Technical Datasheet

FRS-L-S NSM
Near Surface Mounted CFRP Laminate

Characteristics

- Near surface mounted CFRP laminate for structural strengthening of concrete elements
- Standard young's modulus (≥ 170 000 N/mm^2) and high tensile strength (≥ 3000 N/mm^2)
- Component of European Technical Assessment ETA-24/0281
- Very high alkaline resistance and high environmental and chemical durability
- Low density

General Information

Composition	Precured unidirectional carbon fiber reinforced composite with epoxy matrix
Appearance	Black strip with periodically printed product name and batch number
Delivery Unit	Coil of 150 m, Inner coil diameter Ø ≥ 800 mm
Shelf life	Infinite if stored appropriately in original packaging
Storage conditions	Storage under dry conditions, below + 50 °C temperature The product must be protected from direct sun light.
Transport conditions	Only in original packaging or in adequate packaging protected against mechanical impact and aggressive environments.
Packaging	Coil in sealed plastic foil and carton overpack

Product Geometries

Art.-No.	Width [mm]	Thickness [mm]	Cross section [mm^2]	Coil length [m]
571702	10	1,7	17	150
571701	15	1,4	21	150
571700	20	1,2	24	150

Approvals and Assessments

ETA 24/0281	According to EAD 160086-01-0301

Technical Data

Property		Performance
Tensile strength (EN 2561)[1]	Mean value	3000 N/mm²
	Characteristic 5 % fractile value	2700 N/mm²
Young's Modulus (EN 2561) [1]	Mean value	170 000 N/mm²
Elongation at break (EN 2561) [1]	Mean value	1,74 %
Fiber volume content (DIN EN 2564)		≥ 67 %
Density of laminate		1,60 g/cm³
Glass transition temperature (EN 12614 & ASTM E1640)		≥ 100 °C

[1]Values determined in 0° longitudinal fiber direction.

Note that the technical parameters included in the technical assessments are decisive for structural design. In case of questions regarding the structural design, please contact our national technical team.

Consumption of FRS-CS Epoxy Mortar for near surface mounted FRS-L-S NSM CFRP laminates

Width of the laminate [mm]	Required amount of FRS-CS [kg/m]
10	0,06-0,075
15	0,075-0,09
20	0,09-0,2
The required amount of Epoxy Mortar FRS-CS may strongly depend on the concrete surface condition, roughness, layout of laminate crossings and layer thickness.	

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

Related products

Adhesive application device	fischer FRS-AD
Laminate coiler	fischer FRS-LC

Measurement data

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

Further information

- The structural design must be carried out by an experienced structural engineer.
- Applications out of the scope of the product approvals is out of the responsibility of the fischer group.
- The application of the FRS-L-S NSM CFRP laminates using epoxy resins from other manufacturers is out of the responsibility range of the fischer group.
- Well trained and experienced contractors are to be commissioned to carry out the installation works.
- Wear protective clothing, gloves, goggles, and a face mask when cutting the laminates. Laminates can be cut with angle grinders (FCD-FP, FCD-CP, FCD-FHP) or a suitable saw. It is recommended to tape the spot where the CFRP is cut to prevent longitudinal splitting and fiber fly.
- For further information, please refer to your national fischer technical team or the Installation Manual “C-Fiber Force Strengthening System with FRS-L-S NSM Near Surface Mounted CFRP Laminates”.

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. Our current general terms and conditions apply.