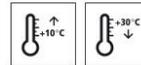


# Technical Data Sheet

## Sto S&P CFRP Plate

CFRP plate, slot reinforcement



### Characteristics

- Area of application**
- for reinforcing concrete structures (concrete and reinforced concrete)
  - for bonding in slots

- Properties**
- CFRP composite
  - very high tensile strength
  - high durability
  - low weight
  - bonding without additional fixing

- Format**
- width: 10, 15, 20 mm

- Information/notes**
- product for reinforcing structures in accordance with DAfStb directive "Reinforcing concrete members with bonded reinforcement", March 2012
  - observe the national technical approval

### Technical data

Criterion	Standard / test specification	Value/ Unit	Notes
Tensile strength	EN 2561	> 2.350 N/mm <sup>2</sup>	Fibre direction
Elongation at break	EN 2561	> 1,5 %	Fibre direction
Static modulus of elasticity	EN 2561	> 160 kN/mm <sup>2</sup>	Fibre direction

The characteristic values stated are average values or approximate values. Due to the natural raw materials in our products, the stated values can vary slightly in the same delivery batch; this does not affect the suitability of the product for its intended use.

### Substrate

#### Requirements

Requirements on the substrate:  
The concrete substrate must be load-bearing and free from native and foreign substances that could interfere with adhesion, as well as from corrosion-promoting components (e.g. chlorides).  
Remove less strong layers and laitance.

Dry in accordance with the definition of the DAfStb (German) Repair Guideline 2001-10, but depending on the compressive strength class. The moisture content may not exceed 4 CM per cent for concrete qualities up to C30/37 and max. 3 CM per cent for C35/45 concrete, measured with a calcium carbide meter.

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Substrate temperature higher than +10 °C and 3 K above dew point.

### Preparations

The concrete must be of the concrete strength class C12/15 at least. The bond strength of the concrete substrate should be such that after preparing the bonding area of the concrete, a bond strength of at least of 1.5 N/mm<sup>2</sup> is achieved.

Substrate preparation:

Strengthening structures using slotted laminates

When using the Sto S&P CFK Lamelle 10 x 1.4 NM, use a concrete grinder to mill slots approx. 3 mm wide and 10 - 20 mm deep into the building element. The slot depth depends on the laminate type.

### Application

#### Application temperature

lowest application temperature: +10 °C  
Highest application temperature: +30 °C

#### Mixing ratio

approved system adhesive - StoPox SK 41  
StoPox SK 41 component A : component B = 100.0 : 25.0 parts by weight

#### Material preparation

Component A and Component B are supplied in the correct mixing ratio and should be mixed in accordance with the following instructions. Stir component A, then add all of component B.

Mix thoroughly with a slow-running paddle mixer (max. 300 rpm) until a homogeneous, streak-free compound develops. It is also vital to stir thoroughly at the sides and the bottom in order to evenly distribute the hardener. Mixing time is at least 3 minutes.

After mixing, pour the compound into a clean container and mix again.

Do not apply from the delivery container!

The temperature of the individual components must be at least +15 °C when mixing.

#### Consumption

Type	Approx. consumption	
	1,0	m/m

Material consumption depends on the application, substrate, and consistency, among other factors. The stated consumption values are only to be used as a guide. If required, determine precise consumption values on the basis of the specific project.

#### Coating build-up

- 1) Substrate preparation
- 2) Levelling significant unevennesses/increasing the concrete cover
- 3) Cutting the slots
- 4) Preparing the Sto S&P CFK Lamelle carbon fibre laminates
- 5) Bonding the Sto S&P CFK Lamelle carbon fibre laminates

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## Sto S&P CFRP Plate

### Application

Bonding the Sto S&P CFK Lamelle carbon fibre laminates in slots

1) Substrate preparation for Sto S&P CFK Lamelle (slot-type laminate)  
Prepare the substrate by cutting a groove and then cleaning it.

2) Levelling unevennesses  
Levelling unevenness is not required.  
If necessary, increase the concrete cover using StoPox Mörtel standfest together with the bonding agent StoPox KSH thix or an approved mortar system.  
In this case, suitable substrate preparation is required.

3) Cutting the slots  
The slot must be at least 1 mm wide, but no more than 3 mm wider than the thickness of the laminate used.

4) Preparing the Sto S&P CFK Lamelle (slot-type laminate)  
If the laminates were not roughened at the factory, sand them on both sides before bonding.

Clean the rough surfaces of the Sto S&P CFK Lamelle carbon fibre laminate using StoCryl VV and a white, lint-free cloth.  
Clean until no more traces of black carbon dust are visible on the white, lint-free cloth.

5) Bonding the Sto S&P CFK Lamelle (slot-type laminate)  
Applying the StoPox SK 41 adhesive:  
Insert the homogeneously mixed StoPox SK 41 adhesive into the slot using a spatula or a gun.

Press the Sto S&P CFK Lamelle slot-type laminate (where e.g. 10 x 1.4 mm means 10 mm wide and 1.4 mm thick) vertically into the slot.  
Using a spatula, trowel off the adhesive that has emerged to produce a smooth finish.

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### Cleaning the tools

Clean with StoCryl VV.

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### Notes, recommendations, special information, miscellaneous

When strengthening structures using carbon fibre laminates, it is vital to observe the current technical approvals from DIBt (German Institute for Building Technology).

The strengthening work may only be carried out by companies which can provide evidence of valid proof of suitability, issued by a certified test place, for bonding CFRP plates.

If there are any requirements for structural fire protection, please observe that epoxy resin adhesives, here StoPox SK 41, are only temperature-resistant to a

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### Sto S&P CFRP Plate

limited extent.

If there is a required fire resistance time to comply with, carry out assessments for the existing building element in accordance with DIN EN 1992-1-2/NA without the CFRP plates. If necessary, check whether the required fire resistance can be achieved by applying fire protection boards, in this case also without the involvement of the CFRP plates.

If the CFRP plates should continue to provide structural support in the case of fire, additionally apply fire protection cladding. If there is no approved fire protection system, approval on an individual basis is necessary.

Damage to the CFRP plates during storage, application, or while in use poses a risk as to the reliability of the structural strengthening. Damaged CFRP plates may not be applied or must be replaced immediately after consulting with a qualified planner.

Please also observe the general application instructions on the website [www.stocretec.de](http://www.stocretec.de)

Delivery			
Article number	Name	Container	
14305-018	Sto S&P CFK Lamella 20/1.7 NM	150 m roll	
14305-016	Sto S&P CFK Lamella 20/1.7 NM	m	
14305-020	Sto S&P CFK Lamelle 15/1.7 NM	150 m roll	
14305-019	Sto S&P CFK Lamelle 15/1.7 NM	m	
14305-012	Sto S&P CFK Lamelle 10/1.4 NM	150 m roll	
14305-006	Sto S&P CFK Lamella 10/1.4 NM	m	
Storage			
<b>Storage conditions</b>	Store in dry and frost-free conditions.		
<b>Storage life</b>	In the original container until ... (see packaging).		

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## Sto S&P CFRP Plate

### Certificates/approvals

Z-36.12-88

Sto S&P CFK Lamella, slotted

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### Identification

Product group

Carbon fibre composite

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### Special notes

The information in this Technical Data Sheet serves to ensure the product's intended use, or its suitability for use, and is based on our findings and experience. Users are nevertheless responsible for establishing the product's suitability and use. Applications not specifically mentioned in this Technical Data Sheet are permissible only after prior consultation. Where no approval is given, such applications are at the user's own risk. This applies in particular when the product is used in combination with other products.

When a new Technical Data Sheet is published, all previous Technical Data Sheets are no longer valid. The latest version is available on the Internet.

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