KINGKRETE®
We Create Future

KingAdd® 200WP

Crystalline waterproofing admixture for concrete and mortars, in powder and liquid form.

DESCRIPTION

KingAdd 200WP is an integral crystalline capillary waterproofing admixture for concrete, for above-grade and below-grade applications.

It consists of Portland cement, very fine treated silica sand and active proprietary chemicals. These chemicals react with the moisture in fresh concrete and with the by-products of cement hydration to form an insoluble crystalline deposit throughout the pores and capillary tracts of the concrete, which reduces its water permeability. In the presence of moisture, KingAdd 200WP also self-heals cracks narrower than 0.4 mm.

APPLICATIONS

KingAdd 200WP is for all structural concrete in constant or intermittent contact with water, such as sea walls, tunnels, basements and structural and precast concrete. It can also be used as a crystalline waterproofing admixture for cement mortars and plasters. Typical structures:

- Basements and foundations.
- Sewage and water treatment plants.
- Dams, canals and harbours.
- Tunnels and subway systems.
- Water reservoirs.
- Concrete pipes.
- Parking structures.
- Precast, cast-in-place and shotcrete work.
- Swimming pools.
- Retaining walls and sea-defence walls.

ADVANTAGES

- Crystalline cementitious material, added integrally.
- Reduces the permeability of concrete and the penetration of water and other liquids.
- Seals hairline cracks up to 0.4 mm.
- Resists hydrostatic pressure from the positive and the negative side.
- Protects against sewage and industrial waste.
- Allows the concrete to breathe.
- Becomes an integral part of the concrete; non-toxic.
- Added at batching, so it is not subject to weather restrictions.
- Less expensive than traditional waterproofing methods.

TECHNICAL PROPERTIES

Appearance (powder):	Free-flowing grey powder
Bulk density (powder):	1.350 ± 0.02 g/cm³
Chloride content:	Chloride-free to EN 934
Water permeability coefficient (DIN 1048 Part 5):	1.3×10^{-13} m/s (specification: ≤ 5×10^{-13} m/s)
Depth of water penetration (DIN 1048 Part 5):	6.67 mm (specification: below 15 mm)
Reduction in water penetration:	Up to 30 - 35% against untreated concrete
Crystalline growth:	Confirmed by SEM: crystal growth and fewer voids than untreated concrete
Workability and setting time:	Little or no effect against untreated concrete

TEST MIX

The test data above are for this concrete, with 1% KingAdd 200WP powder by mass of cementitious material.

OPC	370 kg/m³ of concrete
Fly ash	120 kg/m³ of concrete
Water/binder ratio	0.34
Water	166.5 kg/m³ of concrete
Coarse aggregate, 20 mm	530 kg/m³ of concrete
Coarse aggregate, 10 mm	530 kg/m³ of concrete
Sand	708 kg/m³ of concrete
KingMix superplasticiser	0.6% by mass of binder
KingAdd 200WP (powder)	1% by mass of binder

METHOD OF USE

Dosage

As a guide, use 1 kg of KingAdd 200WP powder per 100 kg of cementitious material. Up to 2 kg per 100 kg can be used for special requirements. For ready-mixed concrete, a typical dosage is 5 kg per cubic metre.

These dosages are for the powder. For the liquid form, and for help developing mixes with special performance, contact your local KingKrete representative.

Dispensing and mixing

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KingAdd 200WP is batched at the concrete plant in the same way as cement or other cementitious materials, in either a central or a truck mixer. When adding it to a truck mixer, follow ASTM C94/C94M for batching and mixing. Mix for at least 5 minutes after adding KingAdd 200WP so that it is distributed evenly through the concrete.

Producing waterproof concrete

- Keep the water/cement ratio below 0.5.
- Use a superplasticiser from the KingMix range to reach the lowest water/cement ratio.
- Place the concrete quickly and compact it well.
- Cure the concrete fully with a KingKure curing compound, particularly in hot, windy and dry weather.

Setting time

KingAdd 200WP has little or no effect on the setting time within the recommended dosage range. Test it where other admixtures or blended cementitious materials are used.

Workability

KingAdd 200WP has little or no effect on the workability of concrete. Run site trials beforehand; adjust any change in workability through the admixture dosage or the water content.

COMPATIBILITY

KingAdd 200WP can be used with Portland cements to ASTM and EN specifications, and with slag and pozzolans such as fly ash, GGBS and silica fume. It is compatible with most concrete admixtures, including all KingKrete admixtures, and is recommended with high-range water-reducing admixtures such as the KingMix range, for maximum workability at a low water/cementitious ratio.

CORROSIVITY

KingAdd 200WP is chloride-free and non-corrosive. It will neither initiate nor promote corrosion of steel reinforcement in concrete, in prestressed concrete or in concrete placed on galvanised steel floor and roof systems. No calcium chloride or calcium chloride-based ingredients are used in its manufacture, and it meets the strictest chloride-ion limits currently suggested by industry standards and practice.

PACKAGING

KingAdd 200WP powder is available in 25 kg bags. KingAdd 200WP liquid is available in 20 litre and 200 litre packs.

STORAGE

Store KingAdd 200WP where the temperature does not drop below +5°C. Shelf life is 6 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local KingKrete representative.

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. Avoid inhalation of dust. For further information, refer to the Safety Data Sheet.

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 Middle East facility are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, ISO 14001 and ISO 45001.

* Properties listed are based on laboratory-controlled tests.

® = Registered trademark of the KingKrete-Group in many countries.

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