



Scotch-Weld™ 7290

Solvent based Structural Epoxy Adhesive

Technical Data Sheet

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Replace version: February 2001

Description

Scotch-Weld™ 7290 is a very low viscosity, solvent based, structural epoxy adhesive. The product features resistance to high temperature with a certain level of flexibility maintained.

This adhesive is particularly suitable for metal bonding.

Physical properties	Density	1.0	
	Viscosity (mPa.s at 24°C)	400 – 800 Mpa.s	
	Solid content (%)	22-26	
	Solvents	Methoxypropanol, diacetone alcohol, Methyl pyrrolidone	Flash point = 33°C (closed pot)
	Colour	Clear / Very pale yellow	
	Shelf life	12 months from date of despatch by 3M when stored in the original container at 20°C +/- 5 °C. Storage at the temp 4°C or lower can significantly extend the shelf life of the product.	

Information

Additional information

To obtain optimal mechanical performances, the bond line thickness must be between 120 and 250µm. However, very thin bond lines (down to 10µm) can be achieved. In this case, mechanical strength is reduced (up to 15 MPa in overlap shear at room temperature) .

For thin bonding lines high applications pressure is required to establish good physical contact between the surfaces to be bonded.

Excellent wetting properties allow a one surface application, which requires a precise determination of pressure while curing to ensure high bond integrity.

Information**Working time**

Bonding must be performed on a dry film (after complete solvent evaporation)

The obtained layer is tack free and can be stored for a few months before final curing. Storage must be in clean environment and at room temperature .

Equipment:

Application can be made with spatula, trowel, brush, roll or even spraying equipment.

Coverage:

It depends on the desired bond thickness,

The low initial viscosity allows low coating weight.

Cleaning:

Adhesive excess can be removed before curing with 3M n°2 solvent.

Note: Solvent no. 2 is flammable and must be handled in a well ventilated room.

Curing:

For thick bond line (200 microns) we recommend a minimum temperature of 170 °C during 30 to 60 minutes. Standard conditions are 30 minutes at 177°C.

A higher temperature up to 230°C can be applied. It is assumed in some applications that curing requires leaving the product for 2 minutes at a temperature exceeding 180°C.

Application conditions	Solvents must be completely removed prior to curing.	Incomplete drying may lead to partial or complete disconnection of the bond	Drying can be achieved at room temperature. However, exposure to 60°C (30 minutes) or 90°C (15 minutes) is recommended in order to achieve perfect drying.												
Surface preparation	A thoroughly cleaned, dry, grease-free surface is essential for maximum performance.	Cleaning with a solvent (isopropyl alcohol) will be sufficient for most substrates. On metals, surface abrasion is recommended.	Surface preparation must be evaluated, by taking into account specific application conditions or exposure to specific environments.												
Storage conditions	Better stability is obtained in cold conditions. The recommended temperature is 4°C, although the product is stable at room temperature.	In case of cold storage allow the product to come back to room temperature before removing the cover to prevent moisture absorption.	For stock control, it is recommended to follow the FIFO principle.												
Mechanical tests	Results obtained after 30 minutes at 177°C curing under 0.7 bar Aluminium substrate 2024T 3 SULFOCHROMIC TREATMENT														
	<p>- Overlap shear (OLS):</p> <table><tr><td>OLS at -55°C</td><td>43 Mpa</td></tr><tr><td>OLS at +23°C</td><td>38 Mpa</td></tr><tr><td>OLS at +82°C</td><td>33 Mpa</td></tr><tr><td>OLS at +120°C</td><td>12.4 Mpa</td></tr><tr><td>OLS at +150°C</td><td>6.2 Mpa</td></tr></table> <p>- Peel resistance</p> <table><tr><td>Peel at +23°C</td><td>7 daN/cm</td></tr></table>			OLS at -55°C	43 Mpa	OLS at +23°C	38 Mpa	OLS at +82°C	33 Mpa	OLS at +120°C	12.4 Mpa	OLS at +150°C	6.2 Mpa	Peel at +23°C	7 daN/cm
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Toxicology Please refer to MSDS.

NOTE: SW 7290 is a version of SW 2290 which has lower ignition temperature, which considerably reduces its application in an industrial environment.

Additional information

For more detailed information, please contact us via the provided address.

Important info:

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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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3M Poland Sp. z o.o.

Dział taśm i klejów przemysłowych

Aleja Katowicka 117, Kajetany k/Warszawy

05-830 Nadarzyn

tel.: (022) 739 60 00, fax: (022) 739 60 01

www.3m.pl