

FSGR

GFRP REBAR — RIBBED PULTRUDED RIBBED GLASS-FIBRE REINFORCED POLYMER BAR FOR CORROSION- RESISTANT STRUCTURAL CONCRETE REINFORCEMENT

≥ 950 MPa

TENSILE STRENGTH

≥ 47 GPa

ELASTIC MODULUS

S-Glass

FIBRE GRADE

Ø 6–32 mm

DIAMETER RANGE

DESCRIPTION

FSGR are pultruded glass-fibre reinforced polymer (GFRP) bars produced from high-strength S-glass continuous roving in a vinyl-ester matrix, finished with surface ribs along the bar length. FSGR is designed as a non-corrosive replacement for steel reinforcement in structural concrete exposed to chloride, alkali, or chemical attack. The ribbed surface develops mechanical bond with concrete through rib interlocking, comparable to deformed steel rebar.

USES

- Marine and coastal structures — quay walls, jetties, sea-walls, splash-zone slabs.
- Bridge decks and parapets subject to de-icing salts.
- Chemical, wastewater, and desalination plant structures.
- MRI rooms, substations, and radar/antenna foundations requiring electromagnetic transparency.
- Permanent flexural and shear reinforcement in concrete members where steel corrosion governs service life.

CHARACTERISTICS / ADVANTAGES

- S-glass high-strength roving — tensile strength ≥ 950 MPa, more than twice the yield of HRB400 steel.
- Ribbed surface — develops mechanical bond with concrete through rib interlocking.
- Fully non-corrosive — immune to chloride, carbonation, and alkali attack.
- Low weight — approximately 1/4 the density of steel.
- Electromagnetically and thermally neutral — non-conductive, non-magnetic.
- Thermal expansion matched to concrete in the longitudinal direction.

APPROVALS / STANDARDS

- Tensile properties tested in accordance with ASTM D7205 — Standard Test Method for Tensile Properties of Fiber Reinforced Polymer Matrix Composite Bars.
- Also manufactured and tested in accordance with GB/T 26743-2011 — Fibre Reinforced Composite Bars for Civil Engineering.

PRODUCT INFORMATION

PROPERTY	VALUE
Colour	Light green / natural
Diameter	6 / 8 / 10 / 12 / 14 / 16 / 20 / 22 / 25 / 28 / 32 mm
Surface	With ribs
Fibre Type	S-glass continuous roving

PROPERTY	VALUE
Resin Matrix	Vinyl-ester
Packaging	6 m and 12 m straight bars; bent shapes to order
Storage	Store on flat supports off the ground, away from direct sunlight and impact
Shelf Life	2 years from date of manufacture, under proper storage

TECHNICAL INFORMATION

PROPERTY	VALUE	STANDARD
Density	2.1 g/cm ³	
Fibre Content	Min 70 %	
Tensile Strength	≥ 950 MPa	ASTM D7205
Tensile Elastic Modulus	≥ 47 GPa	ASTM D7205
Elongation at Break	2.1 %	ASTM D7205

LIMITATIONS

- Design calculations must be certified by an independent licensed professional engineer.
- Field bending is not permitted — all bent shapes must be ordered factory-formed.
- Protect the system from prolonged UV exposure during long-term storage.

HEALTH & SAFETY INFORMATION

- Refer to the most recent Safety Data Sheet for safe handling, cutting, 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.