PUMAFIX TQV

DESCRIPTION

2-component fast curing vinylester injection resin.

TECHNICAL CARACTERISTICS

Pure resin based vinylester (styrene free).

ADVANTAGES AND USES

- Chemical bonding of horizontal and vertical anchors.
- Suitable for wet and dry substrates.
- Indoor and outdoor.
- Suitable for solid and hollow substrates.
- Anchoring machinery
- Anchoring bars, bolts, rods, plates…
- Fixing doors, railings, blinds, awnings, signs, aerials…
- For concrete, stone, brick or hollow concrete substrates.
- For assembling prefabricated concrete elements.
- Excellent mechanical resistance.
- Fast curing.
- Thixotropic, for both vertical and horizontal use.

SUITABLE SUBSTRATES

- Substrates must be resistant, stable, sound and clean, free of dust, demolding agents, organic products, etc.
- Once the perforation of the substrate has been made, clean any residue using compressed air or a cylindrical brush.

APPLICATION PROCEDURE

INSTRUCTIONS FOR USE INSTALLATION INSTRUCTIONS IN SOLID BRICKWORK FACTORY

- Drill a hole in accordance with the diameter and depth shown on the application table. During the drilling process, the perpendicularity of the hole in the substrate should be checked.
- Clean the hole of dust, fragments, oil, water, grease and other contaminants before injecting the mortar (with the manual blower and standard manual brush).
- The cleaning of the hole consists of 4 blowing operations, 4 brushing operations followed by a further 4 blowing operations.
- Before brushing, the brush must be cleaned and the diameter checked to ensure it is the correct size.
- The threaded rod must be free from any dust, grease, oil and other impurities.
- Unscrew the top of the cartridge, engage the mixing nozzle to the cartridge and position in the gun.
- At the start of using a new cartridge, eject some product until a uniform colour of the mortar appears.
- Fill the drilled hole uniformly from the bottom up to avoid air pockets, moving the nozzle slowly outwards.
- Fill 2/3 of the depth of the drilled hole with mortar.
- Insert the threaded rod slowly and with a slight rotating movement, remove the excess mortar injected from around the threaded rod.
- Wait the necessary curing time in accordance with the datasheet.
- Do not move or load the anchor until the curing process has finished.

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INSTALLATION INSTRUCTIONS IN HOLLOW/PERFORATED BRICKWORK FACTORY

- Unscrew the top of the cartridge, engage the mixing nozzle to the cartridge and position in the gun.
- At the start of using a new cartridge, eject some product until a uniform colour of the mortar appears.
- Fill the drilled hole uniformly from the bottom up to avoid air pockets, moving the nozzle slowly outwards.
- Fill 2/3 of the depth of the drilled hole with mortar.
- Insert the threaded rod slowly and with a slight rotating movement, remove the excess mortar injected from around the threaded rod.
- Wait the necessary curing time in accordance with the datasheet.
- Do not move or load the anchor until the curing process has finished.
- Remove the top of the plastic sieve.
- Introduce the plastic sieve in the hole.
- Fill the sieve uniformly from the bottom up, moving the mixing nozzle slowly towards the outside: move the mixing nozzle 10 mm towards the outside each time you pull the trigger.
- Completely fill the sieve.
- Place the top on the filled plastic sieve.
- Immediately insert the threaded rod slowly and with a slight rotating movement, removing the excess mortar injected from around the threaded rod.
- Wait the necessary curing time in accordance with the datasheet.
- Do not move or load the anchor until the curing process has finished.

Anchor	Installation					Resistance	Permissible load	
Rod class 8,8	Drill piece diameter d_0	Hole depth h_{ef}	Standard distance edges C_{Cr}	Standard distance anchors S_{Cr}	Torque T_{inst}	Charasteristic resistance N_{Rk}	Concrete C20/25	Concrete C20/25
	[mm]	[mm]	[mm]	[mm]	[N.m]	Traction [kN]	Traction [kN]	Shear [kN]
M8	10	80	80	160	10	29,3	11,6	8,1
M10	12	90	90	180	20	46,4	18,4	12,9
M12	14	110	110	220	40	63,8	25,3	18,7
M16	18	125	125	250	80	76,9	30,5	34,9
M20	24	170	170	340	120	112,7	44,7	54,4

Safety factor of 2.52 load stress

APPLICATION TABLE FOT CORRUTAGED CONCRETE BARS

Bar diameter d_5	Drill bit diameter d_0	Permissible load $F_{s\ in}$ C20/25 concrete. High tack 500 MPa corrutaged steel bar						
[mm]	[mm]	Hole depth Load stress	[mm] [kN]	[mm] [kN]	[mm] [kN]	[mm] [kN]	[mm] [kN]	[mm]*1 [kN]*1
8	10	l_v	80	120	160	200	240	322
		$F_{s\ [C20/25]}$	5,4	8,1	10,9	13,6	16,3	21,9
10	12	l_v	100	150	200	250	300	403
		$F_{s\ [C20/25]}$	8,5	12,7	17	21,2	25,4	34,2
12	16	l_v	120	180	240	300	360	483
		$F_{s\ [C20/25]}$	12,2	18,3	24,4	30,5	36,6	49,2
14	18	l_v	140	210	280	350	420	564
		$F_{s\ [C20/25]}$	16,6	24,9	33,3	41,6	49,9	66,9

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*1 Maximum loads according to elastic limit of 500 MPa corrutaged steel

RECOMMENDATIONS

- Do not use solvents.
- On site use and adjustments to the product are only possible before the hardening of PUMAFIX TQV.
- Store between 5º C and 25º C.
- Consult the Technical Department for any application not specified in this Technical Datasheet.
- For all information regarding safety during handling, transport, storage and use of product please consult the current version of the Product's Safety Sheet.

PACKAGING AND STORAGE

380 ml 2-component cartridges. (application with special gun) and 280 ml. (application with mono-component product guns).Shelf life: up to 18 months in sealed original packaging, sheltered from weather conditions and humidity.

TECHNICAL DATA

(Statistical data obtained under standard conditions)

Density	1.75 Kg/dm³
Double the load times in wet conditions	
Min application temperature	5º C
Max application temperature	30º C
Working temperature interval after curing	from -40º C to 80º C

Application temperature	Open time	Curing time
5º C	15 min.	120 min.
10º C	12 min.	90 min.
20º C	6 min.	45 min.
30º C	3 min.	20 min.

Calculation method: F_s (kN)= $d_{0\,x}\, l_{v\,x\,c}$ / 100
d_0 and l_v in mm, min. spacing 10 d_{s1} min. edge distance 5 d_s

Concrete resistance class		C12/15	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50	C45/55	C55/60
(*)	de Ø 8 mm a 25 mm	1,6	2	2,3	2,7	3	3,4	3,7	4	4,3
(**)		0,452	0,565	0,650	0,763	0,848	0,961	1,046	1,131	1,216
(*)	de Ø 26 mm a 32 mm	1,6	2	2,3	2,7					
(**)		0,452	0,565	0,650	0,763					
(*)	Ø 34 mm	1,6	2	2,3	2,6					
(**)		0,452	0,565	0,650	0,735					
(*)	Ø 36 mm	1,5	1,9	2,2	2,6					
(**)		0,424	0,537	0,622	0,735					
(*)	Ø 40 mm	1,5	1,8	2,1	2,5					
(**)		0,424	0,509	0,594	0,707					

* Charasteristic interchange resistance for good anchorage conditions (EC2) $_{ft}$ (MPa)
** Factor according to concrete type c
$c = 0{,}06 \times \pi \times ft \times s^2 / \gamma s$
γs = 1,15 safety coefficient
s = 1,5 high tack bar coefficient (1)

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(1) For smooth bars use s = 1,0

PERFORMANCE: NUMBER OF ANCHORS ACCORDING TO DIAMETER AND CARTRIDGE TYPE

Anchorage	Concrete rods		Corrutaged concrete bars	
Diámetro	380 ml.	280 ml.	380 ml.	280 ml.
8	90/100	65/75	90/100	65/75
10	55/55	35/40	50/55	35/40
12	30/34	20/24	20/25	14/19
16	16/18	11/13	12/14	9/11
20	7/8	5/6	7/8	5/6

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