

# Dekguard S



5

Dekguard S  
CI/SfB: Vu6  
January 2001

## High performance aliphatic acrylic 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 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

### Standards compliance

Dekguard S has been approved by the British Board of Agrément under Certificate No. 98/3461.

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  $i_1$  — 1.3. Building Regulations rating — Class 0.

### Description

The Dekguard S system comprises 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.

### Technical support

Fosroc offers a comprehensive range of high performance, high quality repair, maintenance and construction products. In addition, Fosroc offers a technical support package to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the world.

### 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.

### Properties

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

#### Volume solids

**Dekguard S:** 43%

#### Carbon dioxide diffusion resistance (Taywood method). Equivalent thickness of air —

**Initial:** >200 metres  
**2,000 hours QUV weathered:** >200 metres

#### Equivalent thickness of 30 N/mm<sup>2</sup> concrete cover (Taywood method):

>500mm

#### Water vapour diffusion resistance (Taywood method):

$S_D$  0.98 m @ 150 microns dft

#### Reduction in chloride ion penetration (Aston University Diffusion Cell method):

>99%





<b>Chloride ion diffusion coefficient (Taywood method):</b> <b>2,000 hours QUV weathered</b>	No chloride ion diffusion after 600 days immersion
<b>Freeze/thaw salt scaling (50 cycles) – (ASTM C672-84):</b> <b>Good quality concrete (control):</b>	Unaffected Severe scaling
<b>Fire testing (BS 476, Pt 7:1987) – Spread of flame:</b>	Class 1
<b>Fire testing (BS 476, Pt 6:1989) – Propagation index I:</b> <b>Sub index i<sub>1</sub>:</b> <b>Building Regulations rating:</b>	1.5 1.3 Class 0

## 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. 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/mm<sup>2</sup> 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 0 Building Regulations rating when tested to BS 476, Pt 6:1989 and Pt 7:1987.

### Application instructions

#### 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.

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.

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. Rougher substrates can be levelled using Renderoc RP252, a cementitious reprofiling and protection mortar. Separate data sheets **must** be referred to before commencing overcoating of Renderoc RP252 with 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
<b>Number of coats:</b>	Flood coat	2
<b>Theoretical application rate per coat:</b>	0.4 litres/m <sup>2</sup>	0.175 litres /m <sup>2</sup>
<b>Theoretical wet film thickness per coat:</b>	N/A	175 microns
<b>Overcoating time – @ 20°C:</b>	12 hours	6 hours

Application should not commence if the temperature of the substrate is below 2°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 0.4 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 consulted.

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.

Under no circumstances should the primer be overcoated until the surface is properly dry. Dekguard S is applied as described previously.

### Cleaning

Renderoc FC and Renderoc RP252 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.

Application of Dekguard S, Dekguard Primer or Nitoprime DG should not commence if the temperature of the substrate is below 2°C. Nitobond AR application should not commence if the temperature of the substrate is below 5°C.

### Estimating

#### Supply

<b>Dekguard S:</b>	15 litre drums
<b>Dekguard Primer:</b>	25 litre drums
<b>Nitoprime DG:</b>	25 litre drums
<b>Nitobond AR:</b>	5 and 25 litre drums
<b>Fosroc Solvent 102:</b>	5 litre drums

### Coverage

<b>Dekguard S:</b>	3 m <sup>2</sup> per litre (total)
<b>Dekguard Primer:</b>	2.5 m <sup>2</sup> per litre (total)
<b>Nitoprime DG:</b>	2.5 m <sup>2</sup> per litre (total)
<b>Nitobond AR:</b>	6 m <sup>2</sup> per litre (total)

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 packs.

#### Storage conditions

Store in cool, dry conditions, away from sources of heat and naked flames, in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

### 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 provide 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.

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. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent. 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.



## 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 CO<sub>2</sub> or foam. Do not use a water jet.

## Flashpoints

<b>Dekguard Primer:</b>	38°C
<b>Nitoprime DG:</b>	38°C
<b>Dekguard S:</b>	42°C
<b>Fosroc Solvent 102:</b>	33°C

For further information, refer to the Product Safety Data Sheet.

## Additional information

Fosroc manufactures a wide range of products specifically designed for the 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, 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.



### Fosroc Limited

Coleshill Road  
Tamworth  
Staffordshire  
B78 3TL  
Tel 01827 262222  
Fax 01827 262444  
www.FosrocUK.com

Dekguard is the trade mark of Fosroc International Limited

## 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 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.