

EJOT Solar Fastening System – Technical Data Sheet

The following table shows an extract of the characteristic tensile forces of the EJOT Solar Fastening System related to different screw-in depths in softwood, at the same time taking into consideration the duration of the load (k_{mod}).

If required, EJOT offers the possibility to estimate your respective project through an initial sizing and this way gives a recommendation for the optimal configuration and quantity of fastenings to be used. Nonetheless, this initial sizing does not substitute the analysis by an approved structural engineer.

Characteristic load-bearing values in soft wood (Table 1)

Characteristic load-bearing values $N_{R,K}$ (in Pound-force lb (Kilonewton kN)) for the EJOT Solar Fastening System JA3-SB-8.0 x L (d=5/16") in soft wood (strength class C24, usage class 2) Depending on the accumulated load duration and the screw-in depth l_{ef}					
Screw-in depth l_{ef} in inches	Standard $k_{mod} = 0,6$ Longer than 10 years (usually intrinsic weight)	Long $k_{mod} = 0,7$ 6 months to 10 years	Medium $k_{mod} = 0,8$ 1 week to 6 months (usually snow)	Short $k_{mod} = 0,9$ Shorter than 1 week (usually wind)	Very Short $k_{mod} = 1,1$ Shorter than 1 minute
	lb (kN)	lb (kN)	lb (kN)	lb (kN)	lb (kN)
1.260	296.75 (1.32)	346.21 (1.54)	395.66 (1.76)	445.12 (1.98)	544.04 (2.42)
1.575	370.93 (1.65)	431.63 (1.92)	494.58 (2.20)	555.28 (2.47)	678.92 (3.02)
1.772	415.90 (1.85)	485.59 (2.18)	555.28 (2.47)	624.97 (2.78)	764.35 (3.40)
1.890	445.12 (1.98)	519.31 (2.31)	591.25 (2.63)	665.43 (2.96)	813.81 (3.62)
1.969	463.11 (2.06)	539.54 (2.40)	615.98 (2.74)	694.66 (3.09)	847.53 (3.77)
2.205	519.31 (2.31)	604.74 (2.69)	690.16 (3.07)	777.84 (3.46)	950.94 (4.23)
2.362	555.28 (2.47)	647.45 (2.88)	739.62 (3.29)	831.79 (3.70)	1018.38 (4.53)
2.520	591.25 (2.63)	690.16 (3.07)	789.08 (3.51)	888.00 (3.95)	1085.83 (4.83)
2.756	647.45 (2.88)	755.36 (3.36)	863.27 (3.84)	971.17 (4.32)	1186.99 (5.28)
2.835	665.43 (2.96)	777.84 (3.46)	888.00 (3.95)	1000.40 (4.45)	1220.71 (5.43)
3.150	739.62 (3.29)	863.27 (3.84)	986.91 (4.39)	1110.56 (4.94)	1357.85 (6.04)
3.347	786.83 (3.50)	917.22 (4.08)	1049.86 (4.67)	1180.25 (5.25)	1441.03 (6.41)
3.465	813.81 (3.62)	950.94 (4.23)	1085.83 (4.83)	1220.71 (5.43)	1492.73 (6.64)
3.543	831.79 (3.70)	971.17 (4.32)	1110.56 (4.94)	1249.94 (5.56)	1526.45 (6.79)
3.780	888.00 (3.95)	1036.37 (4.61)	1184.74 (5.27)	1333.12 (5.93)	1627.62 (7.24)
3.937	926.21 (4.12)	1079.08 (4.80)	1234.20 (5.49)	1387.07 (6.17)	1697.31 (7.55)
4.095	962.18 (4.28)	1121.80 (4.99)	1283.66 (5.71)	1443.27 (6.42)	1764.75 (7.85)
4.331	1018.38 (4.53)	1186.99 (5.28)	1357.85 (6.04)	1526.45 (6.79)	1865.91 (8.30)
4.409	1036.37 (4.61)	1209.47 (5.38)	1382.58 (6.15)	1555.68 (6.92)	1899.64 (8.45)
4.724	1110.56 (4.94)	1294.90 (5.76)	1481.49 (6.59)	1665.83 (7.41)	2036.77 (9.06)

Conversion from metric to imperial dimension units: It has to be noted that no responsibility is taken for any data, despite careful preparation. EJOT disclaims all liability. Conversion of the data in kN (taken from the German Technical Approval Z-14.4-532) to Pound-force through <http://www.convertworld.com/de/kraft/Pound-force.html>

Characteristic values of the tensile and compressive strength $N_{R,K}$ (Pound-force lb (Kilonewton kN)) of the EJOT Solar Fastening System JZ3-SB-8.0 x L in steel (Table 2)

	Thickness of the steel substructure			
	0.059" (1.50 mm)	0.079" (2.00 mm)	0.118" (3.00 mm)	≥ 0.158" (≥ 4.00 mm)
$N_{R,K}$ [lb (kN)]	494.58 (2.20)	764.35 (3.40)	1303.89 (5.80)	1528.70 (6.80)

- For intermediate substructure thicknesses, the $N_{R,K}$ for the smaller component thickness must be taken.
- In the case of thin ($t_{II} \leq 0.079"$), un-symmetrical (e.g. C or Z profiles) substructures, the characteristic load-bearing values $N_{R,K}$ must be reduced by 30%.

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Pre-drilling diameter in mm for profiled metal sheets and substructure (Table 3)

EJOT Solar Fastening	Thickness of the substructure				
	Steel				Wood
	0.059" < 0.197" (1.5 < 5.0 mm)	0.197" < 0.295" (5.0 < 7.5 mm)	0.295" < 0.394" (7.5 ... < 10 mm)	≥ 0.394" (≥ 10 mm)	≥ 1.260" (≥ 32 mm)
JZS-SB-8.0 x L	6.8 mm	7.0 mm	7.2 mm	7.4 mm	-
JA3-SB-8.0 x L	-	-	-	-	5.5 mm

Pre-drilling diameter in the profiled metal sheets = Pre-drilling diameter in the substructure

Metric drill diameters are necessary for optimal holding/clamping characteristics! Metric drills have to be used not to void the warranty!

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