Dekguard WB300

constructive solutions

High performance, elastomeric, anticarbonation protective coating for concrete and masonry

Uses

Dekguard WB300 is an anticarbonation, water based acrylic, elastomeric exterior protective cum decorative coating developed to protect atmospherically exposed reinforced concrete structures above any splash zones from attack by carbon dioxide, chloride ions, oxygen and moisture ingress, especially where there is a danger of subsequent cracks appearing within the substrate. Typical uses include, but are not necessarily limited to, the following :

- New and existing buildings
- Concrete storage tanks - external surfaces
- New & existing Road & Rail Bridges
- Industrial structures - Silos and Chimneys

Advantages

- High performance - comprehensive barrier against carbon dioxide, water and sulphates.
- Extremely durable - maintains elastomeric performance, with high recoverey, even after long term UV weathering.
- Breathable - water vapour can escape from the structure.

Description

Dekguard WB 300 is an elastomeric, water-based . anticarbonation protective coating based on a acrylic polymer. It provides elongation , resistance to aggressive elements like carbondioxide, UV light and rain. It is available in a wide range of colours.

The complete system includes a film-forming, stabilising primer (Dekguard WB Primer) which is supplied as a white liquid and is based on an acrylic emulsion. The primer is capable of producing a thin film of hydroprobic barrier, thus inhibiting the passage of water and water-borne contaminants. A thin surface film is produced which consolidates and stabilises porous substrates.

The DekguardWB300 system thus comprises a single component acrylic primer and a single component elastomeric pigmented coating, both ready for immediate site use.

Standard Compliance

IRC SP80 (MORTH) (@ 200-225 microns DFT)

Design criteria

To achieve the desired protective properties, the Dekguard WB300 system must be applied to the substrate at the correct coverage rates. The coating should thus be applied in two coats to achieve a total dry film thickness of 200 - 300 microns.

Properties (@ 300 microns DFT)

Solids by weight	70% ± 3%
Volume solids	65%
Specific Gravity	1.40 + 0.05 g/cm
Dry film thickness	300 microns in 2 coats
Adhesion strength (ASTM D4541)	> 1.5 N/mm^2
Carbonation resistance	>50 m
Equivalent air layer thickness (DIN EN 1062)	
Tensile strength (ASTM D 638)	> 3 N/mm^2
Elongaton (ASTM D638)	60%
Salt spray test (ASTM B117)	0.26 g/m^2/1000 hr
RCPT test (ASTM C1202)	Low Permeability

Properties (@ 200 - 225 microns DFT) as per IRC SP80 specifications

Specific Gravity (IS 354)	1.4 ± 0.05
Solid contents (IS 354)	70 ± 3%
UV resistance (ASTM D4587)	No colour change
IR Spectrum	As per acrylic polymer
Adhesion with concrete (ASTM D4541)	1.5 N/mm^2
Dry film thickness	200-225 microns (for min. 2 coats)
Coverage	400gm /m^2 (2 coats) - 200 microns DFT 450gm/m^2 (2 coats) - 225 microns DFT
Diffusion resistance against carbon dioxide (DIN EN1062) - Equivalent air layer thickness (Sd)	>50 m
Breathability (ISO 7783)	24 g/m^2 / hr
Diffusion resistance against water vapour (ISO7783) - Equivalent air layer thickness (Sd)	< 4m
Water proofing characteristics	Percentage reduction influx 50%
Re-coatability	4 - 16 hrs

Dekguard WB300

Specification

Where shown on the contract documents, the protective coating system shall comprise the following elements :

i) a penetrating WB acrylic primer (Dekguard WB primer and

ii) a single component, elastomeric, aliphatic acrylic, anticarbonation, exterior protective coating (Dekguard WB300)

The total dry film thickness of the protective coating system shall be in the range of 200 - 300 microns.

Application instructions

Substrate preparation

All surface 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 which may impair adhesion. 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.

It is essential to provide an unbroken coating of Dekguard WB300. Thus all blow holes and similar surface irregularities should be filled using Renderoc FC and should be allowed to cure properly before the application of Dekguard WB300.

Consult the local Fosroc office for further details.

Substrate priming

A primer coat is required to penetrate and 'stabilise' the substrate. The depth of penetration of the primer, and thus its coverage rate are determined by substrate profile, porosity and general condition.

Hence for low permeability concretes, primer penetration will be low and area covered per litre will be high - permeability may be affected by cement replacements (e.g. microsilica). It is thus recommended that a general coverate rate of 8-10m_2/ litre be observed, noting that this may change according to substrate condition.

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

Application

The correct application rates and overcoating times should be observed, in order to obtain the complete benefits of the protective properties of the Dekguar WB300, except where substrate condition dictates different application rates for the primer.

Dekguard WB Primer

Number of coats	:	1
Theoretical application rate per coat	:	8-10 m^2 /ltr

The primer should be allowed to dry for approx. 1 hr at 30°C before application of Dekguard WB300

Dekguard WB300 (@ 300 microns DFT)

Number of coats	2
Theoretical application rate per coat	4.2-4.5 m^2 /ltr
Theoretical wet film thickness per coat	230 microns
Overcoating time	12 hrs

Dekguard WB300 should preferably be applied by spray, but can also be applied by brush or roller. For further information about application techniques and equipment consult the local Fosroc office.

All primed substrates should be treated with two coats of Dekguard WB300. 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.

The first coat should be applied to achieve a uniform coating with a wet film thickness in the range of 175 microns (for 113 micron DFT) to 230 micron (for 150 micron DFT) . This coat should be allowed to dry until firm to the touch. Typically, this will be after approximately 12 hours in dry weather at 35°C.

The second coat of Dekguard WB300 should be applied at 90° to the first, to ensure a final full unbroken coating to the substrate. The second coat should be applied to achieve a uniform coating with a wet film thickness in the range of 175 microns (for 113 micron DFT) to 230 micron (for 150 micron DFT) In order to maintain a record of the coating activities a coating log should be kept.

Cleaning

Dekguard WB300 , Dekguard WB Primer should be removed from tools and equipment with clean water immediately after use.

Limitations

- 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. Compatibility and soundness should be assessed on a trial aread.

- Dekguard WB300 should not be used in submerged or permanently wet conditions. Consult the local Fosroc office for recommendations.

- Application should not commence if the temperature of the substrate is below 10°C or above 60°C or where the prevailing relative humidity exceeds 90%.

- In conditions of high relative humidity i.e 85-90% good ventilation conditions are essential. Substrate temperature should be at least 3°C above dew point.

- Dekguard WB300 should not be applied in windy conditions where early-age dust adhesion may occur, or where rain is likely within 2 hours.

Technical support

Fosroc offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer onsite technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Estimating

Supply

Dekguard WB Primer	: 4 & 20 litre drums
Dekguard WB 300	: 4 & 20 litre drums

Coverage

Dekguard WB Primer	: 10 m^2/litre
Dekguard WB300	: 550 to 600 gm/m^2 @ 275-300 micron DFT
	400 to 450 gm/m^2 @ 200-225 micron DFT

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

Application rates and coverage of Dekguard WB300 may be varied according to particular service conditions. However, to ensure that the desired performance properties of the mate-rial are attained, it is important to observe correct application procedure.

Storage

When stored in cool, dry conditions, away from sources of heat and naked flames, in the original, unopened packs, all products have a shelf life of 12 months.

If stored at high temperatures and/or high humidity conditions the shelf life may be reduced. Dekguard WB300 should be protected from frost.

Precautions

Health and Safety

Dekguard WB Primer, Dekguard WB300 should not come in contact with the skin and eyes, or be swallowed. Ensure adequate ventillation and avoid inhalation of vapours. Some people are sensitive to alkalis, resins and solvents. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitble 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 WB Primer & Dekguard WB300 are nonflammable.

Additional Information

Hot weather working practices Whilst the performance properties of Dekguard WB300 at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are adopted as a prudent working regime.

(i) Store unmixed materials in a cool (preferably temperature controlled) environment , avoiding exposure to direct sunight.

(ii) Keep application equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

(iii) Try to eliminate application in the middle of the day, when ambient temperature is high.

Important note :
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