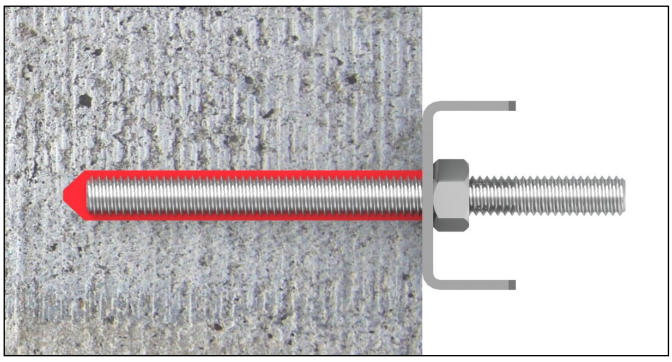
Fosroc® Lokfix E75

constructive solutions

High performance pure epoxy 3:1 resin cartridge system, for anchoring reinforcement and fixings into a variety of substrates.



Uses

For concrete (solid, porous and light) and solid masonry.

- Accredited for use in dry, damp and flooded concrete substrates
- Can be used with cracked concrete
- Fixing of post installed reinforcement
- Anchoring of threaded rod fixings
- Anchoring of internal threaded rod sleeves
- Internal, external and submerged conditions
- Can be applied to almost any size of fixing
- For horizontal, vertical and overhead application
- Bonding and surface crack sealing applications

Advantages

- High Bond strengths
- No additional mixing equipment required
- C1 and C2 seismic resistance*
- Does not apply expansive force to the substrate
- Fixings can be spaced closer together than mechanical anchors
- Enables fixings closer to edges than mechanical anchors
- Resistant to a variety of chemicals
- Low VOC
- Tested with diamond drilled bore holes
- Fire rated up to 2 hours*
- Waterproof, protecting the fixing from corrosion
- Re-usable
- Slow gel times allow for more complex procedures
- 24 month shelf life

**consult test data for specific conditions*

Description

Lokfix E75 is a two-component Epoxy anchoring material, supplied in 3:1 ratio side-by-side cartridges with a static mixer nozzle. When applied it sets and cures to firmly secure a variety of steel fixings into concrete and solid masonry substrates.

Other grades of Lokfix are also available

Lokfix E35 Resin anchor cartridge system based on styrene free Polyester for lightweight anchoring.

Lokfix E55 Resin anchor cartridge system based on styrene free vinyl-ester for medium and heavy duty anchoring.

Specification Clause

The anchor grout shall be Fosroc Lokfix E75 cartridge system. The Anchoring grout shall comply with EDA 330087-00-0601, systems for post-installed rebar connections, which supersedes EOTA TR 023.

Standards Compliance

Lokfix E75 complies with the following standards:

- European approval according to EAD 330499-00-0601, anchoring in cracked and un-cracked concrete (which supersedes ETAG 001 option 5) includes fire testing, threaded rod only, 120 minutes and C1 & C2 seismic approval.
- European approval according to EAD 330087-00-0601, diamond drilled holes in un-cracked concrete, which supersedes ETA TR029 in concrete option 7.
- Émissions dans l'air intérieur : A+
- LEED compliant VOC Level

Fosroc® Lokfix E75

ETA CE 1343
Fosroc Limited
Factory RC1
18
1343- CPR-M 672-5
ETA-18/0590
EAD-330499-00-0601
Option 1
M8-M30/Rebar 8-32mm
For use in cracked &
un-cracked concrete

ETA CE 1343
Fosroc Limited
Factory RC1
18
1343- CPR-M 672-4
ETA-18/0592
EAD-330499-00-0601
Option 7
M10-M24/Rebar 10-25mm
Diamond drilled holes in
un-cracked concrete

ETA CE 1343
Fosroc Limited
Factory RC1
18
1343- CPR-M 672-3
ETA-18/0588
EAD-330087-00-0601
Ø8-Ø40
Post-installed rebar

Material Properties

Table 1—Material Properties

Compressive Strength (EN196)	>110 MPa
Flexural Strength (EN196)	>40MPa
E Modulus (EN196)	10,800 MPa
Shore D Hardness	85
Density	1.41kg/L
Temporary service temperature	-40 to +72°C
Permanent service temperature	-40 to +43°C
Electrical resistance (IEC93)	1.2 x10^{12} Ωm
Thermal Conductivity (IEC 600093)	0.47W/m.K

Chemical resistance

Lokfix E75 has resistance to a wide variety of chemicals. Consult Fosroc technical department for specific data.

Table 2 - Lokfix E75 Gel & *Dry Curing Times

For optimal use the cartridge temperature should be between +10 to +25ºC.

Installation temperature range +5 to +40ºC.

Substrate Temp.	Gel Time (mins)	*Dry Curing Time (hrs)
+5ºC	120	50
+10 ºC	90	30
+20 ºC	30	10
+30 ºC	20	6
+40ºC	12	4

*The table is for dry conditions. In wet/damp conditions, the curing time will double.

Be aware that the substrate temperature can vary significantly from the ambient temperature.

Design Criteria

Assistance and qualification

Design of fixings and reinforcement must be undertaken by suitably qualified personnel with understanding of the construction and use of the structure, the use of the fixing, as well as being in compliance with local legislation.

In applications where fixings or rebar must be designed and applied in compliance with the requirements of the relevant ETA and EDA, designers should consult the relevant Fosroc accreditation documents.

Fosroc provides software which may be used to aid design, available at www.lokfix.com or through your local technical office.

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Design Criteria

Table 3- Setting Parameters – details below

Un-cracked Concrete Rebar Anchor Size				Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28	Ø32	Ø36	Ø40
Edge Distance		$C_{cr,N}$	mm	97	121	139	170	180	219	274	298	330	372	413
Min. Edge Distance	5 x d	C_{min}		40	50	60	70	80	100	125	140	160	180	200
Axial Distance		$S_{cr,N}$		194	242	277	339	360	438	548	596	661	744	826
Min. Axial Distance	5 x d	S_{min}		40	50	60	70	80	100	125	140	160	180	200
Embedment Depth		h_{ef}		80	90	110	115	125	170	210	250	280	340	360
Min Part Thickness		h_{min}		h_{ef} +30mm		h_{ef} +2d_0								
Drill Diameter		d_0		12	14	16	18	20	24	32	35	40	46	50
Brush Diameter				14	16	18	20	22	26	34	37	42	48	52
Material Consumption			ml	6	7	10	12	15	24	66	88	128	220	256

Table 4 - Setting Parameters – details below

Un-cracked Concrete Threaded Rod Anchor Size				M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39
Edge Distance		$C_{cr,N}$	mm	113	135	165	188	255	304	342	379	400	436	472
Min. Edge Distance	5 x d	C_{min}		40	50	60	80	100	120	135	150	165	180	195
Axial Distance		$S_{cr,N}$		226	270	330	375	510	607	683	759	799	872	945
Min. Axial Distance	5 x d	S_{min}		40	50	60	80	100	120	135	150	165	180	195
Embedment Depth		h_{ef}		80	90	110	125	170	210	250	280	320	350	380
Min Part Thickness		h_{min}		h_{ef} +30mm			h_{ef} +2d_0							
Drill Diameter		d_0		10	12	14	18	24	28	32	35	37	42	46
Brush Diameter				12	14	16	20	26	30	34	37	39	44	48
Installation Torque		$T_{inst.}$	Nm	10	20	40	60	120	150	200	250	350	500	700
Material Consumption			ml	3	4	5	7	24	35	58	72	71	130	180

Note tables 3 and 4 are for dry un-cracked concrete only. For all other conditions including fixings into solid masonry types, fixings into cracked concrete, fixings subject to seismic conditions and post installation of reinforcement, then refer to the relevant method statement, EAD document or use the design software www.lokfix.com, also available through your local technical office.

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Product Installation

Full details are available in the application method statement, a copy of which may be obtained from your local Fosroc technical department.

The following methodology is for installation into solid substrates such as reinforced concrete. For other substrates or fixings please request a separate method statement.

Hole Formation and Preparation

Drill hole with percussive drill ensuring sides of the concrete are rough. If using diamond drill, the hole must be flushed with clean water, cleaned with a wire brush and flushed again before using the cleaning process described below.

If rebar is struck immediately stop drilling and seek the advice of the designing engineer.

Clean holes immediately prior to installation of fixings to avoid them becoming re-contaminated.

Standing water in the hole shall be removed prior to preparation. Using a hand pump or compressed air insert the nozzle to the back of the hole and blow out 2 times.

Insert a wire cleaning brush to the bottom of the hole and brush out 2 times

Using a hand pump or compressed air insert the nozzle to the back of the hole and blow out an additional 2 times.

If dust is still present, repeat the process until no further dust is visible.

Ensure the drill bit and the cleaning brush are of suitable diameter for the fixing used. Consult tables 3 and 4 for specific diameters.

Fixings Preparation

Fixings shall be free from rust, paint, grease and contaminants which will interfere with the bond.

Mark the required depth on the fixing.

Installation

Lokfix E75 requires a special 3:1 application gun.

Unscrew the fixing cap. Remove the plastic stopper.

Screw the static mixer nozzle onto the cartridge. Place the cartridge into the application gun.

Pull the trigger to extrude the Lokfix E55.

Important: extrude the initial material until the colour becomes red and consistent. This typically takes two or three full squeezes. Discard material that is streaky in colour.

Insert the nozzle to the back of the hole and pump the Lokfix material gently pulling back until the hole is ¾ full. Ensure there are no voids in the resin. If the hole is too deep for the nozzle to reach the back, use a nozzle extender.

In wide/overhead holes a piston plug will help reduce slump and ensure a void fee application. This is particularly recommended for fixings above 20mm diameter.

Observing the product gel time, insert the fixing into the hole using a gentle twisting motion. Ensure the fixing is inserted to the required depth and is held straight until the resin sets. There should be some extrusion of the Lokfix material from the hole which indicates that there is full embedment.

Do not load or apply tension to the fixing until the product fixing time has been observed, see table 2 .

Do not over-tighten fixings. Observe maximum installation torque as stated in tables 3 & 4.

If the cartridge is to be re-used, remove the mixing nozzle and re-apply the cap. When using again a new mixing nozzle will be required.

Cleaning

Wet resin should be removed from tools and equipment using Fosroc Solvent 102 immediately after use.

Estimating

Supply

Lokfix E75 supplied in boxes of 12 no. 385ml cartridges, each supplied with a single mixer nozzle.

Fosroc may also supply:

- Lokfix E75 application gun, one size.
- Steel cleaning brushes, in various diameter to clean the hole.
- Dust blower pump, one size, hand held to clean the hole.
- Hollow block sleeves, in a variety of diameters and embedded lengths for hollow bricks and blocks, can be used for solid brick.

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- Extension nozzle, essential where the embedment depth is greater than 190mm. In various lengths.
- Piston plugs, required where the hole diameter is >20mm or where embedment depth is >240mm. Must be used with an extension nozzle.
- Application guns, hand held for cartridge application.
- Spare mixer nozzles, required if a cartridge is to be re-used.

Yield

Standard yield estimation is provided in tables 4 and 5 based on the hole diameter, fixing size and embedded length.
For non-standard consumption the following calculation of theoretical consumption may be used. factors such as over-drilling, extrusion from bolt hole, initial gun extrusion and some wastage. Should also be considered

(π radius cm hole^2 - π radius cm bolt^2) x hole length cm = consumption ml.

Limitations

Load calculations should always be undertaken by a qualified engineer.

For designing under conditions where seismic forces or fire is a consideration, please consult the relevant certification to make suitable adjustments for loading.

Lokfix E75 may stain natural or decorative stone. Suitability must be checked before using for such applications.

Storage

385ml cartridges have a maximum shelf life of 24 months when kept in a dry warehouse at between +5 to +25ºC.

Precautions

Health & Safety

Observe the information provided on the relevant SDS.

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