

Fosroc® Dekguard E2000



constructive solutions

Crack-accommodating elastomeric protective coating for reinforced concrete and masonry 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 movement of 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 primer and a single component elastomeric pigmented coating, both ready for immediate site use.

The choice of primer (Nitobond AR or Dekguard CP) depends on performance requirements. Dekguard CP, a film forming water based stabilising primer may be utilised when chloride resistance is of primary importance. Dekguard CP 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 clause

The protective coating system shall be Dekguard E2000, a single component, crack-accommodating, elastomeric 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 shall be not less than 200 microns, shall be capable of providing carbon dioxide diffusion resistance equivalent to not less than 50 metres of air and provide an effective barrier to chloride ion diffusion. It shall exhibit a Class 1 water vapour transmission resistance



(SD) and a Class A2 crack bridging ability. The coating system shall comprise a priming coat of Dekguard CP / Nitobond AR / dilute Dekguard E2000 (*select as appropriate*) and one full coat of Dekguard E2000 achieving a wet film thickness not less than 400 microns. The product application shall be in accordance with the manufacturer's written instructions to a correctly prepared substrate.

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Dekguard E2000	
BS EN 1504-2: Surface protection systems methods 1.3, 2.2 and 8.2	
Permeability to CO ₂	> 50 m
Permeability to water vapour	Class 1 < 5 m
Capillary absorption and permeability to water	< 0.1 kg/(m ² h ^{0.5})
Adhesion strength by pull-off test	≥ 0.8 MPa (non-trafficked)
Crack bridging ability	Class A2 >250µm
Fire Classification	Euroclass B s1 d0
Dangerous substances	Complies with 5.3

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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	1.1 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 ² *h ^{0.5}	0.02 Kg / m ² *h ^{0.5}
Carbon dioxide permeability	EN 1062-6:2002	Sd>50m	59m
Crack bridging	UNE EN 1062-7:2004	Class A2 >250µm	Complies at 20°C and -10°C
Surface drying Ballotini method	EN ISO 1517:1996	-	2 h 15 m
Volume Solids	-	-	50%
Equivalent thickness of 30MPa concrete cover	Taywood Method (calculated)	-	148mm
Fire Testing EN 13501-1 2007	Methods EN -ISO 11925-2 and EN 13823	-	Euroclass B s1 d0
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.

Application instructions

All coating work to be carried out in accordance with the relevant sections of BS6150:2019, Painting of Buildings - Code of Practice.

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 E2000.

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

Existing coatings

The Dekguard E2000 system is formulated for application to clean, sound concrete or masonry. When applied over existing coatings or paints, the performance characteristics of Dekguard E2000 may be impaired and its fire rating invalidated. Trial areas should be conducted to ensure compatibility and bond of Dekguard E2000 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.

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.



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A priming coat of 1 part Dekguard E2000 to 1 part water by volume should be prepared and applied to the surface and allowed to dry. A single coat of undiluted Dekguard E2000 is then applied as described below. Note, areas to be overcoated do not require the use of Dekguard CP / Nitobond AR.

For further advice, contact Fosroc Technical Services.

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.

Dekguard CP (Priming option 1)

Number of coats:	1
Theoretical application rate:	0.25 litres/m ²
Theoretical wet film thickness:	N/A
Overcoating time:	6 hours @ 20°C

Nitobond AR (Priming option 2)

Number of coats:	1 or 2
Theoretical application rate per coat:	0.15 litres/m ²
Theoretical wet film thickness per coat:	N/A
Overcoating time:	6 hours @ 20°C

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Number of coats:	1
Theoretical application rate:	0.4 litres/m ²
Theoretical wet film thickness:	400 microns

It is important that Nitobond AR / Dekguard CP and Dekguard E2000 are only applied during appropriate ambient conditions, refer to the limitation section of this datasheet for further information.

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 chosen primer should be applied in one or more coats until the recommended application rate 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.

Allow the primer to dry for a minimum of 6 hours (at 20°C), longer at lower temperatures. Under no circumstances should the primer be overcoated with Dekguard E2000 until the surface is properly dry. When applying Dekguard E2000 over existing coatings, Dekguard CP / Nitobond AR primers are not required, refer to the Preparation of Existing Coatings section for priming instructions.

When applying Dekguard E2000 directly over surfaces treated with Protectosil® CIT, the use of Dekguard CP or Nitobond AR primers is not required.

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

Dekguard E2000, Dekguard CP and Nitobond AR should be removed from tools and equipment with clean water immediately after use.

Estimating

Supply

Dekguard CP:	10 litre drums
Nitobond AR:	25 litre drums
Dekguard E2000:	10 litre drums

Coverage

Dekguard CP:	4m ² / litre (total)
Dekguard E2000 Dilute Primer:	10m ² /litre (mixed material)
Nitobond AR:	6 to 8m ² / litre
Dekguard E2000:	2.5m ² / 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

Application of Dekguard CP / Nitobond AR and Dekguard E2000 should not proceed if the air or substrate temperature is 5°C and falling (at a steady 5°C, or 5°C and rising, application may commence).

Dekguard CP / Nitobond AR and Dekguard E2000 should not be applied at less than 3°C above the dew point or at >85%



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RH, or in windy conditions, where early-age dust adhesion may occur, where rain is likely within 2 hours at 20°C or 20 hours at 5°C, or where there is a likelihood of exposure to freeze / thaw cycles during the curing period.

The use of Dekguard E2000 should not be considered for areas subjected long term exposure 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.

Dekguard E2000 should not be used on soffits subject to possible water ingress. In these cases use Dekguard S or W.

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

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

For further information refer to appropriate Product Safety Data Sheet.

Fire

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

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

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Important note

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