Dekguard S300

constructive solutions

High build cement and aliphatic acrylate protective and decorative coating for concrete and masonry

Uses

To protect atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, sulphates,oxygen and water. The product is also suitable to protect other cementitious substrates and masonry. Dekguard S300 system is suitable for use on all types of structures, especially those in aggressive marine and coastal environments. Dekguard S300 is an ideal protective cum decorative coating for bridges , flyovers, underpasses , commercial and industrial buildings. Dekguard S300 is a component of Fosroc's Renderoc system of concrete reinstatement.

Advantages

- Excellent barrier to carbon dioxide, chloride ions, sulphates, oxygen and water
- Breathibility Allows water vapour to escape from the structure
- Highly UV resistant aliphatic acrylate gives exceptional resistance to the effects of long term weathering.
- Highly durable in all climatic conditions.
- Selected range of decorative colours
- Ease of application – Brush/Roller/Spray
- High build- can mask surface imperfections
- Waterproof - protects the concrete from water borne mechanisms

Standards compliance

Dekguard S300 has been tested and conform to standard specifictions..

Description

Dekguard S300 system comprises of a single component, silane/silaxone primer followed by a two component polymer under coat, over coated with a single component pigmented aliphatic top coat. The primer, Dekguard primer is supplied as a clear liquid and is based on a silane/silaxone blend dissolved in a penetrating organic carrier. The primer is reactive and capable of producing a chemically bound hydrophobic barrier, thus inhibiting the passage of water and waterborne contaminants. The under coat comprising of powder and polymeric emulsion provides the high build and weathering properties. The top coat consists of a single component aliphatic acrylic based protective coating.

The aliphatic acrylate, solvent-based topcoat provides outstanding resistance to aggressive agents, UV light and rain. It is available in a selected range of colors.

Technical support

The company provides a technical advisory service supported by a team of specialists in the field.

Design criteria

The coating should be applied to a total dry surface in two coats at a wet film thickness of not less than 300 microns excluding primer to achieve the correct protective properties, Dekguard S300 system must be applied on to the substrate at the coverage rates recommended.

Properties

	Dekguard S300	Control concrete
Percentage water absorption after 24 hours	Nil	1.02
Water Permeability as per BS:1881 (ml/m^2/s) after		
2 hours	Nil	-
6 hours	Nil	9.0
24 hours	Nil	30.3
48 hours	10	52.8
Depth of carbonation in mm (Accelerated carbonation test)		
2 hours	Nil	1.0
4 hours	Nil	3.0
6 hours	Nil	5.0
12 hours	Nil	7.0
24 hours	Nil	8.0
Chloride ion diffusion (Accelerated electrochemical Chloride ion diffusion test)		
24 hours	Nil	345
48 hours	Nil	1418
72 hours	Nil	3189
Adhesive bond strength of (ASTM)	> >1.5N/mm^2	
Pot life of under coat	: 20 - 30 minutes	

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Specification clauses

Protective / decorative surface coating

The protective coating shall be Dekguard S300 sysetem comprising of a penetrating silane/silaxone primer followed by Dekguard S300, polymer undercoat and overcoated with Dekguard S300, aliphatic acrylate pigmented topcoat. The total dry film thickness of the coating shall be not less than 300 microns excluding primer and shall be capable of providing carbon dioxide diffusion resistance and the depth of carbonation shall be Nil, when tested at 24 hours by the accelerated carbonation test. The permeability and water absorption shall be Nil when tested at 24 hours as per BS 1881. The chloride ion diffusion shall be nil after 72 hours. The coating shall be resistant to UV and weathering.

Application instructions

Preparation

All surface should be dry and free from contamination such as oil, grease, loose particles, decayed matter, moss, algae growth, laitance, and all traces of mould release oils and curing compounds which may impair adhesion. This is best achieved by lightly grit blasting the surface. Where moss, algae or similar growths have occurred, treatment with a proprietary biocide should be carried out after the grit blasting process.

Note : It is not necessary to remove Fosroc's Nitobond AR curing membrane prior to the application of Dekguard S300 provided the adhesion to the substrate is excellent. Where application over existing sound coatings is required,trials should be conducted to ensure compatibility and retention of the bond between the underlying coating and the substrate. For further advice, consult Fosroc. It is essential to produce an unbroken coating of Dekguard S300 system. To ensure this is achieved, surfaces containing blow holes or similar areas of pitting should first be filled using a suitable cementitious fairing coat of Renderoc FC. The cementitious fairing coat should be allowed to cure for about 48 hours depending on ambient conditions before the application of Dekguard S300.

Application

In order to obtain the protective properties of the Dekguard system, it is important that the correct rates of application and over coating time are observed.

	Dekguard S300 Primer	Dekguard S 300 Under coat	Topcoat
Number of coat (s)	1	1	1 or 2
Theoretical application rate	8.0 m^2/L	4.0 m^2/L	8.0 m^2/L
Wet film thickness/coat	NA	250 microns	125 microns
Dry film thickness/coat	NA	250 microns	50 microns
Total dry film thickness	NA	250 microns	50 microns
Over coating time			
@ 20^{0}C	2 Hours	6-24 Hours	--
@ 30^{0}C	90 min	6-12 Hours	--

Application should not commence if the temperature of the substrate is below 10^{0}C.

Any areas of glass should be masked. Plants, grass, joint sealants, asphalt and bitumen - painted areas should be protected during application. The primer should be applied in one or more coats until the recommended application rate of 0.125 liters per square meter has been achieved to reduce extra suction and to improve adhesion. This is best accomplished by using portable spray equipment of the knapsack type. Early coating of concrete prevents penetration of deleterious salts. If in doubt about the condition of the substrate the local Fosroc office should be consulted. The primer should be allowed to dry for a minimum of two hours (at 25^0 C) before application of Dekguard S300.Under no circumstances should the primer be over coated until the surface is properly dry.

Dekguard S300 undercoat and topcoat may be applied by the use of suitable brushes or rollers. Queries relating to spray application should be referred to the local Fosroc office prior to the commencement of work. For further information about application techniques, please consult Fosroc.

All primed substrates should be treated with one coat of Dekguard S300 undercoat and one coat of topcoat. The material should be stirred thoroughly before use. The undercoat coat should be applied to all areas by the use of suitable brushes

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or rollers to achieve a uniform coating with wet film thickness not less than 250 microns. This coat should be allowed to dry before continuing. The topcoat of Dekguard S300 should be applied exactly as detailed above, again achieving a wet film thickness of not less than 125 microns.

Cleaning

Cementitious fairing coat should be removed from tools and equipment with clean water immediately after use. Dekguard Primer, Dekguard S300 under coat and topcoat should be removed from tools and equipment using Nitoflor Sol.

Limitations

The Dekguard S300 system is formulated for application to clean, sound concrete or masonry. The product should not be applied over dense, nonporous materials. Where application over existing sound coating or paints is required, trials should be conducted to ensure compatibility and retention of the bond between the underlying coatings or paints, the performance characteristics of Dekguard S300 may be impaired. Compatibility and soundness should be assessed on a trial area. For further advice, consult Fosroc.

Estimating

Packaging

Dekguard S300 Primer	5 & 20 liters cans
Dekguard S300 topcoat	5 & 20 liters cans
Dekguard S300 undercoat	10.5 kg. powder+5.5 kg. poymer (10 litres)
Nitoflor Sol	5 liters cans

Coverage

Dekguard S300 Primer	8.0 m^2 per liter
Dekguard S300 undercoat	4.0 m^2 per liter
Dekguard S300 topcoat	8.0 m^2 per liter

Note: The coverage figures given are theoretical. Due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be reduced.

Storage

Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Precautions

Health & Safety

Dekguard S300 primer, Dekguard S300 under coat and Dekguard S300 top coat and Nitoflor Sol should not come in contact with the skin and eyes, or be swallowed. Adequate ventilation should be ensured and inhalation of vapours should be avoided. Some people are sensitive to resins, hardeners and solvents, hence suitable protective clothing, gloves and eye protection should be worn. If working in confined areas, suitable respiratory protective equipment must be used. The use of barrier creams provide additional skin protection. In case of contact with skin, should be rinsed immediately with plenty of clean water and medical advice sought. If swallowed, medical attention sought immediately. Should not induce vomiting.

Fire

Dekguard S300 Primer, Dekguard S300 under coat and topcoat and Nitoflor Sol are flammable, should be kept away from sources of ignition. Smoking not allowed. In the event of fire, extinguish with CO_2 or foam, should not use a water jet.

Flash points

Dekguard Primer	38^{0}C
Dekguard S300 Undercoat	42^{0}C
Dekguard S300 Topcoat	42^{0}C
Nitoflor Sol	33^{0}C

Additional information

Fosroc manufactures a wide range of products specifically designed for repair and refurbishment of damaged reinforced concrete. This includes hand-placed and spray grade repair mortars, fluid micro - concretes, chemical resistant epoxy mortars and a comprehensive package of protective coatings. In addition, a wide range of complementary products is available. This includes joint sealants, water proofing membranes, grouting, anchoring and specialised flooring materials.

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Fosroc have also produced several educational training videos which provide more detail about the mechanisms which cause corrosion within reinforced concrete structures and the solutions which are available to arrest or retard these destructive mechanisms. Further information is available from the publication : " Concrete Repair and Protection - The Systematic Approach'.

For further information about products, training videos or publications, contact the local Fosroc office.

Important note :
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.

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