KingAdd ® 150AC

Premium quality, high solids liquid acrylic copolymer additive for the GFRC production.

DESCRIPTION

KingAdd 150AC is a high solids single component acrylic copolymer emulsion. It is designed to improve the physical properties of GFRC systems (Glass Fiber Reinforced Concrete).

GFRC is an environment friendly composite system with low consumption of energy and used to produce great varieties of products based on cement-based composite material reinforced with alkali-resistance fiber.

The fibers add flexural, tensile and impact strength and the resulting material allows the production of strong light weight products used in architectural, civil engineering and many other applications.

GFRC has reached a great position among Architects, Designers, Engineers and end users for its flexibility to meet performance, appearance, and cost.

APPLICATIONS

KingAdd 150AC is used in the formulation of glass reinforced concrete products. As GFRC is a mixture of several materials, the properties of GFRC vary with the production method, amount and type of glass fiber and composition of the cementitious matrix.

In this matrix KingAdd 150AC plays a major role in achieving the long term physical properties (especially the flexural, tensile, flexibility, etc.) and the elimination of the wet cure process for achieving the maximum strengths.

GFRC having KingAdd 150AC is used in:

- Artificial rock designs.
- Concrete lining for durability.
- Architectural panels and land scape areas.
- Composite mouldings counter top systems.

Technical Properties @ 25°C

Type of polymer:	Pure acrylic copolymer
Appearance:	Milky white liquid free from lumps
Specific gravity:	1.06 ± 0.02
Solid content:	48 ± 3% (by weight)
Viscosity:	100 - 300 cps
pH:	9 ± 1
Minimum film forming temperature:	10°C
UV resistance:	Pass (500 hr)
Alkali resistance: (1 mole KOH hydrolysis)	≤ 5% @ 50°C for 4 weeks
Freeze-thaw stability:	Pass

Typical Properties of GFRC mix with Cem- Add AC130*

Density:	2.0 ± 0.1 g/cm^3
Flexural strength: EN 13892-2	≥ 7.0 MPa @ 28 days
Modulus of Elasticity:	≥ 15 GPa @ 28 days
Compressive strength: EN 13892-2	≥ 40 MPa @ 28 days

* *Note: These are typical results for GFRC mix using 52.5 OPC, they should not be used for design or control purposes. The actual result will depend on the mix design, quality of the individual components and the production process.*

ADVANTAGES

- Eliminates the need for wet curing.
- Improves significantly the physical properties especially the flexural strength.
- Improves the workability, and the consistency of the cementitious matrix.
- Gives a sprayable non-sag mix.
- UV stable polymer.
- Chloride free.
- KingAdd 150AC is free from formaldehyde and from any corrosion additives.

STANDARDS

KingAdd 150AC complies with Appendix G of MNL

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130-09, The Manual for Quality Control for Plants and Production of Glass Fiber Reinforced Concrete Products.

Mix Design

The guidance dosage of KingAdd 150AC is between 6-10% of the cement content by weight. Other dosages can be used depending on the quality of the other components in the mix and the needed performance.

Representative trials should be conducted to determine the proportion of the individual amount of the GFRC mix to meet the desired performance requirements. A general guide mix design is as following:

Portland cement: 50 kg Silica fine sand: 50 kg Water: 13 - 18 litre
KingAdd 150AC: 3 - 5 litre
Superplasticizer: 100 - 500 ml
AR Glass Fiber: 2 - 4% by the total weight of the mix

METHOD OF USE

Applications

All the liquid ingredients including KingAdd 150AC should be added firstly to the mixer. Start mixing at low speed (i.e. 300-500 rpm) while adding the powder parts.

For the best results, start by adding the pigment (if used), then sand and then add the cement content and increase the mixer speed up to 1500 rpm and mix for 2 minutes.

Reduce the mixer speed to 300 - 500 rpm and gradually add the AR glass fiber until it will thoroughly dispersed in the mix, typically this should not take more than 1 minute.

Note: Mixing with high speed mixers or for long periods should be avoided as this will affect the performance of GFRC matrix.

CLEANING

All tools should be cleaned immediately after use with fresh clean water. Hardened materials should be cleaned mechanically.

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.

PACKAGING

KingAdd 150AC is available in 5, 25 and 200 liters drums.

QUALITY AND CARE

All products originating from KingKrete's manufacturing facilities are manufactured under a

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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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