Fosroc®
Dekguard® S

FOSROC construction solutions

High performance, pigmented aliphatic acrylic, protective and decorative coating for concrete against acidic gases, chloride ions, UV light and water

Uses

To protect atmospherically exposed (non-trafficked) reinforced concrete structures from attack by acid gases, chloride ions, and water. Dekguard S is suitable for use on all types of concrete structures, especially those in aggressive marine and coastal environments. It is equally suitable for new and existing structures. Dekguard S compatible with the Renderoc system of concrete reinstatement.

Advantages

- Excellent barrier to carbon dioxide, chloride ions 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

Description

Dekguard S is an aliphatic acrylate, solvent based protective coating, providing outstanding resistance to aggressive elements, UV light and rain. Available in 2 shades of grey, Concrete Grey and Bridge Grey.

The primer (Dekguard Primer) is based on a silane-siloxane and capable of producing a chemically-bound hydrophobic barrier, thus inhibiting the passage of water and water-borne contaminants.

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 must be applied on to the substrate at the recommended coverage rate 0.167 litres / m^2 ($6m^2$ / litre) per coat.

Properties

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

Test method	Typical result
Volume solids:	37%
VOC content:	781g / litre
Carbon dioxide diffusion resistance	(AS/NZS 4548.5-1999)
Equivalent Thickness of air (R):	>200 metres
Equivalent Thickness of 30 MPa concrete cover (Sc):	>940 mm
CO_2 Diffusion Coefficient:	$7.1x10^{-08}$ cm^2/sec
Water vapour transmission resistance	(AS/NZS 4548.5-1999)
Vapour Transmission Rate:	21.9g/m^2/24hr
Equivalent thickness of Air (Sd):	>1
Vapour Diffusion Coefficient:	$2.7x10^{-05}$ cm^2/sec
Reduction in chloride ion penetration:	>99% (Aston University Diffusion Cell method):
Chloride ion diffusion coefficient:	1.0 x $10^{-14}$$m^2$/sec @ 147 days (AS/NZS 4548.5-1999)

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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.

Note: When Nitobond AR, Concure A99 or diluted Nitoprime 330 has been used to cure Renderoc repairs, it is not necessary to remove the curing material prior to the application of the primer and Dekguard S. Any other curing membrane will need to be mechanically removed.

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 contact Fosroc.

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 or Renderoc ST 06, a cementitious fairing coat (for further details, refer to separate Technical Data Sheet). Renderoc FC and Renderoc ST 06 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 Dekguard S, it is important that the correct rates of application and overcoating times are observed.

Dekguard S must be applied following the application of a Primer, such as Dekguard Primer or Nitocote SN511.

	Dekguard Primer or Nitocote SN511	Dekguard S
Number of coats:	Flood coat	2
Theoretical application rate per coat:	2.5 m²/litre 0.4 litres/m²	6 m²/litre 0.167 litres/m²
Theoretical wet film thickness per coat:	N/A	175 microns
Overcoating time :	4 hours @ 2°C	12 hours @ 2°C
	2 hours @ 20°C	6 hours @ 20°C
	90 minutes @ 30°C	5 hours @ 30°C

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.

Dekguard Primer or Nitocote SN511 should be applied in one or more coats until the recommended application rate of 0.4 litres /m² has been achieved. This is best accomplished by using portable spray equipment of the knapsack-type.

Very 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/Nitocote SN511 in continuous, multiple coats as necessary. If in doubt about the condition of the substrate, contact Fosroc.

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.

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, rollers or spray 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

Dekguard Primer, Nitocote SN511, Nitoprime DG and Dekguard S should be removed from tools and equipment using Fosroc Solvent 10.

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. Compatibility and soundness should be assessed on a trial area. For further advice contact Fosroc.

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

Dekguard coatings are not designed nor suitable for use on trafficable surfaces.

Supply

Dekguard S Concrete Grey 15 litres**:**	FC860623-15L
Dekguard S Bridge Grey 15 litres:	FC860624-15L
Dekguard Primer 20 litre:	FC861520-20L
Nitoprime DG 20 litre:	FC862600-20L
Nitocote SN511 20 litre drum:	FC855155-20L
Nitocote SN511 200 litre drum:	FC855155-200L
Fosroc Solvent 10 4 litre:	FC600800-4L
Fosroc Solvent 10 20 litre:	FC600800-20L

Coverage

Dekguard S:	3.0m² / litre (total in 2 coats)
Dekguard Primer:	2.5m² per litre (total)
Nitoprime DG:	2.5m² per litre (total)
Nitocote SN511:	2.5m² per litre (total)

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

Storage

Store in cool, dry conditions, away from sources of heat and naked flames.

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