Conditions

Store product at 15°C to 25°C for maximum storage life. Higher temperatures reduce normal storage life.

Water dispersed products will become unstable with prolonged storage below +4°C.

PROTECT FROM FREEZING!

Additional Product Information

IMPORTANT:
Because the adhesive contains water, pumping equipment should be stainless steel for maximum durability.

All material hoses should be nylon lined.

Do not use material hoses previously used with solvent based adhesive as residual solvent will destabilise the water dispersion.

Health and Safety Information

Precautions:
May cause eye irritation. Avoid contact with eyes. Use only in well ventilated areas.

First Aid:

Eye Contact:
Rinse immediately with plenty of water and seek medical advice.

Skin Contact:
Wash with soap and water.

Ingestion:
Drink two glasses of water immediately and call a physician.
Do not induce vomiting.

For further Health and Safety information, please contact the Toxicology Department at Bracknell Technical Centre on (01344) 860678.

Date : July 1997
Fastbond 40 Water Based
Liquid Adhesive

Specifications

Fastbond 40 has been tested on a range of substrates and meets requirements of BS476 Part 7 Spread of Flame Test with Class 1 approval.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes.
Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.
This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

Tapes & Adhesives Group

3M United Kingdom PLC
3M House, PO Box 1,
Market Place,
Bracknell, Berkshire,
RG12 1JU

Product Information :

Tel 0870 60 800 50
Fax 0870 60 700 99

3M Ireland
3M House, Adelphi Centre,
Upper Georges Street,
Dun Laoghaire, Co. Dublin,
Ireland

Customer Service :

Tel (01) 280 3555
Fax (01) 280 3509