

S-RVE – OPTION 7



- *Unique identification code of the product-type:*
SMART S-RVE
- *Type or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):*
See annex 1 to this document
- *Intended uses of the construction product, in accordance with the applicable harmonized technical specification as foreseen by the manufacturer:*

Intended use or uses of the construction product according to ETAG 001 Part 5	
Generic type	Bonded injection type anchor sizes M8, M10, M12, M16, M20, M24.
For use in	For use in non-cracked concrete with threaded rods in the range C20/25 as a minimum up to a maximum of C50/60 according to EN 206-1:2000-12.
Option / Category	ETAG001 Part 5 Option 1 used as an EAD
Loading	static, quasi static
Material	<ul style="list-style-type: none"> a) Carbon steel, galvanized, class 5.8, 8.8 and 10.9 according to EN ISO 898-1 for dry internal conditions. b) Stainless steel A2-70, A4-70 and A4-80 according to EN ISO 3506 for dry internal conditions, external atmospheric exposure (including industrial and marine environment) or exposure in permanently damp internal conditions if no particular aggressive conditions exist. c) High resistant corrosion stainless steel 1.5429, 1.4565 according to EN 10088 for all conditions.
Temperature range	Service temperature range: -40°C to +80°C. Maximum short term temperature = +80°C. Maximum long term temperature = +50°C.

- *Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11 (5):*
pgb-Polska sp. z o.o. – Ul. Jondy 5 – 44-100 Gliwice – Polska
- *System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:*
System 1

- In case of the declaration of performance concerning a construction product for which European Technical Assessment has been issued:

ETA - 15/0871 issued by	TZUS Praha
Body nr	NB 1020
On the basis of	ETAG001 Part 1 and ETAG001 Part 5
Certificate of Conformity issued by	TZUS
Under System	1

Declared performance – Essential characteristics – Performances

Essential characteristics			Performances						Technical specification
			M8	M10	M12	M16	M20	M24	
Installation parameters									ETAG001 p1/5
d_0	Nominal diameter of drill bit:	[mm]	10	12	14	18	22	26	
T_{inst}	Nominal installation torque:	[Nm]	10	20	40	80	150	200	
$h_{ef,min} = 8d$									
h_0	Depth of drilled hole:	[mm]	64	80	96	128	160	192	
S_{min}	Minimum spacing:	[mm]	35	40	50	65	80	96	
C_{min}	Minimum edge distance:	[mm]	35	40	50	65	80	96	
h_{min}	Minimum thickness of concrete member:	[mm]	$h_{ef} + 30 \text{ mm} \geq 100$			$h_{ef} + 2d_0$			
$h_{ef,max} = 12d$									
h_0	Depth of drilled hole:	[mm]	96	120	144	192	240	288	
S_{min}	Minimum spacing:	[mm]	50	60	70	95	120	145	
C_{min}	Minimum edge distance:	[mm]	50	60	70	95	120	145	
h_{min}	Minimum thickness of concrete member:	[mm]	$h_{ef} + 30 \text{ mm} \geq 100$			$h_{ef} + 2d_0$			
Tension load: steel failure – characteristic resistance									ETAG001 p1/5
$N_{Rk,s}$	Steel grade 5.8	[kN]	18	29	42	79	123	177	
$N_{Rk,s}$	Steel grade 8.8	[kN]	29	46	67	126	196	282	
γ_{Ms}	Partial safety factor	[-]	1,5						
$N_{Rk,s}$	Steel grade 10.9	[kN]	37	58	84	157	245	353	
γ_{Ms}	Partial safety factor	[-]	1,4						
$N_{Rk,s}$	Stainless steel A2-70, A4-70	[kN]	26	41	59	110	172	247	
γ_{Ms}	Partial safety factor	[-]	1,9						
$N_{Rk,s}$	Stainless steel A4-80	[kN]	29	46	67	126	196	282	
γ_{Ms}	Partial safety factor	[-]	1,6						
$N_{Rk,s}$	Stainless steel 1.4529	[kN]	26	1	59	110	172	247	
γ_{Ms}	Partial safety factor	[-]	1,5						
$N_{Rk,s}$	Stainless steel 1.4565	[kN]	26	41	59	110	172	247	
γ_{Ms}	Partial safety factor	[-]	1,9						
Tension load: combined pull-out and concrete failure in non-cracked C20/25 concrete									TR029
T_{Rk}	Characteristic bond resistance dry / wet concrete or flooded holes:	[N/mm ²]	10	8	9	9.5	8.5	8.5	
γ_{Mc}	Partial safety factor: ¹	[-]	1,8 ²						
ψ_c	C30/37	[-]	1,12						
ψ_c	C40/45	[-]	1,19						
ψ_c	C50/60	[-]	1,30						
Tension load: splitting failure									ETAG001 p1/5
$C_{cr,sp}$	Critical edge distance (splitting):	[mm]	$2,0 h_{ef}$	$2,0 h_{ef}$	$2,0 h_{ef}$	$1,5 h_{ef}$	$1,5 h_{ef}$	$1,5 h_{ef}$	
$S_{cr,sp}$	Critical spacing (splitting):	[mm]	$4,0 h_{ef}$	$4,0 h_{ef}$	$4,0 h_{ef}$	$3,0 h_{ef}$	$3,0 h_{ef}$	$3,0 h_{ef}$	
γ_{Msp}	Partial safety factor: ¹	[-]	1,8						

¹ In absence of national regulations

² The partial safety factor $\gamma_2=1,2$ is included

DECLARATION OF PERFORMANCE




Displacements under tension loads									ETAG001 p1/5
N	Service tension load:	[kN]	6,3	9,9	11,9	23,8	29,8	45,6	
δ_{N0}	Short term displacement	[mm]	0,2	0,2	0,3	0,5	0,7	0,9	
$\delta_{N\infty}$	Long term displacement	[mm]	0,4	0,4	0,4	0,4	0,4	0,4	
Shear load: steel failure – characteristic resistance									ETAG001 p1/5
$V_{Rk,s}$	Steel grade 5.8	[kN]	9	15	21	39	61	88	
$V_{Rk,s}$	Steel grade 8.8	[kN]	15	23	34	63	98	141	
M^0	Bending moment steel grade 5.8	[Nm]	19	37	66	166	325	561	
M^0	Bending moment steel grade 8.8	[Nm]	30	60	105	266	519	898	
γ_{Ms}	Partial safety factor	[-]	1,25						
$V_{Rk,s}$	Steel grade 10.9	[kN]	18	29	42	79	123	177	
M^0	Bending moment steel class 10.9	[Nm]	37	75	131	333	649	1123	
γ_{Ms}	Partial safety factor	[-]	1,50						
$V_{Rk,s}$	Stainless steel A2-70, A4-70, 1.4565	[kN]	13	20	30	55	86	124	
M^0	Bending moment stainless steel A2-70, A4-70 and 1.4565	[Nm]	26	52	92	233	454	786	
γ_{Ms}	Partial safety factor	[-]	1,56						
$V_{Rk,s}$	Stainless steel A4-80	[kN]	15	23	34	63	98	141	
M^0	Bending moment stainless steel A4-80	[Nm]	30	60	105	266	519	898	
γ_{Ms}	Partial safety factor	[-]	1,33						
$V_{Rk,s}$	Stainless steel 1.4529	[kN]	13	20	30	55	86	124	
M^0	Bending moment stainless steel 1.4529	[Nm]	26	52	92	233	454	786	
γ_{Ms}	Partial safety factor	[-]	1,25						
Shear load: concrete pryout failure									ETAG001 p1/5
K	K factor:	[-]	2,0	2,0	2,0	2,0	2,0	2,0	
γ_{Mpr}	Partial safety factor:	[-]	1,5						
Shear load: concrete edge failure									ETAG001 p1/5
See section 5.2.3.4 of Technical Report TR 029 for the Design of Bonded Anchors									
γ_{Ms}	Partial safety factor	[-]	1,5						
Displacements under shear loads									ETAG001 p1/5
V	Service shear load	[kN]	5,2	8,3	12,0	22,4	35,0	50,4	
δ_{V0}	Short term displacement	[mm]	0,1	0,1	0,2	0,4	0,8	1,5	
$\delta_{V\infty}$	Long term displacement	[mm]	0,2	0,2	0,3	0,6	1,2	2,3	

- The performances of the product identified by the above identification code are in conformity with the declared performance, This declaration of performance is issued under the sole responsibility of pgb-Europe nv, Signed for and behalf of the manufacturer by:

Place and date of issue	Signature
Melle, 07/12/2015	nv pgb-Europe sa Gontrode Heirweg 170 9090 MELLE BE 0425 888 396  Johannes Heye, product manager



Annex 1 : Product overview

ml	pgb code	EAN13	
300	SMCH13300PL EA	5902134196480	12
410	SMCH13410PL EA	5902134196503	12