FM 610

Dekguard W

Water-based acrylic copolymer protective and decorative coating for concrete and masonry

Uses

To protect atmospherically exposed reinforced concrete structures, cementitious substrates and masonry from aggressive elements, weathering and rain. Dekguard W is suitable for use on all types of structures, including those in coastal environments. It is equally suitable for new and existing structures. Dekguard W is a component of Fosroc's Renderoc system of concrete reinstatement.

Advantages

- Excellent barrier to carbon dioxide, chloride ions, oxygen and water
- Allows water vapour to escape from the structure
- High resistance to the effects of long-term weathering and durable in all climatic conditions
- Water-based
- Wide range of decorative colours

Standards compliance

Fire tested to BS 476, Pt 6: 1987. Spread of flame - Class 0.

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

Description

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

A range of reactive primers are available to suit substrate porosity and site conditions and inhibit the passage of water and waterborne contaminants.

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 W system must be applied on to the substrate at the coverage rates recommended.

Properties

The values obtained are for the Dekguard W system applied in two coats at the minimum recommended application rate.

Volume solids	
Dekguard W:	41%
Carbon dioxide diffusion resistance (Taywood method). Equivalent thickness of air	
Initial:	133 metres
After 2000 hours QUV:	91 metres
Equivalent thickness of 30 N/mm² concrete cover (Taywood method):	279 mm
Water vapour diffusion resistance (Taywood method):	SD 0.066 m @ 50 microns dft
Reduction in chloride ion penetration when primer is used (Aston University Diffusion Cell method):	> 84%
Fire testing (BS 476, Pt 7: 1987)	
Spread of flame:	Class 1

Specification clauses

Protective/decorative surface coating

The protective coating shall comprise a penetrating silane-siloxane primer and Dekguard W, 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 279 mm of 30 N/mm2 concrete cover (by the Taywood method). It shall provide a reduction in chloride ion penetration not less than 84% (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 (SD) of not more than 0.066 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 W.

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 W. 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 W.

Application

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

	Dekguard Primer	Dekguard W
Number of coats:	Flood coat	2
Theoretical application rate per coat:	0.4 litres/m2	0.18 litres/m^2
Theoretical wet film thickness per coat:	N/A	180 microns
Overcoating time — @ 20°C:	12 hours	16 hours

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.

All primed substrates should be treated with two coats of Dekguard W. Stir material before use. The first coat should be applied to achieve a uniform coating with a wet film thickness not less than 180 microns. This coat should be allowed to dry until firm to the touch. Typically, this will be after 16 hours in dry weather at 20°C.

The second coat of Dekguard W should be applied as detailed above, again achieving a wet film thickness not less than 180 microns, and a total dry film thickness not less than 150 microns.

Semi protected surfaces

For semi-protected surfaces, such as multi storey car park interiors, a reduced specification may be adopted whilst still achieving a carbon dioxide diffusion resistance of > 50m of air.

Omit Dekguard Primer and apply two coats of Dekguard W at a wet film thickness of 140 microns per coat, diluting the first coat with 10% v/v water, to achieve a total dry film thickness of not less than 110 microns.

Cleaning

Dekguard W should be removed from tools and equipment with clean water immediately after use.

Limitations

When applied over existing coatings or paints, the performance characteristics of Dekguard W may be impaired and its fire rating invalidated. For further advice, consult the local Fosroc office.

The application of the primer should not commence if the temperature of the substrate is below 2°C. Application of Dekguard W should not commence if the temperature of the substrate is below 5°C.

Dekguard W should not be applied where there is a likelihood of exposure to frost within 48 hours of the application. The product should not be applied in windy conditions where early-age dust adhesion may occur, or where rain is likely within 2 hours at 20°C or 20 hours at 5°C (up to 80% RH) or when the prevailing relative humidity exceeds 90%.

Dekguard W should not be considered for areas subjected to exposure to ponded water. Dekguard S should be considered where occasional ponded water is anticipated.

Estimating

Supply

Dekguard W:	10 litre drums
Dekguard Primer:	25 litre drums
Nitoprime DG:	25 litre drums
Renderoc FC:	25kg bags
Renderoc RP252:	20kg bags
Nitobond AR:	5 and 25 litre drums
Fosroc Solvent 102:	5 litre drums

Coverage

Dekguard W:	2.75 m^2 per litre (total)
Dekguard Primer:	2.5 m^2 per litre (total)
Nitoprime DG:	2.5 m^2 per litre (total)
Renderoc FC:	15 litres (5 m^2 at 3mm thickness)
Renderoc RP252:	12 litres (2.4 m^2 at 5mm thickness)
Nitobond AR:	6 m^2 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

Dekguard W has a shelf life of 12 months if kept in a dry store in the original, unopened packs. Store in cool, dry conditions, away from sources of heat and naked flames.

If stored at high temperatures and/or high humidity conditions the shelf life may be reduced. Dekguard W should be protected from frost.

Precautions

Health and safety

Renderoc FC and Renderoc RP252 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 W 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

Dekguard W is non-flammable.

Dekguard Primer, Nitoprime DG 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
Fosroc Solvent 102:	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.

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

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Important note