GATORBAR®

APPLICATION DATA SHEET

ZERO SLIVERS.
BETTER BOND.

ICC AC454 CERTIFIED (ESR-4526)
GatorBar #3 only (#4 & #5 pending)

An ACI Center of Excellence for Nonmetallic Building Materials
MEMBERSHIP



PHYSICAL PROPERTIES

	#3 BAR	#4 BAR	#5 BAR
Nominal Diameter	10 mm 3/8 in	13 mm 1/2 in	16 mm 5/8 in
Weight	.09 lbs/ft (1.8 lbs/stick) >75% Fiber Content	.166 lbs/ft (3.32 lbs/stick) >75% Fiber Content	.2475 lbs/ft (4.95 lbs/stick) >75% Fiber Content
Guaranteed Tensile Strength ASTM 7205	1100 MPa 155 ksi 17,100 lbs	1100 MPa 155 ksi 30,400 lbs	889 MPa 129 ksi 39,750 lbs
Tensile Modulus of Elasticity ASTM7205	47 GPa 6.8 x 10^6 psi	49 GPa 7.1 x 10^6 psi	44.7 GPa 6.5 x 10^6 psi
Guaranteed Transverse Shear Capacity ASTM 7617	185 MPa 26.8 ksi 6,800 lbs	185 MPa 26.8 ksi 10,500 lbs	185 MPa 26.8 ksi 16,800 lbs
ICC-ESR	AC454 Certified (ESR-4526) for #3 (#4 & #5 pending)		
Bond Strength ASTM D7913	1100 psi guaranteed for #3 and #4 (#5 pending)		
Moisture Content ASTM D570	< 0.25% (#3, #4, & #5)		
Performance Standards	Above performance criteria are met or exceeded in accordance with ASTM D7957, ASTM D7913, ACI440.11, and AC454		

PRODUCT FEATURES

- **LOWER COSTS** — 35% - 45% LABOR SAVINGS
- **ZERO SLIVERS** — GRIP TECH FOR BETTER HANDLING
- **2X STRONGER** THAN STEEL
- **4X LIGHTER** THAN STEEL
- **RUST FREE** — LONGER LASTING CONCRETE
- **BETTER BOND** — INCREASED PULL-OUT STRENGTH

APPLICATIONS

- ✓ PAVEMENTS
- ✓ PARKING LOTS
- ✓ CURB & GUTTER
- ✓ SIDEWALKS
- ✓ COMMERCIAL FLOORS
- ✓ POURED WALLS
- ✓ FOUNDATIONS & FOOTINGS
- ✓ AND MANY MORE!

HUNDREDS OF MILLIONS OF FEET IN CONCRETE

AMERICA'S REBAR

PATENT #9688030B2

ZERO POLYESTER

906.934.2661

GATORBAR.COM

GATORBAR® VS STEEL

TENSILE STRENGTH & WEIGHT COMPARISONS*

STEEL REBAR (GRADE 60)	#3 GATORBAR STRONGER	#3 GATORBAR LIGHTER	#4 GATORBAR STRONGER	#4 GATORBAR LIGHTER	#5 GATORBAR STRONGER	#5 GATORBAR LIGHTER
#3 STEEL	2.7X	4X	4.4X	2.3X	6.2X	1.2X
#4 STEEL	1.5X	7.4X	2.5X	4X	3.5X	2.7X
#5 STEEL	CALL FOR ENGINEERING ASSISTANCE		1.6X	6.3X	2.1X	4.2X
#6 STEEL	CALL FOR ENGINEERING ASSISTANCE: 906.934.2661				1.5X	6X

*FOR CRACK CONTROL CONSIDERATION. IT IS NOT GATORBAR'S INTENT TO IMPLY THAT COMPOSITE REBAR CAN REPLACE STEEL IN ALL APPLICATIONS.





SPACING RECOMMENDATIONS

GATORBAR'S DESIGN AND INSTALLATION MANUAL RECOMMENDS:	
4" CONCRETE	24" TO 30" WITH #3 GATORBAR
6" CONCRETE	18" TO 24" WITH #3 GATORBAR 24" TO 30" WITH #4 GATORBAR
8" CONCRETE	12" TO 18" WITH #3 GATORBAR 18" TO 24" WITH #4 GATORBAR

NEUVOKAS CORPORATION

SUBMITTAL
FOR
GLASS FIBER REINFORCED POLYMER (GFRP) FOR CONCRETE REINFORCEMENT

a. Description. This work consists of furnishing and placing glass fiber reinforced polymer **(**GFRP) reinforcement as detailed on the plans and specified herein.

b. GatorBar material properties are described in ESR-4526 and as applicable this document will match those requirements. This certifies that GatorBar meets the material performance and quality criteria set forth by the International Code Council (ICC) in AC 454 and AC10.

c. Materials. Furnish GFRP reinforcement that meet the following material specifications and requirements and are fabricated in accordance with the details on the plans. The size of GFRP bars shall be consistent with typical standard sizes of steel reinforcing bars.

1. Fibers. Use fibers in the form of unidirectional rovings of given size and weight with fiber sizing and coupling agents that are compatible with the resin system used to impregnate them. The GFRP reinforcement must contain 70 percent minimum, by weight of glass fiber.

2. Resin Matrix. Use commercial grades of resin. Ensure the base polymer in the resin system does not contain any polyester. Polyester based resin will not be permitted in the manufacturing process of the bar. Ensure the glass transition temperature (T_g) of the resin is not less than 212 degrees Fahrenheit (F). The glass transition temperature of the resin does not represent a service level maximum temperature, but a quality assurance tool used by the manufacturer. Test the resin matrix in accordance with the Differential Scanning Calorimetry (DSC) method as described in *ASTM E 1356*.

3. Fillers: Inorganic fillers and secondary fibers may be used, but their quantity shall not exceed 20% by weight of the base polymer resin specified. Commercial grade additives and process aids such as release agents, low profile shrink additives, initiators, promoters, hardeners, catalysts, pigments, fire-retardants, and ultra violet inhibitors are permitted and depend on the process method. If used, limit shrink additives to less than 20% by weight of the polymer resin.

4. Mechanical properties. Furnish GFRP with the following minimum requirements:

    a. Tensile Strength: this property varies with bar size. The minimum tensile strength of GFRP reinforcement is listed in Table 1. Testing shall be in accordance to ASTM D7205.

Table 1. Minimum Tensile Strength Requirements

Bar Size	Minimum Tensile Strength (ksi)
3	155
4	155

b. Tensile Modulus: The nominal tensile modulus of elasticity shall average 6,810 ksi according to ASTM D7205.

c. Transverse Shear: Transverse shear is tested according to ASTM D7617. The minimum transverse shear for all bars shall be 27 ksi.

d. Moisture Absorption: Moisture absorption tests shall be determined in accordance with ASTM D570. The maximum value of this test shall follow ACI recommendations and be less than 1.0%.

e. Bond Strength: The guaranteed bond strength for all bars must follow ACI recommendations of ACI 440.6-08, 1.4 ksi. The manufacturer is to disclose the test method used for testing bond strength. A suggested test method is ACI 440.3R test method B3.

f. Ultimate Tensile Strain: The ultimate tensile strain shall be calculated by dividing the guaranteed tensile strength by the nominal tensile modulus of elasticity. The nominal values obtained by this procedure should at least be 1.4%.

Provide GFRP rebar (GatorBar) as manufactured by:

Neuvokas Corp., 3206 Number 6 Road, PO Box 220, Ahmeek, MI 49901, (906) 934-2661

d. Construction. Before ordering material, submit approved drawings and specifications to manufacturer for quotation. This should include: bar size, length, bent shape and radius of bends, and quantities in linear feet. GFRP reinforcement bars shall be uniform in diameter/ size and free of defects that would be injurious to the mechanical and durability properties. Defects include: cracks, kinks, and surface pitting. Slight discoloration over time is typical and is not cause for concern.

1. Field Fabrication. Provide composite reinforcement in accordance with the details shown on the plans. The minimum bending radius is two feet and must utilize the necessary tying and stabilization methods to ensure reinforcement remains in the proper position before and during concrete placement. Field cut reinforcement may be accomplished using high speed grinding cutter, fine blade saw, diamond blade, or masonry blade.

2. Handling. Bars can be handled similar to their steel counterparts. Minor scratches and chipping that do not impact performance may be permitted with approval of the Engineer.

3. Storage of Reinforcement. Store reinforcement above the surface of the ground on platforms, skids, pallets, or other supports. If stored outside for an extended period of time GatorBar will yellow and it can be covered if desired. Overall strength is not affected by this yellowing and GatorBar does not need to be covered.

4. Placing and Fastening. Place all reinforcement within the tolerances recommended in the CRSI "Manual of Standard Practice" unless otherwise specified in the contract documents. Secure reinforcement firmly with mechanical fasteners during the placing and setting of the concrete. Suspend concrete placement and take corrective action if it is observed that

the reinforcement is not adequately supported or tied to resist settlement, floating upward, or movement in any direction during concrete placement.

5. Ties and Supports. It is recommended that all accessories for use with the bars such as tie wires, bar chairs, supports or clips are either plastic coated steel, stainless steel, galvanized steel or plastic, but that depending on engineering plans or application plain steel may be used. Place all reinforcement in locations as shown on the plans and securely hold in position while placing and consolidating concrete. Fasten bars together with ties at all intersections.
6. Lap Splices. Lap splices are the only approved method to tie bars together to make a continuous bar. Mechanical splices are prohibited. Ensure lap length and spacing is as specified in the contract. Provide the same cover clearances for splices that is shown or specified for the reinforcement.