

# TUF-BAR

## Fiberglass Rebar 45 GPa Straight Bars

## 100+ Years Concrete Reinforcement

Ultimate Corrosion Solution

### APPLICATIONS

- Bridge Decks and Barrier Walls
- Roads, Parking Garages and Concrete Slabs
- Power Generation and MRI
- Tunneling and Temporary Reinforcement
- Dams, Sea Walls and Marine Applications

TUF-BAR uses the highest quality corrosion resistant vinyl ester resin and E-CR fiberglass materials.

- ▶ **Contributes 7 LEED Credits**
- ▶ **Bends in all sizes**
- ▶ **Custom lengths**

### 100+ Years Sustainability

- ▶ 300% Total Project Savings
- ▶ Zero Maintenance
- ▶ ¼ The Weight of Steel
- ▶ 2X Tensile Strength of Steel
- ▶ Non-Magnetic
- ▶ Non-Conductive
- ▶ Thermal Insulation

ISO 9001 • ISO 14001 • OHSAS 18001

# TUF-BAR 45 GPa Straight Bars

## Product Data Sheet: TUF-BAR 45 GPa Straight Bar April 2021

	Units	#3-45	#4-45	#5-45	#6-45	#7-45	#8-45
Nominal Diameter (CSA S807)	mm	10	13	15	20	22	25
	inch	3/8	1/2	5/8	3/4	7/8	1
Fiber Type	E-CR glass						
Resin Type	Vinyl ester						
Minimum Guaranteed Ultimate Tensile Strength (ASTM D7205 / CSA S806)	MPa	1000	850	925	900	900	850
	ksi	145	123	134	130	130	123
Minimum Modulus of Elasticity (ASTM D7205 / CSA S806)	GPa	49.1	45.6	48.8	51.0	49.6	52.0
	ksi	7115	6608	7079	7395	7195	7547
Ultimate Elongation	%	2.3	2.1	2.1	2.0	1.9	1.8
Average Bond Strength (ASTM D7913)	MPa	17.4	12.7	15.1	14.4	13.6	13.5
	ksi	2.5	1.8	2.2	2.1	2.0	2.0
Transverse Shear Strength (ASTM D7617)	MPa	219.3	209.7	202.7	190.3	199.2	183.5
	ksi	31.8	30.4	29.4	27.6	28.9	26.6
Longitudinal Thermal Expansion Coefficient (ASTM E831)	10-6/°C	7.9	8.6	6.7	7.3	8.9	8.7
	10-6/°F	4.4	4.8	3.7	4.0	5.0	4.8
Transverse Thermal Expansion Coefficient (ASTM E831)	10-6/°C	21.7	24.2	25.4	23.6	24.5	25.2
	10-6/°F	12.1	13.4	14.1	13.1	13.6	14.0
Water Absorption (ASTM D570)	%	0.5	0.5	0.5	0.4	0.4	0.3
Linear Weight	g/m	150	259	433	611	816	1105
	lb/ft	0.10	0.17	0.29	0.41	0.55	0.74
Effective Cross Sectional Area (Including Coating) (CSA S807 Annex A)	mm <sup>2</sup>	72	123	203	290	399	530
	inch <sup>2</sup>	0.111	0.190	0.315	0.450	0.618	0.821
Nominal Cross Sectional Area (CSA S807)	mm <sup>2</sup>	71	129	199	284	387	510
	inch <sup>2</sup>	0.110	0.200	0.308	0.440	0.600	0.791

### TUF-BAR 45 Straight Bars Comply with:

- CSA S807, Grade I
- MTO, Grade I
- ASTM D7957



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