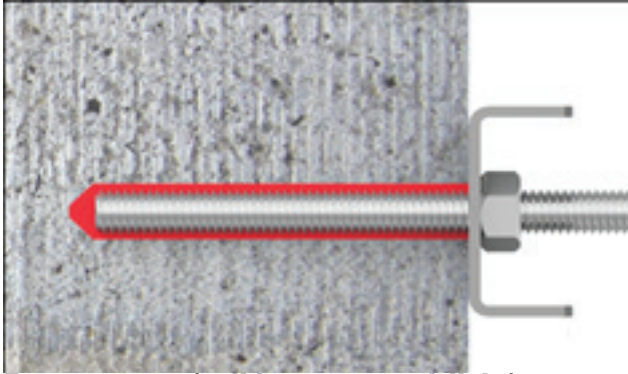


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Styrene free vinyl-ester resin based cartridge system, for anchoring reinforcement, fixings into a variety of substrates.



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

- 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 strength
- Rapid return to service
- Can use with a good quality skeleton gun (300ml size)
- No additional mixing equipment required
- Does not apply expansive force to the substrate
- Enables fixings closer to edges than mechanical anchors
- Resistant to a variety of chemicals.
- Low VOC
- Waterproof, protecting the fixing from corrosion
- Performs over a wide variety of temperatures
- C1 seismic resistance, Lokfix E55S only
- Fire rated up to 2 hours, Lokfix E55S only

Description

Lokfix E55 is a two component vinyl-ester anchoring material, supplied in single component cartridges with a static mixer nozzle. When applied it sets and cures rapidly to firmly secure a variety of steel fixings into concrete and masonry substrates.

Two grades of Lokfix E55 are available, selection is based upon substrate installation temperature and compliance :

Lokfix E55S : Standard temperature grade, optimised for substrate installation temperatures between -10 to +40°C.

Lokfix E55L : Low temperature grade, optimised for substrate installation temperatures : - 20 to + 15°C. Lokfix E55L does not have C1 seismic approval or fire testing.

Other grades of Lokfix are also available.

Lokfix E35 Resin anchor cartridge system based on styrene free Polyester for lightweight fixings into concrete and masonry.

Lokfix E75 Resin anchor cartridge system based on pure epoxy for heavy duty fixings and reinforcement anchoring into concrete

Specification Clause

The anchor grout shall be Fosroc Lokfix E55 cartridge system. The Anchoring grout shall comply with ETA-18/0587, ETA-18/0586 and ETA-18/0585 and have a fire resistance of 120 minutes.

Standards Compliance

Lokfix E55S and Lokfix E55L comply with the following standards:

- European approval to EAD-330499-00-061 option 1 for use in cracked and un-cracked concrete, which super sedes ETAG 001 option 5.
- European approval to EAD-33076-00-0604 for use in anchoring masonry, which supersedes ETAG TR 029 in concrete option 1 and 7.
- European approval to EAD-33087-00-0601 for use in post-installed rebar, which supersedes TR 023.
- LEED compliant VOC Level
- Fire resistance <120mins
- Seismic C1 testing as part of EAD 330499-00-0601 for specific fastening sizes

Compressive Strength (EN196)	100 MPa
Flexural strength (EN196)	15 MPa
E Modulus (EN 196)	14000 MPA
Shore D Hardness	90
Density	1.77kg/L
Permanent Service Temperature	-40 to +72°C
Service Temperature	-40 to +120°C

Fosroc LokfixE55

Electrical resistance (IEC93) 3.6 x109 Ωm

Thermal Conductivity (IEC 600093) 0.65W/m.K

Chemical resistance

Lokfix E55 has resistance to a wide variety of chemicals. Consult Fosroc technical department for specific data.

Table 2 - Lokfix E55S Gel & Fixing Times

For optimal use the cartridge temperature should be between +15 to +30°C

Substrate Temp.	Gel Time (mins)	Fixing Time (mins)
-10°C	90	1440
- 5°C	90	840
0°C	45	430
+5°C	25	120
+10°C	15	80
+20°C	6	45
+30°C	4	25
+35 to 40°C	2	20

Table 3. Lokfix E55L Gel & Fixing Times

For optimal use the cartridge temperature should be between +10 to + 20°C.

Substrate	Gel Time (mins)	Fixing Time (mins)
-20°C	75	1140
-15°C	55	960
-10°C	35	600
-5°C	20	300
0°C	10	150
+5°C	6	80
+10°C	6	45
+15°C	4	25

For installations below -10°C the cartridge must be conditioned between +10°C and +20°C.

Note, the substrate temperature can vary significantly from the ambient temperature. The tables are for dry conditions.

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 ETA, 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.

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 hollow substrates please request a separate method statement.

Hole Formation and Preparation

Drill hole with percussive drill ensuring sides of the concrete are rough.

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 4 times

Insert a wire cleaning brush to the bottom of the hole and brush out 4 times

Using a hand pump or compressed air insert the nozzle to the back of the hole and blow out an additional 4 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

Fosroc LokfixE55

Table 5. Setting Parameters - details below

Un-cracked Concrete Threaded Rebar											
Anchor Size		Un-cracked									
Edge Distance		Ccr1N	92	126	152	173	188	253	303	323	341
Min. Edge Distance	5 x d	Cmin	40	50	60	70	80	100	125	140	160
Axial Distance		Scr1N	184	252	304	346	376	506	606	646	682
Min. Axial Distance	5 x d	Smin	40	50	60	70	80	100	125	140	160
Embedment Depth		H hef	80	90	110	115	125	170	210	250	270
Achor Diameter		d	8	10	12	14	16	20	25	28	32
Drill Diameter		d _o	12	14	16	18	20	24	32	35	40
Brush Diameter			14	16	18	20	22	26	34	37	41.5
Installation Torque		T	10	20	40	50	60	120	150	200	250
Material Consumption	ml		6	7	10	12	15	24	66	88	124

Table 5. Setting Parameters - details below

Un-cracked Concrete Threaded Rebar											
Anchor Size		Un-cracked									
Edge Distance		Ccr1N	92	126	152	188	253	291	312	329	
Min. Edge Distance	5 x d	Cmin	40	50	60	80	100	120	135	150	
Axial Distance		Scr1N	184	252	304	346	376	506	606	646	682
Min. Axial Distance	5 x d	Smin	40	50	60	70	80	100	125	140	160
Embedment Depth		H hef	80	90	110	115	125	170	210	250	270
Achor Diameter		d	8	10	12	14	16	20	25	28	32
Drill Diameter		d _o	12	14	16	18	20	24	32	35	40
Brush Diameter			14	16	18	20	22	26	34	37	41.5
Installation Torque		T	10	20	40	50	60	120	150	200	250
Material Consumption	ml		6	7	10	12	15	24	66	88	124

hreaded rod:

Drill bit Ø = rod diameter +2mm

Wire brush Ø = rod diameter +4mm

Reinforcement:

Drill bit Ø = rod diameter +4mm

Wire brush Ø = rod diameter +6mm

Fixings Preparation

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

Mark the required depth on your fixing

Installation

Unscrew the fixing cap. Pull the plastic within the tube slightly upwards so that the steel collar is exposed, cut the plastic tube competently removing the metal clip and discard.

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 grey 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 $\frac{3}{4}$ 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 free application.

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 tables 2 & 3.

Do not over-tighten fixings. Observe maximum installation torque as stated in tables 4 & 5 for un-cracked concrete. If the cartridge is to be re-used, remove the mixing nozzle and re-apply 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.

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Wet resin should be removed from tools and equipment using Fosroc Solvent 105 immediately after use.

Estimating

Supply

Lokfix E55S and Lokfix E55L are supplied in boxes of 12 no. 300ml cartridges, each supplied with a single mixer nozzle. Fosroc may also supply:

- steel cleaning brushes
- hollow block sleeves
- dust blower pumps
- extension nozzle
- application guns
- piston plugs
- spare mixer nozzles

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

$(\pi \text{ radius cm hole}^2 - \pi \text{ radius cm bolt}^2) \times \text{hole length cm} = \text{consumption ml.}$

Limitations

Load calculations should always be undertaken by a qualified engineer.

When embedding into hollow masonry it is normally necessary to use hollow block sleeves. Consult separate method statement.

Storage

300ml cartridges have a maximum shelf life of 12 months when kept in a dry warehouse at between +5 to +25°C.

Precautions

Health & Safety

Observe the information provided on the relevant SDS.

Fosroc® Polyurea WCS

Important note :

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.



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