

Flexcem® HS80

Ultra high strength, pourable, non-shrink cement-based grout for repair and strengthening works

Description

Flexcem® HS80 is High strength, non-shrink, pourable cement-based grout with special additives. It provides:

- Very good flowability without segregation. High initial and final strength.
- Efficient bonding to steel and concrete. Resistance to impact and vibration.
- Low water permeability.

Flexcem® HS80 is Certified according to EN 1504-3. It is classified as a CC R4 mortar for concrete repairs and as a type B grout according to ASTM C 1107-99.repairs,

Fields of application

Flexcem® HS80 is applied in a thickness of up to 100 mm and is suitable for:

- Repairs and re-profiling in damaged concrete elements.
- Construction of concrete jackets at existing concrete elements.
- Filling cavities and hollows in concrete elements.
- Grouting of machinery and equipment to maintain precision alignment.

Technical Data

Form	cementitious mortar
Colour	grey
Water demand	3.5-4.5 l/25kg bag
Application temperature	from +5°C to +35°C
Pot life	~60 mins
Bulk Density Dry Mortar	1.60 +/- 0.10 kg/l

Bulk Density Fresh Mortar 2.35 +/- 0.10 kg/l

Effective bearing area 95%

Chloride content 0.0%

Compressive strength (ASTM C 579 – 01)

- 1 day 48 MPa
- 7 days 72 MPa
- 28 days 86 MPa

Elastic Modulus 36.3 GPa

Flexural Strength, 28 days, at 27°C 11 MPa \

Free linear Expansion, (ASTM C 827) 0.2%

Adhesion Strength, 28 days at 27°C 2.9 MPa

Coefficient of Thermal Expansion, per °C $11^{+12} \times 10^{-6}$ (Similar to Concrete)

Directions to use

Substrate Preparation

All grouting surfaces should be clean and free of foreign substances including corrosion, if present on steel. Remove all spalled areas and areas of unsound concrete. Preparation work done on the grouting surfaces should be completed by high pressure water blast, breaker, hammer, or other appropriate mechanical means to obtain a properly prepared surface. Saturate repair area with clean water before grouting to ensure SSD condition. No standing water should be left in the repair area.

Mixing

Flexcem® HS80 is gradually added to 3.0 l of water and mixed well with a low speed mixer (300 rpm.), until a uniform fluid mass is formed. An additional quantity of up to 0.50 l of water is



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added under stirring, until the desired fluidity is achieved.

Application

Place the grout quickly and continuously using proper consolidation techniques when possible (i.e. light rodding, vibrating, tamping, etc.) to eliminate air bubbles. The typical application depth of **Flexcem® HS80** is up to 100 mm. For applications over 100 mm in depth, it is preferable to extend the product with high quality 9.5 mm gravel, at a rate of approximately 12.5kg of gravel per 25kg bag of **Flexcem® HS80**. For many applications, it may be placed up to 150 mm in depth without the extension. When placing at depths over 100 mm and the surface area is over 0.25 m², the product should be extended. For all these applications, care should be taken to not overwater, which may cause segregation.

Curing

A damp cure of at least 3 days is necessary to control the non-shrink characteristics and maintain strength levels.

Precautions

- Additions of cement or other materials will eliminate the designed product qualities
- Water quantities may be affected by temperature, mixing method and batch size
- Should not be re-tempered
- Mix no more grout than can be placed in 25 minutes.
- Use a consistent water temperature when mixing multiple batches, to prevent performance fluctuations.

Packaging

Flexcem® HS80 is available in HDPE bags of 25kg.

Shelf life & storage

12 months from production date if stored in original, unopened packaging, in temperature between +5°C and +35°C. Protect from direct sun exposure and frost.

Health & safety

The product contains cement powders which, when mixed with water, release alkalis that could be harmful to the skin. It is preferable that the application be done in a ventilated area, and to wear protective gear for hands, eyes and respiratory system and to avoid breathing of the dust. Splashes on the skin should be washed away by cleaning with soap and water. In case of contact with eyes, wash thoroughly with clean water. If swallowed, do not induce vomiting, in both cases seek medical attention. The product is non-flammable.

Notes

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