

PIOFIX EP

Epoxy-based chemical anchor system

DESCRIPTION

PIOFIX EP is two component, epoxy-based chemical anchor system, applied in a single action and the resin will provide strong fixing with exceptionally high chemical resistance. 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.
- Bonding threaded rods and reinforcing rebars
- Fixing machines, & other similar applications

ADVANTAGES

- Excellent adhesion performance
- 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 80°C (Temporary 100°C)
- Non-toxic and styrene free, has no odor
- Suitable for big diameter rebars and rods

TECHNICAL DATA

PIOFIX EP	Typical values
Gel time @35°C	10 – 20 min
Full Cure time @35°C	6 – 12 hours
Service Temperature	0°C to + 80°C
Application Temperature	+15°C to +35°C
Pot Life	2-3 min
Specific Gravity of Comp. A (g/cm ³)	1.62±0.03
Specific Gravity of Comp. B (g/cm ³)	1.4±0.03

*Pull out test 24 hours after full cure is recommended

JOINT DESIGN

Product	Pack Size
PIOFIX EP	400 ml

Factor Fixings per cartridge			
Anchor size	Hole diameter (mm)	Hole depth (mm)	No. of fixings (400 ml)
M8	10	80	80
M10	13	90	42
M12	16	120	21
M16	20	145	11
M20	25	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 EP Product curing must complete before opening the installed objects for service.

PACKAGING

400 ml component A & B.

HEALTH & SAFETY

PIOFIX EP 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 18 months at temperatures between +5°C and +25°C, product properties below 5°C and above 25°C is adversely affected.

EPOXY-BASED ANCHORING SYSTEM

Solid Substrate Rebar Installation Details

Pressure	Destroy Haul Strength (Kgf / KN)		Safety Haul Strength (Kgf / KN)		Working Standard (mm)			
	Concrete Strength		Concrete Strength		Hole Diameter	Hole Depth		
	4,000 psi	280 kg/cm ²	4,000 psi	280 kg/cm ²				
#3	φ 10	3,607	36.4	1,202	12.1	13	90	
#4	φ 12	6,409	64.7	2,136	21.6	16	125	
#5	φ 16	9,695	97.9	3,232	32.6	20	145	
#6	φ 20	13,655	137.9	4,552	46.0	25	170	
Rebar No.	#7	φ 22	18,672	188.6	6,224	62.9	28	200
	#8	φ 25	24,032	242.7	8,011	80.9	32	225
	#9	φ 28	27,364	276.4	9,121	92.1	37	260
	#10	φ 32	31,730	320.5	10,577	106.8	40	290
	#11	φ 36	35,843	362.1	11,948	120.7	42	320

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	#4	#5	#6	#7	#8	#9	#10	#11	
40	0.65									
50	0.66	0.62								
60	0.69	0.66	0.64							
70	0.72	0.69	0.65							
80	0.75	0.71	0.67	0.64						
90	0.78	0.74	0.69	0.65						
100	0.81	0.76	0.71	0.66	0.64					
125	0.88	0.82	0.76	0.70	0.67	0.64				
150	0.95	0.89	0.81	0.74	0.70	0.66	0.64			
160	1.00	0.91	0.83	0.75	0.72	0.67	0.65	0.65		
175		0.95	0.86	0.77	0.73	0.69	0.66	0.66	0.65	
225		1.00	0.91	0.81	0.79	0.75	0.72	0.69	0.67	
240			0.96	0.85	0.81	0.76	0.73	0.72	0.68	
250			1.00	0.87	0.83	0.77	0.74	0.73	0.69	
275				0.88	0.85	0.78	0.76	0.74	0.71	
280				0.92	0.85	0.79	0.76	0.75	0.73	
300				0.94	0.89	0.82	0.79	0.77	0.75	
320				1.00	0.91	0.84	0.81	0.79	0.77	
350					0.95	0.87	0.84	0.82	0.79	
400					1.00	0.93	0.89	0.83	0.82	
440						0.97	0.93	0.85	0.84	
480						1.00	0.95	0.91	0.86	
500							0.97	0.95	0.91	
525							1.00	0.97	0.94	
550								1.00	0.97	
570									1.00	

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

EPOXY BASED ANCHORING SYSTEM

Solid Substrate Thread Rod Installation Details

Pressure	Destroy Haul Strength (Kgf / KN)		Safety Haul Strength (Kgf / KN)		Edge Spacing (cm)	Working Standard (mm)		
	Concrete Strength	4,000 psi 280 kg/cm ²	4,000 psi 280 kg/cm ²			Hole Diameter	Hole Depth	
Thread Rod No.	M8	2,338	23.6	779	7.9	5	10	80
	M10	3,133	31.6	1,044	10.5	6	12	90
	M12	4,495	45.4	1,498	15.1	7	14	110
	M16	6,595	66.6	2,198	22.2	7	18	125
	M20	11,958	120.8	3,986	40.3	9	24	170
	M24	17,352	175.3	5,784	58.4	13	28	210
	M30	28,473	287.6	9,491	95.9	16	35	270
	M36	39,170	395.7	13,056	131.9	19	40	330

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
40	0.65							
50	0.75	0.64						
60	0.83	0.71	0.64					
70	0.91	0.78	0.69					
80	1.00	0.85	0.75	0.64				
90		0.92	0.81	0.68				
100		1.00	0.87	0.73	0.65			
110			0.93	0.78	0.67			
120			1.00	0.82	0.71	0.65		
140				0.92	0.79	0.68	0.64	
160				1.00	0.86	0.74	0.67	0.65
180					0.94	0.81	0.73	0.68
200					1.00	0.87	0.79	0.74
220						0.93	0.85	0.78
240						1.00	0.91	0.86
265							1.00	0.92
280								1.00

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

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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