

December 31, 2020

**SUBJECT: Use of 3MAX™ and 4MAX™ as a 1:1 replacement for #4 Grade 60 Reinforcement in residential foundations**

To Whom It May Concern:

3MAX™ and 4MAX™ Fiberglass Rebar are high-strength composite reinforcing bar from MSTBAR®. 3MAX™ and 4MAX™ Fiberglass Rebar is made with code-compliant Vinyl Ester Resin & corrosion-proof ECR Glass Fibers with the following properties (3MAX™ / 4MAX™):

BAR DIMENSIONS	0.375 in / 0.45 in Diameter x 20 ft Length
CROSS-SECTIONAL AREA	0.11 in <sup>2</sup> / 0.16 in <sup>2</sup>
TENSILE STRENGTH	145 ksi / 165 ksi
ELASTIC MODULUS	6675 ksi / 7550 ksi
SHEAR STRENGTH	23.5 ksi / 27 ksi
PULL-OUT CAPACITY	2600 psi / 2900 psi

The 3MAX™ reinforcement may conservatively replace standard slab on grade reinforcement one to one at spacing noted on plans. For welded wire fabric specification, 3MAX™ @ 24" o.c. each way may conservative be substituted.

The 4MAX™ reinforcement may conservatively replace standard #4 and #5 reinforcement in residential foundations including spread and continuous footings, basement walls (under 4 ft), stem walls, and piers. Contact engineering for wall greater than 4 ft.

Always wear gloves when handling 4MAX™ Fiberglass Rebar to protect against fiberglass splinters. Avoid direct contact with skin. When cutting 4MAX™ Fiberglass Rebar, use a diamond blade for best results. Tie and chair 4MAX™ Fiberglass Rebar as you would steel rebar. Generally, minimum lap splice length of 15 inches unless otherwise specified by the engineer of record.

The information in this letter is valid until **06/30/2021** when it will be re-evaluated by TUF-N-LITE. Please visit [mstbarusa.com](http://mstbarusa.com) for additional pertinent information. If you have questions or need further assistance regarding this matter, please contact TUF-N-LITE engineering at 925.750.0100

Sincerely,  
TUF-N-LITE



COMPOSITE REBAR PRODUCTS

*All MSTBAR Composite Rebar Products are ASTM D7957 Certified Building Materials. For more information on MSTBAR or other innovative products offered by TUF-N-LITE, give us a call at (513) 472-8400, or visit us on the web at [www.mstbarusa.com](http://www.mstbarusa.com)*

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