Fosroc®
Conbextra® EP65 Plus

constructive solutions

Ultra high strength, high flow epoxy grout

Uses

For grouting under baseplates, crane rails, turbines where heavy dynamic loads are encountered and areas where chemical spillage may occur.

Typical applications include:

- Reciprocating machinery
- Heavy crane and transporter rails
- High speed turbines
- Centrifuges
- Drop forges
- Anchoring of steel bars
- Electroplating and chemical plants

Conbextra EP65 Plus can also be used for anchoring vertical starter bars and other vertical anchoring applications such as hold down bolts. Refer to the Fosroc Epoxy Anchoring Application Guidelines available on the Fosroc website.

Conbextra EP65 Plus is suitable for underwater grouting work and for the repair of water immersed concrete structures such as bridge piles and wharf piles. Refer to the specific Conbextra EP65 Plus Underwater Application TDS available on the Fosroc website.

Advantages

- Very high compressive, tensile and flexural strengths
- Resistant to repetitive dynamic loads
- Excellent chemical anchor
- Fast, convenient installation with high early strength gain
- Withstands a wide range of chemicals spills
- Low creep characteristics under sustained loading
- Compiles to AS4020-2018; suitabe for use in potable water

Standards Compliance

Conbextra EP65 Plus complies with AS 4020-2018; AWQC Report 323631.

Copies of the report are available on the Fosroc website.

Description

Conbextra EP65 Plus is a rapid hardening, ultra high strength epoxy grout. It is designed for use as a precision, heavy duty multi purpose grout for engineering applications. It is supplied as a two component system consisting of epoxy resin incorporating inert fillers and the hardener, to produce a highly fluid grout.

Design Criteria

Conbextra EP65 Plus has been designed so it achieves the best possible Effective Bearing Area enabling the grout to effectively transfer load from the base plate to the foundation.

Conbextra EP65 Plus is formulated for flow application into gaps under base plates ranging from 10mm to 100mm.

Chemical Resistance

Conbextra EP65 Plus is resistant to oil, grease, fats, most common chemicals spills, mild acids and alkalis, fresh and sea water. Consult Fosroc when exposure to solvents or concentrated chemicals is anticipated.

Instructions for Use

Please refer to the Conbextra Epoxy Grouts Application Guide for further information. This is available from the Fosroc website.

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. For maximum bond, surfaces should be abraded or roughened, preferably by mechanical means such as needle gun, grit blasting, grinding. 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 EP65 Plus 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 the entire contents of the hardener pack into the base container. Mix the hardener slowly into the base using a slow speed heavy duty mixer such a 120/140mm helical mixing paddle fitted to a heavy-duty 1600W mixer. Once combined the product should be mixed at 350 to 400 RPM for 2 to 3 minutes until a uniform mix is obtained.

For large pours purpose made grout pumps can be used - seek further advice from Fosroc.

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Properties

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

	Standard	Typical Result				
Compressive Strength	**AS1478.2 2005**	**Cure Time**	**10°C**	**23°C**	**30°C**	**40°C**
	(MPa)	2 hours	0	40	50	65
		3 Hours	5	70	80	90
		4 Hours	15	80	85	95
		5 Hours	25	85	90	100
		12 Hours	45	90	100	105
		1 Day	60	105	115	125
		3 Days	100	115	125	125
		7 Days	110	125	125	125
Indirect Tensile Strength	AS1012.2 10-2000	7 days – 15Mpa				
Flexural Strength (Modulus of Rupture)	AS1012.2.11-2000	7 days - 29MPa				
Modulus of Elasticity	AS 1012.17-1997	13.5 GPa				
Thermal Coefficient of Expansion	ASTM C531:2000	9.22 x 10^{-5} mm/mm °C				
Slant Shear Bond Strength	ASTM C882/ C882M:2012	36.7 MPa (substrate failure)				
Creep 28 days @ 2.8MPa	ASTM C1181-00	@ 23°C 7 x 10^{-4} cm/cm @ 60°C 2.3 x 10^{-2} cm/cm				
Pot Life		10°C 20°C 30°C	60 mins 30 mins 15 mins			
Colour		Dark grey (mixed)				
Minimum Thickness **Maximum Thickness**		10mm 100mm				

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 EP65 Plus	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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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.

Please refer to the Conbextra Epoxy Grouts Application Guide for further information. This is available from the Fosroc website.

Adding Aggregate

Conbextra Grout Aggregate can be added to Conbextra EP65 Plus to reduce exothermic heat development enabling increased pour sizes.

When required, add up to 10kg of Conbextra Grout Aggregate per 14 litre kit of Conbextra EP65 Plus. Typical yield increase is approximately 4 litres per 10kg of aggregate added.

Caution: when adding aggreagte to epoxy based grouts air may be entrained in the mix. Allow the mixed product to settle and expel air bubbles before placing.

The addition of aggregate to grout will reduce the flow characteristics of the product. If high flow performance is required it is not recommended that aggregate be added.

Cleaning

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

Limitations

Temperature during application

Grouting may be carried out without conditioning at ambient temperatures from 5°C to 25°C. Where temperatures exceed 20°C note the pot life will be reduced.

Cure rate will be affected at low temperatures. Application should not proceed if the ambient or surface temperature is $<5^0$C and falling.

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.

Temperature in service

The cured grouts, which are completely resistant to frost and sub-zero temperatures, are suitable for use up to 55°C.

Supply

Conbextra EP65 Plus: 14 litre 2 component packs	
Conbextra EP65 Plus (Base)	FC524460-11.5L
Conbextra EP65 Plus (Hardener)	FC524470-2.5L

Storage

Conbextra EP65 Plus base component has a shelf life of 24 months from date of manufacture if kept in a dry, cool store in the original, unopened packs.

Conbextra EP65 Plus hardener component has a shelf life of 36 months from date of manufacture if kept in a dry, cool store in the original, unopened packs.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

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