

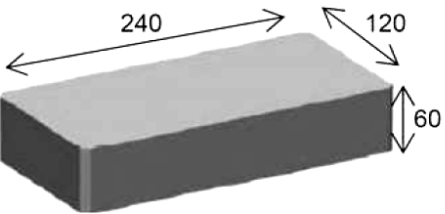
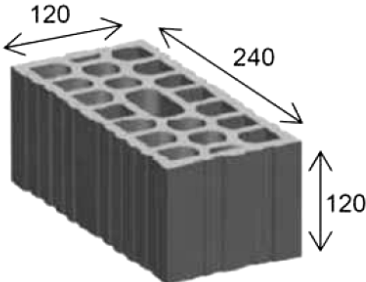
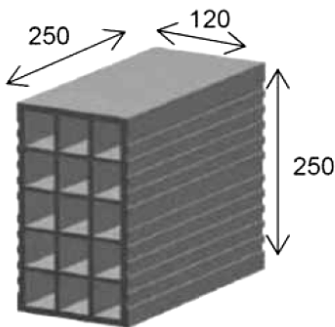
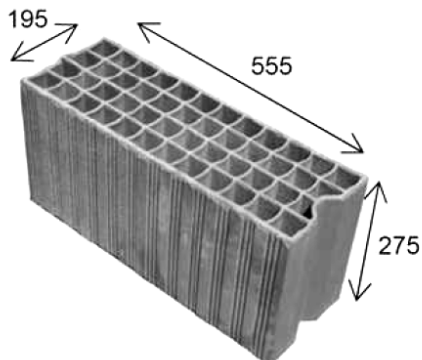
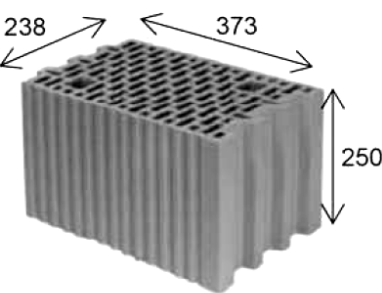
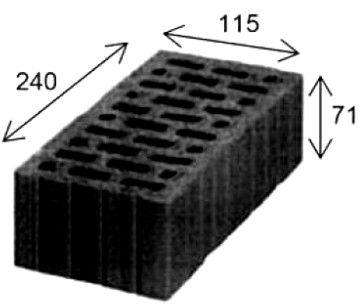
DECLARATION OF PERFORMANCE N. CPR-IT1/0438

 1) Unique identification code of the product-type: **MAPEFIX PE WALL**

2) Intended uses:

Generic type and use		Bonded anchor for anchorage of threaded rod.		
Size covered		M8	M10	M12
h_{ef} [mm]	Category b	80	85	95
	Category c	80 with GC 12x80	85 with GC 15x85	85 with GC 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 figure 1 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.		

figure 1

<p>Brick n°1 – Solid according to EN 771-1 - HD (High density)</p>  <p>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")</p>	<p>Brick n°2 – Hollow/perforated according to EN 771-1 - LD (Low density)</p>  <p>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")</p>
<p>Brick n°3 – Hollow/perforated according to EN 771-1 - LD (Low density)</p>  <p>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")</p>	<p>Brick n°4 – Hollow/perforated according to EN 771-1 - LD (Low density)</p>  <p>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")</p>
<p>Brick n°5 – Hollow/perforated according to EN 771-1 - LD (Low density)</p>  <p>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")</p>	<p>Brick n°6 – Hollow/perforated according to EN 771-1 - LD (Low density)</p>  <p>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")</p>

- 3) Manufacturer: **MAPEI S.p.A. – Via Cafiero, 22 – 20158 Milan – Italy - www.mapei.it**
- 4) Systems of AVCP: **System 1**
- 5) European Assessment Document: **ETAG 029, Edition April, 2013 (guideline for European technical approval used according to CPR 305/2011, art. 66, 3rd subsection)**

European Technical Assessment: **ETA 12/0434 revised on 25/11/2016 (agreement used according to CPR 305/2011, art. 66, 4th subsection)**

Technical Assessment Body: **ETA-Danmark A/S**

Notified bodies: **TECHNICKY A ZKUSEBNI USTAV STAVEBNI PRAHA s.p., N. 1020 performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control and issued the certificate of constancy of performance.**

- 6) Performances declared:

ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-12/0434 Table C1:		
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		GC 12x80	GC 15x85	GC 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} [mm] category b (solid masonry)		240	255	285
C _{min} [mm] category b (solid masonry)		120	128	143
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

ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-12/0434 Table C3: <i>Characteristic values for tension and shear load.</i>		
* 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
γ _{Mm} [-] Category w/d		2,50		
Brick n°1	S _{cr,N} [mm]	240	255	285
	C _{cr,N} [mm]	120	128	143
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 [-]		
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 _{N0} [mm]	0,08	0,07	0,06
Displacement	δ _{N∞} [mm]	0,16	0,16	0,16
Brick n°2 – Hollow/perforated brick		M8 GC 12x80	M10 GC 15x85	M12 GC 20x85
Admissible service load in tensile	F [kN]	1,48	1,81	2,09
	δ _{N0} [mm]	0,06	0,08	0,10
Displacement	δ _{N∞} [mm]	0,16	0,16	0,20
Brick n°3 – Hollow/perforated brick		M8 GC 12x80	M10 GC 15x85	M12 GC 20x85
Admissible service load in tensile	F [kN]	0,29	0,73	0,80
	δ _{N0} [mm]	0,06	0,08	0,07
Displacement	δ _{N∞} [mm]	0,16	0,16	0,16
Brick n°4 – Hollow/perforated brick		M8 GC 12x80	M10 GC 15x85	M12 GC 20x85
Admissible service load in tensile	F [kN]	0,39	0,44	0,26
	δ _{N0} [mm]	0,06	0,06	0,06
Displacement	δ _{N∞} [mm]	0,16	0,16	0,16
Brick n°5 – Hollow/perforated brick		M8 GC 12x80	M10 GC 15x85	M12 GC 20x85
Admissible service load in tensile	F [kN]	0,92	0,91	1,02
	δ _{N0} [mm]	0,06	0,06	0,06
Displacement	δ _{N∞} [mm]	0,16	0,16	0,16
Brick n°6 – Hollow/perforated brick		M8 GC 12x80	M10 GC 15x85	M12 GC 20x85
Admissible service load in tensile	F [kN]	1,19	1,69	1,78
	δ _{N0} [mm]	0,12	0,07	0,06
Displacement	δ _{N∞} [mm]	0,24	0,16	0,16

MAPEFIX PE WALL
Declaration of Performance
N. CPR-IT1/0438

ESSENTIAL CHARACTERISTICS		PERFORMANCE ACCORDING TO ETA-12/0434 Table C3: Characteristic values for tension and shear load.		
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
	$\delta_{v\infty}$ [mm]	0,34	0,72	0,57
Brick n°2 – Hollow/perforated brick		M8	M10	M12
		GC 12x80	GC 15x85	GC 20x85
Admissible service load in shear	F [kN]	1,72	2,03	2,93
Displacement	δ_{v0} [mm]	0,20	0,38	0,34
	$\delta_{v\infty}$ [mm]	0,30	0,57	0,51
Brick n°3 – Hollow/perforated brick		M8	M10	M12
		GC 12x80	GC 15x85	GC 20x85
Admissible service load in shear	F [kN]	0,93	1,08	0,86
Displacement	δ_{v0} [mm]	0,31	0,23	0,18
	$\delta_{v\infty}$ [mm]	0,46	0,34	0,27
Brick n°4 – Hollow/perforated brick		M8	M10	M12
		GC 12x80	GC 15x85	GC 20x85
Admissible service load in shear	F [kN]	0,44	0,63	0,44
Displacement	δ_{v0} [mm]	0,10	0,18	0,27
	$\delta_{v\infty}$ [mm]	0,15	0,27	0,40
Brick n°5 – Hollow/perforated brick		M8	M10	M12
		GC 12x80	GC 15x85	GC 20x85
Admissible service load in shear	F [kN]	0,78	1,06	1,00
Displacement	δ_{v0} [mm]	0,23	0,19	0,31
	$\delta_{v\infty}$ [mm]	0,34	0,28	0,46
Brick n°6 – Hollow/perforated brick		M8	M10	M12
		GC 12x80	GC 15x85	GC 20x85
Admissible service load in shear	F [kN]	1,25	2,23	1,65
Displacement	δ_{v0} [mm]	0,17	0,69	0,13
	$\delta_{v\infty}$ [mm]	0,25	1,03	0,19

ESSENTIAL CHARACTERISTICS	PERFORMANCE according to ETA 12/0434-Table C4 and C5: Reference to ETAG 029, clauses 2.5.1 and 2.5.2
Resistance to fire	NPD
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.

LEGEND	
d	Diameter of anchor bolt or thread diameter
d₀	Drill hole diameter
d_{fix}	Diameter of clearance hole in the fixture
h_{ef}	Effective anchorage depth
h₁	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
δ₀	Short term displacement under service load
δ_∞	Long term displacement under service load
NPD	No declared performance

The performance of the product identified above is in conformity with the set of declared performances.

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by: **Paolo Murelli – Corporate Quality Management**

Milan, 16/04/2019



DoP in Pdf format are available in the Mapei website.

Revision 1 notes:	<i>updated notified body</i>
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MAPEFIX PE WALL
CE MARKING
Annex to DoP N. CPR-IT1/0438



CE “reminder” printed on the cartridge

CE 1020 12 CPR-IT1/0438 ETA 12/0434 based on ETAG 029
M8-M12

Note:

MAPEI supplies the current annex along with the DoP to make the consultancy of the CE marking easier for the international clients. The enclosed CE marking can be slightly different compared to the one printed on the relevant packaging or documentation because of:

- *graphic adaptations due to lack of space on the packaging or printing methods used,*
- *different language (the same packaging can be shared by several countries),*
- *the product is already in stock when the updating of the CE marking is implemented,*
- *printing mistakes.*