

# Technical Datasheet

## FRS-BA Bonding Agent



### Characteristics



- Fast curing epoxy-based bonding agent for the subsequent application of FRS-PC 11 concrete repair mortar or for other concrete repair mortars
- Increases adhesion between the concrete and the subsequent concrete repair mortar
- Corrosion protection of the embedded steel reinforcing bars
- Component of European Technical Assessment ETA-24/0281
- DoP according to EN 1504-7
- Strong adhesion to concrete and high tensile strength
- Low chloride ion content (< 0,05 %)

### General Information

Composition	Thixotropic 2-component epoxy repair mortar
Appearance	Concrete grey viscous liquid
Delivery Unit and packaging	1 x steel can (Filling weight 5 kg, A+B comp.)
Mixing ratio	Component A : Component B = 9 : 1 by weight
Art.-No.	561929
Shelf life	36 months (after manufacturing date)
Storage conditions	Storage in dry conditions at temperatures between + 5 °C and + 40 °C. Before using the product, please ensure that the product is at application temperature. The product must be protected from direct sun exposure.

### Approvals and Assessments

ETA 24/0281	According to EAD 160086-01-0301
EN 1504-7*	EN 1504-7:2005

\*only for embedded steel rebar

**Technical data of the components**

Property	Performance	Unit	Remark
Chemical base	Epoxy mortar with amine hardener		
Solid content	≥ 99	% by mass	
Consistency component A (mortar)	Viscous Paste		
Consistency component B (hardener)	Fluent liquid		
Density component A (mortar)	2,12	g/cm <sup>3</sup>	EN ISO 2811
Density component B (hardener)	0,99	g/cm <sup>3</sup>	EN ISO 2811
Viscosity Component A (mortar)	8 000 000	mPa*s	Brookfield, spindle 6
Viscosity Component B (hardener)	500	mPa*s	EN ISO 3219
Colour Component A (mortar)	Beige		
Colour Component B (hardener)	Black		
Flashpoint	> 100	°C	

The values stated represent typical characteristics of the product and are not to be understood as binding products specifications.

**Technical data of the mixture**

Property	Performance	Unit	Remark
Processing temperature	10 - 40	°C	
Workability time at 10 °C - 20 °C (10 kg)	≥ 50	min.	EN ISO 9514
Workability time at 20 °C - 30 °C (10 kg)	≥ 30	min.	EN ISO 9514
Workability time at 30 °C - 40 °C (10 kg)	≥ 20	min.	EN ISO 9514
Curing time at 10 °C - 20 °C	96	h	
Curing time at 20 °C - 30 °C	24	h	
Curing time at 30 °C - 40 °C	16	h	
Viscosity, mixture	50 000	mPa*s	EN ISO 3219
Density, mixture	2,01	g/cm <sup>3</sup>	EN ISO 2811-1
Consistency, mixture	Thixotropic liquid		
Colour of mixture and cured adhesive	Grey		

The values stated represent typical characteristics of the product and are not to be understood as binding products specifications.

## Technical data of the cured adhesive

Property	Performance	Unit	Remark
Temperature range of use	- 40 to + 40	°C	Without long term load reduction
Temperature range short-term	80	°C	With load reduction during temperature exposure above 40°C
Water resistance	Resistant		
Weathering resistance	Resistant		
UV resistance	Conditionally resistant, in case of permanent UV radiation an adequate coating is recommended.		
Tensile strength	≥ 35	N/mm <sup>2</sup>	ISO 527-1, after 7 d at RT
Young's modulus (tension)	≥ 7 000	N/mm <sup>2</sup>	ISO 527-1, after 7 d at RT
Compressive strength	≥ 120	N/mm <sup>2</sup>	EN ISO 604, after 7 d at RT
Flexural strength	≥ 40	N/mm <sup>2</sup>	EN ISO 178, after 7 d at RT
Glass transition temperature	≥ 45	°C	EN 12614, after 24 h at RT
	≥ 50	°C	EN 12614, after 72 h at RT
	≥ 55	°C	EN 12614, after 7 d at RT

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## System components of ETA-24/0281

CFRP laminates	fischer FRS-L-H / FRS-L-S / FRS-L-S NSM
Cleaning agent for the laminate	fischer FRS-CA
Epoxy mortar for the application of the CFRP laminate	fischer FRS-CS
Epoxy repair mortar	fischer FRS-PC 11
Bonding agent	fischer FRS-BA

## Measurement data

The technical data given in this datasheet are based on laboratory testing according to given EN or ASTM norms. Actual measured data may deviate depending on the measurement procedures, devices and norms used.

## Processing instructions

Mixing ratio mortar to hardener

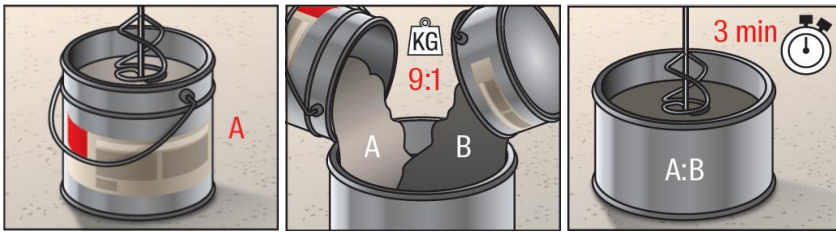
- Component A to component B: 9 to 1 parts by weight

Processing temperatures (underground, air and adhesive)

- at least + 10 °C (and at least 3 K above dew point)
- maximum + 40 °C

FRS-BA consists of two components, supplied in prepacked quantities. Stir component A, then add component B completely. When taking subsets, please take care to ensure the exact mixing ratio by using a sufficiently accurate scale. Stir with a hand-held stirrer (max. rotation speed 300 rpm) until a homogeneous mass is formed. The hardener needs to be evenly distributed. While mixing, please ensure that the pail sides and bottom are well mixed. Care should be taken to keep entrainment of air to a minimum while mixing. Mixing time needs to be at least 3 minutes. After mixing, the resin must be refilled into a clean container or pail and mixed again.

The bonding agent FRS-BA is used to promote adhesion between the concrete substrate and the repair mortar FRS-PC 11. In combination with cementitious repair mortars, wet in wet processing is obligatory. The FRS-BA can be applied brush or similar tool. Complete coverage of the surface should be ensured. The consumption rate is approx. 0,5 - 0,8 kg/m<sup>2</sup> depending on the surface roughness. The consumption is dependent on the surface roughness. Please take notice of the processing and curing time.



### Cleaning of tools

The stirrer and all application tools must be cleaned before mixing FRS-BA. No substances may be used during cleaning that have separating or accelerating properties on the epoxy resins. Before using application tools, care must be taken that no cleaning agent encounters the FRS-BA components. After application FRS-CA or other potent organic solvents such as acetone, toluene, ethyl acetate, butyl acetate or others can be used. Take care to clean all equipment within pot life. Cured material can only be mechanically removed.

### Chemical resistance

The hardened resin is largely resistant to diluted acids and alkalis as well as to many solvents, mineral oils, diesel, and gasoline. The long-term exposure of solvents can lead to a product volume increase and affects the performance. Short-term contact (24 h – 48 h) should not have significant impact on the product performance. Concentrated acids and alkalis, in particular organic acids such as acetic acid can impair performance, especially upon prolonged or repeated exposure.

Please take notice of the safety information and advice given on the packaging labels and safety data sheets.

Please note that the data and information provided above are guidelines from laboratory and real-life experience and are not binding. This general information describes our products and their use, but due to varied working conditions, not every case can be covered. We recommend conducting tests or consulting the fischer technical team if in doubt. We provide information to outline our products and services, without guaranteeing specific properties or suitability for a particular purpose. Please always refer to the latest Technical Data Sheet as well as any national and international regulations. Upon publication of a new version, the previous Technical Data Sheet becomes invalid. Product users must retrieve the latest product data sheet at [www.fischer-international.com](http://www.fischer-international.com). Our current general terms and conditions apply.