

Glasspree® E46 round bars and stirrups



Glass fiber round bars obtained through a pultrusion process impregnated with vinylester resin, used for permanent concrete reinforcements. Corrosion resistance GLASSPREE bars give reinforced concrete structures a longer service life than steel reinforcements.

GLASSPREE ROUND BARS SPECIFICATIONS

Property	Limit According to ASTM D7957	Test Method
Mean glass transition temperature	Midpoint temperature >100°C (212°F)	ASTM E 1356
Mean measured cross-sectional area	Ref Table 3 – ASTM D7597	ASTM D7205/D7205M, subsection 11.2.5.1.
Mean tensile modulus of elasticity	>44.8 GPa (6.500.000 psi)	ASTM D7205/D7205M
Mean ultimate tensile strain	>1.1%	ASTM D7205/D7205M
Guaranteed transverse shear strength	>131 MPa (19.000 psi)	ASTM D7617/D7617 M
Guaranteed bond strength	>7.6 MPa (1.100 psi)	ASTM D7913/D7913 M
Mean moisture absorption to saturation	<1.0% to saturation at 50°C (122°F)	ASTM D570, subsection 7.4
Guaranteed ultimate tensile force of bent Portion of bar	>60% of the values in Table 3 [ASTM D7957]	ASTM D7914/D7914 M

GLASSPREE® E46 ROUND BARS

Diameter mm	Bar designation	Nominal bar area mm ²	Guaranteed tensile strength f*fu (=ffk) - MPa	Tensile modulus of elasticity – Ef GPa	Ultimate strain	Ultimate tensile load kN
6	#2	32	900	46	1.9%	>27
10	#3	71	900	46	1.8%	>59
12	#4	129	850	46	1.6%	>96
16	#5	199	800	46	1.6%	>130
20	#6	284	780	46	1.5%	>182
22	#7	387	750	46	1.4%	>241
25	#8	510	750	46	1.3%	>297
30	#9	645	600	46	1.3%	>365
32	#10	819	580	46	1.2%	>437

f*_{fu} = mean tensile strength minus three times standard deviation (ACI 440.1R-2015).



GLASSPREE® E46 STIRRUPS AND BENT BARS

Diameter (mm)	Bar designation	Inside bend diameter mm	Nominal bar area mm ²	Tensile strength MPa	Elastic modulus GPa	Ultimate load kN
12	#4	>76	129	379	46	50
16	#5	>96	198	362	46	75
20	#6	>114	295	345	46	100

