

Epoxy resin free-flow grouts

Uses

Free-flow grouts for use in situations where heavy dynamic or mobile loads are encountered, e.g. reciprocating machinery, testing equipment, heavy crane and transporter rails, high speed turbines, centrifuges and drop forges.

Also for use in conditions where chemical spillage may be encountered. Typical situations could be met in refineries, electroplating works and chemical plants.

Advantages

- Low creep characteristics under sustained loading
- Resistant to repetitive dynamic loads
- Non-shrink and hence ensures complete surface contact and bond
- High compressive, tensile and flexural strengths
- Fast, convenient installation with rapid strength gain
- Withstands a wide range of chemicals

Description

Conbextra EP are epoxy resin based products designed for free-flow grouting of gap thicknesses from 0.25 to 120 mm. Two grades of product are available.

Conbextra EP10 for grouting gap thicknesses from 0.25 to 10 mm. An all-liquid system consisting of a base and hardener.

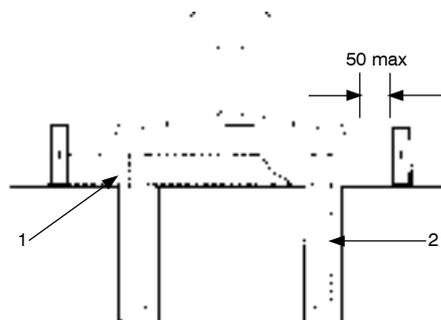
Conbextra EPR for grouting gap thicknesses from 10 to 120 mm. A three-component system consisting of base resin, liquid hardener and specially graded inert fillers.

Technical support

Fosroc offers a comprehensive range of high performance, high quality construction products. Fosroc offers a technical support package to specifiers and contractors as well as technical advice from staff with unrivalled experience in the industry.

Design criteria

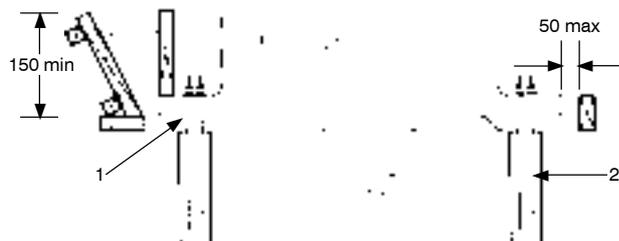
Example of Conbextra EP grout to individual rail baseplate



- 1 Conbextra EP grout
- 2 *Lokset resin anchor

* Also available from Fosroc.

Example of Conbextra EP grout to machinery baseplate



- 1 Conbextra EP grout
- 2 *Lokset resin anchor

* Also available from Fosroc.



Properties

The following results are typical for the hardened grout at 20°C.

Test method for	Typical result	
	EP10	EPR
Density:	1060 kg/m ³	2025 kg/m ³
Compressive strength (BS 6319, Part 2: 1983) —		
6 hours (24°C):	—	38 N/mm ²
1 day:	57 N/mm ²	91 N/mm ²
3 days:	66 N/mm ²	95 N/mm ²
7 days:	83 N/mm ²	101 N/mm ²
Tensile strength (BS 6319, Part 7: 1985) —		
7 days:	29 N/mm ²	14.2 N/mm ²
Flexural strength (BS 6319, Part 3: 1990) —		
7 days:	91 N/mm ²	32.5 N/mm ²
Secant modulus (BS 6319, Part 6: 1984):	—	13.3 kN/mm ²

Chemical resistance

All Conbextra EP products are resistant to oil, grease, fats, most chemicals, mild acids and alkalis, fresh and sea water. Consult Fosroc's Customer Service Department when exposure to solvents or concentrated chemicals is anticipated.

Pot life

Ambient temperature affects the time for which bulk material will remain fluid.

Typical values in minutes are:

	10°C	20°C	30°C
EP10:	40	20	10
EPR:	60	30	15

Exotherm

All epoxy systems will develop a temperature rise on mixing. Its extent will be a function of the volume to surface ratio, the ambient temperature as well as the mass and thermal conductivity of the surrounding materials. Contact Fosroc for specific data on each product.

Specification clauses

Supplier specification

All epoxy resin grouting where shown on the drawings, must be carried out using the suitable grade of Conbextra EP product manufactured by Fosroc and used in accordance with the manufacturer's data sheet.

Performance specification

All epoxy resin grouting where shown on the drawings, must be carried out with a factory packed product manufactured by a registered firm. The hardened grout must have a compressive strength which exceeds 80 N/mm² at 7 days, a tensile strength which exceeds 14 N/mm² at 7 days and a flexural strength which exceeds 31 N/mm² at 7 days.

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

Application instructions

Preparation

Foundation surface

All contact surfaces must be free from oil, grease, free-standing water or any loosely adherent material. Concrete surfaces should be cut back to a sound base. All dust must be removed and bolt holes or fixing pockets blown clean of any dirt or debris.

Steel surfaces

All steel surfaces should be shot blasted free of rust and flaky mill scale. Cleaned surfaces may be protected by the application of Nitoprime 28.

Formwork

The formwork should be constructed to be leakproof as Conbextra EP products are free-flowing grouts. Loss of grout once the material is placed, but not hardened, will result in incomplete filling of the gap.

For free-flow grout conditions it is essential to provide a hydrostatic head of grout. To achieve this a feeding hopper system should be used.

Mixing

Pour all the contents of the hardener pack into the base container. Mix using a slow speed power drill and paddle until homogeneous.



Pour all the resultant liquid into a container with a capacity of 15 to 25 litres. Add all the filler provided for each product. Mix using a slow speed power drill and paddle for 2 minutes or until a uniform colour is achieved in the grout.

Placing

The mixed grout should be poured steadily from one side only to eliminate the entrapment of air.

Continuous grout flow is essential.

Sufficient grout must be available prior to starting.

The time taken to pour a batch should be regulated to the time taken to prepare the next batch.

Flow characteristics

The maximum distance of flow is governed by the gap thickness, the head of grout applied and the ambient temperature. The following table gives typical data for flow design.

	°C	Gap thickness (mm)	Hydrostatic head (mm)	Maximum flow (mm)
EP10:	Flow determined by gap thickness and pressure applied			
EPR:	5	12	100	450
	5	35	100	900
	20	12	100	900
	20	35	100	2000

Cleaning

All tools and equipment should be cleaned immediately after use with Fosroc Solvent 102. Spillages should be absorbed with sand or sawdust and disposed in accordance with local regulations.

Limitations

Temperature

During application

For both products grouting may be carried out without special precautions at ambient temperatures from 5°C to 25°C. Where temperatures exceed 20°C note the pot life given previously.

In service

The cured grouts, which are completely resistant to frost and sub-zero temperatures, are suitable for use up to 45°C.

Estimating

Supply

EP10: 3 litre packs containing liquid base and hardener

EPR: 8 and 16 litre packs containing base, hardener and filler

Storage

Conbextra EP products have a shelf life of 12 months if kept in dry conditions at 20°C.

Precautions

Health and safety

In common with most epoxy resin systems, the Conbextra EP range will react exothermically when mixed and left in bulk. The heat generated may be excessive and can lead to vapour emission and splash damage to adjacent surfaces.

To reduce the risk of exotherm, these products should only be mixed when ready for use and then applied without delay. Any unused residue should be poured onto a disposable impervious surface, in a well-ventilated area, to allow cure before disposal.

Conbextra EP: Contains resins which may cause sensitisation by skin contact. Avoid contact with skin and eyes and inhalation of vapour. Wear suitable protective clothing, gloves and eye/face protection. Barrier creams provide additional skin protection. Should accidental skin contact occur, remove immediately with a resin removing cream, followed by soap and water. Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed seek medical attention immediately — **do not** induce vomiting.

Fosroc Solvent 102: Flammable liquid. Keep away from sources of ignition — No Smoking. Wear suitable protective clothing, gloves and eye/face protection. Use only in well ventilated areas.

Fire

Fosroc Solvent 102 is flammable. In the event of fire extinguish with CO₂ or foam.

Flash point

Fosroc Solvent 102: 33°C

For additional information see relevant Product Safety Data Sheet.



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