

Guardian Fasteners for wooden substrates

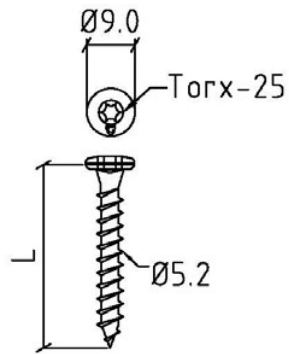


Fig. 38
TS 5.2 Screw for fixing in wood

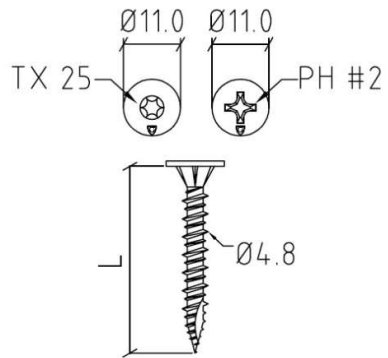


Fig. 39
MTS 4.8 screw for fastening metal to timber constructions

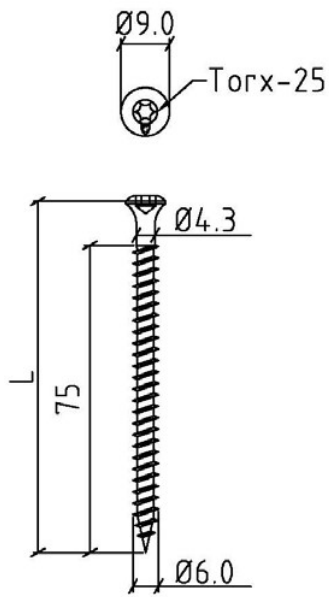


Fig. 40
LBS 6.0 Screw for light weight concrete, concrete and wooden substrates
LBS-S 6.0 Stainless screw for lightweight concrete and wooden substrates

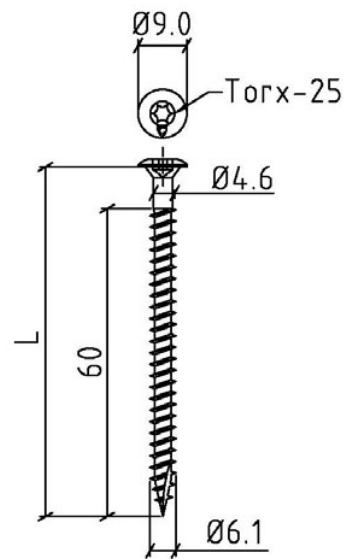


Fig. 41
HD 6.1 Screw for light weight concrete, concrete and wooden substrates

Table 5: Wood substrate

Fastener	Substrate	Washer	R _k : Characteristic values of axial load resistance (kN)
GUARDIAN HD 6.1	18 mm OSB/3 ⁷⁾	-	1.36
GUARDIAN HD 6.1	18 mm multilayer wood deck ¹²⁾	-	2.37
GUARDIAN HD 6.1	18 mm wood deck underlayment ¹¹⁾	-	1.94
GUARDIAN MTS 4.8	18 mm OSB/3 ⁷⁾	SP 50	1.16
GUARDIAN TS 5.2	17mm softwood ⁹⁾	SP 50	1.28
GUARDIAN TS 5.2	23mm softwood ⁹⁾	SP 50	1.90
GUARDIAN TS 5.2	18 mm OSB/3 ⁷⁾	SP 50	1.35
GUARDIAN TS 5.2	18 mm chipboard ¹⁰⁾	SP 50	1.18
GUARDIAN TS 5.2	18 mm multilayer wood deck ¹²⁾	SP 50	1.89
GUARDIAN TS 5.2	18 mm wood deck underlayment ¹¹⁾	SP 50	1.94
GUARDIAN LBS 6.0	18 mm OSB/3 ⁷⁾	SP 50	1.40
GUARDIAN LBS 6.0	23mm softwood ⁹⁾	SP 50	2.00
GUARDIAN LBS-S 6.0	18 mm OSB/3 ⁷⁾	SP 50	1.44
GUARDIAN LBS-S 6.0	18 mm Plywood ⁸⁾	SP 50	2.92
GUARDIAN BS 4.8	18 mm OSB/3 ⁷⁾	SP 50	1.05
GUARDIAN BS 4.8	18 mm Plywood ⁸⁾	SP 50	1.80
GUARDIAN BSRF 4.8	18 mm OSB/3 ⁷⁾	SP 50	1.05
GUARDIAN BSRF 4.8	18 mm Plywood ⁸⁾	SP 50	1.54
GUARDIAN DBTA 4.8	18 mm OSB/3 ⁷⁾	SP 50	1.05
GUARDIAN DBTA 4.8	18 mm Plywood ⁸⁾	SP 50	1.80

⁷⁾ OSB board type 3 according to EN 300

⁸⁾ Plywood according to EN 636-2, structural application

⁹⁾ Soft wood according to EN 338 C24

¹⁰⁾ Chipboard according to EN 312:2010 class P4 minimum

¹¹⁾ Multilayer wood deck Underlayment according to EN 636-2 Structural application

¹²⁾ Multilayer wood deck according to EN 636-2 Structural application

Table 6: Pullover test of washer

Washer	Fastener ¹³⁾ Guardian														R _k : Characteristic values of axial load resistance	Durability according to EAD 030351-00-0402		
	ACS 6.1	BS 4.8	BS 5.5	BS 6.1	BS 6.8	BSHD 4.8	BSRF 4.8	CS 6.1 / CS S 6.1	DB(A) 4.8	DBT(A) 4.8	DBT(A)-S 4.8	HD 6.1	LBS 6.0 / LBS S 6.0	LBS-8.0			PS 4.8	TS 5.2
SP-40 – D/F/DD/FD	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.88	Approved
SP-40-LBS	-													X			4.29	Approved
SP-50-D. F. S	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	4.83	Approved
SPB-50-S	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	4.83	Approved
SP-70-D. F. S	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	2.88	Approved
SP 8240-D/F/S	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	5.30	Approved
SPA 8240-D/F	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	-	5.00	Approved
STBS	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.68	Approved
Sleeve R23 – STBT	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.78	Approved
Sleeve R23 – STBS7T15	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.78	Approved
Guardian screw-STBS7T15	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.68	Approved
STBST	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.68	Approved
Sarnabar + R23	X	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.78	Approved
Sarnabar + Guardian screw	-	X	X	X	X	X	X	X	X	X	X	X	X	-	X	X	5.00	Approved
GWSP (*)-80-F2E	-	-	X	X	X	-	-	X	-	-	-	-	X	-	-	X	2.48	Approved
Sleeve GWT + GWSP (*)-80-F4E	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.17	Approved
Sleeve R 45	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve RPA 45	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.00	Approved
Sleeve R 48	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve RPA 48	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.00	Approved
Sleeve RB 48	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve RBPA 48	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	3.00	Approved
Sleeve RBS 50	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve R 75	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve TBPP 8040	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	1.58	Approved
Sleeve TBPA 8040	-	X	X	X	X	X	X	X	-	-	-	X	X	-	X	X	2.52	Approved
PP 45	-	X	X	X	-	X	X	X	-	-	-	-	X	-	X	X	2.50	Approved
Sleeve HR 45	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.58	Approved
Sleeve HR 48	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.58	Approved
Sleeve HR 75	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.58	Approved
Sleeve R45-LN	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	1.58	Approved
Sleeve R48-LN	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	1.58	Approved
Sleeve R75-LN	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	1.58	Approved

¹³⁾Obtained values from the axial load test in different substrates (table 2 - 5) and the pullover test (table 6) of washers/sleeves are compared and the lowest of the two gives the characteristic value for the fastener / sleeve, washer combination of the application.