TYTAN PROFESSIONAL Chemical anchor EV1

Polyester Styrene Free Low Odour Resin is a high performance, rapid curing two part chemical anchoring system. Applied through attached mixing nozzle directly into fixing hole. Product can be extruded with use of standard extruder for silicones. When cured this resin will produce a cost effective, strong, chemical resistant fixing.

APPLICATIONS

Anti-break in doors mounting
Curtain walling
Balustrading
Handrails
Hinges mounting

BENEFITS

Suitable for use in hollow wall, brickwork, masonry & concrete
Economical fixing resin
Medium duty load applications
Used in dry and wet conditions
Close edge distance and small spacing
Suitable as a filler for gap and crack filling
Styrene free with low odour
Ideal as well for indoor usage

APPLICATION CONDITIONS

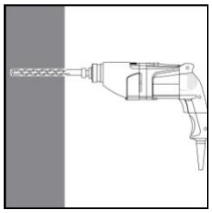
Application temperature [°C]	-10* ÷ +35

*Cartridge temperature must be at least 20°C

DIRECTIONS FOR USE

1. SOLID SUBSTRATE

1. Bore hole drilling

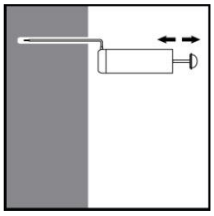


Drill hole in the substrate to the required embedment depth using the appropriately sized carbide drill bit.

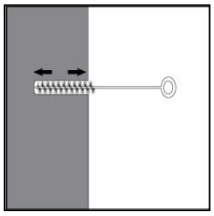
2. Bore hole cleaning

a) Manual air cleaning (MAC) for all bore hole diameters do ≤ 24mm and bore hole depth ho ≤ 10d.

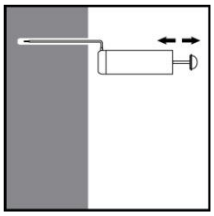
Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com



The manual pump shall be used for blowing out bore holes up to diameters
$d_o \leq 24mm$ and embedment depths up to $h_{ef} \leq 10d$.
Blow out at least 4 times from the back of the bore hole, using an extension
if needed.

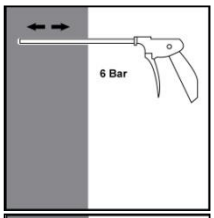


Brush 4 times with the specified brush size (see Table 1) by inserting the **Selena** steel brush to the back of the hole (if needed with an extension) in a twisting motion and removing it.

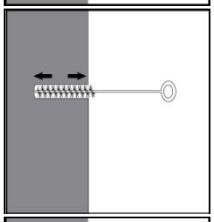


Blow out again with manual pump at least 4 times.

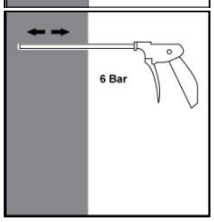
b) Compressed air cleaning (CAC) for all bore hole diameters do and all bore hole depths



Blow 2 times from the back of the hole (if needed with a nozzle extension) over the whole length with oil-free compressed air (min. 6 bar at 6m³/h).



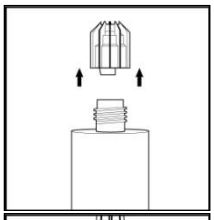
Brush 2 times with the specified brush size (see Table 1) by inserting the **Selena** steel brush to the back of the hole (if needed with an extension) in a twisting motion and removing it.



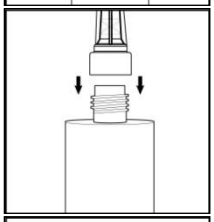
Blow out again with compressed air at least 2 times.

Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com

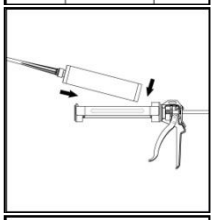
3. Installation



Remove the threaded cap from the cartridge.

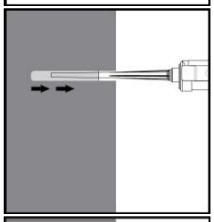


Tightly attach the standard or mixing nozzle. Do not modify the mixer in any way. Made sure the mixing element is inside the mixer. Use only the supplied mixer.

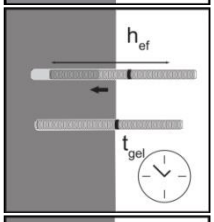


Insert the cartridge into the **Selena** dispenser gun.

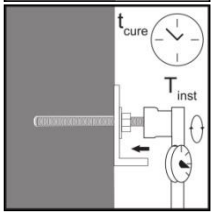
Discard the initial trigger pulls of adhesive. Depending on the size of the cartridge, an initial amount of adhesive mix must be discarded.
Discard quantities are:
- 5cm for between 150ml, 300ml & 400ml Foil Pack
- 10cm for all other cartridges



Inject the adhesive starting at the back of the hole, slowly withdrawing the mixer with each trigger pull.
Fill holes approximately 2/3 full, to ensure that the annular gap between the anchor and the concrete is completely filled with adhesive along the embedment depth.



Before use, verify that the threaded rod is dry and free of contaminants.
Install the threaded rod to the required embedment depth during the open gel time t_{gel} has elapsed. The working time t_{gel} is given in Table 2.

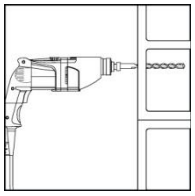


The anchor can be loaded after the required curing time t_{cure} (see Table 2).

SELENA GLOBAL EXPERIENCE
Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com

2. HOLLOW SUBSTRATE

4. Hole drilling

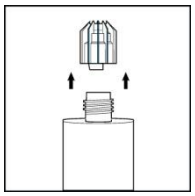


Drill hole in the substrate to the required embedment depth using the appropriately sized carbide drill bit.

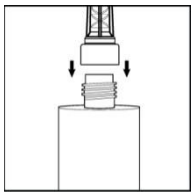
5. Hole cleaning

Just before setting an anchor, the bore hole must be free of dust and debris.

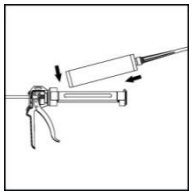
6. Installation



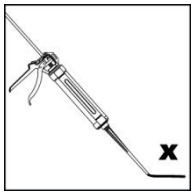
Remove the threaded cap from the cartridge.



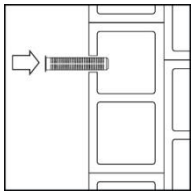
Tightly attach the mixing nozzle. Do not modify the mixer in any way. Made sure the mixing element is inside the mixer. Use only the supplied mixer.



Insert the cartridge into the dispenser gun.

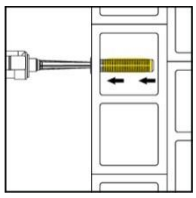


Discard the initial trigger pulls of adhesive. Discard the first 10ml of resin until an even colour is achieved.

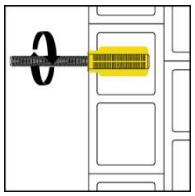


Introduce the sleeve of suitable dimensions.

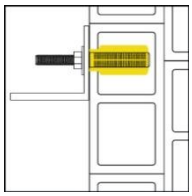
Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com



Insert the nozzle to the end of the sleeve and inject the resin so long till the sleeve will fill into 100%.



Insert the anchor, slowly with a slight twisting motion into the sleeve.



Remove excess resin and leave the fixing until minimum couring (loading) times has elapsed.

TECHNICAL DATA

Table 1. Bore hole cleaning method with steel brush

Threaded rod and rebar	Size	Nominal drill bit diameter d_o [mm]	Steel brush [mm]	Cleaning methods	
				Manual cleaning (MAC)	Compressed air cleaning (CAC)
Studs	M8	10	12	Yes … hef ≤ 80 mm	Yes
	M10	12	14	Yes … hef ≤ 100mm	
	M12	14	16	Yes … hef ≤ 120mm	
	M16	18	20	Yes … hef ≤ 160mm	

Table 2. Curing conditions

Minimum base material temperature	Gel time (working time) In dry/wet concrete	Cure time
-5°C to 0°C	40 min	180 min
0°C to 10°C	20 min	90 min
10°C to 20°C	9 min	60 min
20°C to 30°C	5 min	30 min
30°C to 40°C	3 min	20 min

The temperature of the bond material must be ≥ 20°C.

Table 3. Consumption of resin – solid substrate

Size	Hole diameter (mm)	Hole depth (mm)	Yield (165ml)*	Yield (300ml)*	Yield (380ml)*
M8	10	80	<39	<71	<90
M10	12	90	<24	<44	<56
M12	14	110	<14	<26	<33

SELENA GLOBAL EXPERIENCE
Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com

M16	18	125	<8	<14	<18

*Hole filling: 2/3 full

Table 4. Consumption of resin – hollow substrate

Size	Sleeve	Hole diameter (mm)	Hole depth (mm)	Yield (165ml)*	Yield (300ml)*	Yield (380ml)*
M6, M8	12 x 50	12	55	29	53	67
M10, M12	15 x 85	16	90	10	19	25
M10, M12	15 x 130	16	135	7	13	16
M14, M16	20 x 85	20	90			

Table 5. Typical tensile (kN) performance data at standard embedment depth

Size	Concrete, fck, cube = 25N/mm^2 (C20/25) 5.8 Grade Steel Studding							
	Characteristic Resistance (kN)		Recommended Load (kN)		Spacing	Hole ø Drill	Hole ø In Fixing	Setting Depth
	Tension (Nrk)	Shear (Vrk)	Tension (Nrec)	Shear (Nrec)	(mm)	(mm)	(mm)	(mm)
M8	19.0	9.0	9.1	5.1	160	10	9	80
M10	26.3	15.0	8.7	8.6	200	12	11	90
M12	36.3	21.0	12.0	12.0	240	14	13	110
M16	52.2	39.0	17.3	22.3	320	18	17	125

Detailed technical information can be found in the European Technical Approval No. ETA-11/0510 and ETA-15/0021.

NORMS / APPROVALS / CERTIFICATES

1. European Technical Approval, ETA-11/0510, Injection anchor for use in masonry
2. European Technical Approval, ETA-15/0021, Bonded injection type anchor for use in non-cracked concrete: sizes M8 to M16

TRANSPORT / STORAGE

The chemical anchors should be stored between +5°C and +25°C. The shelf life of the product is 18 months from the manufacturer date. Cartridge can be open up to 3 months. During this time the chemical anchor can be used – you only have to change mixer before use.

Chemical anchors in cartridge are resistant to low temperatures. The minimum temperature of transportation is -40˚C and the maximum time of transportation in temperatures below zero is 6 weeks. The product is resistant to 100 cycles of freezing / thawing out.

The information contained herein is offered in good faith based on Producer's research and is believed to be accurate. However, because conditions and methods of use of our products

Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com

are beyond our control, this information shall not be used in substitution for customer's tests to ensure that Producer's products are fully satisfactory for your specific applications. Producer's sole warranty is that the product will meet its current sales specifications. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Producer specifically disclaims any other expressed or implied warranty of fitness for a particular purpose or merchantability. Producer disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.

Selena FM S.A. ul. Strzegomska 2-4, 53-611 Wrocław, Poland,
tel. +48 71 78 38 290, fax: +48 71 78 38 291
e-mail: office@selena.com, www.selenafm.com