TECHNICAL DATASHEET

GFRP REBAR — GLASS FIBRE REINFORCED POLYMER

Solid, ribbed GFRP bars for concrete reinforcement, manufactured by pultrusion at Nana Borsara, Surat, Gujarat.

1. Material & properties

Fibre	E-glass fibre
Matrix	Thermoset resin system
Manufacturing process	Continuous pultrusion with surface profiling (ribbed)
Density (typical)	≈ 2.1 g/cm³ (steel ≈ 7.85 g/cm³)
Corrosion · electrical · magnetic	Does not corrode · non-conductive · non-magnetic
Tensile strength	Up to ~2× steel — guaranteed value per batch test certificate
Modulus of elasticity	Per batch test certificate
Bond to concrete	Ribbed surface — per batch test certificate
Standards	Designed to align with ASTM D7957; test methods per ISO 10406-1

2. Size range & nominal values

DIA (MM)	NOMINAL AREA (MM²)	APPROX. WEIGHT GFRP (KG/M)	SAME BAR IN STEEL (KG/M)	LENGTH
3	7.1	0.015	0.055	Custom
3.5	9.6	0.020	0.076	Custom
4.5	15.9	0.033	0.125	Custom
6	28.3	0.059	0.222	Custom
7	38.5	0.081	0.302	Custom
8	50.3	0.106	0.395	Custom
10	78.5	0.165	0.617	Custom
12	113.1	0.238	0.888	Up to 12 m
14	153.9	0.323	1.208	Up to 12 m
16	201.1	0.422	1.578	Up to 12 m
18	254.5	0.534	1.998	Up to 12 m
20	314.2	0.660	2.466	Up to 12 m
22	380.1	0.798	2.984	Up to 12 m
25	490.9	1.031	3.853	Up to 12 m

Nominal area = $\pi \cdot d^2/4$. Weights are approximate, calculated from nominal diameter and typical density; actual unit weight is stated on the batch test certificate.

3. Design notes

- ✓ GFRP has a lower modulus of elasticity than steel and is linear-elastic to failure; designs are usually governed by deflection and crack width.
- ✓ Design must be carried out for GFRP by a qualified engineer — do not substitute bar-for-bar from a steel drawing.
- ✓ Fire performance depends on concrete cover as specified in the design.

4. Site handling

- ✓ Store off the ground on level supports; cover if stored outdoors for long periods.
- ✓ Cut with an abrasive or diamond blade; wear gloves, eye protection and a dust mask.
- ✗ Do not bend on site, heat or weld. Specify bends in the bar-bending schedule before ordering.
- ✓ Tie with plastic-coated wire or nylon ties; use non-metallic chairs and spacers.
- ✓ Secure cages to supports — light GFRP cages can lift during concreting.

5. Supply & documentation

- ✓ Bundled and labelled by diameter and length.
- ✓ Batch test certificate with guaranteed mechanical values supplied with each consignment.
- ✓ Annual capacity 25,00,000+ metres; supply across India.

Contact for specifications and quotes

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