Scotch-Weld™ 30 Water Based Adhesive

Product Data Sheet

Updated : February 2007
Supersedes : July 1997

Product Description

A solvent-free water dispersed, sprayable contact adhesive with high bond strength and long bonding range. Non-flammable. Good heat resistance. Post Formable. Ideally suited for high performance laminating applications. Scotch-Weld 30 stays very flexible when dry. Used to bond foamed plastics, plastic laminate, wood, plywood, wallboard, wood veneer, plaster and canvas to themselves and to each other. A typical application is the bonding of high pressure laminate to particle board in the manufacture of kitchens worktops, countertops or doors.

Physical Properties
Not for specification purposes

Solvent	Water (toluene and ethanol less than 5%)	
Base	Polychloroprene	
Consistency	Thin Liquid	
% Solids	Approx 50%	
Specific Gravity	1.09	
pH	10.5	
Viscosity)Brookfield RVF spindle 1 at 20 rpm at 26°C.)	Approx. 300 mPa.s	
Colour	Wet: Turquoise Dry: Green	
Flash point	None	
Shelf Life	6 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

This product is non-flammable in the wet state.

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	0.83	
Polypropylene	1.37	
EPDM Rubber	0.14	
PMMA Plastic	1.90	
Polycarbonate	2.27	
PVC Plastic	1.63	
ABS Plastic	2.03	
Polystyrene	1.97	
Pine Wood	2.83	
Oak Wood	2.87	
Plywood	2.50	
Glass	0.73	
Aluminium	1.47	
Steel	2.70	

Performance Characteristics Cont'd..
Not for specification purposes

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	10.0	15.1	15.2	0.0
Polypropylene	7.2	10.8	10.2	
PVC	11.6	16.8	17.0	
Aluminium	14.0	43.3	21.5	
Plywood	16.9	23.6	20.0	

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	134.9	

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	
0. ┌ 55 °C	6.43	
+ 23 °C	1.73	
+ 60 °C	0.90	
+ 90 °C	0.30	
+ 120 °C	0.07	

Storage Conditions

Store product at 15°C/25°C for maximum storage life. Higher temperatures reduce normal storage life.
Water dispersed products will become unusable with prolonged storage below +4°C.
PROTECT FROM FREEZING.

Equipment

Spray Gun	Air Cap Bars	Fluid Tip	Air Pressure recommended ml/minute	Fluid Flow l/min
Kremlin SKM 18	N3 or G2	15	1.0	.3
Binks No. 18. 29. 62. 61	66SF	65	0.6 – 1.3	.3
DeVilbiss JGA JGS or AGB	30	FF	0.6 – 1.3	.3

Directions for Use

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

Application
Apply a uniform coat of adhesive to the substrates (very porous materials may require more than one coat) by using a brush, roller or by spraying. When spraying the adhesive should cover approx 80% of the surface (the natural tendency based on experience with solvent based adhesives is to apply much more than needed). Both surfaces must be coated and dried out for about half an hour, then joined by clamping or applying a high pressure. For porous materials (fabrics, cloths, felt etc.) it may require a heavier coat. An alternative technique to traditional contact bonding may be applied when one or both surfaces are porous. Here wet bonding techniques allow initial repositioning.

Drying Time
Drying time depends upon temperature, humidity and air movement. FB30 dries sufficiently in 30 minutes under normal conditions. After the adhesive is dry (indicated by colour change) the bond must be completed within 4 hours. Drying time can be reduced by using forced air ovens or infra-red.

Assembly
Spacers, such as dowels or strips of laminate may be used to prevent premature adhesive/adhesive contact and bonding prior to positioning. Slide out the spacers and apply uniform pressure (3kg/cm² minimum), working toward the edges. A manual roller (75mm width maximum), can be used with high body pressure, to ensure adequate contact and bonding, especially on edges. For maximum performance the use of a pinch roll is preferred. Bonded assemblies may be machined, trimmed etc. immediately after bonding.

Clean Up
Adhesive in liquid state may be cleaned up using water or soapy water. When dry, aromatic, ketonic solvents (toluene or methylethylketone) or 3M Industrial Cleaner are recommended. When using solvents for clean-up, it is essential that proper precautionary measures for handling such materials are observed.

Coverage
Approximately 20 m²/litre when using the spraying technique (0.020mm dry film). This coverage will depend upon substrate porosity.

Example of typical coverages :

HPL to chipboard: 25m²/litre one side, i.e. an average of 12.5 m²/litre of final assembly (2 surfaces to be coated).
Expanded polystyrene to ABS and to painted metal in the manufacture of sandwich panels for transportation: average of 24 m²/litre one side, i.e. an average of 6 m²/litre of final assembly (4 surfaces to be coated).
Carpet to wood : an average of 16-20 m²/litre for one side, i.e. an average of 8-10 m²/litre for final bonded assembly (2 surfaces to be coated).

IMPORTANT
Because the adhesive contains water, pumping equipment should be stainless steel for maximum durability. All material hoses should be nylon or PE lined. Packagings and glands in contact with adhesives should be made of PTFE.

DO NOT USE MATERIAL HOSES PREVIOUSLY USED WITH SOLVENT BASED ADHESIVE SINCE RESIDUAL SOLVENT WILL CAUSE THE WATER DISPERSION TO BREAK.

Specifications

Scotch-Weld 30 has been tested on a range of substrates and meets requirements of BS476 part 7 spread of flame test with class 1 approval.

Precautionary Information

Refer to product label and Material Safety Data Sheet for health and safety information before using the product.
For information please contact your local 3M Office.
www.3M.com

Date : February 2007
'Scotch-Weld' 30 Adhesive

For Additional Information

To request additional product information or to arrange for sales assistance, call 0870 6080050 Address correspondence to: 3M United Kingdom PLC, 3M House, 28 Great Jackson Street, Manchester, M15 4PA

Important Notice

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Note

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.
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