

Dekguard S

High performance aliphatic methacrylate 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 S is suitable for use on all types of structures, especially those in aggressive marine and coastal environments. It is equally suitable for new and existing structures. Dekguard S is a component of Fosroc's Renderoc system of concrete reinstatement.

Advantages

- Excellent barrier to carbon dioxide, chloride ions, sulphates, oxygen and water
- Allows water vapour to escape from the structure
- Highly UV-resistant aliphatic methacrylate gives exceptional resistance to the effects of long term weathering
- Highly durable in all climatic conditions Wide range of decorative colour

Standards Compliance

Dekguard S has been approved by the British Board of Agreement under Certificate No. 92/2824.

- Fire tested to BS476, Pt 7: 1987. Spread of flame Class 1.
- Fire tested to BS 476, Pt 6: 1989. Propagation index 1- 1.5.
- Sub index i1 - 1.3. Building Regulations rating Class 0.

Description

The Dekguard S system comprise a single component, penetrating silane-siloxane primer and a single component pigmented coating, both ready for immediate site use.

The primer (Dekguard Primer) is supplied as a clear liquid and is based on a silane-siloxane 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 water-borne contaminants.

Dekguard S is an aliphatic acrylate, solvent based protective coating, providing outstanding resistance to aggressive elements, UV light and rain. It is available in a wide range of colours.

Properties

The values obtained are for the Dekguard S system applied at the minimum recommended application rate.

Test Method	Typical Result
Volume Solids	43%
Carbon dioxide diffusion resistance (Taywood method). Equivalent thickness of air-	Initial >200m 2000 hrs >200m QV Weathered
Equivalent thickness of 30 N/mm ² concrete cover (Taywood Method)	>500mm
Water Vapour Diffusion Resistance (Taywood Method)	S _D 0.98m @150 microns DFT
Reduction in chloride ion penetration (Aston University Diffusion Cell method):	>99%
Chloride ion diffusion coeff. (Taywood Method) 2000 hrs QV weathered	No chloride ion diffusion after 600 days immersion
Freeze/thaw salt scaling 50 cycles (ASTM C672-84) Good quality concrete (control)	Unaffected Severe scaling
Fire testing (BS476, Pt7: 1987) Spread of flame	Class 1
Fire testing (BS476, Pt6: 1989) Propagation index I:	1.5
Sub index i ₁	1.3
Building Regulations rating:	Class 0.

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Technical Support

Fosroc offers a comprehensive range of high performance high quality, construction products. In addition to a wide range of quality products, Fosroc offers a technical support package to specifiers and contractors which includes assistance with product selection and technical advice from staff with unrivalled experience in the industry.

Design Criteria

The coating should be applied in two coats to achieve a total dry film thickness of not less than 150 microns. To achieve the correct protective properties, Dekguard S system must be applied on to the substrate at the coverage rates recommended.

Specification Clauses

Protective/decorative surface coating

The protective coating shall comprise a penetrating silane-siloxane primer and Dekguard S, a single component aliphatic methacrylate coating. The total dry film thickness of the coating shall be not less than 150 microns and shall be capable of providing carbon dioxide diffusion resistance equivalent to not less than 500 mm of 30 N/mm² concrete cover (by the Taywood method). It shall provide a reduction in chloride ion penetration not less than 99% (by the Aston University Diffusion Cell method) and no chloride ion diffusion after 600 days (by the Taywood method). It must exhibit a water vapour transmission resistance (S_D) of not more than 0.98 metres (by the Taywood method) at a dry film thickness of 150 microns. When tested to BS 476, Pt 7: 1987, it must exhibit a Class 1 spread of flame and achieve a Class O Building Regulations rating when tested to BS 476, Pt 6: 1989 and Pt7: 1987.

Application Instructions

Surface preparation

All surfaces should be dry and free from contamination such as oil, grease, loose particles, decayed matter, moss, algal growth, laitance, and all traces of mould release oils and curing compounds. 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 S.

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 the local Fosroc office.

It is essential to produce an unbroken coating of Dekguard S. To ensure this is achieved, surfaces containing blow-holes or similar areas of pitting should first be filled using Renderoc FC, a cementitious fairing coat (for further details, refer to separate data sheet). Renderoc FC should be allowed to cure for approximately 48 hours dependent on ambient conditions before the application of Dekguard S.

Application

In order to obtain the protective properties of the Dekguard S system, it is important that the correct rates of application and overcoating times are observed.

	Dekguard Primer	Dekguard S
Number of coats:	Flood coat	2
Theoretical application rate per coat:	0.2 litres/m ²	0.2 litres/m ²
Theoretical wet film thickness per coat:	N/A	175 microns
Overcoating time -		
@ 2 °C:	4 hrs	12 hrs
@ 20 °C:	2 hrs	6 hrs
@ 30 °C:	90 mins	5 hrs

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 0.4 litre per square metre has been achieved. This is best accomplished by using portable spray equipment of the knapsack-type. Porous surfaces may require the application of Nitoprime DG as an alternative primer, or may require other special treatment. Nitoprime DG should be applied at the same coverage rate as Dekguard Primer but in continuous, multiple coats as necessary. If in doubt about the condition of the substrate, the local Fosroc office should be

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consulted. The primer should be allowed to dry-for a minimum of two hours (at 20 C) before application of Dekguard S. Under no circumstances should the primer be overcoated until the surface is properly dry.

Dekguard S 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 the local Fosroc office.

All primed substrates should be treated with two coats of Dekguard S. The material should be stirred thoroughly before use. The first coat should be applied to all areas by the use of suitable brushes or rollers to achieve a uniform coating with a wet film thickness not less than 175 microns.

This coat should be allowed to dry before continuing. The second coat of Dekguard S should be applied exactly as detailed above, again achieving a wet film thickness not less than 175 microns.

Cleaning

Renderoc FC should be removed from tools and equipment with clean water immediately after use. Dekguard Primer, Nitoprime DG and Dekguard S should be removed from tools and equipment using Fosroc Solvent 102.

Limitations

The Dekguard S system is formulated for application to clean, sound concrete or masonry. Where application over existing sound coatings or paints is required, trials should be conducted to ensure compatibility and retention of the bond between the underlying coating and the substrate.

When applied over existing coatings or paints, the performance characteristics of Dekguard S may be impaired and its fire rating invalidated. Compatibility and soundness should be assessed on a trial area. For further advice, consult the local Fosroc office.

Estimating

Supply

Renderoc FC	:	25 kg bags
Dekguard Primer	:	20 litres
Dekguard S	:	20 litres
Fosroc Solvent 102	:	5 litre pails

Coverage and yield

Renderoc FC	:	15 litres/25kg bag (5m ² at 3mm thickness)
Dekguard Primer	:	5.0m ² per litre
Dekguard S	:	5.0m ² per litre

The coverage figures given are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened bags or packs.

Storage conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced to 4 to 6 months.

Precautions

Health and safety

Renderoc FC contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provides additional skin protection.

In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately - do not induce vomiting.

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Dekguard Primer, Nitoprime DG, Dekguard S and Fosroc Solvent 102 should not come in contact with the skin and eyes, or be swallowed.

Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used.

Fire

Renderoc FC is non-flammable.

Dekguard Primer, Nitoprime DG, Dekguard S and Fosroc Solvent 102 are flammable. Keep away from sources of ignition.

No smoking. In the event of fire, extinguish with CO₂ or foam. Do not use a water jet.

Additional Information

Dekguard S was formerly known as Nitocote Dekguard S. Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes hand-placed and sprays 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, waterproofing membranes, grouting, anchoring and specialised flooring materials.

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', available in seven language formats.

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



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Important note

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