

SM1KA101



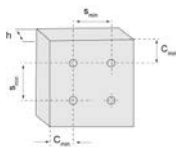
- *Code d'identification unique du type de produit:*
SMART-KAH, SMART-KAH HCR
- *Type, lot ou numéro de série ou tout autre élément permettant l'identification du produit de construction comme requis en application de l'article 11(4):*
Numéro de lot: voir l'emballage du produit
- *Usage(s) prévu(s) du produit de construction selon la spécification technique harmonisée applicable comme envisagée par le fabricant:*

Usage prévu ou usage du produit de construction selon l'ETAG 001 parts 1 - 2	
Generic type	Torque controlled expansion anchor sleeve type
Base material	Cracked and non-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
Material:	S-KAH : Stainless steel A4 S-KAH HCR : High corrosion resistant stainless steel
Durability	S-KAH : internal conditions and external atmospheric exposure (including industrial and marine environments) S-KAH HCR : internal conditions, external atmospheric exposure and in permanently damp internal conditions or in other particular aggressive conditions (splash zone of sea water, chloride atmosphere of indoor swimming pools etc)
Loading	static or quasi-static loads
Fire Resistance	A1, in acc. with 96/603/EC
Assumed working life	50 years

- *Nom, nom commercial enregistré ou marque commerciale enregistrée et adresse de contact du fabricant comme requis en application de l'article 11 (5):*
pgb-Polska sp. z o.o. – Ul. Jondy 5 – 44-100 Gliwice – Polska
- *Système ou systèmes d'évaluation et vérification de la consistance des performances du produit de construction comme stipulé à l'annexe V:*
System 1
- *Cas d'une déclaration des performances concernant un produit de construction pour lequel une Evaluation Technique Européenne a été émise:*

ETA - 10/0472 issued by	VTT EXPERT SERVICES OY
Body nr	NB 0809
On the basis of	ETAG 001, part 1 and 2
Under System	1
And issued	12/01/2011

Performances déclarées

STANDARD EMBEDMENT DEPTH							
Installation parameters (ETAG001 part 1 and 2)				M8	M10	M12	M16
	d _o	Nominal diameter of drill bit	[mm]	8	10	12	16
	h _{ef}	Effective standard embedment depth	[mm]	45	60	70	85
	d _f	Fixture clearance hole diameter	[mm]	9	12	14	18
	T _{inst}	Nominal installation torque	[Nm]	20	35	70	120
	h ₁	Depth of drilled hole	[mm]	60	75	90	110
	h _{min}	Min. thickness of concrete member	[mm]	100	120	140	170
	s _{min}	Minimum spacing	[mm]	50	50	60	70
	c _{min}	Minimum edge distance	[mm]	50	50	55	85
Tension load: steel failure							
	N _{Rk,s}	Tension steel characteristic resistance	[kN]	15	24	35	75
	γ _{Ms}	Partial safety factor ¹	[-]	1.40			
Tension load: concrete cone or splitting failure in concrete							
	N _{Rk,p}	Tension characteristic resistance in CRACKED concrete C20/25	[kN]	5	9	12	20
	N _{Rk,p}	Tension characteristic resistance in NON-CRACKED concrete C20/25	[kN]	9	16	20	35
	γ _{Mp}	Partial safety factor	[-]	1.80 ²			1.50 ³
	ψ _c	Increasing factor C25/30	[-]	1,04			
		Increasing factor C30/37	[-]	1,10			
		Increasing factor C40/50	[-]	1,20			
		Increasing factor C50/60	[-]	1,28			
Tension load: concrete cone or splitting failure in concrete							
	S _{cr,N}	Critical spacing	[mm]	135	180	210	255
	S _{cr,sp}	Critical spacing (splitting)	[mm]	180	240	280	340
	C _{cr,N}	Critical edge distance	[mm]	68	90	105	128
	C _{cr,sp}	Critical edge distance (splitting)	[mm]	90	120	140	170
	γ _{Mc}	Partial safety factor ²	[-]	1.80 ³			1.50 ³
Tension load: displacements							
Cracked and non-cracked concrete C20/25 – C50/60	N	Tension service load	[kN]	2	3,6	4,8	9,5
	δ _{N0}	Displacements under short term tension loads	[mm]	0,3	0,6	0,6	0,7
	δ _{N∞}	Displacements under long term tension loads	[mm]	1,8	1,6	2,0	1,4
Shear load: steel failure without lever arm							
	V _{Rk,s}	Characteristic resistance	[kN]	11	17	25	47
	γ _{Ms}	Partial safety factor ²	[-]	1.50			
Shear load: steel failure with lever arm							
	M ⁰ _{Rk,s}	Characteristic resistance	[kN]	22	45	79	200
	γ _{Ms}	Partial safety factor ³	[-]	1.50			
Shear load: concrete pryout failure							
	K	K factor	[-]	1	2		
	γ _{Mpr}	Partial safety factor ²	[-]	1.50			

¹ In absence of other national regulations² The installation safety factor of $\gamma_2 = 1,2$ is included³ The installation safety factor of $\gamma_2 = 1,0$ is included

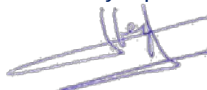
Installation parameters (ETAG001 part 1 and 2) - continued				M8	M10	M12	M16
Shear load: concrete edge failure							
	l _f	Effective anchorage depth under shear loads	[mm]	45	60	70	85
	d _{nom}	Outside anchor diameter	[mm]	8	10	12	16
	Ψ _{ucr,V}	CRACKED concrete without edge reinforcement	[-]	1.00			
		CRACKED concrete with straight edge reinforcement > ∅ 12mm		1.20			
		CRACKED concrete with edge reinforcement and closely spaced stirrups (a ≤ 100mm) or non-cracked concrete		1.40			
	γ _{Mc}	Partial safety factor ²	[-]	1.50			
Shear load: displacements							
Cracked and non-cracked concrete C20/25 – C50/60	V	Service shear load	[kN]	5,7	10,3	13,1	25,1
	δ _{V0}	Short term displacement under shear loads	[mm]	1,7	1,7	2,4	3,2
	δ _{V∞}	Long term displacement under shear loads	[mm]	2,6	2,6	3,6	4,8

Characteristic tension resistance in cracked and non-cracked concrete C20/25 to C50/60 under fire exposure																			
SMART THROUGH BOLT		M8				M10				M12				M16					
Fire resistance duration	R.... [min]	30	60	90	120	30	60	90	120	30	60	90	120	30	60	90	120		
Steel failure																			
Characteristic resistance	N _{Rk,s,fi} [kN]	5,7	3,9	2,0	1,1	9,1	6,1	3,2	1,8	13,2	8,9	4,7	2,6	24,5	16,6	8,7	4,8		
Pull-out failure																			
Characteristic resistance	N _{Rk,p,fi} [kN]	1,3		1,0		2,3		1,8		3,0		2,4		5,0		4,0			
Concrete cone failure																			
Characteristic resistance	N ⁰ _{Rk,p,fi} [kN]	2,4		2,0		5,0		4,0		7,4		5,9		12,0		9,6			
Spacing	S _{cr,N} [mm]	4 x h _{ef}																	
	S _{min} [mm]	50				55				60				70					
Edge distance	C _{cr,N} [mm]	2 x h _{ef}																	
	C _{min} [mm]	Fire attack from one side: C _{min} = 2xh _{ef} Fire attack from more than one side: C _{min} ≥ 300mm																	

In absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1,0$ is recommended.

Characteristic shear resistance in cracked and non-cracked concrete C20/25 to C50/60 under fire exposure																		
SMART THROUGH BOLT		M8				M10				M12				M16				
Fire resistance duration	R.... [min]	30	60	90	120	30	60	90	120	30	60	90	120	30	60	90	120	
Steel failure without lever arm																		
Characteristic resistance	V _{Rk,s,fi} [kN]	5,7	3,9	2,0	1,1	9,1	6,1	3,2	1,8	13,2	8,9	4,7	2,6	24,5	16,6	8,7	4,8	
Steel failure with lever arm																		
Characteristic resistance	M ⁰ _{Rk,s,fi} [Nm]	5,8	4,0	2,1	1,1	11,7	7,9	4,2	2,3	20,4	13,9	7,3	4,0	52,0	35,2	18,5	10,2	
Concrete pryout failure																		
K factor	K [-]	1,0				2,0				2,0				2,0				
Characteristic resistance	V ⁰ _{Rk,cp,fi} [kN]	2,4			2,0		10,0			8,0		14,8		11,8		24,0		19,2
Concrete edge failure																		
The initial value V ⁰ _{Rk,c,fi} of the characteristic resistance in concrete C20/25 to C50/60 under fire exposure may be determined by: V ⁰ _{Rk,c,fi} = 0,25 x V ⁰ _{Rk,c} (≤ R90) V ⁰ _{Rk,c,fi} = 0,20 x V ⁰ _{Rk,c} (R120) With V ⁰ _{Rk,c} initial value of the characteristic resistance in cracked concrete C20/25 under normal temperature.																		
In absence of other national regulations the partial safety factor for resistance under fire exposure γ _{M,fi} = 1.0 is recommended.																		

- Les performances du produit identifié aux points 1 et 2 sont conformes aux performances déclarées. Cette déclaration des performances est émise sous la seule responsabilité de pgb-Europe nv. Signé pour et au nom du fabricant par:

Date et lieu de délivrance	Signature	
Melle, 01/07/2013		Johannes Heye, product manager 

Annex 1 : Product overview



Through bolt with ETA option 1



size	pgb code	EAN13		
M 8x72	SM1KA308072 A4	5902134724638	50	
M 8x92	SM1KA308092 A4	5902134724645	50	
M 8x112	SM1KA308112 A4	5902134724652	40	
M 10x92	SM1KA310092 A4	5902134724669	40	
M 10x102	SM1KA310102 A4	5902134724676	25	
M 10x112	SM1KA310112 A4	5902134724683	25	
M 10x132	SM1KA310132 A4	5902134724690	25	
M12x103	SM1KA312103 A4	5902134724706	20	

size	pgb code	EAN13		
M12x118	SM1KA312118 A4	5902134724713	20	
M12x128	SM1KA312128 A4	5902134724720	20	
M12x148	SM1KA312148 A4	5902134724737	20	
M12x163	SM1KA312163 A4	5902134724744	20	
M16x123	SM1KA316123 A4	5902134724751	10	
M16x138	SM1KA316138 A4	5902134724768	10	
M16x168	SM1KA316168 A4	5902134724775	10	