

Moisture-tolerant epoxy adhesive
for structural bonding applications

weber.tec EP structural adhesive

epoxy plus structural adhesive



Uses

- Adhesive for structural bonding
- Jointing of precast segmental bridge units
- Adhesive for external steel plate bonding
- Adhesive for **weber.tec force carbon plate** composite strengthening
- Adhesive for bonding rubber bearing pads for highways and railways

About this product

weber.tec EP structural adhesive is a two-component, bisphenol epoxy resin and polyamine hardener, highly moisture-tolerant structural adhesive for structural jointing and structural strengthening. Used for application thicknesses of 2 – 10 mm.

Technical data

The following test results were obtained in laboratory conditions at 20°C

Physical properties

Colour		Mid grey when mixed Components different colours
Density		1535 kg/m ³
Grades	Standard Winter	10°C – 25°C 5°C – 15°C
Cure temperature		+5°C to 30°C
Moisture resistance		0.5% water absorption at 1.1 mm 0.3% water absorption at 1.6 mm
Workable life	Standard Winter	30 minutes at 20°C 30 minutes at 10°C

Mechanical properties

		Standard	Winter
Compressive strength	5°C 24 hrs	–	31 N/mm ²
	5°C 7 days	–	75 N/mm ²
	10°C 24 hrs	32 N/mm ²	60 N/mm ²
	10°C 7 days	75 N/mm ²	80 N/mm ²
	20°C 24 hrs	70 N/mm ²	–
	20°C 7 days	85 N/mm ²	–
Flexural strength		35 N/mm ²	35 N/mm ²
Tensile strength		17 N/mm ²	17 N/mm ²
Flexural modulus E _m		9.8 kN/mm ²	10 kN/mm ²
Heat distortion temperature (ISO 75:1987)		> 40°C	
Lap shear strength (BS 5350-C5)	–25°C	25.2 N/mm ²	
	+20°C	18.3 N/mm ²	
	+45°C	12.7 N/mm ²	

Features and benefits

- ▲ Excellent cohesive bond to prepared surfaces
- ▲ Good adhesion to concrete, steel, timber, glass, rubber and carbon fibre
- ▲ Negligible shrinkage on curing
- ▲ Moisture tolerant for all year round work
- ▲ Three grades available: standard, winter and tropical
- ▲ Able to operate in temperatures from 5°C to 45°C
- ▲ Fully complies with BA 30/94 *Strengthening of Concrete Highway Structures Using Externally Bonded Plate*

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Preparation

No adhesive will develop full bond adhesion strength without the surface substrate being carefully prepared to give a mechanically sound, clean surface.

Concrete and masonry

The surface must be prepared by mechanical means, such as grinding or grit blasting, to remove any weak surface laitance or deleterious, friable material.

The substrate should have an inherent tensile strength greater than 1.0 N/mm².

Pull-off tests should be carried out prior to application of the adhesive.

If the substrate is uneven, then the surface must be re-profiled with a levelling mortar such as **weber.tec EP highbuild**. Check for evenness of substrate.

Timber

Timber surfaces should be prepared by sanding and planing with all dust removed under vacuum.

Steel substrates

These should be grit blasted to Swedish Standard SA 2^{1/2}, equivalent to BS 7079-A1 and de-greased immediately prior to application. Where corrosion is absent, wire brushing to a clean, bright surface may be adequate. Care must be taken not to polish the rust.

Mixing

Mix by adding the dark grey hardener to the white resin and mix for 3 to 5 minutes with a low speed drill and spiral mixing head (EPI MR4 100). Mix until a uniform consistency and colour is obtained.

In cold weather, it is advisable to store the product unopened in a warm environment for several hours before mixing.

Application

The mixed adhesive must be placed within its pot life. Apply the adhesive to the prepared substrate with a grooved trowel or by gloved hands. Apply material to both surfaces before joining together.

In some cases, only one face needs to be coated with adhesive, provided that at least 3 mm thickness is applied (e.g. segmental bridge construction).

Plate bonding

Push the glued plates onto the glued substrate within the open life of the material.

Apply a hard rubber roller to squeeze the adhesive from both sides of the plate edge and ensure no air voids.

Roller to achieve a bond line of approximately 2 – 3 mm thickness. Remove the surplus adhesive from the sides of the plate.

Setting time

Temp	Standard	Winter
5°C	Do not use	75 min.
10°C	80 min.	60 min.
15°C	65 min.	41 min.
20°C	44 min	Do not use
25°C	31 min.	–

Cleaning

Clean tools and any uncured adhesive using **weber.tec solvent 3**.

Packaging

weber.tec EP structural adhesive is available in 5 kg pails with hardener compound recessed in the lid.

Coverage

Yield 5 kg approximately 3-1 litres.

Thickness of adhesive	kg/m ²
2 mm	3.3
4 mm	6.7
10 mm	17.0

Storage and shelf life

Shelf life is at least 12 months when it is kept unopened and stored in cool, dry conditions.

Store at between 5°C and 25°C.

Protect from frost.

Health and safety

Contains epoxy constituents. Refer to information supplied by manufacturer (see Material Safety Data Sheet).

All skin contact with epoxy resin products should be avoided. Barrier creams should be used and operatives should wear protective clothing including gloves. Working areas should be well ventilated.

The hardener content is alkaline and labelled as corrosive. The resin content is labelled as an irritant. The flash point of all components is in excess of 100°C. In the event of fire use foam, dry chemical, carbon dioxide (CO₂) or water fog extinguishers.

For further information, please request the Material Safety Data Sheet for this product.

Technical services

Weber's Customer Services Department has a team of experienced advisors available to provide on-site advice both at the specification stage and during application. Detailed specifications can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

Technical helpline
Tel: (01525) 722110

Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. For UK sales enquiries and overseas projects, contact **Weber's** Sales office.

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