

PRODUCT DATA SHEET

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FSC230A

HIGH-STRENGTH HIGH-MODULUS CARBON FIBER FABRIC FOR STRUCTURAL STRENGTHENING

DESCRIPTION

FSC230A is a unidirectional woven carbon fiber fabric designed for structural strengthening applications. It can be used in both dry and wet application processes.

USES

FSC230A is suitable for:

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

CHARACTERISTICS / ADVANTAGES

- Flexible and can be wrapped around complex shapes.
- High strength with low weight.
- Non-corrosive and alkali-resistant.
- Low aesthetic impact.

APPROVALS / STANDARDS

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

PRODUCT INFORMATION

Color	Black
Fiber Orientation	Unidirectional
Areal Weight	230 g/m²
Width	10/15/20/25/30/50/60 cm
Packaging	100m/Roll/Box
Storage	Store in a dry place and without direct sunlight at a temperature between -5°C and +35°C
Density	1.8 g/cm³
Fiber Content	100%
Dry Fiber Tensile Strength	5800 MPa

TECHNICAL INFORMATION

Mechanical Properties Calculated by Net-fiber Area

Properties	Mean Value	Characteristic Value*
Tensile Strength*	4500 MPa	4000 MPa
Tensile Elastic Modulus*	240 GPa	240 GPa
Elongation At Break*	1.8%	1.6%
Tensile Resistance Per Width	576 kN/m	512 kN/m
Tensile Stiffness Per Width	30.7 MN/m	30.7 MN/m
Fabric Nominal Thickness	0.128 mm	

Mechanical Properties Calculated by Gross-laminate Area

Properties	Mean Value	Characteristic Value*
Tensile Strength*	1440 MPa	1280 MPa
Tensile Elastic Modulus*	76.8 GPa	76.8 GPa
Elongation At Break*	1.8%	1.6%
Tensile Resistance Per Width	576 kN/m	512 kN/m
Tensile Stiffness Per Width	30.7 MN/m	30.7 MN/m
Cured Laminate Nominal Thickness	0.40 mm	

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

**Characteristic 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.
- Round all corners to a minimum radius of 20 mm.

Adhesive Mixing:

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

Fabric Cutting:

- Use heavy-duty scissors to cut the fabric to the required length. Avoid dull or worn cutting tools to prevent fiber damage.

Priming and Saturating:

- Prime the concrete with FSE302 using spray, brush, or roller. Wait until the resin is tacky.
- Apply mixed FSE322 epoxy resin to the substrate and place the fabric onto the resin. Smooth out any air pockets using a plastic laminating roller. If multiple layers are required, repeat the process.

and apply a final coat of FSE322.

Protection and Coating:

- Avoid exposing the fabric to direct sunlight post-application. For additional protection, apply an extra layer of epoxy and cover with silica sand to promote adhesion before applying a top coat.

LIMITATIONS

- Design calculations must be certified by an independent licensed professional engineer.
- Minimum radius for application around corners must be over 20 mm.
- Overlapping of the fabric in the fiber direction must be at least 100 mm.
- 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.