

Guardian Tubes

Guardian R45 sleeve range

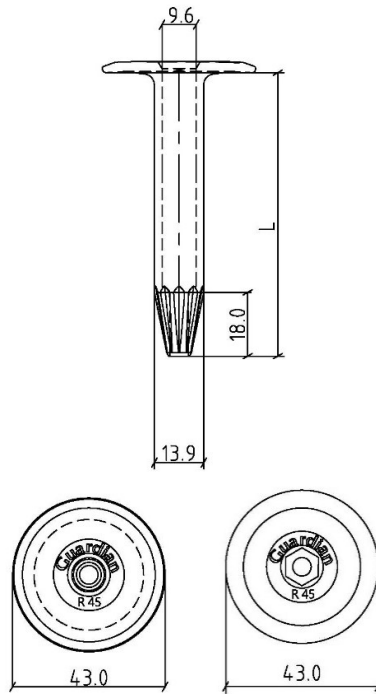


Fig. 1

Tube washer R-45 (Polypropylene)
 Tube washer HR-45 with hexagonal internal tube shape (used together with ACS 6.1)
 Tube washer RPA-45 (Polyamide)

Guardian R48 sleeve range

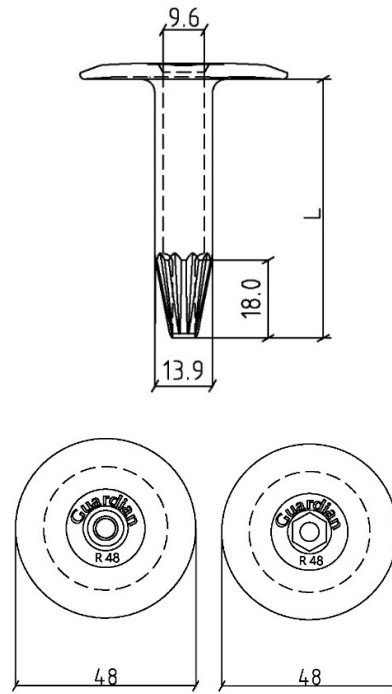


Fig. 2

Tube washer R-48 (Polypropylene)
 Tube washer HR-48 with hexagonal internal tube shape (used together with ACS 6.1)
 Tube washer RPA-48 (Polyamide)

Guardian RB48 sleeve range

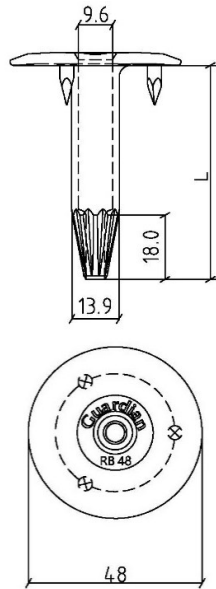


Fig. 3

Tube washer RB-48 with three barbs (Polypropylene)
 Tube washer RBPA-48 with three barbs (Polyamide)

Guardian RBS50 sleeve range

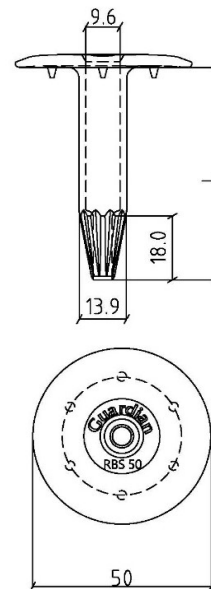


Fig. 4

Tube washer RBS-50 with six barbs

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.