

# Fosroc® Dekguard E2000

constructive solutions

## Crack-accommodating elastomeric protective coating for reinforced concrete structures

### Uses

To protect atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, oxygen and water, especially where there is a danger of subsequent cracks appearing within the substrate. Dekguard E2000 is suitable for use on all types of structures, including those in coastal environments.

### Advantages

- Can accommodate substrate cracking up to 2mm and cyclic movement up to 0.3mm
- Excellent barrier to carbon dioxide, chloride ions, oxygen and water
- Special acrylic polymer minimises dirt retention
- Allows water vapour to escape from the structure
- Resistant to the effects of ultra-violet light
- Water-based
- Range of decorative colours

### Description

The Dekguard E2000 system comprises a single component penetrating primer and a single component elastomeric pigmented coating, both ready for immediate site use.

The system is available with a choice of priming systems, i.e. Nitobond AR or Nitoprime DG. Nitoprime DG, a film forming stabilising primer may be utilised when chloride resistance is of primary importance. Nitoprime DG is supplied as a clear liquid and is based on an acrylic resin and 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. A thin surface film is produced which consolidates and stabilises porous substances.

Nitobond AR may be used where chloride resistance is of secondary importance to carbonation resistance.

## Specification clauses

Crack-accommodating protective/decorative surface coating.

The protective coating system shall comprise Nitoprime DG, an acrylic film-forming penetrating silane-siloxane primer and Dekguard E2000, a single component elastomeric coating suitable for application by brush, roller or spray.

The total dry film thickness must be capable of providing carbon dioxide diffusion resistance equivalent to not less than 50 metres of air and no chloride ion diffusion after 100 days when evaluated by the Taywood method. It shall exhibit a water vapour transmission resistance ( $S_D$ ) of not more than 0.14 metres (by the Klopfer method) at a dry film thickness of 200 microns. It must be capable of bridging a 2mm incipient crack at 20°C before failure when evaluated by the UK BRE method.

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<b>Dekguard E2000</b>	
<b>EN1504-2: Surface protection systems methods 1.3, 2.2 and 8.2</b>	
Permeability to CO <sub>2</sub>	> 50 m
Permeability to water vapour	Class 1 < 5 m
Capillary absorption and permeability to water	< 0.1 kg/(m <sup>2</sup> h <sup>0.5</sup> )
Adhesion strength by pull-off test	≥ 0.8 MPa (non-trafficked)
Crack bridging ability	Class IV>1250μ
Fire Classification	Class B
Dangerous substances	Complies with 5.3

# Fosroc® Dekguard E2000

## Properties

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

Test Method	Standard	EN 1504 - 2 Requirement	Result
Bond Strength by pull off	EN 1542:2000	Non traffic weight >0.8 MPa	2.1 MPa
Water vapour permeability	EN ISO 7783-2:1999	Class 1 Sd <5m	0.76m
Liquid water permeability	EN 1062-3:1999	W<0.1Kg/m <sup>2</sup> *h <sup>0.5</sup>	0.02 Kg / m <sup>2</sup> *h <sup>0.5</sup>
Carbon dioxide permeability	EN 1062-6:2002	Sd>50m	106m
Crack bridging	UNE EN 1062-7:2004	Class IV>1250 um	1595um
Surface drying Ballotini method	EN ISO 1517:1996	-	2 h 15 m
Volume Solids	-	-	50%
Carbon dioxide diffusion resistance equivalent thickness of air initial	Taywood Method	-	>50 mm
Carbon dioxide diffusion resistance equivalent thickness of air after 2000 hours QUV after 2000 hours QUV	Taywood Method	-	>50 m
Chloride resistance	Taywood Method	-	No chloride ion diffusion after 100 days
Fire Testing EN 13501-1 2007	Methods EN -ISO 11925-2 and EN 13823	-	Euroclass B S1 d0
Number of coats	-	-	Nitoprime DG: Flood coat Dekguard E2000: 2
Theoretical application rate per coat	-	-	Nitoprime DG: 0.4 litres / m <sup>2</sup> Dekguard E2000: 0.4 litres / m <sup>2</sup>
Theoretical wet film thickness per coat	-	-	Nitoprime DG: n/a Dekguard E2000: 400 microns
Overcoating time @ 20°C			Nitoprime DG: 12 hours Dekguard E2000: 16 hours
Minimum application temperature			Application should not commence / be carried out at substrate temperatures below 5°C. Cure times will be increased at low temperatures.
Colour range			Standard colours BS 4800: 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

All surfaces should be dry and free from contamination such as oil, grease, loose particles, decayed matter, moss, algae 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 E2000.

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 Fosroc Technical Department.

It is essential to produce an unbroken coating of Dekguard E2000. 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 E2000.

### Application

In order to obtain the protective properties of the Dekguard E2000 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.

#### Nitoprime DG

Number of coats:	Flood coat
Theoretical application rate per coat:	0.4 litres/m <sup>2</sup>
Theoretical wet film thickness per coat:	N/A
Overcoating time:	12 hours @ 20°C

#### Nitobond AR

Number of coats:	1 or 2
Theoretical application rate per coat:	0.15 litres/m <sup>2</sup>
Theoretical wet film thickness per coat:	150 microns
Overcoating time:	12 hours @ 20°C

#### Dekguard E2000

Number of coats:	1
Theoretical application rate per coat:	0.4 litres/m <sup>2</sup>
Theoretical wet film thickness per coat:	400 microns

Application of Nitoprime DG should not commence if the temperature of the substrate is below 2°C. Application of Dekguard E2000 should not commence if the temperature of the substrate is below 5°C.

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

The Nitoprime DG 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. A uniform surface appearance (sheen) should be achieved. If any matt porous patches remain, a further application of primer should be made.

The primer should be allowed to dry for a minimum of 12 hours (at 20°C), longer at lower temperatures, before continuing. Under no circumstances should the primer be overcoated with Dekguard E2000 until the surface is properly dry.

Dekguard E2000 may be applied by the use of suitable brushes, rollers or spray equipment. For further information about application techniques, please consult Fosroc Technical Department.

All primed substrates should be treated with one coat of Dekguard E2000. It is important that no gaps or 'raw edges' appear in the finished coating. Special care should be taken to provide an unbroken coating at external corners and similar exposed protrusions. This 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 400 microns. It should be allowed to dry until firm to the touch. Typically, this will be after about 16 hours in dry weather at 20°C.

### Cleaning

Renderoc FC, Renderoc RP252, Dekguard E2000 and Nitobond AR should be removed from tools and equipment with clean water immediately after use. Nitoprime DG should be removed from tools and equipment using Fosroc Solvent 102.

# Fosroc® Dekguard E2000

## Estimating

### Supply

Renderoc FC:	25kg bags
Renderoc RP252:	20kg bags
Nitoprime DG:	20 litre drums
Nitobond AR:	25 litre drums
Dekguard E2000:	10 litre drums
Fosroc Solvent 102:	5 litre drums

### Coverage

Renderoc FC:	15 litres (5 m <sup>2</sup> at 3mm thickness)
Renderoc RP252:	12 litres (2.4 m <sup>2</sup> at 5mm thickness)
Nitoprime DG:	2.5 m <sup>2</sup> / litre (total)
Nitobond AR:	6 to 8m <sup>2</sup> / litre
Dekguard E2000:	2.5m <sup>2</sup> / 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.

## Limitations

The Dekguard E2000 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 E2000 may be impaired and its fire rating invalidated. Compatibility and soundness should be assessed on a trial area. For further advice, consult Fosroc Technical Department.

Application of Nitoprime DG should not commence if the temperature of the substrate is below 2°C. Application of Nitobond AR and Dekguard E2000 should not commence if the temperature of the substrate is below 5°C, or less than 3°C above the dew point.

Dekguard E2000 and Nitobond AR 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). It should not be applied when the prevailing relative humidity exceeds 90%.

The use of Dekguard E2000 should not be considered for areas subjected to ponded water. Dekguard E2000 is unsuitable for use in areas subject to direct physical attack by vandals. Where appropriate, Dekguard S should be considered.

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 E2000 should be protected from frost.

Dekguard products have a shelf life of 18 months if kept in a dry store in the original, unopened packs; other products detailed have a 12 month shelf life. Material from different batches shall 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.

### Fire

Renderoc FC, Renderoc RP252, Nitobond AR and Dekguard E2000 are non-flammable.

Nitoprime DG 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.

### Flash points

Nitoprime DG:	38°C
Fosroc Solvent 102:	33°C

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

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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 of information given by it.

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