

Moisture-tolerant epoxy adhesive
 for structural bonding applications

webertec EP structural adhesive

For bonding webertec force carbon plates



Uses

- External bonding of **webertec force carbon plates**
- Bonding to concrete, timber and masonry structures
- Primary bonding mechanism for CFRP Plates
- A component of **webertec force** composite strengthening system

Features and benefits

- ▲ Excellent adhesion to prepared surfaces and CFRP laminates
- ▲ Excellent transfer of stress between member and CFRP laminate
- ▲ Excellent cohesive bond to CFRP laminates allows laminates to be bonded without support or bolts
- ▲ Two grades available for normal and low temperature work
- ▲ Independently tested to Eurocode Standards
- ▲ Colour coded two components for ease of mixing
- ▲ Excellent moisture resistance properties
- ▲ Thixotropic properties allow work to proceed overhead and on vertical surfaces

Physical properties

Colour	Mid grey when mixed
Density	1535 kg/m ³
Thickness of application	for laminates, 2 – 4 mm
Grades	Standard: 10°C to 25°C Winter: 5°C to 15°C

Pot life	Standard	Winter
5°C	210 min.	120 min.
10°C	90 min.	80 min.
15°C	65 min.	41 min.
20°C	45 min.	-
25°C	31 min.	-

About this product

webertec EP structural adhesive is a two-component epoxy resin adhesive specific for external bonding of **webertec force carbon plates**. Bisphenol A/F epoxy resin with a modified aliphatic polyamine hardener and inert filler available in two grades for standard and low temperature work.

Technical data

The following test results were obtained in laboratory conditions at 20°C and 4% relative humidity

	Standard	Winter
Compressive strength BS 6319		
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 EN 1504-4		
	19 N/mm ²	19 N/mm ²
Lap shear strength		
	18 N/mm ²	18 N/mm ²
Slant shear strength EN 12188		
	86 N/mm ²	86 N/mm ²
Compression		
Young's flexural modulus E	9.8 kN/mm ²	10 kN/mm ²
Adhesive bond strength to concrete		
	>20 N/mm ² concrete failure	
Cohesion to CFRP laminate		
CFK 150/2000	26 N/mm ²	
CFK 200/2000	35 N/mm ²	
Coefficient of friction		
CFK 150/2000	0.4	
CFK 200/2000	0.2	
Glass transition temperature T_{GK}		
	50°C*	
Moisture resistance		
	<0.5% water absorption	
Curing shrinkage		
	negligible	
Heat distortion temperature		
	>40°C	

*T_{GK} can be raised when curing at 30°C

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Preparation

No adhesive will develop full bond strength without the surfaces of the CFRP laminate and 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 friable material.

The substrate should have an inherent tensile strength greater than 1.5 N/mm². Pull-off tests should be carried out prior to application of the CFRP laminate.

If the substrate is uneven, then the surface shall be re-profiled with a levelling mortar such as **webertec EP highbuild**.

Check for evenness of substrate.

Timber

Timber surfaces should be prepared by sanding and planing with all dust removed under vacuum. Pull-off tests should be carried out prior to application of the CFRP lamination and ensure substrate preparation is correct.

Mixing

Mix by adding the dark grey hardener to the white resin and mixing for 3 to 5 minutes with a low speed drill and spiral mixing head (EPI MR100).

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 shall be placed within the pot life of the adhesive.

Apply the adhesive to the prepared substrate at 1 – 2 mm thick minimum and prepared CFRP laminate at 2 – 3 mm thick by a suitable spreader or knife.

A special profiled spreader plate shall be used with an adhesive bath to apply an even thickness of adhesive to the CFRP laminate in a profiled manner.

Place the glued CFRP laminate onto the glued substrate within the open life of the material.

Apply a hard rubber roller along the centre of the plate to squeeze the adhesive from both sides of the laminate edge and ensure no air voids. Roller to achieve a bond line of approx. 2 – 4 mm thickness. Remove the surplus **webertec EP structural adhesive** from the sides of the plate.

Cleaning

Clean tools and any uncured adhesive using **webertec solvent**.

Packaging

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

Coverage

Yield 5 kg approximately 2.9 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
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Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. Please contact the relevant Customer Services Team below for all product orders and enquiries.

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