

FRP FOR INDUSTRY & COMMERCE

FIBER REINFORCED POLYMERS

COMPANY PROFILE

"Durability Merges With Sustainability"

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1. Who We Are

FRP for Industry & Commerce is an Egyptian company specializing in the production of Glass Fiber Reinforced Polymer (GFRP) rebars and similar composites — a new and proven construction technology that is redefining the future of concrete reinforcement in Egypt and beyond.

Founded on the principles of innovation, quality, and sustainability, FRP is the first company in Egypt to manufacture GFRP rebars locally and deploy them at scale across industrial, commercial, and infrastructure projects.

We operate from our state-of-the-art production facility at the Makka Industrial Complex in Abu Rawash, Giza — positioned at the heart of Egypt's industrial corridor.

Our Mission

To accelerate Egypt's transition to sustainable, durable, and cost-effective construction by replacing corrosion-prone steel reinforcement with superior GFRP technology — backed by the Egyptian national code ECP 208.

Our Vision

To be the leading GFRP manufacturer in the MENA region, delivering structures that outlast conventional construction by decades, at a lower total lifetime cost.

Our Core Values

- Integrity — Everything we do is built on transparency and trust.
- Expertise — Deep engineering knowledge of FRP technology and ECP 208 compliance.
- Impact — Our products reduce corrosion damage, lower lifecycle costs, and shrink the carbon footprint of construction.
- Collaboration — We partner with engineers, contractors, and developers to make GFRP adoption seamless.



2. Product Overview: GFRP Rebars

Glass Fiber Reinforced Polymer (GFRP) rebars are high-performance composite bars made of high-strength E-glass fibers (70–80%) embedded in an epoxy-based polymer matrix (20–30%). The result is a structural reinforcement bar that is stronger in tension than steel, a quarter of the weight, and completely immune to corrosion.

Unlike steel, GFRP rebars do not corrode when exposed to chlorides, moisture, acids, or alkaline environments — making them the ideal reinforcement for demanding applications across Egypt's coastal, industrial, and chemical sectors.

Certified Technical Specifications

Property	Value	Standard
Tensile Strength	≥ 1,000 MPa	ASTM D7205
Tensile Modulus	≥ 40 GPa	ASTM D7205
Shear Strength	≥ 180 MPa	ASTM D7617
Pull-out Bond Strength	3–6 MPa	ASTM D7913
Corrosion Resistance	Excellent — Immune	ASTM D7957 / ACI 440.1R-15
Weight vs. Steel	~¼ of equivalent steel bar	—
Composition	70–80% E-glass / 20–30% Epoxy Matrix	—
Color / Form	Yellow or Black solid rod	—

Compliance with International and National Standards

- ECP 208-2019 (Egyptian Code) — The dedicated Egyptian national code for the design and execution of buildings using GFRP reinforcement. Products using FRP comply by code — no special approval required.
- ACI 440.1R / ACI CODE-440.11-22 — American Concrete Institute building code requirements for structural concrete reinforced with GFRP bars.
- ASTM D7957, D7205, D7617, D7913 — Standard specifications and test methods covering tensile properties, shear strength, and bond strength.
- CSA S806 — Canadian standard for design and construction with fiber reinforced polymers.



3. Why Choose GFRP? Key Advantages

GFRP rebars deliver measurable advantages across the full construction lifecycle — from lower installation costs to dramatically reduced maintenance over the service life of the structure.

100% Corrosion Immune vs. steel in chloride/acid	$\geq 1,000$ Tensile Strength (MPa) vs. ~500 MPa for steel	$\frac{1}{4}$ Weight of Steel Faster, cheaper to install	95% Less CO ₂ in Production vs. steel manufacturing
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Performance Advantages • Tensile strength exceeding 1,000 MPa — higher than standard steel rebar • Zero corrosion, even in seawater, chloride-rich, and acid environments • Non-conductive: electrically and thermally insulating • Non-magnetic: ideal for MRI suites and electromagnetic-sensitive structures • Dimensional stability — low thermal expansion reduces long-term cracking • 100-year design service life in harsh environments	Economic Advantages • 40% direct cost saving on slab-on-grade reinforcement vs. steel (FRP internal study) • No overlap losses: sold in continuous lengths, no wastage • Very low transportation cost due to lightweight nature • Low labor cost — easy to cut, handle, and install on site • Zero maintenance cost for corrosion repair over the structure's lifetime • Reduced lifecycle costs by 20–30% over 30-year period
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Environmental & Sustainability Advantages

- 95% lower CO₂ emissions compared to steel production
- 95% lower energy consumption in manufacturing
- Contributes to LEED green building certification credits
- Inert material — does not leach chemicals or decompose in soil or water



4. Applications

GFRP rebars are the preferred choice wherever corrosion, weight, conductivity, or long service life are critical. FRP for Industry & Commerce has supplied rebars for all of the following structural applications in Egypt:

Industrial & Commercial

- Heavy-duty slabs on grade (factories, warehouses, logistics centers)
- Chemical plants and production facilities
- Wastewater and water treatment structures
- Underground tanks and water storage tanks
- Precast concrete elements
- Loading decks and ramps
- Fences and boundary walls

Buildings & Infrastructure

- Flat slabs and hollow block slabs (administrative and commercial buildings)
- Basement slabs and retaining walls
- Marine and coastal structures
- Roads, highways, and bridge decks
- Artificial lagoons and swimming pools

Specialty Applications

- MRI suites and medical imaging facilities (non-magnetic reinforcement)
- Data centers and electromagnetic-sensitive structures
- Keystone retaining wall pins
- Agriculture: greenhouse structures, plant stakes, orchard supports

Why GFRP is Ideal for Egypt

- Egypt's Mediterranean and Red Sea coastal zones suffer severe chloride-induced corrosion — GFRP eliminates this entirely
- Industrial zones with chemical exposure (acid, alkalis) benefit immediately from GFRP's inert nature
- Egypt Vision 2030 and ECP 208-2019 align directly with GFRP adoption



5. Cost Comparison: GFRP vs. Steel

The following cost study is based on a real slab-on-grade application, comparing equivalent structural performance for both reinforcement systems.

	Steel Reinforcement (Case 1)	GFRP Reinforcement (Case 2)
Diameter / Spacing	Ø 10mm / 5 bars per m'	Ø 6mm / 5 bars per m'
Price basis	42,000 EGP per ton	16 EGP per unit length
Raw cost per m ²	260.4 EGP	160 EGP
Overlap losses	+8.5% (1m per 12m splice)	None — continuous lengths
Final cost per m ²	280 EGP	160 EGP
Labor / Transport	Heavy — requires crane/forklift	Light — manual handling
Long-term maintenance	Corrosion repair costs accumulate	Zero — fully corrosion-free
Cost Saving	43% saving on direct reinforcement cost — plus elimination of all future maintenance	

Note: The 43% saving is on direct reinforcement material cost for slab-on-grade. When long-term maintenance elimination is included, the total lifecycle saving over 50 years typically reaches 20–30% of total construction cost. (Source: FRP internal study; global benchmark: 40% saving over 50 years — Canadian bridge case study.)



6. Our Projects in Egypt

FRP for Industry & Commerce has successfully delivered GFRP reinforcement to major Egyptian projects across the industrial, commercial, and real estate sectors. The following case studies represent our track record of execution.

Makka Company for Development & Urban Projects

Abu Rawash Industrial Zone — 6th of October | Heavy-duty slab on grade

The first private-sector industrial zone on a 200-feddan plot. FRP supplied and installed GFRP reinforcement for 50+ heavy-duty slab-on-grade units across factory floors and logistics warehouses.

Pyramids International for Urban Developments

New Administrative Capital | Basement slab & ramps

Reinforcement of basement slabs on grade and parking ramps covering 5,000 m². GFRP chosen for its non-corrosive performance in below-grade applications with permanent moisture exposure.

Gaballah Commercial Mall

Nasr City, Cairo | Flat slabs — upper floors

Reinforcement of the 10th and 11th floor flat slabs for a commercial mixed-use tower in central Cairo. Demonstrated GFRP's viability as primary reinforcement for elevated structural slabs.

Revolve Commercial Mall

3rd Settlement, New Cairo | Concrete fresh water tank

Construction of a large concrete fresh water storage tank (15 × 13 × 7 meters). GFRP selected for its complete resistance to water and chloride corrosion, ensuring the tank's long-term structural integrity.

Fayoum City Artificial Lagoons

Fayoum City | Marine / water feature structures

Reinforcement of curved lagoon walls and base slabs exposed to permanent water contact. GFRP's non-magnetic and corrosion-free properties made it the natural choice for this leisure infrastructure.



7. Standards, Codes & Certifications

All FRP products are manufactured and tested in compliance with the following codes and standards:

Standard	Description
ECP 208-2019	Egyptian National Code for the Design and Execution of Buildings Using FRP — Issued by the National Housing & Building Research Center (HBRC). Your legal framework for GFRP use in Egyptian structures.
ACI 440.1R-15	American Concrete Institute guide for design and construction of structural concrete reinforced with FRP bars.
ACI CODE-440.11-22	ACI/ANSI building code requirements for structural concrete reinforced with GFRP bars.
ASTM D7205	Standard test method for tensile properties of fiber reinforced polymer matrix composite bars.
ASTM D7617	Standard test method for transverse shear strength of FRP bars.
ASTM D7957	Standard specification for solid round GFRP bars for concrete reinforcement.
ASTM D7913	Standard test method for bond strength of FRP bars to concrete by pullout testing.
CSA S806	Canadian standard for design and construction of building components with FRP.

A Material Safety Data Sheet (MSDS) and Method Statement for GFRP Rebars are available upon request, covering product composition, handling protocols, PPE requirements, and installation methodology — compliant with international safety standards.



8. Global Track Record — GFRP in Practice

GFRP is not experimental technology. It has been deployed at scale in demanding infrastructure projects worldwide for over two decades. FRP brings this proven global track record to Egypt.

International Projects	Government & Policy Support
• Egypt — Suez Canal Tunnels: corrosion-free infrastructure in a permanent chloride environment • Canada — Waterloo Bridge: GFRP deck reinforcement selected for freeze-thaw cycle resistance • USA — Florida saltwater bridges: no corrosion after 50+ years in service • Japan — Seismic-resistant commercial buildings using GFRP as primary reinforcement • Middle East — Dubai Metro expansion: GFRP chosen for long-term durability in the Gulf climate	• Egypt: ECP 208-2019 enacted — GFRP is now code-compliant for Egyptian buildings • Egypt: HBRC International Conference on Green Smart Sustainable Building promotes GFRP adoption • GCC: Saudi Vision 2030 and Gulf infrastructure programs actively promote non-corrosive materials • EU: Green Deal funds low-carbon construction materials • USA: Federal grants support infrastructure using composite materials



9. Why Partner with FRP for Industry & Commerce

Local Egyptian manufacturer	No import lead times. Competitive EGP pricing. Supply continuity.
ECP 208 design support	We provide design tables, worked examples, and engineering support aligned to the Egyptian code so your team can specify and approve GFRP with confidence.
Full technical package	Technical data sheets, MSDS, method statement, installation guidelines, and on-site training — all included.
Proven local references	50+ slab-on-grade units delivered; projects in New Administrative Capital, Nasr City, 3rd Settlement, Fayoum, and Abu Rawash.
Sustainability credentials	95% lower CO ₂ than steel production. LEED credit contribution. Inert, non-toxic, long-life material.
End-to-end service	From design consultation and quantity take-off through delivery, installation supervision, and quality inspection before concrete pour.

10. Contact Us

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