

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, sulfates, 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, sulfates, 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

Dekguard S is a single component, solvent based, aliphatic acrylic pigmented protective coating for application to concrete and masonry. It provides outstanding resistance to carbon dioxide, chloride ions, UV light and rain. After application, the passage of water and waterborne contaminants is inhibited.

Dekguard S is available in a wide range of colours, ready for immediate site use.

Specification clause

Protective/decorative surface coating

The protective coating shall be Dekguard S, a single component aliphatic acrylic coating, suitable for application by brush, roller or spray, compliant with 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, shall be capable of providing carbon dioxide diffusion resistance equivalent to not less than 140 metres of air (Sd) and provide an effective barrier to chloride ion diffusion. It shall exhibit a Class 1 water vapour transmission resistance (SD). When tested to methods EN-ISO 11925-2 and EN 13823, it shall



achieve a Euroclass B s1 d0 fire rating. The coating system shall comprise a dilute priming coat of Dekguard S and two full coats of Dekguard S achieving a wet film thickness not less than 175 microns per coat. The product application shall be in accordance with the manufacturer's written instructions to a correctly prepared substrate.

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 rating EN 13501-1 2007 Euroclass Class B s1 d0.

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Dekguard S	
EN1504-2: Surface protection systems methods 1.3, 2.2 and 8.2	
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 s1 d0
Dangerous substances	Complies with 5.3

Fosroc® Dekguard S

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
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 (calculated)	-	>370mm
Number of coats	-	-	Priming layer: 1 coat Dekguard S: 2 coats
Theoretical application rate per coat	-	-	Priming layer: 0.1 litres/m ² (after dilution) Dekguard S: 0.175 litres / m ²
Theoretical wet film thickness per coat	-	-	Dekguard S : 175 microns
Volume Solids			44.5 %
Overcoating time @ 20°C	-	-	Priming layer: 6 hours Dekguard S: 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 BS6150:2019, Painting of Buildings - Code of Practice.

Ensure appropriate PPE is used at all stages during preparation and application.

Preparation

Bare concrete and masonry

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. For concrete surfaces this is best achieved by suitable mechanical means. On other surfaces where moss, algae or similar growths have occurred, treatment with a proprietary biocide should be carried out.

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. All relevant data sheets must be referred to before commencing overcoating of Renderoc products with Dekguard S.

Existing coatings

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 by high pressure water jetting and / or with a sponge and dilute detergent then rinsed with clean water to remove all service contaminants 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.

Upon completion of preparation and validation testing, proceed with priming and Dekguard S application as described below.

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.

Prior to use, Dekguard S tins should be thoroughly stirred to disperse any settlement.

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.

All prepared substrates and existing coatings should be primed with a dilution of Dekguard S as follows. Using suitable volumetric containers, add 2 parts Dekguard S and 1 part Fosroc Solvent 102 by volume into a clean bucket. Mix with a paint stirrer until a uniform thin consistency is obtained. Apply this priming coat to the prepared substrate (or existing coating) by brush or roller. The primer should be remixed periodically to re-disperse any settlement. Ensure any un-used primer is stored in a sealed container. It is suggested that only sufficient primer to complete the upcoming day's work is made up at a time. **IMPORTANT NOTE:** Do not use any other solvent (e.g. white spirit, turps) to dilute Dekguard S. Do not add water to Dekguard S.

When applying Dekguard S directly over surfaces treated with Protectosil® CIT, no diluted priming coat is required. In all other instances, proceed as above.

The primer should be allowed to dry for a minimum of 6 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 then be treated with two undiluted 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 for 6 hours (at 20°C) 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.



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Cleaning

Dekguard S should be removed from tools and equipment using Fosroc Solvent 102.

Estimating

Supply

Dekguard S:	10 litre drums
Fosroc Solvent 102:	5 and 25 litre tins

Coverage

Dekguard S:	6 m ² per litre per coat
Diluted priming coat:	10m 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 (or the diluted primer coat) should not proceed if the air or substrate temperature is 2°C and falling (at a steady 2°C, or 2°C and rising, application may commence).

Dekguard S should not be applied at less than 3°C above the dew point or >85% RH, or where exposure to dust, rain or frost is likely within the drying time. 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

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 S:	42°C
Fosroc Solvent 102:	33°C

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Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of 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. All Fosroc datasheets are updated on a regular basis. It is the user's responsibility to obtain the latest version.

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