

PIOFIX ES

Polyester-based chemical anchor

DESCRIPTION

PIOFIX ES Two component, constituted resin and hardener, polyester based chemical anchor system, easy to apply, quick-setting and high-strength product. Thixotropic, non-sagging, nondripping, Ideal for horizontal and vertical applications. **PIOFIX ES** two parts are dispensed and mixed in one action through a static mixing nozzle, which allows accurate mixing and precise application.

USAGES

- Heavy load-carrying attachment in solid stone and concrete
- Repair mortar or adhesive mortar for concrete components
- Fixing of wooden constructions, metal constructions, metal profiles, pipe connections, etc.
- Starter bars, wall tiles, deformed bars, studs, bolts and large screws
- Where mildly corrosive environments exist
- Where minimal chemical resistance is required
- Suitable for situation where anchor is subject to cyclic loading

ADVANTAGES

- Fast curing
- Material is easily applicable with special gun
- Material color remains constant
- Resistant to many chemicals
- Non-sagging it can be applied vertically
- No shrinkage, can be used in oversized holes
- Thixotropic, can be applied in both vertical and horizontal directions
- Resistant to permanent temperature of 0°C – 100°C
- Fixings into mildly corrosive environment
- Suitable for application where cyclic loading is subjected

TECHNICAL DATA

PIOFIX ES	Typical values
Gel time @35°C	3 min
Full curing time @35°C	2 hours
Service Temperature	0°C to +100°C
Application Temperature	+15°C to +35°C
Specific Gravity of Comp. A (g/cm ³)	1.66±0.03
Specific Gravity of Comp. B (g/cm ³)	1.30±0.03

*Pull out test 24 hours after full cure is recommended.

JOINT DESIGN

Product	Pack Size
PIOFIX ES	380 ml

Fixings per cartridge			
Anchor size	Hole diameter (mm)	Hole depth (mm)	No. of fixings (380 ml)
M8	10	80	76
M10	12	90	47
M12	14	110	28
M16	18	125	15
M20	24	170	6
M24	28	210	4
M30	35	270	2
M36	40	330	1

NOTE: Based on continuous installation without interruptions or nozzle changes. Provided as a guide and will vary with temperature.

USAGE INSTRUCTIONS

1. Surface preparation

- Drill a hole suitable to the diameter of the anchoring rod or the object required anchor (by using driller)
- Clean the hole from dust using air blower
- Use twisted wire brush to remove the remaining loose particles and dust
- Blow air using air blower again to ensure a dust free hole
- Anchor/rod to be fixed must be oil-free & clean

2. Application

- Remove the cap of the cartridge and cut the foil, rotate the static mixer on the top of cartridge to fix it, then place the product in a standard cartridge gun
- Dispense first 10 ml or so waste until mix is homogenous in the nozzle
- The product is to be injected starting from the interior depth of the hole
- Place the anchoring rod then fasten it by rotation
- Wipe away excess materials
- Do not touch studs or anchor until mixture has gelled and do not load the anchor until curing is complete

3. Curing

PIOFIX ES Product curing must complete before opening the installed objects for service.

PACKAGING

380 ml component A & B.

HEALTH & SAFETY

PIOFIX ES should be applied in a ventilated place, avoid contact with skin and eyes, do not breath vapor and do not smoke while using the product.

For information and advice on disposal of chemical products, users shall refer to the most recent material safety data sheet; safety-related data.

STORAGE & SHELF LIFE

Store the product in air-conditioned places away from direct sunlight & extreme humidity.

The shelf life is 12 months at temperatures between +5°C and +25°C, product properties below 5°C and above 25°C is adversely affected.

POLYESTER BASED ANCHORING SYSTEM

Solid Substrate Rebar Installation Details

Pressure	Destroy Haul Strength (Kgf / KN)		Safety Haul Strength (Kgf / KN)		Working Standard (mm)			
	Concrete Strength				Hole Diameter	Hole Depth		
Rebar No.	#3	φ 10	3,070	31.0	1,023	10.0	13	90
	#4	φ 12	4,920	49.7	1,640	16.6	16	120
	#5	φ 16	6,800	68.7	2,267	22.9	20	145
	#6	φ 20	7,708	77.9	2,569	25.9	25	170
	#7	φ 22	9,440	95.4	3,147	31.8	28	200
	#8	φ 25	13,620	137.6	4,540	45.9	32	225
	#9	φ 29	20,340	205.6	6,780	68.5	37	250
	#10	φ 30	26,620	269.0	8,873	89.6	40	290

Remarks: 1. Concrete strength f_c' : 280 kg/cm² (4,000 psi)

2. Rebar strength: #3 - #5 fy: 2,800kgf/cm²; #6 - #11 fy: 4,200 kgf/cm²

REBAR EDGE DISTANCES & TESTING

Edge Distance Reduction Factor

Tensile load (Max loads - kN)

Edge Distance mm	Rebar							
	Concrete 4000 psi / 27.5 mpa							
	#3 (ϕ10)	#4 (ϕ12)	#5 (ϕ16)	#6 (ϕ20)	#7 (ϕ22)	#8 (ϕ25)	#9 (ϕ29)	#10 (ϕ30)
50	0.65							
60	0.75							
70	0.83		0.61					
80	0.90	0.70	0.66					
90	1.00	0.75	0.73	0.63				
100		0.83	0.80	0.65	0.62			
110		0.93	0.86	0.71	0.65			
120		1.00	0.93	0.75	0.70	0.61		
140			1.00	0.82	0.75	0.67		
160				0.93	0.88	0.75	0.61	
180				1.00	0.95	0.85	0.65	0.65
200					1.00	0.88	0.79	0.67
220						0.93	0.83	0.75
240						1.00	0.94	0.81
260							1.00	0.84
280								0.92
300								1.00

All coverage given values are theoretical and subject to actual site conditions. We recommend trial areas are done to establish practical values.

POLYESTER BASED ANCHORING SYSTEM

Solid Substrate Thread Rod Installation Details

Pressure	Destroy Haul Strength (Kgf / KN)		Safety Haul Strength (Kgf / KN)		Working Standard (mm)	
					Hole Diameter	Hole Depth
Concrete Strength	4,000 psi	280 kg/cm ²	4,000 psi	280 kg/cm ²		
Thread Rod No.	M8	2,249	22.7	750	7.6	13
	M10	3,150	31.8	1,050	10.6	13
	M12	4,501	45.5	1,500	15.2	16
	M16	5,402	54.6	1,801	18.2	20
	M20	6,752	68.2	2,251	22.7	25
	M24	13,134	132.7	4,378	44.2	28
	M30	24,556	248	8,185	82.7	35
	M36	35,373	357.3	11,791	119.1	40

Remarks: 1. Concrete strength f_c' : 280 kg/cm² (4,000 psi)
 2. Rebar strength: #3 - #5 fy: 2,800kgf/cm²; #6 - #11 fy: 4,200 kgf/cm²

THREAD ROD EDGE DISTANCES & TESTING

Edge Distance Reduction Factor

Edge Distance mm	Tensile load							
	Thread Rod							
	Concrete 4000 psi / 27.5 mpa							
	M8	M10	M12	M16	M20	M24	M30	M36
50	0.65							
60	0.75							
70	0.83		0.61					
80	0.90	0.70	0.66					
90	1.00	0.75	0.73	0.63				
100		0.83	0.80	0.65	0.62			
110		0.93	0.86	0.71	0.65			
120		1.00	0.93	0.75	0.70	0.61		
140			1.00	0.82	0.75	0.67		
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280								0.92
300								1.00

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TECHNICAL SERVICE

The technical service department of Arkaz is available to assist in the correct and best use of our products, these resources and advice are at your disposal entirely without obligation.

Please contact:
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