KingGrout ® EPCG

High strength pourable epoxy foundation resin grout.

DESCRIPTION

KingGrout EPCG is a high strength, non-shrink, pourable epoxy resin grout suitable for grouting gaps with thicknesses up to 300 mm.

KingGrout EPCG is a three component system having base and hardener as the resin part with the blended ready filler part. And based on actual installation conditions, adjusting the quantity of the filler part can be done with maintaining the needed properties.

APPLICATIONS

KingGrout EPCG is ideally designed for use in the following applications:

- Machine base plates.
- Heavy crane rails.
- Pile top waterproofing.
- Bearing plinths.
- High speed turbines.
- Grouting areas where occasional chemical spillage may occur.

ADVANTAGES

- Resistant to dynamic loading.
- Non-shrink and low creep characteristics under continuous loading.
- Exceptionally high compressive, flexural and tensile strengths.
- Extremely dense with crack resistance.
- Exceptional bond to concrete and steel surfaces.
- Good chemical resistance.
- High early strength development allowing for rapid installation.

METHOD OF USE

Substrate Preparation

The Substrate should be sound, clean and free from contamination. Surface laitance should be removed by scabbling or grit blasting.

Steel surfaces should be grit blasted to remove all rust and scale. Concrete surfaces should be dry.

Holes drilled for anchor bolts should be thoroughly cleaned from dust and lose debris using suitable brush or compressed air.

TECHNICAL PROPERTIES @ 25ºC:

Mixed density:	2.1 ± 0.1 g/cm^3
Compressive strength*: ASTM C579-82, Method B	≥ 85 MPa @ 7 days
Flexural strength*: ASTM C580-74	≥ 30 MPa @ 7 days
Tensile strength*: ASTM C307-83	≥ 12 MPa @ 7 days
Shrinkage*: ASTM C531	≤ 350 microstrain
Modulus of elasticity*: ASTM C580-74	≥ 15 GPa @ 20ºC ≥ 13 GPa @ 40ºC
Co-efficient of thermal expansion*: ASTM C531-81	25 x 10^{-6}/ºC
Water absorption*: ASTM C413	≤ 0.1%
Crack formation (Fill #1): @ 300 mm thickness & 35ºC	No cracks or bleeding
Working life:	40 - 70 min @ 25ºC 25 - 45 min @ 35ºC
Recommended working temperature:	15 - 35ºC
VOC: ASTM D2369	≤ 10 g/ltr (complies with LEED)

**For all fill options.*

RESIN FILLER RATIO

As the foundation situation will vary for each installation project, the quantity of the filler part can be adjusted to obtain the proper flow and the continuous fill as required.

The following table indicates the three different situations in relation to the resin:filler ratio.

(Note 1: It is always preferable to use the maximum amount of filler part that will give the proper installation, and the highest results in strength).

(Note 2: At temperatures ≤ 25ºC, the flow properties will be reduced. So reducing the filler part will help in adjusting it).

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Temperature @25ºC			
	High fill of filler for thick pours Fill #1	Moderate fill of filler for medium pours Fill #2	Low fill of filler for thin pours Fill #3
Mixing ratio:	Base + Hardener + 4 filler bags Total: 106.5 kg	Base + Hardener + 3.5 filler bags Total: 95.3 kg	Base + Hardener + 3 filler bags Total: 84.1 kg
Flow using flow cone with 200 ml volume: BS 890	15 - 16 cm	16 - 17 cm	18 - 19cm
Bulk density of the filler:	1.8 g/cm^3		

It is important NOT to remove more than 1 filler bag.

MIXING

To ensure proper mixing, a mechanically powered mixer or drill fitted with suitable paddle should be used.

The entire content of the Hardener pack should be added to the Base pack. Care should be taken to ensure that the bottom and the product sides are thoroughly scraped and used. Mix the two components for 2 minutes. The filler should be gradually added while mixing.

Mixing should continue for 3 minutes or until a uniform consistency obtained.

CLEANING

All tools should be cleaned immediately after finishing using a suitable epoxy thinner. Hardened materials should be cleaned mechanically.

PACKAGING

The full unit of KingGrout EPCG is with 106.5 kg consisting of Base, Hardener & 4 filler bags.

THICKNESSES AND SIZE LIMITATIONS

KingGrout EPCG can be applied in a single layer at thicknesses between 10 - 300 mm. For thicknesses greater than 300 mm:

- Multiple layers can be applied after initial curing of the previous layer.

PLACING AND FINISHING

Under Base plate:

Enough materials should be available to achieve continuous fill and to complete the work. Pouring of the mixed grout should be started from one side only to avoid air entrapment.

To obtain maximum flow distance, a side shutter feed 100 mm height should be erected and used to build the required head.

Formwork:

As the mixed grout possesses fluid characteristics, all formwork and shutters should be water tight. This can be achieved by sealing underneath the formwork and at the joints by using an appropriate mastic.

Notes:

- If application is done under high temperatures, care should be done because the working time will be reduced significantly.
- To reduce the effect of this problem, try to store the unmixed materials in a cool environment, avoiding the direct sunlight. Also, try not to make the application in the middle of the day or direct sunlight.

YIELD

Approximately 50.5 litre for the full unit.

STORAGE

Shelf life is 1 year when stored under cover, out of direct sunlight and protected from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult KingKrete's Technical Services Department.

HEALTH AND SAFETY

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well ventilated areas and avoid inhalation.

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NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local KingKrete representative.

KingKrete Inc. reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from KingKrete's manufacturing facilities are manufactured under a management system independently certified to conform to the requirements of the quality standard ISO 9001.

* Properties listed are based on laboratory-controlled tests.

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