SM0HA001

CE

- *Unique identification code of the product-type:*
  SMART S-HA

- *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	
Generic type	Torque controlled expansion anchor
Base material	Non-cracked concrete Reinforced or unreinforced normal weight concrete C20/25 to C50/60 acc. to EN 206-1:2003
Material:	Galvanized steel, zinc plated : ISO 4042 A2K ≥ 5µm Bolt class 8.8
Durability	Internal dry conditions
Anchorages subject to	Static or quasi-static loads
Fire Resistance	NPD
Reaction to fire	A1, in acc. with 96/603/EC
Assumed working life	50 years

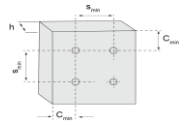
- *Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11 (5):*
  pgb-Polska sp. Z o.o. – Ul. F.W. Redena 3 – 41-807 Zabrze – Polska

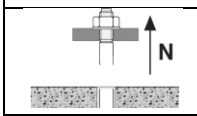
- *System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:*
  System 1

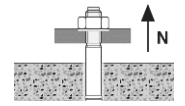
- *In case of the declaration of performance concerning a construction product for which European Technical Assessment has been issued:*

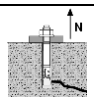
ETA – 17/0505 issued by	DIBt
Body nr	1343
On the basis of	EAD N° 330232-00-0601
Under System	1
And issued	21/08/2017

Declared performance – Essential characteristics – Performances

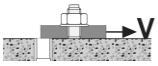
	Installation parameters					
			M6	M8	M10	M12
d_0	Nominal diameter of drill bit	[mm]	8	10	12	16
h_{ef}	Effective embedment depth	[mm]	31	35	40	60
d_f	Fixture clearance hole diameter	[mm]	10	12	14	18
T_{inst}	Installation torque	[Nm]	10	25	40	65
h_1	Depth of drilled hole	[mm]	50	55	60	85
h_{min}	Min. thickness of concrete member	[mm]	80	100	120	150
s_{min}	Minimum spacing	[mm]	95	120	145	175
c_{min}	Minimum edge distance	[mm]	50	60	75	90

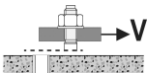
	Tension load: steel failure					
			M6	M8	M10	M12
$N_{rk,s}$	Steel characteristic resistance	[kN]	16,1	29,3	46,4	67,4
γ_{Ms}	Partial safety factor	[-]	1,5	1,5	1,5	1,5

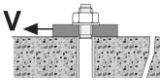
	Tension load: pull out failure					
			M6	M8	M10	M12
$N_{rk,p}$	Characteristic resistance in NON-CRACKED concrete C20/25	[kN]	6	7,5	12	20
γMp	Partial safety factor	[-]	1,0			
ΨC	Increasing factor C30/37	[-]				
ΨC	Increasing factor C40/50	[-]				
ΨC	Increasing factor C50/60	[-]				
$S_{cr,N}$	Critical spacing	[mm]	93	105	120	180
$C_{cr,N}$	Critical edge distance	[mm]	47	53	60	90

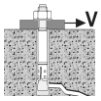
	Tension load: splitting failure					
			M6	M8	M10	M12
$S_{cr,sp}$	Critical spacing	[mm]	200	300	340	430
$C_{cr,sp}$	Critical edge distance	[mm]	100	150	170	215

	Tension load: displacements					
			M6	M8	M10	M12
N	Service tension load	[kN]	3,4	5,2	5,3	11,6
δ_{N0}	Displacements under short term	[mm]	0,1	0,19	0,39	0,51
$\delta_{N\infty}$	Displacements under long term	[mm]	0,39	0,39	0,39	0,39

	Shear load: steel failure without lever arm						
				M6	M8	M10	M12
	$V_{rk,s}$	Steel characteristic resistance	[kN]	7,5	12	20	30
	k_7	Ductility factor	[-]	0,8			
	γ_{Ms}	Partial safety factor	[-]	1,25			

	Shear load: steel failure with lever arm						
				M6	M8	M10	M12
	$M^0_{Rk,s}$	Characteristic resistance	[Nm]	12,2	30	59,8	104,8
	γ_{Ms}	Partial safety factor	[-]	1,25			

	Shear load: concrete pryout failure						
				M6	M8	M10	M12
	k_8	K factor	[-]	1	1	1	2
	γ_{inst}	Installation safety factor		1,0			

	Shear load: concrete edge failure						
				M6	M8	M10	M12
	l_f	Effective anchorage length under shear loads	[mm]	31	35	40	60
	d_{nom}	Outside anchor diameter	[mm]	10	12	14	18
	γ_{inst}	Installation safety factor	[mm]	1,0			

	Shear load: displacements						
				M6	M8	M10	M12
	V	Service shear load	[kN]	3,8	7,0	11,0	16,1
	δ_{N0}	Displacements under short term	[mm]	1,1	1,4	2,6	2,7
	$\delta_{N\infty}$	Displacements under long term	[mm]	1,6	2,1	3,9	4,1

- *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, 27/08/2017	nv pgb-Europe sa Gontrode Heirweg 170 9090 MELLE BE 0425 888 396 Johannes Heye, product manager

Annex 1 : Product overview

SMHAS/08065 Z
SMHAS/08100 Z
SMHAS/10070 Z
SMHAS/10100 Z
SMHAS/10120 Z
SMHAS/12080 Z
SMHAS/12100 Z
SMHAS/12120 Z
SMHAS/16090 Z
SMHAS/16110 Z
SMHAS/161/0 Z