GFRP Glass Fiber Reinforced Polymer Rebar

Sustainable, rust-proof alternative to traditional steel reinforcement

GFRP Glass Fiber Reinforced Polymer Rebar is 25% of the weight of steel and has a Specific Tensile Strength that is 2.5 times greater. This equates to enhanced jobsite safety, with significant savings in transportation and handling costs.

GFRP Glass Fiber Reinforced Polymer Rebar is rust-proof and rated for 100+ years of reinforcement in alkaline and acidic environments.

GFRP Glass Fiber Reinforced Polymer Rebar does not conduct electricity, is non-magnetic, does not interfere with RF signals, and is UV Stable.

GFRP Glass Fiber Reinforced Polymer Rebar							
Part No.	**Description**	**Size**	**Mean Cross Sectional Area**	**Guarenteed Ultimate Tensile Strength**	**Ultimate Tensile Load**	**Tensile Modulus of elasticity**	**Ultimate Strain**
SBGFRPCR3	#3x20’ GFRP Rebar	3/8”	0.108 in^2	156.6 ksi	20.0 kips	7.03 Msi	2.63%
		10mm	69.77 mm^2	1080 MPa	89.1 kN	48.5 GPa	
SBGFRPCR4	#4x20’ GFRP Rebar	1/2”	0.189 in^2	154.4 ksi	33.5 kips	7.27 Msi	2.4%
		13mm	121.72 mm^2	1065 MPa	149.1 kN	50.1 GPa	
SBGFRPCR5	#5x20’ GFRP Rebar	5/8”	0.300 in^2	111.6 ksi	44.6 kips	7.63 Msi	1.96%
		16mm	193.4 mm	770 MPa	198.7 kN	52.6 GPa	

Compliance

All GFRP Glass Fiber Reinforced Polymer Rebar are in compliance with ASTM 7957 and ACI 440-22.

Substantially exceeds all minimum requirements for each category of Acceptance Criteria for ICC-ES 454, FDOT Section 932-3, Fiber Reinforced Polymer (FRP) Bars.

SureBuilT
Concrete Forms & Accessories

840 South 25th Ave
Bellwood, IL 60104
708-493-9569
www.surebuilt-usa.com

Approvals & Governed Use:

GFRP Glass Fiber Reinforced Polymer Rebar is an approved reinforcement product according to ACI 440R-07 covering Basalt, Glass, Carbon and Aramid FRP's. It's used as per ACI 440.1R-06, and its construction use is dictated by Code 440.6-08, and tested according to ASTM D7205, and 5 other ASTM methods; demonstrating GFRP Glass Fiber Reinforced Polymer Rebar exceeds requirements of ACI 440.6-08.

GFRP Glass Fiber Reinforced Polymer Rebar can be placed to meet code requirements (or equivalent) by using the calculations and installation guidelines for GFRP reinforcement of concrete as defined in ACI 440.6-08. Recommendations for maximum deflection and shear of concrete elements reinforced with FRP rebars are presented in ACI 440.1R-06, and specified by 440.5-08.

The use of GFRP is further approved under the ICC Evaluation Service, Acceptane Criteria for Fiber-Reinforced Polymer (FRP) Bars, for Internal Reinforcement of Concrete Members [AC454] dated June 2016.

ASTM Standards

D570 Standard test method for water absorption of plastics
D619 Standard practice for conditioning plastics for testing
D695 Standard test method for compressive properties of rigid plastics
D7205 Standard test method for tensile and tensile modulus
D790 Standard test method for flexural properties of unreinforced and reinforced plastics
D792 Standard test method for density and specific gravity
D2734 Void content of reinforced plastics
D3410 Standard test method for compressive properties of polymer matrix composite materials

Design Manual: Isis Design Manual #3: Reinforcing concrete structures with fiber reinforced polymers (FRP's)

Non-Corrosive Benefits

- No added maintenance cost during the service life of the structure, unlike steel and other FRPs.
- Reductions in the overall concrete cover (usually required due to degradation from steel corrosion) can now be considered.
- Expensive waterproof sealants, coatings and/or special concrete additives are no longer necessary to resist or prevent corrosion.
- Chloride contaminated concrete consituents, such as water (saltwater) and aggregates, as well as chloride-based accelerators and cement without chloride limits can now be used without detriment.