

Polyester resin anchoring grout



Uses

Lokfix mix and place anchoring grouts are used for:

High-strength corrosion-resistant anchoring of bolts and bars into concrete, rock, masonry or brickwork where high speed of installation and early application of load is required

Permanent installation of reinforcement starter bars, MOT bolts, foundation bolts, base plates, balustrading, barriers and safety fences, railway tracks and tie-back anchors.

Advantages

- Easy to mix and apply
- Rapid strength gain
- Vibration resistant
- Corrosion resistant
- Non-expansive
- Can be placed underwater
- Increased flowability

Description

The two versions of Lokfix are pre-measured, two-part, filled polyester resin grouts. After hardening, the grout produces anchorages of consistent reproducible values.

The two versions are:

Lokfix S25 (pourable grade, 25 minute gel at 20°C):

For use where the hole is 8 to 40 mm greater in diameter than the bar.

Lokfix P25 (pumpable grade, 25 minute gel at 20°C):

Used in overhead or horizontal holes where the hole is up to 25 mm greater in diameter than the bar. The thixotropic nature of Lokfix P25 reduces flow of grout out of the hole.

Standards compliance

The material is tested in accordance with BS 5080, BS 7861 and BS 6319.

Properties

Gel time

Temperature (°C)	Gel time (minutes)	Minimum time before load (hours)
5	130	12
10	65	5
20	25	2
30	10	1

The following test results were obtained at a temperature of 20°C:

	Lokfix S25	Lokfix P25
Compressive strength: (BS 6319 Part 2: 1983)	83 N/mm ²	87 N/mm ²
Tensile strength: (BS 6319 Part 7: 1985)	11 N/mm ²	11 N/mm ²
Flexural strength: (BS 6319 Part 3: 1983)	20 N/mm ²	19 N/mm ²
Compressive modulus: (BS 7861 Part 1: 1996)	13 GPa	13 GPa
Density:	1880 to 1920 kg/m ³	1880 to 1920 kg/m ³

Chemical resistance

The cured resin is resistant to fresh and salt water, petrol, oils, grease and most acids, alkalis and solvents. Consult Fosroc Technical Department for specific chemical resistance.

Lokfix

Application instructions

Selection of grout version

The version of Lokfix grout chosen will depend on anchor conditions (see 'Description').

Parameters of anchor design

The high strength of the cured resin permits strong anchors to be created. Ultimate strength is varied by:

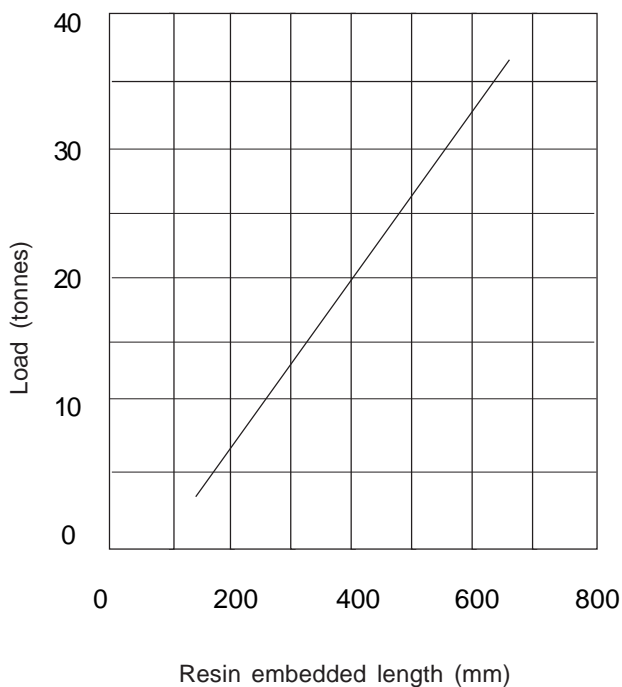
- Strength of host material
- Length of resin bond to bar
- Hole preparation and formation
- Type and dimension of bar

Typical loads attained

Concrete: 20 N/mm² unreinforced.

Bar: Deformed rebar to BS 4449.

Hole: Air-flushed rotary percussive drilled.



Note: The graph illustrates typical failure loads. Minimum safety factors of 1.5 in non-critical and 2 in critical cases should be considered for design purposes. Where relevant, the local codes of practice or standards must also be considered in relation to anchorage length.

Hole preparation and formation

Optimum performance of Lokfix grouts requires rough sided, dust-free holes. Use of rotary percussive drills with air or water flushing is recommended.

Diamond drilled holes should be under-reamed.

Cast holes should preferably be of inverse dovetail configuration. If parallel sided holes are cast they should be rough to provide adequate keying.

Bar preparation

All bars should be deformed. They should preferably be degreased and all flaky rust removed.

Mixing

A complete pack of resin and catalysed filler should be mixed in one operation. Mixing may be carried out manually or mechanically. When a smooth, even consistency is achieved the grout is ready for use and should be placed well within the gel time of the grout.

Packs have been designed to produce practical and economic volumes of grout.

DO NOT attempt to mix partial pack components.

Estimating

Refer to estimating guide table on the following page.

Lokfix

Estimating guide

To find the quantity of material required

The table below indicates the quantity of material in litres required for each 100 mm of hole depth.

Example

- 100 fixings, each using a 20 mm diameter bolt into a 38 mm diameter hole which is 300 mm deep.
- From the table: 20 mm diameter bolt and 38 mm diameter hole gives **0.082 litre** per 100 mm depth of hole therefore **0.082 litre** x 3 (300 mm deep hole) equals **0.246 litre** per hole/fixing.
- As 100 fixings are required: 100 x 0.246 litre = **24.6 litres total**.
- Lokfix S25 and Lokfix P25 are supplied in 2.5 litre packs

therefore $\frac{24.6}{2.5} = 9.84 \longrightarrow$ 10 packs required

NB: This example and the table below quotes net quantities and makes no allowance for overdrilling the hole or for any wastage. A typical allowance to cover these factors is approximately 10%.

To determine the quantity of material per 100 mm of hole depth

Hole diameter	Bolt diameter							
	12 mm	16 mm	20 mm	25 mm	32 mm	38 mm	44.5 mm	51 mm
20 mm	0.020 litre	—	—	—	—	—	—	—
25 mm	0.038 litre	0.029 litre	—	—	—	—	—	—
32 mm	0.069 litre	0.060 litre	0.049 litre	0.031 litre	—	—	—	—
38 mm	—	0.093 litre	0.082 litre	0.064 litre	—	—	—	—
45 mm	—	—	0.128 litre	0.110 litre	0.079 litre	0.046 litre	—	—
51 mm	—	—	—	0.155 litre	0.124 litre	0.091 litre	—	—
57 mm	—	—	—	0.206 litre	0.175 litre	0.142 litre	0.100 litre	—
64 mm	—	—	—	0.273 litre	0.241 litre	0.208 litre	0.166 litre	0.117 litre
76 mm	—	—	—	—	—	0.340 litre	0.298 litre	0.249 litre

Installation

Lokfix S25

Using the calculated volume of grout based on the estimating guide table, the grout should be poured steadily into the prepared holes. The anchor bar is then pressed into the hole to the required depth; slight agitation will assist in achieving a complete bond. The bar should be left undisturbed in the required position until the resin is set.

Lokfix P25

The grout should be injected to the rear of the hole to avoid air entrapment. The thixotropic nature of Lokfix P25 will prevent significant flow of resin out of the hole.

Cleaning

Any mixing drums, pumps, etc., should be cleaned within

the pot life of the grout. Fosroc Solvent 105 is available for this purpose.

Supply

Lokfix S25 - Blue Lid

The pack consists of a can of resin and a plastic bag of hardener contained in a plastic mixing pail with a snap-on lid. Volume of mixed components: 2.5 litres.

Lokfix P25 - Yellow Lid

The pack consists of a can of resin and a plastic bag of hardener contained in a plastic mixing pail with a snap-on lid. Volume of mixed components: 2.5 litres.

Lokfix

Storage

Store in accordance with the Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972. Shelf life of 12 months at 20°C will be reduced at higher temperatures.

Limitations

Fire resistance and creep

At operating temperatures above 40°C, the creep of Lokfix resin under load may become significant. Resin anchors should not be used where structural load bearing performance has to be maintained in anchors subjected to fire conditions. Conbextra GP or Conbextra HF would be suitable in this case.

Precautions

Health and safety

For further information see appropriate Product Safety Data Sheet.

Fire

Lokfix products and Fosroc Solvent 105 are flammable. Do not expose to naked flames or other sources of ignition. No Smoking. Containers should be tightly sealed when not in use. In the event of fire, extinguish with CO₂ or foam.

Flash points

Lokfix S25:	29°C
Lokfix P25:	29°C
Fosroc Solvent 105:	43°C



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Important note

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