

February 15, 2023

SUBJECT: Use of MST-BAR Reinforcement in CMU Construction

To Whom It May Concern:

TMS 402/602-22 Code has added Appendix D Glass Fiber Reinforced Polymer (GFRP) Reinforced Masonry to the newest edition. In D1.1.1 Commentary it is noted:

In applying the prescriptive detailing provisions...GFRP reinforcing bars can be treated the same of steel reinforcing bars...

Wall design with MST-BAR applies to non-bearing, infill, retaining walls and lintels, but is limited to no more than 200 plf. Per Table CC-D.2.1 the following MST-BAR will meet the replacement criteria:

- #3 replaced with 3MAX™
- #4 replaced with 4MAX™
- #5 replaced with #5-MST
- #6 replaced with #6-MST

Maximum size allowed in design is a #6-MST at this time per the masonry code.

For bar laps and development, the higher bond strength of the MST-BAR we recommend (manufacturer) the following:

- Embedment lengths: 20 d_b
- Lap lengths: 40 d_b
- Hook lengths: 10 d_b

GFRP reinforcement cannot be field bent and must be fabricated in required shapes. Since GFRP rebar cannot be field modified, many installers are requesting mixing traditional reinforcement for bent rebar shapes with straight GFRP reinforcement. This hybrid installation is common AND acceptable. As GFRP can't be used for grounding, traditional rebar is often added just for this. Also footing to wall dowels, corner wall dowels and step footing "Z" bars are all examples for steel bars installed with GFRP rebar member reinforcement. Please discuss with engineer of record or our engineering department if there are questions are the mixed use within a single concrete element.

The information in this letter is valid until **12/31/2023** when it will be re-evaluated by TUF-N-LITE. Please visit www.tufnlite.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

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.tufnlite.com

