

FORTA COMPOSIT REBAR (GFRP)

GLASS FIBER REINFORCED POLYMER REBAR

TECHNICAL DATA SHEET

FORTA GFRP rebar reinforcement consists of glass fiber filament which provide high tensile strength and polymer resin as binding material. GFRP Reinforcement is used for high strength reinforcing needs for concrete structures. FORTA can be used for permanent and temporary reinforcement needs.

- Productions are made based on specifications and definitions in ACI440.5-08 "Specification for Construction with FRP Bars". All compositions, production methods comply related specifications.
- GFRP Rebars are not available for bending or changing shape in job site. Thus orders should be made as determined in project technical design.
- If needed, GFRP bars can be cut by grinders, hacksaw or similar cutting equipment on job site. It is not suitable to be welded or glued.
- Surface treatments can be made by ribbing, sand coating or both. Surface treatments are made for providing adherence of gfrp reinforcement with concrete and all dimensions and methods for rib properties are defined in related specifications (TS EN 13816).

Complying Standards and Specifications:

- CSA S807 - ASTM D7957 - ASTM D7205 - ACI 440-5R - ISO10406 - TS EN 13816

Dimensional Properties			
Diameter (mm)	Cross-Sectional Area (mm ²)	1 mt. Weight (kg)	Specific Weight (gr/cm ³)
6	28,25	0,051	1,81
8	50,25	0,092	1,83
10	78,50	0,149	1,89
12	113,00	0,214	1,89
14	153,80	0,292	1,90
16	201,00	0,382	1,90
18	254,35	0,483	1,90
20	314,00	0,597	1,90
24	452,16	0,859	1,90
26	530,66	1,008	1,90
32	803,84	1,528	1,90

Composition

Glass Type	E Glass
Resin Type	Thermosetting Resin
Glass Ratio (by Weight)	>75%



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Mechanical Properties		
	Unit	Value
Tensile Strength	N/mm ²	> 900
Strain	%	> 2
Modulus of Elasticity	GPa	40-60
Shear Strength	N/mm ²	> 150
Electromagnetic Neutrality	-	Inert
Chemical Strength	-	Excellent
Melting Point	°C	> 400
Alkali Tensile Strength	N/mm ²	> 700
Pull Out Strength (Concrete)	N/mm ²	> 12

Technical Design Aspects:

GFRP reinforced concrete structures must be designed as described in related international specifications and regulations.

Strength tests of gfrp reinforcement must be done in accordance with technical standards specialised for composite bar reinforcements. Test set up, which is not properly prepared, will have significant effects on strength values of material.

For recommendations and questions for technical properties and design inquiries FORTA technical team will be ready to support.

