



Scotch-Weld™

Structural Plastic Adhesive

DP-8005

Product Information

December 2002

Description

Scotch-Weld Structural Plastic Adhesive DP-8005 is a low odour, two part acrylic based adhesive (10:1 ratio by volume).

DP-8005 can bond many low surface energy plastics, without special surface preparation. These include **polypropylene, polyethylene and thermoplastic elastomers (TPE's) such as Santoprene®**.

In overlap shear tests, on many grades of polyethylene and polypropylene, the substrates break. This level of bond strength means DP-8005 can replace screws, rivets, plastic welding and other traditional bonding processes.

DP-8005 is packed in 35mL and 265mL Duo-Pak cartridges. Disposable static mixing nozzles are fitted to the cartridges and the adhesive is dispensed using hand held applicator guns. The 35 mL cartridges are stocked in New Zealand.

Features

- Ability to structurally bond polyolefins
- Ability to bond dissimilar substrates
- Very good chemical, water and humidity resistance
- No substrate pre-treatment necessary
- Convenient hand held applicator system

Recommended surfaces

Primary surfaces	Polypropylene (PP) Polyethylene (PE, LDPE, HDPE, UHMW PE) Thermoplastic Elastomers (Santoprene®)	
Secondary surfaces	Glass Reinforced Plastics Polycarbonate Wood Aluminium Glass	Rigid PVC ABS Acrylic Polystyrene Concrete
Not recommended	PTFE (Teflon®) Silicon surfaces Mould release agents Polyimide (Kapton®) Acetal Nylons	

**3M™ Scotch-Weld™
Structural Plastic Adhesive DP-8005**

Physical Properties

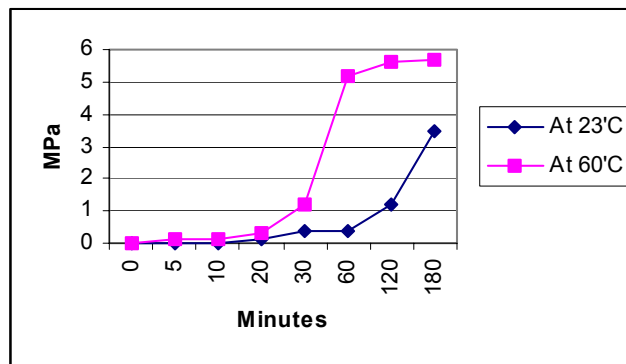
Colour (Cured)	Light yellow
Worklife at 23°C min)	2.5-3 minutes approx
Time to handling strength @23°C	2-3 hours
Full cure @ 23°C	8-24 hours
Time to handling strength @ 60°C	30 minutes
Full cure @ 60°C	60 minutes
Approximate viscosity (cps @ 24°C)	27,500
Hardness	55 Shore D scale
Modulus @ 1% strain	590 MPa

Typical Performance Characteristics*

Substrate	Overlap shear @ 23°C (kPa)	Failure Mode
Extruded PE	6,900	Substrate
Extruded PP	7,200	Substrate
UHMW PE	5,300	Substrate
LDPE	2,300	Substrate
ABS	6,700	Substrate
Polycarbonate	5,900	Substrate
Acrylic	5,600	Substrate
Fibre Reinforced Plastic	16,300	Cohesive
2024 Aluminium	14,800	Cohesive

*Not recommended for specification purposes

Rate of Strength Build Up on Polypropylene (overlap shear)



Further detailed technical information including rate of strength build up, environmental and solvent resistance etc is available for DP-8005 from www.3m.com/adhesives (click on Data Pages) or by contacting 3M Customer Services on ph 0800 200 713, fax 0800 508 980 or e-mail nzsolutions@mmm.com. Data sheets can be provided either electronically or by fax.

3M™ Scotch-Weld™ Structural Plastic Adhesive DP-8005

Format **DP-8005:** 35 mL cartridges (12 cartridges per carton)
Larger cartridges are available. Please contact 3M Customer Services for details.

Product trials: On purchase of an EPX Applicator, 3M will supply free of charge an adhesive cartridge and three mixing nozzles. Contact 3M Customer Service to arrange.

- Surface Preparation**
- For structural bonds, paint, oxide films, oils, dust, mould release agents and all other surface contaminants must be completely removed. The amount of surface preparation directly depends on the bond strength required by the user.
 - Abrading smooth surfaces (particularly the secondary surfaces listed), with Scotch-Brite™ Pads, followed by solvent wiping will typically increase the bond strength.
 - The surfaces must be clean. If there is any doubt solvent wipe with a suitable solvent, such as isopropyl alcohol and water mixed 50/50. If alcohol is not available methylated spirits can be tested as an alternative. MEK is a better solvent for lightly oiled surfaces such as metals.
 - Solvent wiping should be carried out in one direction. Wipe dry before the solvent has evaporated to remove the surface contamination

- Application**
- Important: Use only the 3M EPX™ Plus Applicator with 10:1 plunger and **orange** medium length mixing nozzles. Hand mixing is not recommended and may give variable results.
- Dispense a small amount of adhesive from the cartridge prior to attaching the mixing nozzle (to ensure both parts are flowing).
 - The parts must be joined within the worklife of the adhesive (2.5-3 minutes)
 - The joint design must allow for an adhesive thickness of 0.2 mm. The adhesive contains 0.2mm microspheres for this purpose.
 - The bonded surfaces must be clamped for at least 2 hours at 23°C or 30 minutes at 60°C.
 - The adhesive will yellow with time. A rippling effect as the adhesive cures is normal and indicates the adhesive is mixed and curing properly.
 - To extend worklife apply adhesive to both surfaces

Coverage	Bead size*	Approximate lineal metres per 35
		mL
	13 mm	0.6
	9.5 mm	1.0
	6.5 mm	2.5
	3 mm	9.1
	1.6 mm	35

*Bead size is semi-circular bead with width equal to size noted and height at centre of bead equal to half the width.

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Partly used Duo-Paks	Leave the mixing nozzle plugged onto the Duo-Pack when the application is finished, or replace the original cap. Take care not to mix the two components and block the end. Fit a new nozzle the next time the pack is used.
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Testing	Always test the suitability of the surface preparation and the adhesive selected for your application before use. More detailed product information is available from your 3M Representative.
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Shelf life	6 months if stored at 4 deg C or below, 3 months at room temperature.
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Health and Safety Information	Material Safety Data Sheets may be accessed by going to www.3m.com/msds and entering the product number (DP-8005) or 3M stock number. Alternatively, contact 3M Customer Services.
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Further information	Further information is available at www.3m.com/adhesives or by contacting 3M Customer Services on Free Phone 0800 200 713 or Free Fax 0800 508 980
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Note	The user is responsible for determining whether the 3M product, surface preparation, and method of assembly are suitable for their particular purpose. Failure to determine the suitability of all factors involved in the application may result in bond failure.
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3M New Zealand Ltd
Industrial Tape & Adhesives

PO Box 33-246 Takapuna 1332

Phone: 0800 200 713

Fax: 0800 508 980

Email: nzsolutions@mmm.com

www.3M.com/nz/