Fiberglass Rebar

REINFORCEX

Reinforce-X sand-coated Fiberglass Rebar is a high-performance, non-metallic concrete reinforcement bar engineered for both structural and non-structural applications. Manufactured using a proprietary pultrusion process, Fiberglass Rebar is composed exclusively of boron-free glass fibers, which are chemically stable and engineered to provide superior corrosion resistance in aggressive environments, including those with chlorides and alkalis.

This reinforcement system is embedded in a custom-formulated resin matrix, designed for optimal durability and tensile capacity. A coarse sand coating is applied to the surface to improve mechanical bond with concrete and reduce the risk of splintering during handling and installation.

Reinforce-X sand-coated Fiberglass Rebar reflects an unwavering commitment to structural integrity and longevity. It is significantly lighter than steel - making it easier to transport, handle, and install - yet maintains exceptional tensile strength. Its non-corrosive nature results in extended service life of concrete structures, especially in coastal, chemical, or deicing exposure zones.

Every batch is produced under tightly controlled quality assurance procedures to ensure compliance with stringent mechanical standards and project-specific requirements.

Stronger than steel | Lighter than steel | Lower cost | Easier to haul | Rust proof | Splinter free

CODE COMPLIANCE

Reinforce-X sand-coated rebar is manufactured to meet or exceed applicable mechanical and physical performance requirements for glass fiber reinforced polymer (GFRP) reinforcement systems and is intended for use in performance-based concrete design.

ASTM D7957: Reinforce-X sand-coated rebar complies with all applicable mechanical property requirements specified in ASTM D7957 for solid-round GFRP bars. Production lot certification is available upon request at the time of purchase.

ACI 332 & ACI 440: Approved for use in residential concrete applications, including foundations and footings, when designed in accordance with ACI 440 methodologies and as permitted by ACI 332.

ACI 401.1: Relevant for structural performance-based design considerations involving advanced reinforcement materials.

ICC-ES AC454: Meets or exceeds ICC-ES AC454 acceptance criteria, including required performance thresholds for bond strength, tensile capacity, and tensile modulus of elasticity.

ICC-ES AC521: Meets or exceeds ICC-ES AC521, which establishes supplementary evaluation methods and acceptance criteria for fiber-reinforced polymer reinforcement systems.

TMS 402/602: Compliant for use in masonry wall reinforcement in accordance withAppendix D of TMS 402/602-22.

Proven Crack Mitigation in Concrete Flatwork
Independent testing has proven that #3 Fiberglass Rebar mitigates shrinkage cracks as effectively as #4 steel in poured slabs and can increase the long-term service life of flatwork due to the non-corrosive properties of fiberglass rebar.*

***Restrained Shrinkage Testing at University of Brescia, Italy, 2020.**

AREAS OF APPLICATION

Residential Applications:
- Driveways
- Sidewalks
- Pool decks
- Basement floors and walls
- Footings
- Masonry
- ICF construction

Commercial & Industrial Applications:
- Parking slabs
- Warehouse flooring
- Agricultural slabs
- Loading docks
- Architectural precast components
- Truck aprons
- Pour-back slabs

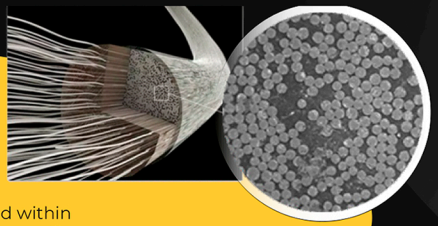
PHYSICAL & MECHANICAL PROPERTIES

Nominal diameter			Nominal cross sectional area		Unit weight/length		Guaranteed ultimate tensile force		Guaranteed ultimate tensile strength		Ultimate tensile strain	Mean tensile modulus of elasticity	
Bar size	in	mm	in²	mm²	lb/ft	kg/m	kip	kN	ksi	MPa	%	Msi	GPa
#2	0.250	6	0.05	32	0.05	0.07	6.76	30.08	138.0	951	2.03	6.80	46.88
#3	0.375	10	0.11	71	0.11	0.16	15.07	67.03	137.0	945	2.01	6.80	46.88
#4	0.500	13	0.20	129	0.18	0.27	26.90	119.66	134.5	927	1.98	6.80	46.88
#5	0.625	16	0.31	199	0.32	0.47	40.30	179.26	130.0	896	1.91	6.80	46.88

Mean transverse shear strength		Bond strength		Fiber mass content	Moisture absorption in 24H at 50°C (122°F)	Moisture absorption to saturation at 50°C (122°F)	Mean glass transition temperature (DSC)	
ksi	MPa	psi	MPa	%	%	%	°F	°C
≥19	≥131	≥1 100	≥7.6	≥70	≤0.25	<1.0	≥212	≥100

PACKAGING

Bar size	Weight per 20-foot bar (lb)	No. of bars per master bundle	Weight per master bundle (lb)	No. of bars in a full truck load (FTL)	Weight per FTL (lb/ton)
#2	0.94	500	470	46 000	43 240/21
#3	2.14	500	1 070	20 000	42 800/20
#4	3.64	250	910	12 000	43 680/22
#5	6.25	250	1 563	7 250	45 327/22



WHAT IS FIBERGLASS (GFRP)?

GFRP – GLASS FIBER REINFORCED POLYMER

Fiberglass rebar is composed of high-strength glass fibers embedded within a polymer matrix.The fibers deliver structural strength, while the polymer distributes loads among the filaments and safeguards the composite against chemical deterioration.

REINFORCE X

HANDLING & INSTALLATION

Proper procedures in planning, handling, placement, and installation of fiberglass reinforcement are essential to ensuring long-term structural performance. Adherence to best practices is strongly advised across all phases of the project lifecycle.

Installation of **Reinforce-X sand-coated Fiberglass Rebar** generally mirrors conventional methods used for steelreinforcement, with a few key distinctions:

- Fiberglass rebar may be tied using standard tools and materials traditionally used for steel reinforcement, subject to contractor preference.

- When using support chairs in concrete placements, ensure spacing meets structural requirements for concrete coverage.

- Cutting should be performed with fine-toothed saws, grinders, or blades designed for composite materials (e.g., carborundum or diamond). End sealing is not required if cut surfaces are clean.

- **Shearing is strictly prohibited**, as it compromises the bar's structural integrity.