SFTec Product Sheet

SFT-Bar ®

For Concrete Reinforcement

MANUFACTURED by SFTec

SFT-Bar ®

FRP (Fiberglass Reinforced Polymer) is a composite material made of a polymer matrix reinforced with fibers. The fibers are usually glass (in fiberglass), basalt, carbon, or aramid. The polymer is usually an epoxy, vinyl ester, or polyester thermosetting plastic.
FRP bar has been developed as a non-corrosive alternative to steel for concrete reinforcement.
FRP bar is the ideal solution for concrete reinforced projects, such as bridges, barrier walls, decks, diaphragm walls (soft eye), tunnel segments, garages, pavements, wharfs, sea walls, wave breakers retaining walls and fence systems.

FRP bar is suitable for any structural or architectural application where a material that is corrosion resistant, lightweight, or non-conductive is required.

Comparison Snapshot	BFRP	Steel	GFRP	Stainless Steel
Strength	+2.5X	Traditional	+2.0X	Traditional
Weight	1/4 X	Heavy	1/4 X	Heavy
Carbon Footprint	Low	Bad	Low	Bad
Conductivity	No	Yes	No	Yes
Saltwater Deterioration	No	1 Day	No	2-5 Years
Easy to Transport	Bar or Coil	Heavy, Long & Bends	Bar or Coil	Heavy, Long & Bends

MEMBERSHIPS

SFT-Bar® is ICC-ES® Evaluated **Report#ESR-5081**

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GFRP Rebar Properties

- Tensile properties were calculated using nominal cross-sectional areas.
- The designers should contact the bar manufacturer for the latest updates of this technical data sheet

Designation of bars (CSA S807 Table 1)	Nominal cross-sectional area (CSA S807 Table 1)	Guaranteed tensile strength (ASTM D7205)	Tensile Modulus of elasticity (ASTM D7205)	Transverse shear strength (ASTM D7617)
Designated Diameter (in mm)	mm²	MPa	GPa	kN
6	32	1105	46-70	7
8	50	1050	46-70	23
10	71	1002	46-70	31
13	129	981	46-70	54
15	199	960	46-70	79
20	284	898	46-70	109
22	387	877	46-70	156
25	510	843	46-70	188
30	645	796	46-70	202
32	819	758	46-70	220
35	1006	722	46-70	223

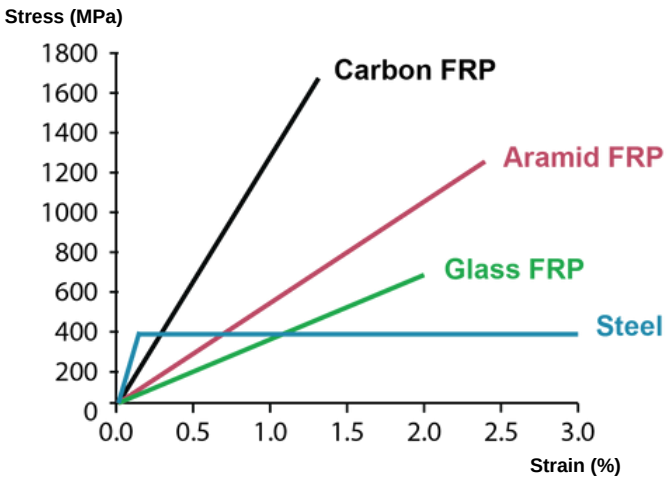
Sustainability Comparison Table

	SFT-Bar®	Steel
Production	43% less CO2 Emissions	High CO2 Emissions
Transport	Fewer construction freight	High construction freight
Service Life	Long (resistance to corrosion)	Short due to corrosion

Reference Codes

- **Bar Specification**
  - CAN/CSA S807-19 (2019)
- **Design Specification**
  - CAN/CSA S806-12 (2021)
  - CAN/CSA S6-19 (2019)

- **Bar Specification**
  - ASTM D7957/D7957M-22 (2022)
  - ASTM D8505/D8505M-23 (2023)
- **Design Specification**
  - ACI 440.11-22 (2022)
  - AASHTO (2018)



Comparison Table

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Cost & Performance Comparison	SFT-Bar ® (GFRP rebar)	Black steel rebar	Epoxy coated rebar (ECR)	Galvanized steel rebar	Stainless steel rebar
Cost Comparison					
Life Cycle Advantage	Longer +++++	Short	Longer +	Longer ++	Longer ++
Initial Cost of Material	**Grade I** - comparable to black steel rebar **Grade II** - comparable to Epoxy coated rebar	Low	High	High	Higher ++
Transport savings	Yes	No	No	No	No
Concrete Cover Savings	Possible	No	Possible	Possible	Possible
Labor & Injury Savings during installation	Yes	No	No	No	No
Corrosion Resistance					
Corrosion risk profile	No	Very High	Yes	Possible	Low
Contact corrosion/ Corrosion at bends	No	Yes	Susceptible	Susceptible	Susceptible
Cathodic protection needed	No	Yes	Limited to coating	Susceptible	Susceptible
Acid rain, Acid soils, marshes	No	Yes	Limited to coating	Susceptible	Susceptible
Rust Expansion/Rust Staining	No	Yes	Limited to coating	Susceptible	Susceptible
Alkali in concrete	No	Yes	Limited to coating	Susceptible	Susceptible
Chlorine, Sulphide stress corrosion	No	Yes	Limited to coating	Susceptible	Susceptible
Mechanical Advantages					
Thermal insulator	Yes	Poor	Poor	Poor	Poor
Electrical Insulator/ Non-Magnetic	Yes	Poor	Poor	Poor	Poor
Weight	1/4	1	1	1	1
Long term bond concrete	Excellent	Poor	Good	Poor	Good
Tensile Properties	Excellent	Okay	Good	Good	Excellent

- *G60 SFT-Bar® are Concrete Reinforcing Bars that can be used in most Concrete applications (such reinforcing bars can be considered for most primary or secondary structural applications) as defined by the CSA S807 & ASTM D7957 standards.*
- *G50 SFT-Bar® are Concrete Reinforcing Bars that can be used in most Concrete applications (such reinforcing bars can be considered for most primary or secondary structural applications) as defined by the CSA S807 & ASTM D7957 standards.*
- *Polyester and G40 SFT-Bar® are Concrete Reinforcing Bars that are meant to be used exclusively in non-structural Concrete Building applications (such reinforcing bars should not be considered for any primary or secondary structural applications) as defined by the CSA S807 & ASTM D7957 standards.*

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