



# Scotch-Weld™

## EPX™ Adhesive DP610

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### Introductory Product Data Sheet

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Updated : June 1998

Supersedes : New

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#### Product Description

3M Scotch Weld™ DP610 is a clear, non yellowing adhesive. It is flexible structural adhesive and is particularly effective for bonding most plastics, glass 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 10 minutes at 23°C and develops handling strength in approximately two hour.

Full strength will build up over 7 days and there can be further strength build-up over longer periods e.g. up to 30 days on some substrates.

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#### Physical Properties

Not for specification purposes

	BASE	ACCELERATOR
<b>Base</b>	Polyol	Isocyanate
<b>Specific Gravity</b>	1.15	1.16
<b>Viscosity @ 23°C</b> Brookfield RVF Spindle 4	30 - 40 mPa.s	3000 mPa.s
<b>Mix Ratio</b> By Weight By Volume	100 100	100 100
<b>Colour</b>	Clear	Clear
<b>Work Life</b>	10 minutes approximately (for typical bead application through mixer).	
<b>Time to Handling Strength</b>	2 hour approximately at 23°C	
<b>Time to Full Strength</b>	7 days approximately at 23°C	
<b>Shelf Life</b>	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.	** Priming is recommended on metal surfaces likely to be exposed to damp or humid environments.	
<u>Surface Preparation:</u>	IPA wipe/7447 Scotchbrite Abrade/IPA wipe	
<u>Bond Area:</u>	12.5mm x 25mm	
<u>Glueline Control:</u>	0.250mm	
<u>Test Temperature:</u>	23°C	
<u>Test Equipment:</u>	Instron 4501 Tensometer	
<u>Test Speed:</u>	2.5mm per minute	
<u>Cure Cycle:</u>	3 days at 23°C	

Substrates	Overlap Shear Strength (MPa)	
PET (Melinex)	2.88	
Polystyrene	1.82	
Polycarbonate	3.36	
ABS	5.57	
PMMA	3.04	
PVC	3.04	
Aluminium	8.7	
Stainless Steel	9.8	
Mild Steel	10.9	

**Floating Roller Peel**

<u>Surface Preparation:</u>	<b>195 N/25mm</b> Etched Aluminium	
<u>Glueline Control:</u>	0.250mm	
<u>Test Temperature:</u>	23°C	
<u>Test Equipment:</u>	Instron 4501 Tensometer	
<u>Test Speed:</u>	2.5mm per minute	
<u>Cure Cycle:</u>	7 days at 23°C	

**Rate of Strength Build up  
@ 20° C**

<u>Surface Preparation:</u>	Etched Aluminium	
<u>Bond Area:</u>	12.5mm x 25mm	
<u>Glueline Control:</u>	0.250mm	
<u>Test Temperature:</u>	23°C	
<u>Test Equipment:</u>	Instron 4501 Tensometer	
<u>Test Speed:</u>	2.5mm per minute	

Time	Overlap Shear Strength (MPa)	
30 mins	0	
1 hour	0.048	
2 hours	0.1856	
3hours	1.216	
4hours	1.664	
24 hours	5.152	
7 days	18.304	

<b>Ageing Characteristics</b>	<u>Surface Preparation:</u>	Etched Aluminium	
	<u>Bond Area:</u>	12.5mm x 25mm	
	<u>Glueline Control:</u>	0.250mm	
	<u>Test Temperature:</u>	23°C	
	<u>Test Equipment:</u>	Instron 4501 Tensometer	
	<u>Test Speed:</u>	2.5mm per minute	

Ageing Cycle	Overlap Shear Strength (MPa)	
10 days @ 50°C	23.04	
4 weeks @ 50°C / 95% RH	14.14	
4 weeks Water Immersion	18.72	
4 weeks BS EN 29142 D3*	23.14	
4 weeks RT controls	22.91	

\*BS EN 29142 D3 Environmental Cycle.

4 hours @ 70°C  
16 hours @ 38°C / 95%RH  
4 hours @ -20°C

<b>Temperature Performance</b>	<u>Surface Preparation:</u>	Etched Aluminium	
	<u>Bond Area:</u>	12.5mm x 25mm	
	<u>Glueline Control:</u>	0.250mm	
	<u>Test Temperature:</u>	-40°C, 23°C, 80°C	
	<u>Test Equipment:</u>	Instron 4501 Tensometer	
	<u>Test Speed:</u>	2.5mm per minute	
	<u>Cure Cycle :</u>	7 days @ 23°C	

Test Temperature:	Average overlap shear strength (Mpa)	
-40°C	33.92	
23°C	22.91	
80°C	2.72	

**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.

<b>Directions for Use</b>	Place the cartridge into the 3M EPX Applicator and clip into position.	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.	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.
	Remove the resealable cap.		
	Expel a small quantity of adhesive and ensure both components flow freely.	<b>Surface Preparation:</b> The degree of surface preparation depends on the bond strength required and the environment likely to be encountered by the bonded structure.	
	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.			

<b>Clean Up</b>	<b>Clean-Up:</b> Excess uncured adhesive can be removed with the following products:	<b>3M VHB Surface Cleaner</b> (mild alcohol based cleaner) <b>3M Scotch-Grip Solvent No2.</b> (Ketone blend) <b>3M Industrial Cleaner</b> (Aerosol).
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<b>Health &amp; Safety Information</b>	For further information please contact the Toxicology Department at the Bracknell Customer Technical Centre on (0344) 860678
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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.



#### Tapes & Adhesives

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