

Fosroc® Dekguard S

constructive solutions

High performance aliphatic acrylic protective and decorative coating for concrete and masonry conforming to the requirements of BS EN 1504-2

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.

Dekguard S is suitable for principles 1.3, 2.2 and 8.2 as defined by BS EN 1504-2

Advantages

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

Description

The Dekguard S system comprises a single component, penetrating primer, Dekguard Primer and a single component pigmented coating, both ready for immediate site use.

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

Specification clauses

Protective/decorative surface coating

The protective coating shall comprise a penetrating silane-siloxane primer and Dekguard S, a single component aliphatic acrylic coating complying to the requirements of BS EN 1504-2 principles 1.3, 2.2 and 8.2

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 more than 140 metres of air (Sd). It shall have a class 1 water vapour transmission rate. When tested to BS 476, Pt 7:1987, it must exhibit a Class 1 spread of flame and achieve a Class 0 Building Regulations rating when tested to BS 476, Pt 6:1989 and Pt 7:1987.

Standards compliance

Dekguard S complies with the requirements of BS EN 1504-2 Surface Protection systems, principles 1.3, 2.2 and 8.2.

Fire tested to BS 476, Pt 7:1987. Spread of flame - Class 1.

Fire tested to BS 476, Pt 6:1989. Propagation index I - 1.5. Sub index i₁ - 1.3.

Building Regulations Rating - Class 0.

Fire rating EN 13501-1 2007 Euroclass B.

<p style="text-align: center;">CE 370</p>	
<p style="text-align: center;">Fosroc Ltd Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK 09 DoP: UK 9-01 0370-CPR-0865</p>	
<p style="text-align: center;">Dekguard S</p>	
<p style="text-align: center;">EN1504-2: Surface protection systems methods 1.3, 2.2 and 8.2</p>	
Permeability to CO ₂	> 50m
Permeability to water vapour	Class 1 < 5m
Capillary absorption and permeability water	< 0.1 kg/(m ² h ^{0.5})
Adhesion strength by pull-off test	≥ 1.0 MPa (non-trafficked)
Reaction to fire	Class B
Dangerous substances	Complies with 5.3

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Properties

The following results were obtained at a temperature of 20°C unless otherwise stated.

Test method	Standard	EN1504-2 Requirement	Result
Measurement of bond strength	EN 1542:2000	>1 MPa	2.7 MPa
Water vapour permeability	EN ISO 7783-2:1999	Class 1 < 5 metres	0.75 metres
Liquid water transmission rate	EN 1062-3:1999	< 0.1 kg/(m ² h ^{0.5})	0.04 kg/(m ² h ^{0.5})
Carbon dioxide permeability	EN 1062-6:2002	Sd > 50 m	149 metres
Spread of Flame	BS 476:7 1987	-	Class 1
Fire propagation index	BS 476:6 1989	-	Propagation Index 1:1.5 Sub index i ₁ : 1.3
Building Regulations rating	-	-	Class 0
Fire Testing EN 13501-1 2007	Methods EN-ISO 11925-2 and EN 13823	-	Euroclass B S1 d0
Reduction in chloride ion penetration	Aston University diffusion cell method	-	>99%
Chloride ion diffusion coefficient 2000 hours QUV weathering	Taywood Method	-	No chloride ion diffusion after 600 hours immersion
Equivalent thickness of 30Nmm ²	Taywood Method	-	> 650 mm
Number of coats	-	-	Dekguard Primer : Flood coat Dekguard S: 2 coats
Theoretical application rate per coat	-	-	Dekguard Primer: 0.4 litres / m ² Dekguard S: 0.175 litres / m ²
Theoretical wet film thickness per coat	-	-	Dekguard Primer : n/a Dekguard S : 175 microns
Volume Solids			44.5 %
Overcoating time @ 20°C	-	-	Dekguard Primer: 12 hours Dekguard S: 6 hours
Minimum application temperature	-	-	Application should not commence / be carried out at temperatures below 2°C. Cure times will be increased at low temperatures.
Colour range	-	-	Standard colours BS4800: White BS 00E55 Magnolia BS 08B15 Sandstone BS 08B17 Portland BS 00A01 Other colours to special order

Clarification of property values: The typical properties given above are derived from laboratory testing. Results derived from field applied samples may vary.

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Application instructions

All coating work to be carried out in accordance with the relevant sections of BS6150:2006, Painting of Buildings - Code of Practice.

Preparation

Bare concrete

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.

If Nitobond AR has been used as a curing membrane over Renderoc patch repairs, it is not necessary to remove this prior to the application of Dekguard S.

It is essential to produce an unbroken coating of Dekguard S. To ensure this is achieved, surfaces containing blowholes or similar areas of pitting should first be filled using Renderoc FC, a cementitious fairing coat. Depending on the thickness required, rougher substrates can be levelled using Renderoc ST05, a protective cementitious coating, or Renderoc RP252 cementitious reprofiling and protection mortar. Separate data sheets must be referred to before commencing overcoating of Renderoc ST05 or RP252 with Dekguard S.

Overcoating

The Dekguard S system is formulated for application to clean, sound concrete or masonry. When applied over existing coatings or paints, the performance characteristics of Dekguard S may be impaired and its fire rating invalidated.

Trial areas should be conducted to ensure compatibility and bond of Dekguard S to the existing coating and also to validate retention of the bond between the underlying coating and the substrate after overcoating. Only after successful test panels are completed should application proceed over large areas.

Dekguard S should not be applied over elastomeric coatings.

The existing coating should be cleaned with a sponge and dilute detergent then rinsed with clean water and allowed to thoroughly dry. Any areas of flaking or crazing in the existing coating should be removed back to an area soundly bonded. Any bare concrete exposed should be prepared as described above.

A priming coat of 2 parts Dekguard S to 1 part Fosroc Solvent 102 by volume should be prepared and applied to the surface and allowed to dry. Two coats of undiluted Dekguard S are then applied as described below. Note, areas to be overcoated do not require the use of Dekguard Primer or Nitoprime DG.

For further advice, contact Fosroc Technical Services.

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.

Where more than one batch of material is to be used, restrict use of batch to whole separate elevations. Contact local Fosroc Office for further details.

Any areas of glass and window frames should be masked. Plants, grass, joint sealants, asphalt and bitumen-painted areas should be protected during application.

Dekguard 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, contact Fosroc Technical Services.

The primer should be allowed to dry for a minimum of 12 hours (at 20°C), longer at lower temperature, before application of Dekguard S. Under no circumstances should the primer be overcoated until the surface is properly dry.

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.

Dekguard S may be sprayed by airless spray techniques. Consult Fosroc Technical Services for advice.

Cleaning

Dekguard Primer, Nitoprime DG and Dekguard S should be removed from tools and equipment using Fosroc Solvent 102.

Estimating

Supply

Dekguard S:	10 litre drums
Dekguard Primer:	20 litre drums
Nitoprime DG:	20 litre drums
Fosroc Solvent 102:	5 and 25 litre tins

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Coverage

Dekguard S:	6 m ² per litre per coat
Dekguard Primer:	2.5 m ² per litre
Nitoprime DG:	2.5 m 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.

Limitations

Application of Dekguard S, Dekguard Primer and Nitoprime DG should not commence if the temperature of the substrate is below 2°C, or less than 3°C above the dew point.

The manufacture of Dekguard coatings is a batch process and despite close manufacturing tolerances variation may occur between batches. Fosroc recommends using material from one batch only as the finish topcoat.

Storage

Store in cool, dry conditions, away from sources of heat and naked flames, in the original, unopened packs.

Dekguard products have a shelf life of 18 months if kept in a dry store in the original, unopened packs. Material from different batches should be stored separately.

If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Precautions

Health and safety

For further information refer to appropriate Product Safety Data Sheet available from www.fosroc.com

Fire

Renderoc FC, Renderoc RP252 and Renderoc RP252 surface conditioner are 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.

Flash points

Dekguard Primer:	38°C
Nitoprime DG:	38°C
Dekguard S:	42°C
Fosroc Solvent 102:	33°C

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Important note

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