Fosroc®
Conbextra EP120

constructive solutions

A high performance two part epoxy grout for dynamic/repetitive load applications suitable for large volume pours

Uses

Conbextra EP120 is for use in situations where heavy dynamic or mobile loads are encountered. The gap between a base plate and substrate needs to be filled and the structural load be uniformly distributed.

Applications

- 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 steelworks, refineries, electroplating works and chemical plants.

Conbextra EP120 is especially suitable where long working time and/or low exotherm properties are required e.g. for large pours or high ambient temperatures. It can also be used for grouting wide gap ranges making it a versatile product for a number of applications.

Advantages

- High compressive, tensile and flexural strengths
- Resistant to repetitive dynamic loads
- Fast, convenient installation
- Withstands a wide range of chemicals
- Virtually no shrinkage and hence ensures complete surface contact and bond
- Low creep characteristics under sustained loading
- Excellent flow properties
- Two part material giving a better quality control during mixing
- Can be used installed at high temperatures
- Wide range of gap thicknesses are possible

Description

Conbextra EP120 is unique two part epoxy grout formulation which does not require any additional aggregate to be added. This saves time and labour in the mixing process and provides a higher quality control in the mixing and placing of the grout.

Design Criteria

Conbextra EP120 is designed to be grouted into gaps from 10mm up to 120mm. Grouting of gap widths below 50mm will take longer to cure due to the low exotherm nature of the grout. If a fast cure of the grout is critical at smaller gap widths please refer to the Conbextra EP65 Plus technical data sheet.

Grout pours greater than 120mm thick are also possible but care should be taken that the total volume of the single pour should be no greater than $1m^3$. Consult Parchem for further advice.

Technical Support

Parchem offers a comprehensive range of high quality, high performance construction products. In addition, Parchem offers technical support and on-site service to specifiers, end-users and contractors.

Chemical Resistance

Conbextra EP120 is resistant to oil, grease, fats, most chemicals, mild acids and alkalis, fresh and sea water. Consult Parchem Technical Services when exposure to solvents or concentrated chemicals is anticipated.

Specification Clause

Performance Specification

To the nominated area(s) (specify details and areas of application), grouting must be carried out using a high strength, low exotherm, epoxy resin, flowable grout, suitable for dynamic /repetitive load applications, and for high ambient temperatures (up to 55°C) with good chemical resistance.

The two component pack is to be stored, handled and placed, strictly in accordance with the manufacturer's current technical data sheet and instructions.

The hardened epoxy resin grout must have a compressive strength which exceeds 80MPa at 28 days at 23°C, a tensile strength 10MPa at 7 days and a flexural strength 25MPa at 7 days.

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

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Properties

The following results were obtained at a temperature of 23°C unless otherwise stated.

Test Method	Standard	Test Result				
Density		1700 kg/m³				
		Cure Time	10°C	23°C	30°C	40°C
Compressive Strength (MPa)	AS1478.2 2005	1 day 3 days 7 days 28 days 56 days	0 5 45 70 80	6 45 75 80 85	19 55 80 85 85	38 68 85 85 85
Indirect Tensile Strength	AS1012.2 10-2000	28 days - 10MPa				
Flexural Strength (Modulus of Rupture)	AS1012.2.11-2000	28 days - 25MPa				
Modulus of Elasticity	AS 1012.17-1997	8.4 GPa				
Thermal Coefficient of Expansion	ASTM C531:2000	1.06 x 10^{-4} mm/mm °C				
Slant Shear Bond Strength	ASTM C882/ C882M:2012	22.3 MPa (bond failure)				
Creep 28 days @ 2.8MPa	ASTM C1181-00	@ 23°C 1.7 x 10^{-3} cm/cm @ 60°C 2.1 x 10^{-2} cm/cm				
Chloride Content	EN 1015-17:2000	0.0%				
Pot Life		10°C 20°C 30°C	6 hours 3 hours 1.5 hours			
Minimum Thickness **Maximum Thickness**		10mm 120mm				

Note: Compressive strengths stated above were measured using cube samples. Test results obtained will vary if testing is carried out to an alternative standard or sample dimensions are used. Refer to the compressive strength testing guide for epoxy grouts document for further information.

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.

	Temperature (°C)	Gap Thickness (mm)	Hydrostatic head (mm)	Maximum Flow
Conbextra EP120	5	10	100	600
	5	35	100	700
	20	10	100	750
	20	35	100	2000
	30	10	100	950
	30	35	100	2500

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Instructions for Use

The following instructions for use should be used in conjunction with the Conbextra epoxy grouting applications guide.

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, paint and flaky mill scale.

Formwork

The formwork should be constructed to be leakproof as Conbextra EP120 is a free flowing grout. 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.

Forming materials should be coated with a release agent such as grease or wax material or a plastic coating.These coatings act as a bond breaker so that a smooth grout surface is achieved after form removal and the forms are protected for reuse.

Mixing

Pour all the contents of the hardener pack into the base container. A forced-action mixer is essential. Mixing at a slow speed (400/500 rpm) for 3 to 5 minutes using appropriate equipment such the Ransom 140 x 600 M14 Helical mixing paddle (product code: N4020892-UNIT) fitted to a heavy-duty 1600W mixer, such as Ransom 1602 E (product code: NP7EV160-UNIT) or equivalent is acceptable for small volume mixes. For large pours a purpose made grout mixer / pump may be used.

Ensure the paddle is fully immersed in the grout whilst mixing. Do not pull the paddle up and down whilst mixing.

Ensure there is no unmixed material left in the drum prior to placing the grout.

For further information on mixing instructions refer to our epoxy grout installation guide.

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.

Cleaning

All tools and equipment should be cleaned immediately after use with Solvent 10. Spillages should be absorbed with sand or sawdust and disposed in accordance with local regulations.

Temperature

During application

Grouting may be carried out without special precautions at ambient temperatures from 10°C to 35°C. Where temperatures exceed 20°C note the pot life will be reduced.

Cure temperatures below 15°C will result in slower strength build up; at 5°C cure will stop until the material warms.

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.

In service

The cured Conbextra EP120, which is completely resistant to frost and sub-zero temperatures, is suitable for use in service up to 55°C.

Estimating

Supply

Conbextra EP120: 14 litre - 2 component pack

Conbextra EP120 Base	FC52233-11.3L
Conbextra EP120 Hardener	FC522444-2.7L

Storage

Conbextra EP120 has a shelf life of 24 months from date of manufacture if kept in a dry store in the original, unopened bags or packs. Refer to the Use by Date indicated on the packaging.

For further information on any of the above, please consult with your local Parchem sales office.

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