

Table 1.1 - SFT-Bar® G60 Grade III

Resin type: Vinylester

vs Steel W400 (High Quality)

Bar Size Imperial # [Metric]	Nominal Cross Sectional Area mm ² [in. ²]	Tensile Strength MPa		Modulus of elasticity GPa		Transverse Shear Strength MPa		Ultimate Strain ϵ_f (%)		Bond Strength MPa	Glass Transition Temperature (°C)
		Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®		
#2 [6mm]	32 [0.049]	*	*	60	*	≥ 180	≥ 186	1.2 %	1.5 %	≥ 10	≥ 100
#3 [10mm]	71 [0.11]	*	1237		72						
#4 [13mm]	129 [0.20]	1,000	1442		70						
#5 [16mm]	199 [0.31]		1226		71						
#6 [20mm]	284 [0.44]		1281		68						
#7 [22mm]	387 [0.60]		1216		70						
#8 [25mm]	510 [0.79]		1208		68						

*Minimum specified tensile strength to be provided by manufacturer; value to be determined from qualification tests

G60 SFT-Bar® are Concrete Reinforcing Bars that can be used in most Concrete applications (such reinforcing bars can be considered for most primary or secondary structural applications) as defined by the CSA S807 & ASTM D7957/D7957M-22 (2022) standards.

Table 1.2- SFT-Bar® Poly & G40 Grade I

Resin type: G40 Vinylester | Poly: Polyester

vs Steel (Lowest Quality) |
For non-structural use only

Bar Size Imperial # [Metric]	Nominal Cross Sectional Area mm ² [in. ²]	Tensile Strength MPa		Modulus of elasticity GPa		Transverse Shear Strength MPa		Ultimate Strain ϵ_f (%)		Bond Strength MPa	Glass Transition Temperature (°C)
		Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®		
#2 [6mm]	32 [0.049]	750	962	40	52	≥ 160	≥ 173	1.2 %	1.5 %	≥ 10	≥ 80
#3 [10mm]	71 [0.11]	750	905		50						
#4 [13mm]	129 [0.20]	650	856		49						
#5 [16mm]	199 [0.31]		845		51						
#6 [20mm]	284 [0.44]	600	820		53						
#7 [22mm]	387 [0.60]	550	825		50						
#8 [25mm]	510 [0.79]		806		51						

*Minimum specified tensile strength to be provided by manufacturer; value to be determined from qualification tests

Polyester and G40 SFT-Bar® are Concrete Reinforcing Bars that are meant to be used exclusively in non-structural Concrete Building applications (such reinforcing bars should not be considered for any primary or secondary structural applications) as defined by the CSA S807 & ASTM D7957/D7957M-22 (2022) standards.

Important Notes for Tables 1.1 & 1.2

- Nominal cross-sectional area is not based on designated diameter.
- Tensile properties is calculated using nominal cross-sectional areas.
- Guaranteed value: Average value - 3 × standard deviation (ACI 440.11-22)
- The designers should contact the bar manufacturer for the latest updates of this technical data sheet

Reference Codes

- CAN/CSA S807-19 (2019)
- CAN/CSA S806-12 (2021)
- CAN/CSA S6-19 (2019)
- ASTM D7957/D7957M-22 (2022)



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Important Notes for Tables 2.1, 2.2 and 2.3

- Nominal cross-sectional area is not based on designated diameter.
- Tensile properties is calculated using nominal cross-sectional areas.
- Guaranteed value: Average value - 3 × standard deviation (according to respective ASTM codes)
- The designers should contact the bar manufacturer for the latest updates of this technical data sheet

Table 2.1 - G60 SFT-Bar® American Standards tested according to ASTM D7957/D7957M-22

Bar Size Imperial # [Metric]	Nominal Cross Sectional Area mm ² [in. ²]	Ultimate Tensile Force kN [kip]*		Modulus of elasticity MPa [ksi]		Transverse Shear Strength MPa		Ultimate Strain ε _f (%)		Bond Strength MPa	Glass Transition Temperature (°C)
		Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®	Standard	SFT-Bar®		
#2 [6mm]	32 [0.049]	27 [6.1]	33 [7.4]	44,800 [6,498]	70,000 [10,160]	≥ 131 [19]	≥ 186 [27]	≥ 1.1 %	≥ 1.5 %	≥ 7.6 [1.1]	≥ 100
#3 [10mm]	71 [0.11]	59 [13.2]	71 [16.0]		75,000 [10,885]						
#4 [13mm]	129 [0.20]	96 [21.6]	124 [27.9]		72,000 [10,450]						
#5 [16mm]	199 [0.31]	130 [29.1]	155 [34.9]		60,000 [8,708]						
#6 [20mm]	284 [0.44]	182 [40.9]	236 [53.2]		65,000 [9,434]						
#7 [22mm]	387 [0.60]	241 [54.1]	337 [75.8]		68,000 [9,869]						
#8 [25mm]	510 [0.79]	297 [66.8]	422 [94.9]		65,000 [9,434]						

*Minimum specified tensile strength to be provided by manufacturer; value to be determined from qualification tests

G60 SFT-Bar® are Concrete Reinforcing Bars that can be used in most Concrete applications (such reinforcing bars can be considered for most primary or secondary structural applications) as defined by the ASTM D7957/D7957M-22 (2022) standards.

Table 2.2 - Poly SFT-Bar®

Bar Size Imperial # [Metric]	Nominal Cross Sectional Area mm ² [in. ²]	Ultimate Tensile Force kN [kip]*	Modulus of elasticity MPa [ksi]	Transverse Shear Strength MPa	Ultimate Strain ε _f (%)	Bond Strength MPa	Glass Transition Temperature (°C)
		SFT-Bar®	SFT-Bar®	SFT-Bar®	SFT-Bar®		
#2 [6mm]	32 [0.049]	30 [6.7]	52,000 [7,547]	≥ 173 [25]	≥ 1.5 %	≥ 10 [1.5]	≥ 80
#3 [10mm]	71 [0.11]	64 [15.2]	50,000 [7,257]				
#4 [13mm]	129 [0.20]	110 [24.7]	49,000 [7,112]				
#5 [16mm]	199 [0.31]	168 [37.8]	51,000 [7,402]				
#6 [20mm]	284 [0.44]	232 [52.1]	53,000 [7,692]				
#7 [22mm]	387 [0.60]	319 [71.1]	50,000 [7,257]				
#8 [25mm]	510 [0.79]	411 [92.3]	51,000 [7,402]				

*Minimum specified tensile strength to be provided by manufacturer; value to be determined from qualification tests

Polyester SFT-Bar® are Concrete Reinforcing Bars that are meant to be used exclusively in non-structural Concrete Building applications (such reinforcing bars should not be considered for any primary or secondary structural applications) as defined by the ASTM D7957/D7957M-22 (2022) standards.

Table 2.3 - SFT-Bar® vs Steel Bar Comparative Properties

GFRP vs Steel | For structural and non-structural use

Rebar Type	Tensile Strength ^a (MPa)	Modulus of Elasticity (GPa)	Bond Strength (MPa)	Thermal Conductivity W/(m.o C)	Density (kg./m ³)	Electrical ^b Resistivity (Ω . cm)	Concrete Cover (mm) ^c
SFT-Bar® (ASTM D7957)	850 - 1250	46 - 70	15	< 1	1,200-2,100	> 10 ¹¹	30
Stainless Steel (ASTM A955)	560	200	10	16	7,850-7,900	> 1x10 ⁻⁴	40-70
Steel (ASTM A615)	560	200	10	54	7,900	> 1.5 x 10 ⁻⁵	40-70

^a Guaranteed Tensile Strength for SFT-Bar®, yield strength for Stainless & black Steel bars | ^b Approximate values | ^c According to ACI 440.5 and ACI 318 for exposure conditions

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- ASTM D7957/D7957M-22 (2022)
- ACI 440.11-22 (2022)
- AASHTO (2018)

