

Description



S&P Resin 220 epoxy adhesive is a solvent-free, thixotropic, grey two-component epoxy resin adhesive that has been specially developed for bonding carbon fibre laminates (S&P CFRP-Laminates). The material properties of the fresh and the hardened adhesive have been tested in the reinforcement system and are incorporated into the FRP Lamella Software.

Application areas

Pressure bonding of:

- S&P CFRP-Laminates on concrete, steel and wood
- Steel strips and plates on concrete
- Concrete elements

Advantages

- ready-to-use (no filler required)
- user-friendly pot life
- high adhesive strength and bonding strength
- remains firm on both vertical and horizontal surfaces such as ceilings
- high mechanical strength
- hardens without shrinkage
- solvent-free
- Impermeable to water and water vapour

Product data

Type

Appearance / Colour

Paste (Comp. A and B); Comp. A: light grey; Comp. B: black

Delivery

Units of: 5 kg and 15 kg (Comp. A + Comp. B)
Pallets of: 42 x 5 kg package / 28 x 15 kg package

Storage

Components A + B may be stored for 1 year. Storage between + 10 °C and + 25 °C. Homogenise before use; slowly warm up and homogenise frozen or super-cooled material

Technical Data

Density (at 23°C)	1.70 -1.80 g/cm ³	
Mixing ratio A:B	4 : 1	by weight
	4 : 1	by volume
Pot life / EN ISO 9514:2005 at 23 °C	~ 25 minutes	

Compressive strength EN 1504-4 (EN 12190)	> 70 N/mm ²	
Modulus of elasticity DIN EN ISO 178	> 7'100 N/mm ²	
Shear strength DIN EN 12615	> 26 N/mm ²	
Shore-D-hardness DIN EN 53505-D/EN ISO 868	87 - 93	
Adhesive tensile strength DIN EN 13892-8	> 3 N/mm ² > 3 N/mm ² > 2 N/mm ² > 14 N/mm ²	on concrete; 3 days; 20 °C on S&P CFRP-Laminates on S&P Resin 230 levelling mortar steel on steel (without Primer)

Consumption:	approx. 1.75 kg/m ² per mm layer thickness
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Substrate preparation	<p>Reinforcement may only take place if the substrate for the CFRP-Laminates has an inherent tensile strength of at least 1.5 N/mm². The substrate must be free from substances which may impair adhesion (oil, grease, wax, etc.), and must additionally be dust-free, clean, hard, and dry (at least to a high extent).</p> <p>Max. substrate humidity: 4 %</p> <p>Age of concrete depending on climate: at least 3 to 6 weeks</p> <p>⇒ see product data sheet S&P CFRP-Laminates/S&P slot-applied laminates</p>
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Indications	<p>When reinforcing structural components with the S&P FRP System, it must be possible to transmit the tensile forces from the laminates to the load-bearing substrate through the adhesive.</p> <p>Mechanical processing (cleaning) of the substrate is therefore always essential. The usual methods, such as grinding, milling, sandblasting, etc., may be used. Any unevenness in the substrate must be eliminated before the laminates CFRP are fitted. This operation is essential, as it prevent any deflection forces from arising under tension. Variation in level must not exceed 0.5 cm over a length of 200 cm. Suitable material: S&P Resin 230 levelling mortar.</p>
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Application / Mixing:	<ul style="list-style-type: none"> – Stir the individual components separately and then add component A to component B and mix thoroughly until the colour is uniformly grey and free of any streaks. Place the mixed material in a different container in order to reveal any inadequacies in the mixture. Mix slowly (< 400 rev/min) in order to avoid mixing air into the mixture. – Before the adhesive is applied, the surface of the laminate must be cleaned with a cloth soaked in S&P Cleaner. – Where appropriate, first apply a layer of adhesive onto the substrate with a spatula to a thickness of approx. 1 mm. – Apply a 2 – 3 mm thick layer of adhesive uniformly onto the laminate. – Within the time the adhesive remains workable, press the laminate into the layer of adhesive previously applied and imbed it uniformly with a pressure roller until the adhesive is pressed out of the joint on both sides. Residual minimum adhesive thickness: 1 mm; maximum thickness: 4 mm. – Adhesive is best applied to the laminate using a special gluing set. – Once the adhesive has hardened, check that the bonding is complete over the entire area by tapping or knocking across the surface.
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- Fire protection requirements must be complied with, as epoxy adhesives generally have limited temperature resistance.
- The surface of the laminates can be painted over to ensure visual uniformity.

Application temperature	Workable from + 8 °C to + 35 °C Substrate temperature must be at least 3° C above dew point temperature.
Cleaning	Material that has not hardened yet can be washed off with S&P Cleaner. Material that has hardened can only be removed by mechanical means.
Important Safety instructions	For detailed safety information, it is recommended to seek advice in the current safety data sheet on www.sp-reinforcement.eu .
Country-specific Data	The information in this product data sheet is valid for products, which are delivered from S&P Clever Reinforcement Company AG, Switzerland. Please note that the information in other countries may differ. Note the local product data sheet abroad.
Specific indications	<p>The information and data in this technical data sheet are made to ensure the normal intended use and normal application suitability; the information and data is based on our knowledge and experience. This does not absolve the user from own responsibility to check the suitability and use.</p> <p>The rights to make changes to product specifications are reserved. Furthermore, our general sales and delivery terms do apply. The most recent product data sheet is valid, and should therefore be requested from us.</p>

CE-marking

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S&P Clever Reinforcement GmbH Karl-Röscher-Anlage 5 60437 Frankfurt a. M. Deutschland	
09 22001	
EN 1504-4: 2004 EN 504-4: ZA.1a	
Kleber für Bauzwecke zur Verstärkung mit angeklebten Verstärkungsplatten	
Haftvermögen/Adhäsion:	Zugfestigkeit $\geq 14 \text{ N/mm}^2$ Schrägscherfestigkeit bei: 50° $\geq 50 \text{ N/mm}^2$ 60° $\geq 60 \text{ N/mm}^2$ 70° $\geq 70 \text{ N/mm}^2$
Scherfestigkeit:	$\geq 12 \text{ N/mm}^2$
Schrumpf/Quellen:	$\leq 0,1 \%$
Verarbeitbarkeit:	30 min bei 23 °C
Elastizitätsmodul:	$\geq 2.000 \text{ N/mm}^2$
Wärmeausdehnungskoeffizient:	$\leq 100 \times 10^{-6} \text{ je K}$
Glasübergangstemperatur:	$\geq 40 \text{ °C}$
Brandverhalten:	Euroklasse E
Dauerhaftigkeit:	Bestanden
Freisetzung gefährlicher Substanzen:	NPD

