



Scotch-Weld™

EPX™ Adhesive DP609

Product Data Sheet

Updated : March 1996
Supersedes : November 1993

Product Description

This is a flexible structural adhesive which cures quickly at room temperature and is particularly effective for bonding plastics and painted or primed metal surfaces.

After application from the cartridge the product has a work life before contact with the second surface of approximately 9 minutes at 23°C and develops handling strength in approximately one hour.

Full strength will build up over 24 hours and there can be further strength build-up over longer periods e.g. up to 30 days on some plastics.

The product exhibits good flow from the cartridge together with good non-sag properties which make it highly suitable for application to vertical surfaces. The non-sag properties also give this product excellent gap filling capability.

Bonds are characterised by excellent flexibility, high strain capability, high toughness and ability to retain high strength over a wide temperature range. The product performs especially well at very low temperatures.

Physical Properties

Not for specification purposes

	BASE	ACCELERATOR
	Polyol	Isocyanate
Specific Gravity	1.03	1.12
Viscosity cP (Brookfield RVF)	10,000 - 55,000 (#6 spindle, 20rpm)	15,000 - 40,000 (#5 spindle, 10rpm)
Mix Ratio By Weight By Volume	100 100	109 100
Colour	Off-White	Brown
Work Life	9 minutes approximately (for typical bead application through mixer).	
Time to Handling Strength	1 hour approximately at 23°C	
Time to Full Strength	24 hours approximately at 23°C (suggest full performance test after one week).	
Shelf Life	12 months from date of despatch by 3M when stored in the original carton at 15 - 25°C.	

Performance Characteristics

Not for specification purposes

Overlap Shear Strength

Shear tests to BS5350 Part C5.

Peel tests to BS5350, C9.

** Priming is recommended on metal surfaces likely to be exposed to damp or humid environments.

In some cases cure was accelerated using elevated temperature.

Metals	-40°C	24°C	82°C
Etched Aluminium	17.5	14.0	2.1
Abraded/solvent wiped aluminium	14.0	14.0	2.1
Abraded/solvent wiped aluminium/1945B/A Primed **	14.7	16.1	1.4
Solvent wiped aluminium	7.0	7.0	0.7
Abraded/solvent wiped steel	14.1	8.4	0.7
3M Scotch-Weld 1945B/A primed steel **	5.6	14.0	2.1

Plastics	-40°C	24°C	82°C
Nylon	1.7	4.1	0.3
Polycarbonate	8.7*	12.9*	0.81
Acrylic	4.3	9.1	0.5
GRP	11.6*	8.1*	1.2
Rigid PVC	2.6	6.7	0.7
ABS	3.1*	5.7	2.1
Polystyrene	2.3	3.7	0.7

Directions for Use

Place the cartridge into the 3M EPX Applicator and clip into position.

Remove the resealable cap.

Expel a small quantity of adhesive and ensure both components flow freely.

Attach correct mixer nozzle (this should have 20 or more elements).

Dispense the adhesive as required.

When finished either leave the nozzle in place and store, or remove the nozzle, wipe clean the tip, and replace cap.

To re-start after storage remove the old nozzle with cured adhesive and re-fit a new nozzle, or remove the cap and fit a new nozzle.

Surface Preparation:

The degree of surface preparation depends on the bond strength required and the environment likely to be encountered by the bonded structure. For most applications solvent wiping with 3M VHB Surface Cleaner, followed by abrasion with 3M Scotchbrite 7447, followed by a further solvent wipe until clean, will give good performance (except for acetal, polyethylene and polypropylene and some other low surface energy materials). The same process will also give good adhesion to metal surfaces.

Where humid environments are likely to be encountered we recommend additional priming with 3M Scotch-Weld 1945B/A for metal surfaces.

Storage Conditions	Store product at 15°C to 25°C for maximum storage life. In the foil pouch used to wrap the cartridge the product has a storage life of 1 year from date of receipt by customer.	After opening the pouch, product should be used within a few weeks and should be stored in a dry atmosphere.	
Clean Up	Clean-Up: Excess uncured adhesive can be removed with the following products:	3M VHB Surface Cleaner (mild alcohol based cleaner) 3M Scotch-Grip Solvent No2. (Ketone blend) 3M Industrial Cleaner (Aerosol).	
Health & Safety Information	Precautions: Harmful by inhalation. Irritating to eyes, respiratory system and skin. May cause sensitisation by inhalation. Avoid contact with skin and eyes. Do not breathe vapour. Contains isocyanates. See information supplied by manufacturer.	First Aid: Eye Contact: Immediately flush eyes with plenty of water and seek medical advice. Skin Contact: Wash immediately with plenty of soap and water.	For further information please contact the Toxicology Department at the Bracknell Head Office on (0344) 858000.
Applications	Motor Homes: Used to assemble painted aluminium cladding to primed steel. Helicopters: For bonding polycarbonate wind shields to primed aluminium frames.	Car Doors: Assembling doors out of reinforced polyester. Portable Buildings: Used for bonding polyester coated steel panels, also side panels, roofs and window fittings.	

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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.



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