

FSGS

GFRP REBAR — SMOOTH PULTRUDED PLAIN ROUND 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

FSGS are pultruded glass-fibre reinforced polymer (GFRP) bars produced from high-strength S-glass continuous roving in a vinyl-ester matrix, with a smooth, plain round surface. FSGS is designed as a non-corrosive replacement for steel reinforcement in structural concrete exposed to chloride, alkali, or chemical attack.

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.
- Smooth profile — clean handling and accepts secondary surface treatment on site where required.
- 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	Smooth plain round (as-pultruded)
Fibre Type	S-glass continuous roving
Resin Matrix	Vinyl-ester

PROPERTY	VALUE
Packaging	6 m and 12 m straight bars; longer custom lengths on request
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

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