

# KingHard<sup>®</sup> S200

**Liquid surface hardener, dust proofer and curing aid for concrete surfaces.**

## DESCRIPTION

KingHard S200 is a liquid surface hardener, dust proofer and curing aid designed for application to concrete, mortar, plaster, terrazzo, and other cementitious floors. KingHard S200 is based on water-based sodium silicate treatment which penetrates deep in the surface resulting in the densification of the concrete.

KingHard S200 reacts chemically with the concrete to produce clear, dense, durable and abrasion-resistant surfaces.

KingHard S200 penetrates the concrete surface neutralizing the alkalis and driving them to the surface to be washed away during application and stopping the efflorescence and lime or alkalis leach.

## APPLICATIONS

KingHard S200 is recommended for new and old cementitious surfaces, such as concrete floors and granolithic paving. It should not be used to renovate concrete which is already disintegrating.

Typical applications include

- 🔧 Factories.
- 🔧 Warehouses.
- 🔧 Garages.
- 🔧 Cold stores.
- 🔧 Food processing plants.
- 🔧 Industrial Plants.
- 🔧 Shopping Malls.
- 🔧 Parking lots and driveways.

## ADVANTAGES

- 🔧 Densification of the concrete surface, as it penetrates deep and reacts to form crystals that fill the pores of the concrete.
- 🔧 Significantly improves the abrasion resistance and hardness of the concrete surface.
- 🔧 Contributes to the enhancement of the compressive strength of concrete at all ages.
- 🔧 Increases water retention, which aids in the curing process of concrete.
- 🔧 Provides a clear finish that does not affect the natural look of the original masonry or concrete surface.

## TECHNICAL PROPERTIES

Specific gravity:	1.20 ± 0.05
Solids by weight:	25 ± 1%
Abrasion resistance: (1000 g, 250 cycle) ASTM D4060, H22 wheel:	> 63% enhancement compared to untreated
Compressive Strength: ASTM C39	> 20% enhancement compared to untreated concrete
Water retention: ASTM C156	> 30% enhancement compared to untreated concrete
UV resistance, 50 hr exposure	No changes observed

- 🔧 Ensures proper bonding of subsequent coatings to the concrete surface since it eliminates surface concrete salts.
- 🔧 Enhances the ease of cleaning and removing oils, greases and other surface contaminants.
- 🔧 Controls hairline cracks in new concrete.
- 🔧 Equipment can be cleaned with water only; thinners are not required.
- 🔧 Compatible with most types of coatings since it is silicone free.
- 🔧 Acts as a dust proofer, as it reacts with the salts in the concrete surfaces preventing the release of concrete dust through the pores on the surface.
- 🔧 Nontoxic, noncombustible and nonflammable.
- 🔧 Complies with LEED requirements for VOC.

## MAINTENANCE

Scrub the floor on a regular basis. The abrasion polishes the floor and gives it a glossy sheen. The densification process will be accelerated if there is plenty of water and regular detergent scrubbing.

To clean the floor, use a detergent with a pH of 8.5 – 10.5 that is free of acids, sulfates, and hydroxides. The appearance of the surface will be dulled if you use an acidic cleanser or sweeping agents. Clean up spills as soon as possible. If left in touch with the floor, very concentrated acid can etch the surface. If coloured foods like mustard and grape juice aren't removed immediately, they can leave a stain. Keep a good oil emulsifier on hand to clean oil, grease, or fats. It is not necessary or suggested to wax or coat with other products.

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## METHOD OF USE

### Substrate Preparation

The substrate must be clean, dry, structurally sound, dense and free from oil, grease, dust and other contaminants. A clean surface will ensure maximum penetration of KingHard S200 into the concrete surface.

Surfaces contaminated by oil or grease should be treated with suitable chemical de-greaser then washed with clean water.

Areas deeply contaminated by oils or grease, should be treated by hot compressed air. All contamination and laitance must be removed before KingHard S200 application to allow for effective penetration.

### New Concrete Surfaces

KingHard S200 may be applied on newly laid concrete immediately after final trowelling, when the surface is firm enough to walk on and before temperature cracking begins using a low-pressure sprayer.

Apply one coat of KingHard S200 at the rate of 4 - 7 m<sup>2</sup>/ litres without producing puddles. If surfaces dry immediately, apply more materials as the surfaces should remain wet for 30 - 40 minutes, working it in the concrete surface with a soft bristle broom.

### Old Concrete Surfaces

KingHard S200 can be applied to cured concrete of any age. Apply one coat of KingHard S200 using a low pressure sprayer. Use soft bristle broom to evenly spread KingHard S200 and ensure uniform wetting. If surfaces dry immediately, apply more materials as the surfaces should remain wet for 30 - 40 minutes.

#### Notes:

*An additional coat of KingHard S200 may be required for highly porous or soft concrete.*

*Ensure to keep the surface wet with KingHard S200 for a minimum of 30 minutes.*

*6 - 12 months after treatment, a natural wax-like sheen caused by the hardening and sealing effects of KingHard S200 will appear on smooth steel troweled concrete surfaces and will last the lifetime of the surface.*

## CLEANING

Tools and equipment can be cleaned with clean cold water.

## PACKAGING

KingHard S200 is available in 25 litre jerrycan and 200 litre drums.

## REMARKS

- ☞ Coverage may vary with the application method, surface conditions, and porosity.
- ☞ KingHard S200 is not a surface retarder. Do not apply during the final troweling operations as dis-colouration may occur.
- ☞ KingHard S200's minimum application temperature is 5°C and the maximum is 50°C.
- ☞ Do not apply KingHard S200 over areas previously treated with curing or sealing agents before cleaning them mechanically.
- ☞ Where the natural appearance of the surface is to be preserved, all treated surfaces must be flushed with clean water to clean all alkali, lime and other impurities that are forced to the surface.
- ☞ Do not use KingHard S200 for lightweight blocks or extremely porous masonry that contains actual air voids or holes.
- ☞ Dusting or erosion problems caused by over troweling, carbonation or insufficient water cement ratio cannot be solved using the regular KingHard S200 coverage rates. However, in some cases additional coverage rates may solve the problem.
- ☞ Do not use airless sprayers for application, only low pressure sprayers can be used.
- ☞ Application of KingHard S200 does not prevent significant salt migration in case of excessive moisture and extreme hydrostatic pressure from beneath the slab.
- ☞ The formation and enhancement of the sheen can be accelerated by burnishing after curing as well as by the abrasion from routine cleaning using a floor scrubber with abrasive type brushes and use of the floor.
- ☞ Concrete mixes containing chloride may cause heavy salt deposits on the surface and produce unpredictable effects on the concrete color.

## COVERAGE

The coverage is 4 - 7 m<sup>2</sup>/ litre per coat. Where two coats are required to ensure maximum densification; the second coat should be applied after 2 - 3 hours of applying the first coat.



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## 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.

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

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this KingKrete Inc. publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

## NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by KingKrete Inc. either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not KingKrete Inc. are responsible for carrying out procedures appropriate to a specific application.



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