MST BAR
MAXIMUM STRENGTH GFRP

#3 Horizontal Bar™

#3 Horizontal Bar™ is the best in class GFRP (Glass Fiber Reinforced Polymer) rebar from MST-BAR. Engineered for concrete flatwork, #3 Horizontal Bar™ is manufactured with long-lasting Vinyl Ester Resin and corrosion-proof Glass to reinforce your concrete with a superior grade, code approved reinforcement.

- **Rust-Proof**
  Eliminates spalling and corrosion cracks.
- **200+ Years Service Life**
  Engineered to last for generations.
- **Quick & Simple Installation**
  Up to 50% labor savings compared to traditional steel rebar.
- **Transportation Savings**
  75% lighter than traditional steel rebar. Load on your truck's ladder rack, no Class-A CDL required.
- **High Performance in All Climates**
  Stronger reinforcement in freeze-thaw regions and guaranteed longevity in corrosive coastal regions.
- **No Waterproofing**
  Eliminates need for costly waterproofing agents and epoxy coating necessitated by rust-prone steel rebar.
- **Stronger Than Steel**
  Over 4X stronger than Grade 40 rebar.
- **Nonconductive & Nonferrous**
  Ideal for projects with electromagnetic sensitivity.
- **Superior Crack Control**
  80% less crack initiation compared to traditional steel rebar.
- **Chemical Resistant**
  Impervious to de-icing salts and other chemicals.

INFO@MSTBAR.COM • WWW.MSTBAR.COM • +1 (416) 740-0377

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PHYSICAL & MECHANICAL PROPERTIES

Nominal Bar Dimensions	0.375 in (10 mm) Diameter / 20 ft (6 m) Length
Nominal Cross-Sectional Area	0.11 in² (71 mm²)
Bar Composition	Vinyl Ester Resin & ECR Glass Fiber
Bar Profile	Integral Rib Design (No Sand-Coating Required)
Guaranteed Tensile Strength	145 ksi (1000 MPa)
Elastic Modulus	6380 ksi (45 GPa)
Transverse Shear Strength	23 ksi (160 MPa)
Guaranteed Pull-Out Capacity	2900 psi (20 MPa)

ASTM D7957 · ACI 440.6 · CSA S807

HANDLING & INSTALLATION

Working with **#3 Horizontal Bar™** is quick and simple with our best practice guidelines.

Always wear gloves when handling **#3 Horizontal Bar™** to protect against fiberglass splinters. Direct contact to skin can cause irritation.

Use a diamond blade when field-cutting **#3 Horizontal Bar™**. Do not shear the bars.

If lap-splicing is necessary, use contact lap splices. Lap length should be no less than 15 inches.

Tie and chair **#3 Horizontal Bar™** as you would steel rebar. Tie wire, rebar clips, and plastic zipties are acceptable methods of securing the bar.

Beware of settlement of loating when using **#3 Horizontal Bar™** with high slump concrete or when vibrating.

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MST-BAR Slab on Grade design for shrinkage and slight load bearing application.

In this design the following assumptions have been used:

- Soil to have a good compaction
- Bars to be placed properly
- Control joint to be cut properly
- Expansion joint to be considered properly
- Spacing between bars to be accurate

Design Aid for Slab on Grade with GFRP substituting steel reinforcement or W.W.F.

ONLY USE FOR MST-BAR • ONLY ON SLAB OF GRADE APPLICATION

Slab Thickness	Function and load	Temperature Zone	GFRP Required in each direction
100mm (4 Inches)	- Residential driveway - 5 Ton Pickup Truck - Live Load = 100 PSF	Subzero	Mid-strip: #3 Horizontal Bar @300 Edge-strip: #3 Horizontal Bar @400
150mm (6 Inches)	- Parking garage - 5 Ton Pickup Truck - Public walkway and platforms with light maintenance vehicle - Live Load = 100 PSF	Subzero	Mid-strip: #3 Horizontal Bar @300 Edge-strip: #3 Horizontal Bar@400
150mm (6 Inches)	- Live Load = 250 PSF - Commercial trucks	Subzero	Mid-strip: #3 Horizontal Bar@200 Edge-strip: #3 Horizontal Bar@400 —Plus 2 Bar @400 Top along all exposed joints
200mm (8 Inches)	- Live load = 250 PSF - Commercial trucks	Subzero	MST-BAR #3@300 —Plus 3-Bar@300 Top along all exposed joints

NOTES:

1. Sawcut control joints at 4m to 5m spacing maximum, depth of sawcut shall be 25% of slab thickness.
2. If you wish to use MST-BAR 10M(3/8") bars you can increase the spacing accordingly based on tensile capacity of the MST-BAR, capacity between the two is 26%, therefore spacing can be increased by 26%.
3. Expansion joints shall be at maximum spacing of 15 meters(50ft.).
4. Mid-strip is 50% of width of panel between joints.
5. Edge-strip is 25% of width of panel along all joints.
6. All #3 Horizontal Bar rebars are placed at mid-depth of slab unless otherwise noted
7. Cover to additional top rebars shall be 30 to 40mm minimum

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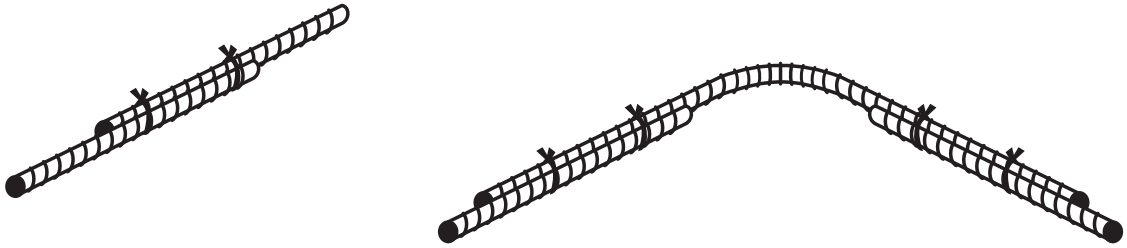
Splices and Corners



Overlap 40 bar diameters.