



# Fosroc® Lokfix RA

**Polyester resin grout for anchoring reinforcement and fixings into Rocks.**

## Uses

Lokfix RA is used for anchoring of bolts and bars from 10-40 mm diameter into the rock. It provides high strength along with corrosion resistance and can be used where high speed of installation and early application of load is required.

Permanent installation of reinforcement bars, foundation bolts, base plates, barriers and safety fences, waler beam anchoring, ground anchors for towers, cranes, dock sills etc., in rocks.

## Advantages

- Rapid strength gain
- Vibration resistant
- Corrosion resistant
- Non expansive

## Standard Compliance

Material tested in accordance with

ASTM C579

## Description

Lokfix RA is a premeasured, two part, filled polyester resin grout. After hardening the grout produces anchorages of consistent reproducible values in natural rock.

Other grades of Lokfix are also available

**Lokfix E77** Resin anchor cartridge system based on Bisphenol A (BPA) free pure epoxy for heavy duty anchoring with 100 year service life.

**Lokfix E55S / E45T** Rapid curing resin anchor cartridge system based on Styrene free Vinylester for heavy /medium duty anchoring.

**Lokfix P, Lokfix S** High strength Polyester resin anchor grout for non critical fixings.

**Lokfix TR** High strength Carbon Steel and Stainless Steel threaded rods of various diameters in customized lengths.

## Material properties

Appearance	Free flowing viscous material
Colour of material	Green
Density	1.7 ± 0.1 g/cc
Pot life @27 degrees	30 min
Initial Flow	240—260mm

## Compressive strength at

4 hours	> 70 N/mm <sup>2</sup>
Bond Strength (measured in Granite)	6 N/mm <sup>2</sup>

Substrate Temp.	Gel Time (mins)	Dry Curing Time (hrs)
+20 °C	80	7
+30 °C	40	3
+40°C	15	1

## Design criteria

The high strength of the cured resin permits strong anchors to be created. The ultimate bond strength developed depends upon:

- Strength and type of rock
- Embedment depth
- Hole preparation and formation
- Type and dimension of bar

The following formula may be used to determine the embedment depth required for installation

$$h_{ef} = \frac{N}{\pi \cdot d \cdot \tau_{Rk}}$$

$h_{ef}$  = Effective embedment depth in mm

$N$  = Required design tensile load in N

$d$  = Diameter of rebar/anchor bolt in mm

$\tau_{Rk}$  = Design bond strength in N/mm<sup>2</sup>

Note: The design bond strength for the in-situ rock has to be calculated by performing pull-out tests.

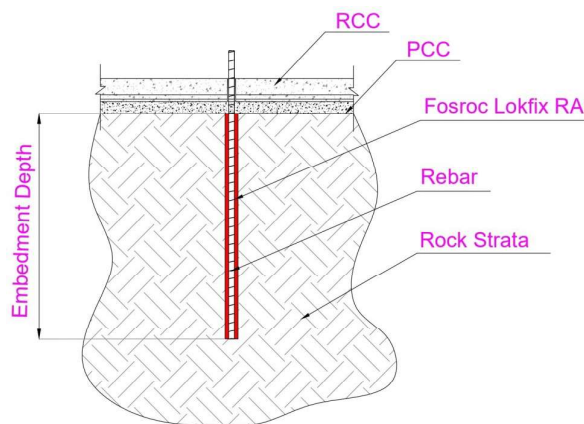
# Fosroc® Lokfix RA

## Technical support

Fosroc offers a comprehensive range of high performance, high quality concrete repair and construction products. In addition, Fosroc offers technical support service to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the country.

## Specification Clause

Lokfix RA is a two component polyester resin grout manufactured by Fosroc. When fully cured it shall exhibit a compressive strength  $>70 \text{ N/mm}^2$ , bond strength  $>6 \text{ N/mm}^2$



The storage, handling and placement of the grout must be in strict accordance with the manufacturer's instructions.

## Application instructions

### Parameters of anchor design

Minimum safety factors of 1.5 in non critical and of 2 in critical cases should be considered for design purposes. Wherever relevant, the local code of practice or standard must also be considered in relation to anchorage length.

### Hole preparation and formation

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

### Bar preparation

All bars 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 shall be carried out 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.

## Installation

Using the calculated volume of grout in table 1, the grout should be poured steadily into the prepared holes. The anchor bar is then pressed in clockwise direction into the hole to the required depth. A light agitation of the bar will assist in achieving a complete bond. The bar should then be left undisturbed in the required position until the resin is set.

Table 1

Hole diameter	Bolt diameter mm						
mm	10	12	16	20	25	32	40
18	2.5						
20	3.2	2.5					
25	4.7	5.0	4.0	2.5			
32		8.0	7.0	6.0	4.0		
38			10.0	10.0	7.5	4.5	
45				15.0	13.0	10.0	4.5
50					18.0	15.0	9.0
62						28.0	22.5

Table indicates volume of Lokfix RA in ml / 10mm depth  
The figures allow for a 25% wastage factor

## Cleaning

Any mixing drums, pumps etc., should be cleaned within the pot life of the grout. Nitoflor Sol is available for this purpose.

## Packing

The product comes in a packing of 5L and 1L.

## Storage

The product should be stored away from high temperature. 6 months shelf life when stored below 25°C in original unopened containers.

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## Precautions

### Fire resistance and creep

At operating temperatures above 40°C, the creep of Lokfix polyester resin grout 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.

### Health and safety instructions

Confined areas must be well ventilated and no naked flames allowed. Contact with the skin should be avoided as certain sensitive skins may be affected by contact with the polyester resin. In such cases if contact with the resin occurs, the skin should be washed immediately with soap and water not solvent. Gloves and barrier creams should be used when handling these products. Eye contamination must be immediately washed with plenty of water and medical treatment sought.

### Fire

Lokfix RA is flammable. Confined areas must be well ventilated and no naked flames allowed. Do not smoke during use.

## Flash point

The flash point of Lokfix RA is 29°C.

\*for more information please contact Fosroc.

## Additional information

The Fosroc range of associated products includes high strength cementitious grouts, epoxy grouts. Also available a range of products for use in construction: viz., admixtures, curing compounds, release agents, flooring systems, repair mortars.

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### Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of 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 of information given by it.

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