

	DECLARATION OF PERFORMANCE According to Construction Product Regulation n° 305/2011
	DoP N°13/0188

1. Unique identification code of the product-type: SIGILLITE SG CE

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):		
CODE 18017 18016	ITEM SIGILLITE SG 300 SIGILLITE SG 400	BARCODE 8001848180178 8001848180161

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
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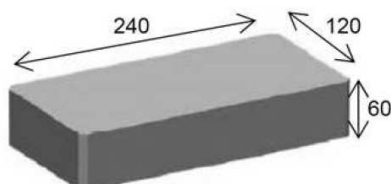
Generic type and use		Bonded anchor for anchorage of threaded rod.		
Size covered		M8	M10	M12
hef [mm]	Category b	80	85	95
	Category c	80 with 12x80	85 with 15x85	85 with 20x85
		GC = plastic sleeve for use in hollow or perforated bricks.		
Base material and strength class		Solid masonry (use category b) or hollow or perforated masonry (use category c) according to characteristics detailed in the annex at the following page (pag.2). The mortar strength class of the masonry has to be M 2,5 according to EN 998-2:2010 at minimum.		
Anchor metal material and corresponding environmental exposure		Threaded rods: a) Carbon galvanized steel class 5.8 or 6.8 according to EN ISO 898-1 for dry internal conditions. b) Stainless steel A4-70 and A4-80 according to EN ISO 3506 for dry internal conditions. Nuts and washers: Corresponding to anchor rod material above mentioned for the different environmental exposures.		
Type of loading		Static or quasi-static loading. Fatigue, dynamic or seismic loading, fire resistance are not covered.		
Service temperature range		a) -40°C to +40°C (max. short term temperature +40°C and max. long term temperature +24°C), b) -40°C to +50°C (max. short term temperature +50°C and max. long term temperature +40°C).		
Use category		Category w/d: installation in wet substrate and use in structures subjected to dry, internal conditions. Perforation with drilling machine.		

The point 3 continued at the next page

ANNEX: Base material and strength class

Brick n°1 – Solid

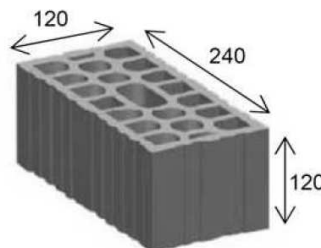
according to EN 771-1 - HD (High density)



Dimensions [mm]: 120 x 240 x 60
 f_b class $\geq 73 \text{ N/mm}^2$
 density $\rho_m \geq 1700 \text{ kg/m}^3$
 (e.g. type "Mattone Pieno")

Brick n°2 – Hollow/perforated

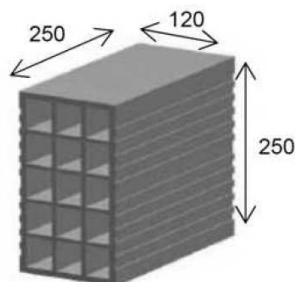
according to EN 771-1 - LD (Low density)



Dimensions [mm]: 240 x 120 x 120
 f_b class $\geq 18,3 \text{ N/mm}^2$
 density $\rho_m \geq 810 \text{ kg/m}^3$
 (e.g. type "Mattone Doppio UNI")

Brick n°3 – Hollow/perforated

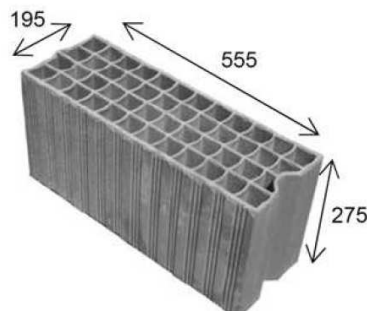
according to EN 771-1 - LD (Low density)



Dimensions [mm]: 120 x 250 x 250
 f_b class $\geq 5,3 \text{ N/mm}^2$
 density $\rho_m \geq 550 \text{ kg/m}^3$
 (e.g. type "Forato")

Brick n°4 – Hollow/perforated

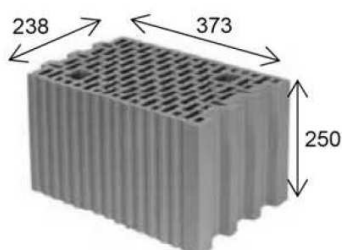
according to EN 771-1 - LD (Low density)



Dimensions [mm]: 555 x 195 x 275
 f_b class $\geq 4,0 \text{ N/mm}^2$
 density $\rho_m \geq 600 \text{ kg/m}^3$
 (e.g. type "Brique creuse RC 40")

Brick n°5 – Hollow/perforated

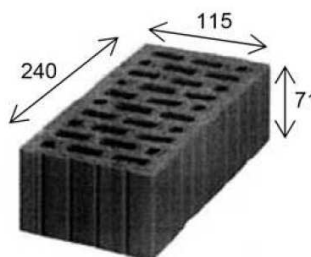
according to EN 771-1 - LD (Low density)



Dimensions [mm]: 373 x 238 x 250
 f_b class $\geq 15 \text{ N/mm}^2$
 density $\rho_m \geq 800 \text{ kg/m}^3$
 (e.g. type "Porotherm 25 P+W")

Brick n°6 – Hollow/perforated

according to EN 771-1 - LD (Low density)



Dimensions [mm]: 115 x 240 x 71
 f_b class $\geq 12 \text{ N/mm}^2$
 density $\rho_m \geq 900 \text{ kg/m}^3$
 (e.g. type "Hlz B – 1.0 1NF 12-1")

11(5):

PIGAL S.p.A. - via Guido Rossa, 2 - 40056 Crespellano (Bo) – Italy – www.pigal.it

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

Not applicable

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 1

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not applicable

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

ETA-Danmark A/S issued ETA-13/0188 on the basis of ETAG 029.

IFBT (n°1109) performed:

the determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product; the initial inspection of the factory and of the factory production control; the continuous surveillance; assessment and approval of the factory production control; under system 1 and issue the certificate of conformity n° 1109-CPD-0081.13

9. Declared performance:

HARMONIZED TECHNICAL SPECIFICATION: ETAG 029

ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-13/0188 Design according to paragraph. 4.2.1 ETA-13/0188		
Installation parameters		M8	M10	M12
d [mm]		8	10	12
d ₀ [mm] category b (solid masonry)		10	12	14
d ₀ [mm] category c (hollow or perforated masonry)		12	16	20
Type of plastic sleeve for use in category c		12x80	15x85	20x85
d _{fix} [mm]		9	12	14
h ₁ [mm]		h _{ef} + 5 mm		
t _{fix} [mm]	Min	> 0		
	Max	≤ 1500 mm		
T _{inst} [Nm] category b (solid masonry)		5	8	10
T _{inst} [Nm] category c (hollow or perforated masonry)		3	4	6
S _{min} e C _{min} [mm] category b (solid masonry)		50	50	50
S _{min} e C _{min} [mm] category c (hollow or perforated masonry)		100	100	120
* Resistance for tensile and shear load Temperature range -40°C/+40°C (T_{mlp} = 24°C) and -40°C/+50°C (T_{mlp} = 40°C)		M8	M10	M12
Brick n°1	N _{Rk} [kN]	1,50	2,50	3,00
	V _{Rk} [kN]	1,50	2,50	3,00
Brick n°2	N _{Rk} [kN]	3,50	4,00	5,00
	V _{Rk} [kN]	3,50	4,00	5,00
Brick n°3	N _{Rk} [kN]	0,60	1,50	1,50
	V _{Rk} [kN]	0,60	1,50	1,50
Brick n°4	N _{Rk} [kN]	0,90	0,90	0,60
	V _{Rk} [kN]	0,90	0,90	0,60
Brick n°5	N _{Rk} [kN]	2,00	2,00	2,50
	V _{Rk} [kN]	2,00	2,00	2,50
Brick n°6	N _{Rk} [kN]	3,00	4,00	4,00
	V _{Rk} [kN]	3,00	4,00	4,00

* For design according to ETAG 029 Annex C:: N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,pb} – steel failure is not decisive

* For design according to ETAG 029: V_{Rk} = V_{Rk,b} = V_{Rk,c} – steel failure without lever arm is not decisive

HARMONIZED TECHNICAL SPECIFICATION: ETAG 029				
ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-13/0188 Design according to paragraph. 4.2.1 ETA-13/0188		
* Resistance for tensile and shear load Temperature range -40°C/+40°C ($T_{mlp} = 24^{\circ}\text{C}$) and -40°C/+50°C ($T_{mlp} = 40^{\circ}\text{C}$)		M8	M10	M12
γ_{Mm} [-] Category w/d		2,50		
Brick n°1	$S_{cr,N}$ [mm]	160	200	240
	$C_{cr,N}$ [mm]	80	100	120
Brick n°2	$S_{cr,N}$ [mm]	240	240	240
	$C_{cr,N}$ [mm]	120	120	120
Brick n°3	$S_{cr,N}$ [mm]	250	250	250
	$C_{cr,N}$ [mm]	125	125	125
Brick n°4	$S_{cr,N}$ [mm]	555	555	555
	$C_{cr,N}$ [mm]	278	278	278
Brick n°5	$S_{cr,N}$ [mm]	373	373	373
	$C_{cr,N}$ [mm]	187	187	187
Brick n°6	$S_{cr,N}$ [mm]	240	240	240
	$C_{cr,N}$ [mm]	120	120	120
β coefficient for in situ test (ETAG 029 Annex B) Temperature range: -40°C/+40°C e -40°C/+50°C		M8	M10	M12
Brick n° 1, 2, 3, 4, 6		β [-] 0,70		
Brick n° 5		0,65	0,70	0,70
Displacement under service load				
Tensile load				
Brick n°1 – Solid brick		M8	M10	M12
Admissible service load in tensile	F [kN]	0,65	1,03	1,15
	δ_{NO} [mm]	0,08	0,07	0,06
	$\delta_{N_{\infty}}$ [mm]	0,16	0,16	0,16
Brick n°2 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in tensile	F [kN]	1,48	1,81	2,09
	δ_{NO} [mm]	0,06	0,08	0,10
	$\delta_{N_{\infty}}$ [mm]	0,16	0,16	0,20
Brick n°3 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in tensile	F [kN]	0,29	0,73	0,80
	δ_{NO} [mm]	0,06	0,08	0,07
	$\delta_{N_{\infty}}$ [mm]	0,16	0,16	0,16
Brick n°4 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in tensile	F [kN]	0,39	0,44	0,26
	δ_{NO} [mm]	0,06	0,06	0,06
	$\delta_{N_{\infty}}$ [mm]	0,16	0,16	0,16
Brick n°5 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in tensile	F [kN]	0,92	0,91	1,02
	δ_{NO} [mm]	0,06	0,06	0,06
	$\delta_{N_{\infty}}$ [mm]	0,16	0,16	0,16
Brick n°6 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in tensile	F [kN]	1,19	1,69	1,78
	δ_{NO} [mm]	0,12	0,07	0,06
	$\delta_{N_{\infty}}$ [mm]	0,24	0,16	0,16

HARMONIZED TECHNICAL SPECIFICATION: ETAG 029				
ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-13/0188 Design according to paragraph. 4.2.1 ETA-13/0188		
Displacement under service load				
Shear load				
Brick n°1 – Solid brick		M8	M10	M12
Admissible service load in shear	F [kN]	1,32	2,94	2,62
Displacement	δ _{v0} [mm]	0,23	0,48	0,38
	δ _{v∞} [mm]	0,34	0,72	0,57
Brick n°2 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in shear	F [kN]	1,72	2,03	2,93
Displacement	δ _{v0} [mm]	0,20	0,38	0,34
	δ _{v∞} [mm]	0,30	0,57	0,51
Brick n°3 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in shear	F [kN]	0,93	1,08	0,86
Displacement	δ _{v0} [mm]	0,31	0,23	0,18
	δ _{v∞} [mm]	0,46	0,34	0,27
Brick n°4 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in shear	F [kN]	0,44	0,63	0,44
Displacement	δ _{v0} [mm]	0,10	0,18	0,27
	δ _{v∞} [mm]	0,15	0,27	0,40
Brick n°5 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in shear	F [kN]	0,78	1,06	1,00
Displacement	δ _{v0} [mm]	0,23	0,19	0,31
	δ _{v∞} [mm]	0,34	0,28	0,46
Brick n°6 – Hollow/perforated brick		M8 12x80	M10 15x85	M12 20x85
Admissible service load in shear	F [kN]	1,25	2,23	1,65
Displacement	δ _{v0} [mm]	0,17	0,69	0,13
	δ _{v∞} [mm]	0,25	1,03	0,19

HARMONIZED TECHNICAL SPECIFICATION: ETAG 029 PARAGRAPH 2.5.1	
ESSENTIAL CHARACTERISTICS	PERFORMANCE
Reaction to fire	In the final application the thickness of the mortar layer is about 1 to 2 mm and most of the mortar is material classified class A1 according to EC Decision 96/603/EC. Therefore it may be assumed that the bonding material (synthetic mortar or a mixture of synthetic mortar and cementitious mortar) in connection with the metal anchor in the end use application do not make any contribution to fire growth or to the fully developed fire and they have no influence to the smoke hazard.

HARMONIZED TECHNICAL SPECIFICATION: ETAG 029 PARAGRAPH 2.5.2	
ESSENTIAL CHARACTERISTICS	PERFORMANCE
Resistance to fire	NPD

TERMINOLOGY AND SYMBOLS

d	Diameter of anchor bolt or thread diameter
d ₀	Drill hole diameter
d _{fix}	Diameter of clearance hole in the fixture
h _{ef}	Effective anchorage depth
h ₁	Depth of the drilling hole
T _{inst}	Torque moment to installation
t _{fix}	Thickness to be fixed
S _{min}	Minimum allowable spacing
C _{min}	Minimum allowable edge distance
N _{Rk}	Characteristic tensile resistance for single anchor
V _{Rk}	Characteristic shear resistance for single anchor
γ _{Mm}	Partial safety factors
S _{cr,N}	Spacing for ensuring the transmission of the characteristic tensile resistance of a single anchor without spacing and edge effects
C _{cr,N}	Edge distance for ensuring the transmission of the characteristic tensile resistance of a single anchor without spacing and edge effects
β	Factor according to ETAG 029 Annex B
F	Service load
δ ₀	Short term displacement under service load
δ _∞	Long term displacement under service load
NPD	Not determined performance

Regulation REACH n°1907/2006

Estimate customer,

We inform you that in the REACH supply chain our company is classified as DU: Downstream-user.

About the product detailed in the point 1 we confirm you that we don't use in our production substances classified as SVHC according to the Candidate List published on ECHA site web:

http://echa.europa.eu/chem_data/candidate_list_table_en.asp.

You can require the safety data sheet of the product to our technical department: pigalab@pigoal.it or you can download the document from our web site www.pigoal.it.

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4. Signed for and on behalf of the manufacturer by:

Name and function	Name and function	Name and function
Alberto GOLDONI Legal representative	Crespellano, 28/06/2013	