

PRODUCT DATA SHEET

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FSL12

PULTRUDED CARBON FIBRE PLATES FOR STRUCTURAL STRENGTHENING

DESCRIPTION

FSL12 are pultruded carbon fiber reinforced polymer (CFRP) laminates, designed for strengthening concrete, timber, masonry, steel and fiber reinforced polymer structures.

USES

FSL12 is suitable for:

- Structural strengthening of reinforced concrete, masonry, and timber elements.
- Increasing the load-bearing capacity of structures.
- Repairing and strengthening aging structures.
- Correcting structural design and construction defects.

CHARACTERISTICS / ADVANTAGES

- High strength with low weight.
- Non-corrosive and alkali-resistant.
- Excellent durability and fatigue resistance.
- Low aesthetic impact.

APPROVALS / STANDARDS

- Complies with relevant international standards for carbon fiber strengthening systems.

PRODUCT INFORMATION

Color	Black
Fiber Orientation	Unidirectional
Width	5/8/10 cm, other widths available on request
Packaging	100m/Roll
Storage	Store in a dry place and without direct sunlight at a temperature between -5°C and +35°C

TECHNICAL INFORMATION

Density	1.6 g/cm ³
Fiber Content	Min 65%
Dry Fiber Tensile Strength	5800 MPa
Nominal Thickness	1.2 mm
Tensile Strength*	2800 MPa

Tensile Elastic Modulus*	165 GPa*
Elongation At Break*	1.6%*
Tensile Resistance Per Width	3360kN/m
Tensile Stiffness Per Width	198MN/m

**The specimen preparation and testing are conducted according to ASTM D3039, with at least 25 specimens. All values refer to nominal thickness.*

**Tensile strength is defined as mean value minus 3 standard deviations. Tensile elastic modulus is defined as reported mean value (0.001 to 0.003 absolute strain). Elongation at break is defined as the calculated strain from characteristic tensile strength and tensile elastic modulus.*

APPLICATION INSTRUCTIONS

Surface Preparation:

- Clean the concrete surface by sandblasting or grinding to remove dust and loose particles.
- Ensure the surface is free from grease and oil, and is dry.
- Level the surface, removing irregularities over 0.5 mm. Use FSE502 for larger deviations.

Laminate Cutting:

- Use a blade saw or cutting machine to cut the carbon fiber board to the desired length.

Adhesive Mixing:

- Refer to the Product Data Sheet for information on the appropriate epoxy adhesive.

Plate Application:

- Apply mixed FSE362 to the prepared concrete at 2 mm thickness and carbon fiber plate at 2–3 mm thickness within the pot life of the adhesive.
- Place the carbon fiber plate onto the prepared substrate with the two adhesive layers in contact. Use hard rubber roller to press the laminate onto the substrate until adhesive squeezes out from both sides of the laminate. Roller along the center of the plate to achieve a void-free bond line of approximate thickness of 2–4 mm.
- Remove the surplus adhesive from the sides of the laminate.

Protection and Coating:

- Avoid exposing the fabric to direct sunlight post-application. Apply fireproof or cement coating.

LIMITATIONS

- Design calculations must be certified by an independent licensed professional engineer.
- Protect the system from UV exposure.

HEALTH & SAFETY INFORMATION

- Refer to the most recent Safety Data Sheet for safe handling, storage, and disposal of the product.

LEGAL NOTES

- The Information and recommendations relating to the application and end-use of FIDSTRONG products, are given in good faith based on our current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in

materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.fidstrong.com.