

## SM00K001

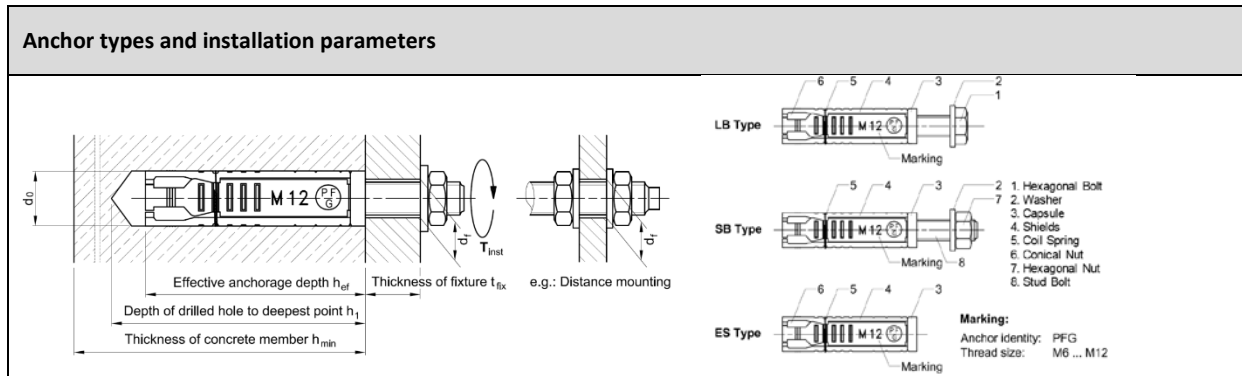


- *Unieke identificatiecode van het product:*  
**SMART TYPE K**
- *Type-, partij- of serienummer, dan wel een ander identificatiemiddel voor het bouwproduct, zoals voorgeschreven in artikel 11, lid 4:*  
**Zie bijlage 1**
- *Beoogde gebruiken van het bouwproduct, overeenkomstig de toepasselijke geharmoniseerde technische specificatie, zoals door de fabrikant bepaald:*

Beoogd gebruik volgens ETAG 001 parts 1 - 2	
Generic type	Torque controlled expansion anchor with threaded rod
Base material	Un-cracked concrete C20/25 to C50/60 acc. to EN 206-1:2003
Material:	Galvanized steel, zinc plated ISO 4042 A2K $\geq 5\mu\text{m}$
Durability	internal dry conditions
Loading	static or quasi-static loads
Fire Resistance	R120
Assumed working life	50 years

- *Naam, geregistreerde handelsnaam of geregistreerd handelsmerk en contactadres van de fabrikant, zoals voorgeschreven in artikel 11, lid 5:*  
**pgb-Polska sp. Z o.o. – Ul. Jondy 5 – 44-100 Gliwice – Polska**
- *Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid van het bouwproduct, vermeld in bijlage V:*  
**System 1**
- *Indien de prestatieverklaring betrekking heeft op een bouwproduct waarvoor een Europese technische beoordeling is afgegeven:*

ETA - 14/0239 issued by	CSTB
Body nr	NB 0679
On the basis of	ETAG 001, part 1 and 2 option 8
Under System	1
And issued	Certificate CE 0679-CPR-1032



- Essentiële kenmerken

Installation parameters (ETAG001 part 1 and 2)				M6	M8	M10	M12
	$d_o$	Nominal diameter of drill bit	[mm]	10	14	16	20
	$h_{ef}$	Effective standard embedment depth	[mm]	40	50	60	80
	$d_f$	Fixture clearance hole diameter	[mm]	7	9	11	13
	$T_{inst}$	Nominal installation torque	[Nm]	10	25	50	85
	$h_1$	Depth of drilled hole	[mm]	45	55	65	85
	$T_{fix, min... max}$	Fixture thickness	[mm]	0...100	0...120	0...140	0...160
	$h_{min}$	Min. thickness of concrete member	[mm]	100	100	120	160
	$s_{min}$	Minimum spacing	[mm]	60	75	90	120
$c_{min}$	Minimum edge distance	[mm]	60	75	90	120	
<b>Characteristic values for tension loads</b>							
<b>Steel failure</b>							
	$N_{Rk,s}$	Tension steel characteristic resistance	[kN]	16	29	46	67
	$\gamma_{Ms}^1$	Partial safety factor	[-]	1,50			
<b>Pull-out failure</b>							
	$N_{Rk,p}$	Tension characteristic resistance in concrete C20/25	[kN]	5	9	12	16
	$\gamma_{Mp}^1$	Partial safety factor <sup>1</sup>	[-]	1,50 <sup>2</sup>			
<b>Concrete cone failure</b>							
	$h_{ef}$	Effective standard embedment depth	[mm]	40	50	60	80
	$s_{cr,N}$	Critical spacing	[mm]	120	150	180	240
	$c_{cr,N}$	Critical edge distance	[mm]	60	75	90	120
	$\gamma_{Mc}^1$	Partial safety factor	[-]	1,50 <sup>2</sup>			
<b>Concrete splitting failure</b>							
	$s_{cr,sp}$	Critical spacing (splitting)	[mm]	240	300	360	480
	$c_{cr,sp}$	Critical edge distance (splitting)	[mm]	120	150	180	240
	$\gamma_{Msp}^1$	Partial safety factor <sup>1</sup>	[-]	1,50 <sup>2</sup>			

<sup>1</sup> In absence of other national regulations

<sup>2</sup> The installation safety factor of  $\gamma_2 = 1,0$  is included.

# DECLARATION OF PERFORMANCE



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Displacements under tension loads							
	N	Tension service load	[kN]	2,0	3,6	4,8	6,3
	$\bar{\delta}_{N0}$	Displacements under short term tension loads	[mm]	0,1	0,1	0,1	0,1
	$\bar{\delta}_{N\infty}$	Displacements under long term tension loads	[mm]	0,3	0,3	0,3	0,3
Characteristic values for shear loads							
Steel failure							
	$V_{Rk,s}$	Shear steel characteristic resistance	[kN]	8	14	23	33
	$M^0_{Rk,s}$	Characteristic bending moment (steel failure with lever arm)	[Nm]	12	30	60	105
	$\gamma_{Ms}$ <sup>3</sup>	Partial safety factor	[-]	1,25			
Concrete pryout failure							
	K	K factor (in equation ( 5.6 ) of ETAG Annex C, § 5.2.3.3)	[-]	1	2		
	$\gamma_{Mcp}$ <sup>3</sup>	Partial safety factor	[-]	1,5 <sup>4</sup>			
Concrete edge failure							
	$l_f$	Effective anchorage depth under shear loads	[mm]	26	33	40	53
	$d_{nom}$	Outside anchor diameter	[mm]	10	14	16	20
	$\gamma_{Mc}$ <sup>3</sup>	Partial safety factor	[-]	1,5 <sup>4</sup>			
Displacements under shear loads C20/25 – C50/60							
	V	Service shear load	[kN]	4,6	8,3	13,2	19,2
	$\bar{\delta}_{V0}$	Short term displacement under shear loads	[mm]	1,5 (+0,7)	1,9 (+1,2)	2,4 (+1,2)	3,3 (+1,2)
	$\bar{\delta}_{V\infty}$	Long term displacement under shear loads	[mm]	2,3 (+0,7)	2,9 (+1,2)	3,6 (+1,2)	4,9 (+1,2)
Characteristic tension resistance in non-cracked C20/25 to C50/60 under fire exposure							
R30 min	$N_{Rk,s,fi,30}$	Tension load - fire duration = 30 min - steel failure	[kN]	0,2	0,4	0,9	1,7
	$N_{Rk,p,fi,30}$	Tension load- fire duration = 30 min - pull-out failure	[kN]	1,3	2,3	3,0	4,0
	$N^0_{Rk,c,fi,30}$	Tension load- fire duration = 30 min - concrete cone failure <sup>5</sup>	[kN]	1,8	3,2	5,0	10,3
R60 min	$N_{Rk,s,fi,60}$	Tension load - fire duration = 60 min -steel failure	[kN]	0,2	0,3	0,8	1,3
	$N_{Rk,p,fi,60}$	Tension load - fire duration = 60 min - pull-out failure	[kN]	1,3	2,3	3,0	4,0
	$N^0_{Rk,c,fi,60}$	Tension load - fire duration = 60 min - concrete cone failure <sup>5</sup>	[kN]	1,8	3,2	5,0	10,3
R90 min	$N_{Rk,s,fi,90}$	Tension load - fire duration = 90 min - steel failure	[kN]	0,1	0,3	0,6	1,1
	$N_{Rk,p,fi,90}$	Tension load -fire duration = 90 min- pull-out failure	[kN]	1,3	2,3	3,0	4,0
	$N^0_{Rk,c,fi,90}$	Tension load - fire duration = 90 min- concrete cone failure <sup>5</sup>	[kN]	1,8	3,2	5,0	10,3
R120 min	$N_{Rk,s,fi,120}$	Tension load - fire duration = 120 min - steel failure	[kN]	0,1	0,2	0,5	0,8
	$N_{Rk,p,fi,120}$	Tension load - fire duration = 120 min -pull-out failure	[kN]	1,0	1,8	2,4	3,2
	$N^0_{Rk,c,fi,120}$	Tension load- f ire duration = 120 min- concrete cone failure <sup>5</sup>	[kN]	1,5	2,5	4,0	8,2
In absence of other national regulations the partial safety factor for resistance under fire exposure $\gamma_{M,fi} = 1,0$ is recommended.							

<sup>3</sup> In absence of other national regulations

<sup>4</sup> The installation safety factor of  $\gamma_2 = 1,0$  is included.

<sup>5</sup> Spacing  $S_{cr,N} = 4xh_{ef}$  and  $S_{min} =$  see table. Edge distance  $C_{cr,N} = 2xh_{ef}$ . If fire attack from one side=  $C_{min}=2xh_{ef}$ . If fire attack from more than one side  $C_{min} \geq 300$  mm



Characteristic shear resistance in non-cracked C20/25 to C50/60 under fire exposure							
R30 min	$V_{rk,s,fi,30}$	Shear load without lever arm- fire duration = 30 min	[kN]	0,2	0,4	0,9	1,7
	$M^0_{rk,s,fi,30}$	Shear load with lever arm- fire duration = 30 min	[kN]	0,2	0,4	1,1	2,6
R60 min	$V_{rk,s,fi,60}$	Shear load without lever arm -fire duration = 60 min	[kN]	0,2	0,3	0,8	1,3
	$M^0_{rk,s,fi,60}$	Shear load with lever arm - fire duration = 60 min	[kN]	0,1	0,3	1,0	2,0
R90 min	$V_{rk,s,fi,90}$	Shear load without lever arm- fire duration = 90 min	[kN]	0,1	0,3	0,6	1,1
	$M^0_{rk,s,fi,90}$	Shear load with lever arm -fire duration = 90 min	[kN]	0,1	0,3	0,7	1,7
R120 min	$V_{rk,s,fi,120}$	Shear load without lever arm- fire duration = 120 min	[kN]	0,1	0,2	0,5	0,8
	$M^0_{rk,s,fi,120}$	Shear load with lever arm -fire duration = 120 min	[kN]	0,1	0,2	0,6	1,3
Concrete pryout failure							
	k	Factor in equation (5.6) of ETAG 001 Annex C, 5.2.3.3	[-]	1,0	2,0	2,0	2,0
R30 min	$V^0_{Rk,cp,fi}$	Characteristic resistance	[kN]	1,8	6,4	10,0	20,6
R60 min				1,8	6,4	10,0	20,6
R90 min				1,8	6,4	10,0	20,6
R120 min				1,5	5,1	8,0	16,5
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: $V^0_{Rk,c,fi} = 0,25 \times V^0_{Rk,c}$ ( $\leq R90$ ) $V^0_{Rk,c,fi} = 0,20 \times V^0_{Rk,c}$ (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 $\gamma_{M,fi} = 1,0$ is recommended.							

De prestaties van het in de punten 1 en 2 omschreven product zijn conform de in punt 9 aangegeven prestaties. Deze prestatieverklaring wordt verstrekt onder de exclusieve verantwoordelijkheid van de in punt 4 vermelde fabrikant:

Plaats en datum van uitgave	Ondertekend voor en namens de fabrikant door	
Melle, 18/08/2014	nv pgb-Europe sa Gontrode Heirweg 170 9090 MELLE BE 0425 888 396	Johannes Heye, product manager 

## Annex 1 : Product overview



4 shield expansion anchor "PFG"



4 shield expansion anchor "PFG"



### CARTON BOX PACKING

size	pgb code	EAN13		
M 6x82	SM00K306080 Z	5902134717555	50	
M 6x77	SM00K306075 Z	5902134717562	50	
M 8x78	SM00K308075 Z	5902134717579	50	
M 8x88	SM00K308085 Z	5902134717586	50	
M 8x103	SM00K308100 Z	5902134717593	50	
M 8x143	SM00K308140 Z	5902134717609	25	
M 10x84	SM00K310080 Z	5902134717616	25	
M 10x94	SM00K310090 Z	5902134717623	25	
M 10x104	SM00K310100 Z	5902134717630	25	
M 10x114	SM00K310110 Z	5902134717647	25	
M 10x124	SM00K310120 Z	5902134717654	25	
M 10x144	SM00K310140 Z	5902134717661	25	
M 12x115	SM00K312110 Z	5902134717678	10	
M 12x125	SM00K312120 Z	5902134717685	10	
M 12x145	SM00K312140 Z	5902134717692	10	
M 12x160	SM00K312155 Z	5902134717708	10	

### WINDOW BOX PACKING

size	pgb code	EAN13		
M 6x82	SM00KE08080 Z	5902134719122	25	
M 6x77	SM00KE08075 Z	5902134719139	25	
M 8x78	SM00KE08075 Z	5902134719146	25	
M 8x88	SM00KE08085 Z	5902134719153	25	
M 8x103	SM00KE08100 Z	5902134719160	25	
M 8x143	SM00KE08140 Z	5902134719177	15	
M 10x84	SM00KE10080 Z	5902134719184	15	
M 10x94	SM00KE10090 Z	5902134719191	15	
M 10x104	SM00KE10100 Z	5902134719207	15	
M 10x114	SM00KE10110 Z	5902134719214	15	
M 10x124	SM00KE10120 Z	5902134719221	15	
M 10x144	SM00KE10140 Z	5902134719238	15	
M 12x115	SM00KE12110 Z	5902134719245	5	
M 12x125	SM00KE12120 Z	5902134719252	5	
M 12x145	SM00KE12140 Z	5902134719269	5	
M 12x160	SM00KE12155 Z	5902134719276	5	