



PERFILSTONE
RESIN

400 ml

CREAM ref. RSPL.CREMA
GREY ref. RSPL.GRIS



POLYESTER RESIN STYRENE FREE

ALMACENAMIENTO Y CONSERVACIÓN
STORAGE AND CONSERVATION

CARTUCHO
CARTRIDGE

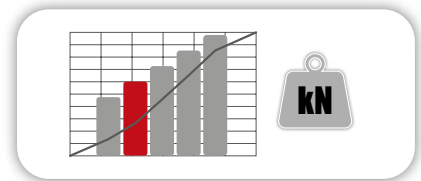
CADUCA (meses)
EXPIRY (months)



Masonry



Option 7



GREEN LIFE

STYRENE FREE
CLP Classification

Ministry of Construction of Russia
МИНСТРОЙ
РОССИИ

FCC
Federal Center for standardization
and technical assessment
of conformity in construction

Eurasian Economic Community

1. SETTING TIMES

01	02	03
30 °C	3 min	20 min
25 °C	4 min	30 min
20 °C	6 min	45 min
10 °C	12 min	1 h 30'
5 °C	15 min	2 hours
0 °C	25 min	3 hours

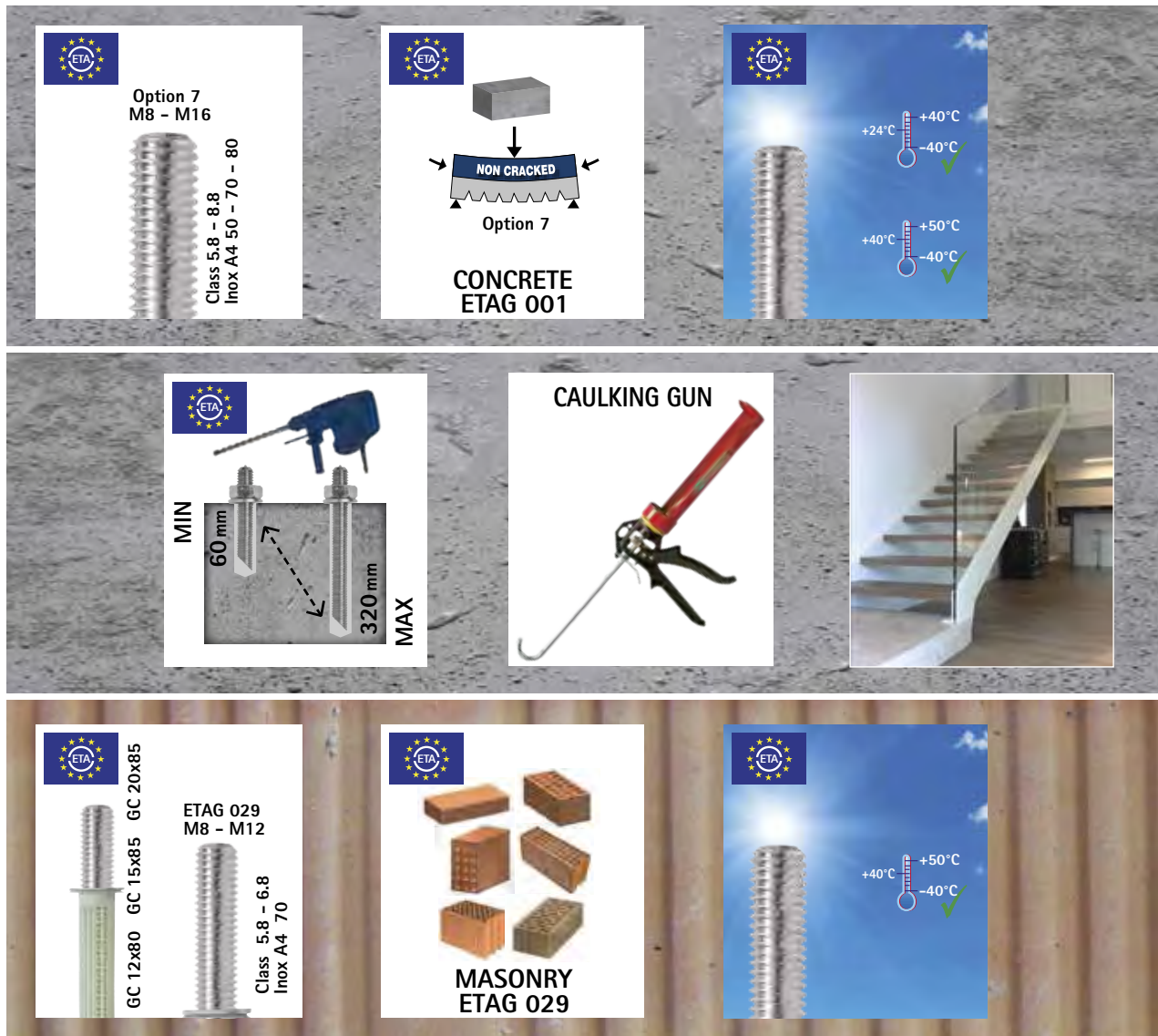
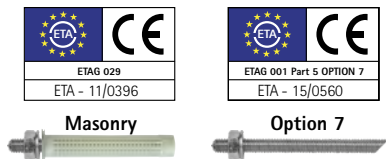
+5°C
Minimum product temperature for application

DRY



- 01 Base material temperature
- 02 Open time
- 03 Curing time

2. REGULATIONS



BI-COMPONENT POLYESTER STYRENE FREE CHEMICAL ANCHOR FOR MEDIUM LOADS, CE MARKED AND ETA ASSESSED FOR USE IN DIFFERENT BASE MATERIALS AS CONCRETE, SOLID MASONRY AND HOLLOW BRICKS MASONRY.

ETA (European Technical Assessments) updated according to the Construction Product Regulation 305/2011.

ETA-15/0560: Assessment for uncracked concrete, Option 7, according to ETAG-001 for diameters from M8 to M16. The product is certified for fixing with variable anchorage depths. This means that the project engineer and the user have a high flexibility. Maximum embedment depth up to 20 times nominal threaded rod diameter. Loads for installation in dry and wet concrete. Certified service temperatures are in the ranges: -40°C/+50°C (T° max long period = 40°C).

ETA-11/0396: Assessment for masonry according to ETAG 029 for fixings in solid bricks, perforated bricks and hollow bricks. Utilization possible even on masonry with temporary humidity present only during the product installation phase. The product is homologated for being used with a wide range of masonry (6 type of bricks), threaded rods (from M8 to M12) and sleeves (GC 12x80 - GC 15x85 - GC 20x85). Certified service temperatures are in the ranges -40°C/+40°C (T° max long period = +24°C) and -40°C/+50°C (T° max long period = +40°C).

Base material temperature (concrete, bricks, etc...) for installation between 0° and +30°C.

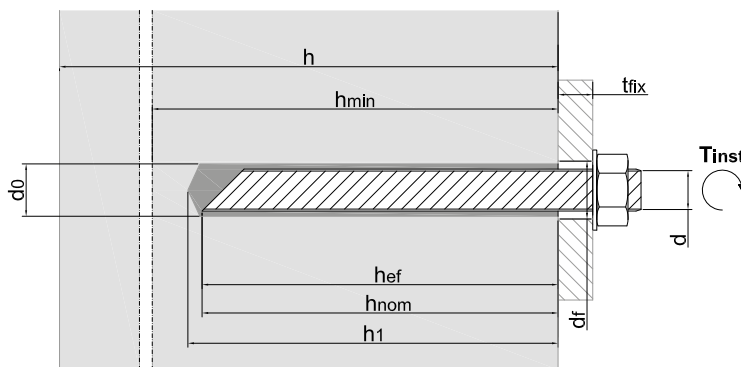
VOC according to the French Decree 2011-321 and according to the standard ISO 16000/EN 16516.

3. NUMBER OF FIXINGS

THREADED STUD	HOLE	Fixings in solid materials		Fixings in hollow materials	
		Concrete	Stone	Solid Brick	Net Solid Brick
d_{nom} [mm]	d_o [mm] x h_1 [mm]	Fixings		d_{nom} [mm] x L [mm]	Fixings
M 8	10 x 90	≈ 72		GC 12 x 80 GC 15 x 85	≈ 35 ≈ 21
M 10	12 x 95	≈ 52		GC 15 x 85	≈ 21
M 12	14 x 115	≈ 34		GC 15 x 85 GC 20 x 85	≈ 21 ≈ 12
M 16	18 x 130	≈ 21		--	--
M 20	24 x 175	≈ 7		--	--
M 24	28 x 215	≈ 5		--	--

WARNING: The number of fixings above mentioned has been calculated according to the theoretical volume needed to fill the hole (or sleeve) excluded the volume of the inserted metal rod. In the theoretical volume it is included a standard extra quantity, but the real quantity of the product may be different than it in function of the real application of the product.

4. INSTALLATION DATA



LEGEND

d [mm]	Rod diameter
h_{min} [mm]	Minimum thickness of base material
d_o [mm]	Hole diameter
h_1 [mm]	Hole depth
h_{nom} [mm]	Embedment depth
h_{ef} [mm]	Effective anchorage depth
$S_{cr,N}$ [mm]	Characteristic spacing
$C_{cr,N}$ [mm]	Characteristic edge distance
S_{min} [mm]	Minimum allowable spacing
C_{min} [mm]	Minimum allowable edge distance
t_{fix} [mm]	Fixture thickness
d_f [mm]	Diameter of clearance hole in the fixture
S_w [mm]	Key
T_{inst} [Nm]	Installation torque
	Material
	Type of rod
	Plastic sleeve

WARNING: Before use see this section and the complete procedure of installation reported in the next pages. We assume no liability for the not correct use of the product.



Option 7
M8 ... M16



MATERIAL	ROD DIAMETER	TYPE OF ROD	MIN. THICKNESS BASE MATERIAL			HOLE DIAMETER	HOLE DEPTH			EMBEDMENT DEPTH			EFFECTIVE ANCHORAGE DEPTH			CHARACTERISTIC SPACING			CHARACTERISTIC EDGE DISTANCE		
			h_{min} [mm]	h_{min} [mm]	h_{min} [mm]		d_o [mm]	h_1 [mm]	h_1 [mm]	h_1 [mm]	h_{nom} [mm]	h_{nom} [mm]	h_{nom} [mm]	h_{nom} [mm]	h_{nom} [mm]	h_{nom} [mm]	$S_{cr,N}$ [mm]	$S_{cr,N}$ [mm]	$S_{cr,N}$ [mm]	$C_{cr,N}$ [mm]	$C_{cr,N}$ [mm]
M8-M16 Non cracked Concrete	M8	≥ 5.8/A4-70	100	110	190	10	65	85	165	60	80	160	60	80	160	180	202	202	90	101	101
	M10	≥ 5.8/A4-70	100	120	230	12	75	95	205	70	90	200	70	90	200	210	253	253	105	126	126
	M12	≥ 5.8/A4-70	110	140	270	14	85	115	245	80	110	240	80	110	240	240	291	291	120	145	145
	M16	≥ 5.8/A4-70	136	161	356	18	105	130	325	100	125	320	100	125	320	300	351	351	150	175	175
	M20*	≥ 5.8/A4-70	168	218	448	24	125	175	405	120	170	400	120	170	400	360	450	450	180	225	225
	M24*	≥ 5.8/A4-70	201	266	536	28	150	215	485	145	210	480	145	210	480	435	540	540	218	270	270

To avoid splitting failure, the thickness of the concrete member shall be $h \geq 2h_{cr}$



(*) Diameters without ETA-CE approval

3. NUMBER OF FIXINGS



Option 7
M8 ... M16



MATERIAL	ROD DIAMETER	TYPE OF ROD	MIN. ALLOWABLE SPACING	MIN. ALLOWABLE EDGE DISTANCE	FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE IN THE FIXTURE	KEY	INSTALLATION TORQUE
	d [mm]		S _{min} [mm]	C _{min} [mm]	t _{fix} [mm]	d _r [mm]	S _w [mm]	T _{inst} [Nm]
M8-M16 Non cracked Concrete  					min ÷ max			
	M8	≥ 5,8/A4-70	40	40	0 ÷ 1500	9	13	10
	M10	≥ 5,8/A4-70	40	40	0 ÷ 1500	12	17	20
	M12	≥ 5,8/A4-70	40	40	0 ÷ 1500	14	19	40
	M16	≥ 5,8/A4-70	50	50	0 ÷ 1500	18	24	80
	M20*	≥ 5,8/A4-70	60	60	0 ÷ 1500	22	30	130
	M24*	≥ 5,8/A4-70	80	80	0 ÷ 1500	26	36	200

(*) Diameters without ETA-CE approval



ETAG - 029 Masonry

Threaded rod
M8-M10-M12

Sleeves

GC 12x80 - GC 15x85 - GC 20x85



M8 - M10 - M12





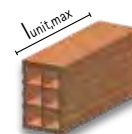
Threaded rod



Plastic sleeve

MATERIAL	ROD DIAMETER	TYPE OF ROD	MIN. THICKNESS BASE MATERIAL	HOLE DIAMETER	HOLE DEPTH	EMBEDMENT DEPTH	EFFECTIVE ANCHORAGE DEPTH	CHARACTERISTIC SPACING	CHARACTERISTIC EDGE DISTANCE	MIN. ALLOWABLE SPACING	MIN. ALLOWABLE EDGE DISTANCE	FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE IN THE FIXTURE	KEY	INSTALLATION TORQUE
	d [mm]		h _{min} [mm]	d ₀ [mm]	h ₁ [mm]	h _{nom} [mm]	h _{ef} [mm]	S _{cr} [mm]	C _{cr} [mm]	S _{min} [mm]	C _{min} [mm]	t _{fix} [mm]	d _r [mm]	S _w [mm]	T _{inst} [Nm]
Solid Brick  	M8	≥ 5,8 A4-70	115	10	85	80	80	240	120	240	120	10	9	13	5
	M10	≥ 5,8 A4-70	115	12	90	85	85	255	128	255	128	20	12	17	8
	M12	≥ 5,8 A4-70	125	14	100	95	95	285	143	285	143	30	14	19	10

MATERIAL	ROD DIAMETER	TYPE OF ROD	PLASTIC SLEEVE	MIN. THICKNESS BASE MATERIAL	HOLE DIAMETER	HOLE DEPTH	EMBEDMENT DEPTH	EFFECTIVE ANCHORAGE DEPTH	CHARACTERISTIC SPACING	CHARACTERISTIC EDGE DISTANCE	MIN. ALLOWABLE SPACING	MIN. ALLOWABLE EDGE DISTANCE	FIXTURE THICKNESS	DIAMETER OF CLEARANCE HOLE IN THE FIXTURE	KEY	INSTALLATION TORQUE
	d [mm]			h _{min} [mm]	d ₀ [mm]	h ₁ [mm]	h _{nom} [mm]	h _{ef} [mm]	S _{cr} [mm]	C _{cr} [mm]	S _{min} [mm]	C _{min} [mm]	t _{fix} [mm]	d _r [mm]	S _w [mm]	T _{inst} [Nm]
Hollow Brick  	M8	≥ 5,8 A4-70	GC 12x80	100	12	85	80	80	l _{unit,max}	0,5 x l _{unit,max}	100	100	10	9	13	3
	M10	≥ 5,8 A4-70	GC 15x85	100	16	90	85	85	l _{unit,max}	0,5 x l _{unit,max}	100	100	20	12	17	4
	M12	≥ 5,8 A4-70	GC 20x85	100	20	90	85	85	l _{unit,max}	0,5 x l _{unit,max}	120	120	30	14	19	6



l_{unit,max} = Max length of masonry unit

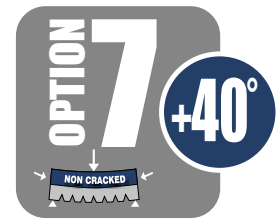
5. LOAD DATA

5.1 CONCRETE

LEGEND

N_{Rum} [kN]	Average ultimate tension load
V_{Rum} [kN]	Average ultimate shear load
N_{Rk} [kN]	Characteristic tension load
V_{Rk} [kN]	Characteristic shear load
N_{rec} [kN]	Admissible tensile load
V_{rec} [kN]	Admissible shear load

1kN = 100 Kg
 $c_{sus} = 1,0$



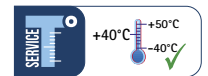
Loads for single anchor with no influence or spacing and edge distance and with $h \geq 2h_e$
 Shear directed away from the edge
 General safety factor included
 Load increasing safety coefficient used = 1,4

MIN Load data with MINIMUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]	$h_{ef,MIN}$ [mm]	N_{Rum} [kN]	V_{Rum} [kN]	N_{Rk} [kN]	V_{Rk} [kN]	N_{rec} [kN]	V_{rec} [kN]
C20/25 Non cracked Concrete	≥ 5.8	M 8	60	19,0	11,4	19,0	9,5	7,5	5,4
		M 10	70	30,2	18,1	27,4	15,1	10,9	8,6
		M 12	80	39,7	26,3	33,8	21,9	13,4	12,5
		M 16	100	56,4	48,9	47,0	40,8	18,6	23,3
		M 20*	120	64,1	76,2	52,6	63,5	20,9	36,2
		M 24*	145	82,0	110,4	67,3	92,0	26,7	52,5

MED Load data with MEDIUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]	$h_{ef,MIN}$ [mm]	N_{Rum} [kN]	V_{Rum} [kN]	N_{Rk} [kN]	V_{Rk} [kN]	N_{rec} [kN]	V_{rec} [kN]
C20/25 Non cracked Concrete	≥ 5.8	M 8	80	19,0	11,4	19,0	9,5	9,0	5,4
		M 10	90	30,2	18,1	30,2	15,1	14,0	8,6
		M 12	110	43,8	26,3	43,8	21,9	18,4	12,5
		M 16	125	70,5	48,9	58,7	40,8	23,3	23,3
		M 20*	170	90,8	76,2	74,5	63,5	29,6	36,2
		M 24*	210	118,8	110,4	97,5	92,0	38,7	52,5

MAX Load data with MAXIMUM effective anchorage depth



MATERIAL	ROD	ROD DIAMETER	ANCHORAGE DEPTH	ULTIMATE TENSION LOAD	ULTIMATE SHEAR LOAD	CHARACTERISTIC TENSILE LOAD	CHARACTERISTIC SHEAR LOAD	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]	$h_{ef,MIN}$ [mm]	N_{Rum} [kN]	V_{Rum} [kN]	N_{Rk} [kN]	V_{Rk} [kN]	N_{rec} [kN]	V_{rec} [kN]
C20/25 Non cracked Concrete	8.8	M 8	160	29,2	17,5	29,2	14,6	13,9	8,3
		M 10	200	46,4	27,8	46,4	23,2	22,1	13,2
		M 12	240	67,4	40,4	67,4	33,7	32,1	19,2
		M 16	320	125,0	75,0	125,0	62,5	59,5	35,7
		M 20*	400	203,0	121,8	175,4	101,5	69,6	58,0
		M 24*	480	271,4	175,8	222,9	146,5	88,5	83,7

(*) Diameters without ETA-CE approval

5.2 MASONRY



For different masonry base materials, load values must be obtained with in situ tests.



MATERIAL	TYPE OF ROD	ROD DIAMETER	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]	N _{rec} [kN]	V _{rec} [kN]
Solid Brick EN 771-1 - HD (High Density) Dimensions: 120x240x60 mm class f _b ≥ 73 N/mm ² density ρ _m ≥ 1700 Kg/m ³ ≥ 5.8 / A4-70	≥ 5.8 A4-70	M8	0,7	1,3
	≥ 5.8 A4-70	M10	1,0	2,5
	≥ 5.8 A4-70	M12	1,2	2,6



MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec} [kN]
Double Brick UNI EN 771-1 - LD (Low Density) Dimensions: 240x120x120 mm class f _b ≥ 18,3 N/mm ² density ρ _m ≥ 810 Kg/m ³ ≥ 5.8 / A4-70	≥ 5.8 A4-70	M8	GC 12 x 80	1,5	1,7
	≥ 5.8 A4-70	M10	GC 15 x 85	1,8	2,0
	≥ 5.8 A4-70	M12	GC 20 x 85	2,1	2,9




MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec} [kN]
Hollow Brick EN 771-1 - LD (Low Density) Dimensions: 120x250x250 mm class f _b ≥ 5,3 N/mm ² density ρ _m ≥ 550 Kg/m ³ ≥ 5.8 / A4-70	≥ 5.8 A4-70	M8	GC 12 x 80	0,3	0,9
	≥ 5.8 A4-70	M10	GC 15 x 85	0,7	0,9
	≥ 5.8 A4-70	M12	GC 20 x 85	0,8	0,9

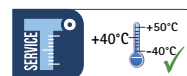
5.2 MASONRY




For different masonry base materials, load values must be obtained with in situ tests.

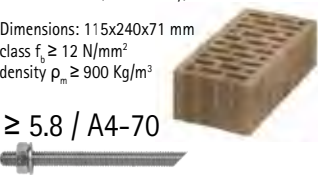


MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec} [kN]
Hollow Brick RC 40 EN 771-1 - LD (Low Density) Dimensions: 555x195x275 mm class f _b ≥ 4 N/mm ² density ρ _m ≥ 600 Kg/m ³ ≥ 5.8 / A4-70 	≥ 5.8 A4-70	M8	GC 12 x 80	0,3	0,4
	≥ 5.8 A4-70	M10	GC 15 x 85	0,3	0,4
	≥ 5.8 A4-70	M12	GC 20 x 85	0,3	0,4



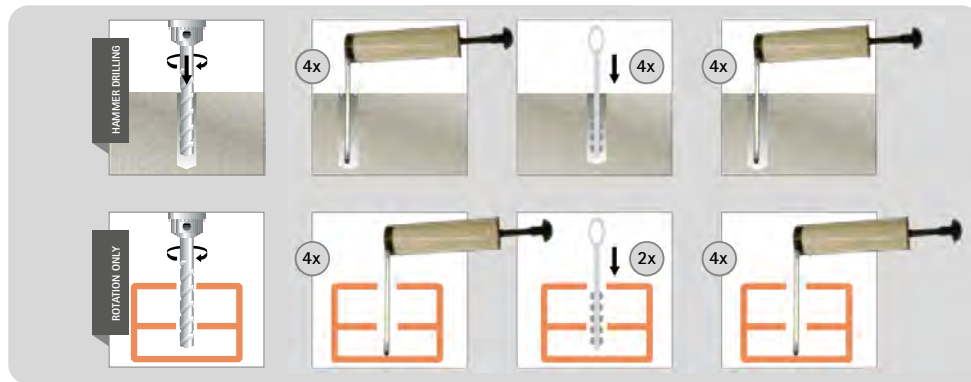
MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec} [kN]
Porotherm 25 P+W EN 771-1 - LD (Low Density) Dimensions: 373x238x250 mm class f _b ≥ 15 N/mm ² density ρ _m ≥ 800 Kg/m ³ ≥ 5.8 / A4-70 	≥ 5.8 A4-70	M8	GC 12 x 80	0,9	0,8
	≥ 5.8 A4-70	M10	GC 15 x 85	0,9	1,0
	≥ 5.8 A4-70	M12	GC 20 x 85	1,0	1,0



MATERIAL	TYPE OF ROD	ROD DIAMETER	PLASTIC SLEEVE	ADMISSIBLE TENSILE LOAD	ADMISSIBLE SHEAR LOAD
		d [mm]		N _{rec} [kN]	V _{rec} [kN]
Hlz B - 1.0 1NF 12-1 EN 771-1 - LD (Low Density) Dimensions: 115x240x71 mm class f _b ≥ 12 N/mm ² density ρ _m ≥ 900 Kg/m ³ ≥ 5.8 / A4-70 	≥ 5.8 A4-70	M8	GC 12 x 80	1,2	1,3
	≥ 5.8 A4-70	M10	GC 15 x 85	1,7	1,7
	≥ 5.8 A4-70	M12	GC 20 x 85	1,8	1,7

6. INSTALLATION

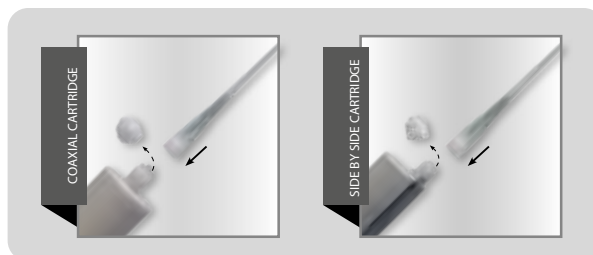
6.1 CLEANING



Drill the hole and check its perpendicularity. Blow the hole with an appropriate pump blower (or compression air), clean the lateral surface of the hole with an appropriate steel brush, blow again in the hole until there is no dust and/or any residual material inside. We strongly recommend use of the steel brush to clean hole sides.



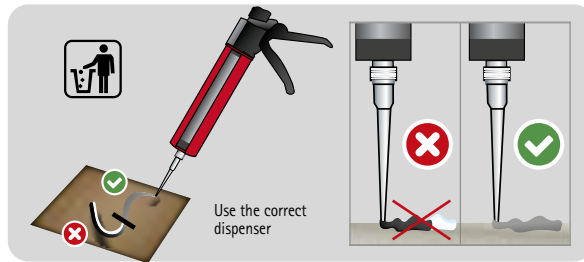
6.2 OPENING



Remove the pressure cup, screw on the mixer and insert the cartridge in the gun. Use protections for hands and face.

WARNING: Installation and loads technical data can be modified by us. For update technical data sheet see www.perfilstoneshop.com or be in contact with our Technical Office.

6.3 CARTRIDGE PREPARATION



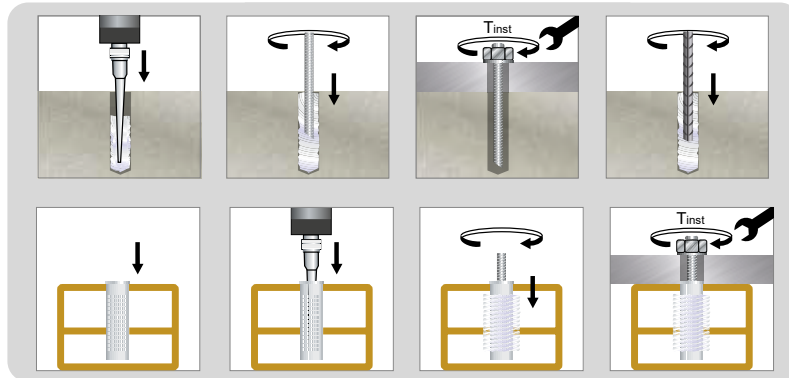
Before starting to use the cartridge, eject a first part of the product, being sure that:

- 1) Through the mixer (transparent) see that the flux of product is compound of part A (white colour) and part B (black colour).
- 2) The two components are completely mixed.

The complete mixing is reached only after that. The product obtained by mixing the two components, comes out from the mixer with an uniform colour. Now the cartridge is ready to be used.



6.4 INJECTION



- 1) Inject resin into the hole up to fill it 2/3rds. In hollow bricks use the plastic sleeve and inject the resin inside.
- 2) Before insert the rod, verify that the element is dry and free oil and other contaminants. Insert threaded stud turning back and forth to avoid presence of air in the fitted hole.
- 3) For the installation and the following anchor load phase, respect the open time and curing time detailed in the technical data sheet and in the label of the product.
- 4) Before to load the anchor, check the hardened of the product.
- 5) The cartridge can be used again screwing the cup and replacing the mixer. Remember to eject a first part of the product, see point 3.

