



Scotch-Weld™

EPX™ DP105 Clear, Fast, Flexible Epoxy Adhesive

Product Data Sheet

Updated : March 1996
Supersedes : June 1995

Product Description

DP105 is a fast setting very flexible clear epoxy adhesive/sealant. Its flexibility when cured makes it ideal for bonding dissimilar surfaces where differences in thermal expansion may be a problem.

It retains its clear colour even when cured in large masses where discolouration is often seen with other fast curing adhesive systems. The key features of DP105 are as follows:

- 4 minute work life.
- flexible.
- clear
- high peel strength.
- convenient 1:1 mix ratio.

Physical Properties

Not for specification purposes

	BASE	ACCELERATOR
Specific Gravity	1.11	1.15
Viscosity at 27°C (cP)	2000	11,000
Mix Ratio	By Weight 100 By Volume 100	97 100
Colour	Clear	Clear
Work Life at 23°C	2g - 5 minutes 20g - 4 minutes	
Tackfree Time	10 minutes	
Time to Handling Strength	20 minutes at 23°C	
Time to Full Strength	48 hours at 23°C (test to full performance at one week)	
Shelf Life	12 months from date of despatch by 3M when stored in the original container at 15 to 25°C .	

Performance Characteristics

Not for specification purposes

Cured Adhesive

Colour	Clear	
Hardness (ASTM D2240) Shore D	39	
Elongation	120%	
Tensile Strength	4.2 N/mm ²	

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Performance Characteristics (Cont...)

Not for specification purposes

Overlap Shear Strength

Shear test to BS5350 C5.
 Peel test to BS5350 C9.

Tests performed at 23°C unless otherwise stated.

Substrate	Shear Strength (N/mm ²)
Etched Aluminium	14.0
Sanded Aluminium (60 Grit)	10.5
Cold Rolled Steel	9.1
Wood, Pine	2.1
Glass, Borosilicate	1.4
Glass + 3M 3901 Primer	1.7
Polycarbonate	2.8
Acrylic	1.7
GRP	9.8
ABS	2.1
PVC	3.6
Polypropylene	0.5

Temperature Performance in Shear and Peel.

(Etched Aluminium)

Temperature (°C)	Shear Strength (N/mm ²)	Peel Strength DaN/cm
-55	24.6	0.53
21	14.1	6.25
49	2.8	0.89
65	1.8	0.35
82	1.0	0.18

Storage Conditions

Store product at 15°C to 25°C for maximum storage life.

Clean Up

Clean-Up:

Excess uncured adhesive can be removed with the following solvents:

3M VHB Surface Cleaner
 (mild alcohol based cleaner)

3M Scotch-Grip Solvent

No2. (Ketone blend)

3M Industrial Cleaner
 (Aerosol).

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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 plastics 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). This also applies to powder coat paints and other stoved paint systems.

The same surface preparation will also give good adhesion to metal surfaces. The objective is to remove loosely attached surface films such as oils, waxes, dusts, mill-scale, loose paints and all other

surface contaminants in addition to enhancing mechanical adhesion. Grit-blasting using a clean, fine grit also offers excellent adhesion on many metallic substrates.

Where humid environments are likely to be encountered by metallic substrates we recommend additional priming with 3M Scotch-Weld 1945B/A or 3M Scotch-Weld 3901. Alternatively, chemical conversion coating techniques combined with priming can offer the best durability. 3M Scotch-Weld 1945B/A is best used with flexible adhesives, it also provides a protective anti-corrosive coating. 3M Scotch-Weld 3901 can be used in conjunction with both flexible and toughened adhesives and it improves specific adhesion. 3M Scotch-Weld 3901 is also an excellent glass primer.

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Health & Safety Information

Precautions:

Causes severe eye irritation, may cause permanent eye damage. Irritating to skin. May cause sensitisation by skin contact. Avoid contact with the skin and eyes. Wear suitable gloves and eye/face protection.

Launder contaminated clothing before re-use. Avoid prolonged breathing of vapours. Avoid inhalation of dust when grinding or cutting cured material.

First Aid:

Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes, holding eyes open. Call a physician.

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.

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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.



Specialty Tapes & Adhesives

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