KingAdd® HF50

Hydrogen free expansive and plasticizing grout additive.

DESCRIPTION

KingAdd HF50 is a hydrogen free expansive and plasticizing additive for cementitious grout. The addition of KingAdd HF50 to the cementitious mixes will produce a high flowable expansive grout; KingAdd HF50 reduces the water demand, producing high strength with low permeability and excellent bond to steel.

APPLICATIONS

- Duct grouting.
- Post tensioned cables.
- Pre-stressed structural elements.
- Where an expansive and flowable grout is required.

ADVANTAGES

- Non-Shrink hydrogen free expansion system to prevent steel corrosion.
- High Flow grout without bleeding.
- High bond to steel.
- Low permeability grout at low water cement ratio.
- High initial and ultimate strength.
- Chloride free.

METHOD OF USE

Proposed Mix

KingAdd HF50	OPC	Water	Yield
0.520 kg	50 kg	16 ± 2	33 ltr

Mixing

- To ensure proper mixing, a mechanically powered mixer or drill fitted with suitable paddle should be used for quantities up to 50 kg.
- High shear vane mixer is required when mixing large quantities.
- The required water content should accurately measured and added into the mixer. While mixing, KingAdd HF50 is then added into the mixer. Then slowly add the cement.
- Mix for 5 minutes until smooth even consistency is achieved.

TECHNICAL PROPERTIES @ w/c = 0.32:

Colour:	Brown
Fresh wet density:	2.0 ± 0.1 g/cm^3
Bleeding: ASTM C940	Pass, no bleeding
Compressive strength: ASTM C109/109M-11	> 25 MPa @ 1 day > 50 MPa @ 7 days > 60 MPa @ 28 days
Expansion:	Up to 2%
Flow characteristics: (directly after mixing) ASTM C939-87	< 32 sec
Working time: (Re-mixing is required to achieve the needed flow directly before the application)	30 min
Initial setting time: ASTM C191	3 - 4 hr
Chloride content: BS5075	Nil
Compatibility:	Compatible with all types of cement

Note: The results were obtained when OPC (complies with ASTM C150-02a with compressive strength @ 28 days > 42.5 MPa) is used.
Higher compressive strength results can be achieved when OPC > 52.5 MPa is used. Where added water needs to be adjusted based on the mentioned range. It is important to conduct trials so as to choose the best source of OPC for the needed application.
Compressive strength @ 1 day is under restrain. Compressive strength @ 7 & 28 days is under wet cure.
Compressive strength results were obtained when 16 litre of water is used in the mix.
The results were obtained when 16 litre of clean water was used for mixing.

PLACING AND FINISHING

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.

Areas to be grouted should be clean, sound and must me pre-wetted with clean water.

The mixed grout should be placed during the flowability time to gain the full benefit of the expansion process. Care should be taken to keep the unrestrained surface areas of the grout to a minimum.

CURING

KingAdd® HF50

Grouts mixed with KingAdd HF50 are a cementitious based, they should be treated in a similar way to concrete.

Curing can be conducted by either using concrete curing compound such as Setseal 22 or by using wet hessian and polyethylene.

CLEANING

All tools should be cleaned immediately after finishing by water. Hardened materials can be cleaned mechanically.

PACKAGING

KingAdd HF50 is available in 0.520 kg bags.

DOSAGE

KingAdd HF50 dosage is 520 g per 50 kg of OPC.

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.

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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