

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	in ²	mm ²	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
7/16	0.4375	11	0.15	95	0.134	0.23	24.728	110	145	1000	2	6.90	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		

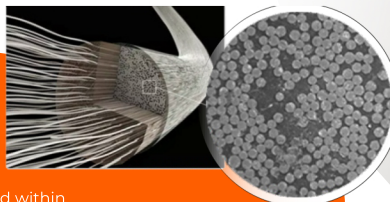
PACKAGING

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
7/16	2.96	500	1 480	14 500	42 920
#4	3.64	500	1 820	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.



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 **RCM UltraRebar** generally mirrors conventional methods used for steel reinforcement, 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.

RCM
ROBUST COMPOSITE MATERIALS

PRODUCT OVERVIEW

2x stronger
than steel



RCM **UltraRebar** is a high-performance, non-metallic concrete reinforcement bar engineered for both structural and non-structural applications. Manufactured using a proprietary pultrusion process, **RCM UltraRebar** is composed exclusively of **ECR (Electrical and Chemical Resistant)** 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.

7x lighter
than steel



RCM **UltraRebar** 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 of **RCM UltraRebar** is produced under tightly controlled quality assurance procedures to ensure compliance with stringent mechanical standards and project-specific requirements.

Lower
cost



CODE COMPLIANCE

ASTM D7957

- RCM **UltraRebar** complies with all mechanical and physical property requirements specified in ASTM D7957.
- 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 methodology 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

- Accepted under ICC-ES AC521, which defines supplementary evaluation methods and acceptance criteria for fiber-reinforced polymer reinforcement systems.

TMS 402/602

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

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



Rust proof



Easier to haul

