Vandex® BB75-Z

Technical Data Sheet

Surface applied, cement based render, waterproofing barrier for positive and negative water pressure applications

Uses

Waterproofing of concrete and masonry structures both new and old. Vandex BB75-Z is a cementitious membrane and does not rely on crystal growth to achieve its waterproofing. As a result, BB75-Z can be used on most masonry surfaces, including sandstone, provided that the surfaces are adequately prepared.

Vandex BB75-Z has been formulated using sulphate resisting cement making it suitable for application in open sewerage environments.

Vandex BB75-Z is excellent for solving the problem of water seepage through concrete and masonry in both new and old structures. It can be applied to either the positive or negative pressure faces of the concrete or masonry.

Vandex BB75-Z is ideal in applications where the negative pressure face is not easily accessible such as lift pits and basement walls. It is also ideal for waterproofing the inside face of swimming pools, sewerage processing tanks, concrete block walls and any masonry surface where crystal growth waterproofing will not be effective due to a lack of alkalinity in the substrate.

Advantages

- Abrasion resistant
- Applied to either the positve or negative pressure face of concrete
- Based on sulphate resisting cement making it suitable for use in open sewerage processing tanks
- Works on masonry, brick, stone and concrete blocks where crystal growth treatments are not effective
- Suitable for permanent sunlight exposure after curing
- Tested to withstand a positive water pressure head of 70 metres
- Colour compatible with the host concrete
- Can be applied to damp concrete

Description

Vandex BB75-Z is a ready-mixed, cementitious, surface applied, waterproofing membrane consisting of grey sulphate resistant cement, graded quartz sands and inorganic additives. Vandex BB75-Z is waterproof and has been tested to a pressure of 7.0 bar (70m water head). The initial and final bonding capability of BB75-Z is excellent, making it suitable for application to both vertical and horizontal surfaces. It is durable, resistant to frost after setting and remains permeable to water vapour.

Test reports and approvals

Official Materials Testing Institute Clausthal-Zellerfield

- Mechanical properties
- Bend - tensile strength / compressive strength / adhesion / modulus of elasticity

LMP Baustoffprufinstitut, Beinwll am Bee

- Resistance against sewage
- Shrinkage and swelling behaviour / bend tensile and compressive strength / structural composition

Design criteria

In most waterproofing applications, Vandex BB75-Z is applied in two coats by brush, trowel or spray. Specific minimum application rates are as follows;

Ground moisture - one coat by brush, trowel or spray at an application rate of 3.0 kg / m² / coat (total minimum layer thickness for one coat must be 1.5 mm).

Pressureless surface water - two coats by brush, trowel or spray at an application rate of 2.0 kg / m² / coat (total minimum layer thickness for two coats must be 2.0 mm).

Water under pressure - two coats by brush, trowel or spray at an application rate of 3 kg / m² / coat (total minimum layer thickness for two coats must be 3.0 mm).

Note: the maximum total thickness of all coats of the BB75-Z system should not exceed 5 mm.

Note: Vandex BB75-Z is a rigid coating and as such will not accommodate any movement due to cracks or joints in the substrate beneath; in such applications an elasticised product such as BB75E-Z or Cemelast should be considered.

Specification clause

Where so designated on the drawings, surfaces to be waterproofed shall have a surface applied, cementitious waterproofing membrane installed. The waterproofing must form an impermeable layer on the surface of the substrate and must not rely on crystal growth within the substrate in order to be effective. It must have a proven capability of sustaining pressures of 7.0 bar (70 metre water head) while maintaining its waterproofing integrity. The waterproofing treatment must have a compressive strength greater than 25 MPa and bending tensile strength greater than 5 MPa after 28 days water cure. The cementitious waterproofing membrane must have a modulus of elasticity greater than 20 GPa after 28 days cure. The setting time for the waterproofing must be in the range 2 - 4 hours.

The cementitious waterproofing membrane must be capable of being applied to concrete and masonry surfaces by trowel, or as a slurry by brush or by spray application through a hopper gun.

Vandex® BB75-Z

Properties

Form:	Cementitious powder
Colour:	Cement grey
Compressive strength EN 1594-3:2005:	>25 MPa (class 3)
Chloride ion content:	<0.05%
Adhesive bond:	>2.0 MPa
Modulus of elasticity:	>20 GPa
Fresh wet density:	Approx. 2.0
Bending tensile strength:	6 MPa after 28 days water storage
Elastic modulus:	28 GPa @ 28 days
Initial setting time:	2 - 4 hours
Full cure time at 20°C 50% RH:	5 days
Physical or chemical change:	Chemical cure
Application temperature:	5°C - 30°C
Service temperature (continuous ambient):	Minus 40°C - 120°C

Chemical resistance

Vandex BB75-Z protects concrete against sewerage water, sea water, aggressive ground water and a range of chemical solutions. Vandex BB75-Z is approved for use in contact with potable water and is therefore suitable for the treatment of water storage tanks, reservoirs, water towers etc.

Application instructions

Surface preparation

When applying Vandex BB75-Z to existing concrete or masonry, all surfaces to be waterproofed should be clean, sound and free of concrete curing compounds, form release agents, paints and all other coatings, dirt and contamination.

Concrete surfaces should be prepared by water blasting, grit blasting or grinding in order to remove the laitance and open the pore structure of the concrete in preparation to receive the Vandex BB75-Z.

Concrete surfaces should be free from major imperfections. All major imperfections must repaired with a suitable cementitious reprofiling mortar such as Vandex Uni Mortar 1-Z which is suitable for reprofiling depths of 6 mm to 12 mm. Larger repairs may be carried out using multiple layers of Uni Mortar 1-Z or a suitable high build cementitious repair mortar.

Priming

Priming is not normally required on good quality concrete substrates, however all surfaces must be pre-watered before applying Vandex BB75-Z.

Movement joints

All expansion and movement joints should be sealed with a suitable joint sealant after application of the Vandex BB75-Z.

Cracks

All shrinkage and non-moving structural cracks having a width equal to or less than 0.3 mm will be waterproofed by applying Vandex BB75-Z directly bridging over the crack. Static cracks wider than 0.3 mm must be routed out to form a 'V' shaped groove with a hand or pneumatic chisel to a depth and width of approximately 25 mm. These larger cracks must be repaired by priming the chiselled out crack with two coats of Vandex Concrete Grey, followed by the application of Vandex Uni Mortar 1-Z to fill the rebate flush with the concrete surface. All of the above products must be installed 'green on green', before the previous layer has dried out.

Live cracks cannot be waterproofed with Vandex BB75-Z. If the structure contains live cracks, Vandex BB75E-Z, an elasticised cementitious waterproofing membrane should be considered.

Water seepage

All water seepage must be stopped using Vandex Plug prior to the application of Vandex BB75-Z. Do not attempt to apply BB75-Z over weeping or seeping substrates no matter how slow the seepage, as the BB75-Z will be damaged by the seepage water before it has a chance to cure.

Application

Vandex BB75-Z is supplied in the form of a dry powder and , after mixing with the specified amount of water, can be applied as a slurry by trowel, brush or spray.

To mix, place 5 - 5.75 litres of clean tap water into a clean container and add 25 kg of Vandex BB75-Z for brush or trowel application. Add 5.75 - 6.25 litres of water for spray application through a Hopper Gun.

The Vandex BB75-Z powder and water must be thoroughly mixed using a slow speed heavy duty electric drill (300 rpm) or heavy duty mixer fitted with a spiral mixing paddle for 3 minutes immediately prior to use. Mix only as much material as can be used in 20 minutes and stir the mixture frequently. If the mixture starts to set, do NOT add more water, simply stir the product to restore workability.

Ensure that all surfaces to which Vandex BB75-Z will be applied are pre-watered. The correct amount of pre-watering is measured by the substrate taking on a greenish appearance, however there must be no free surface water. A simple check can be performed by placing a hand on the pre-watered substrate and removing the hand. If the hand is wet from contact with the substrate, then the substrate is too wet and must be allowed time for the excess surface water to evaporate. Surfaces that have been pre-watered and dry out before application of the Vandex BB75-Z must be pre-watered again.

Apply the first coat from the base of the wall and work towards the top using a trowel, a hopper gun or a plasterer's brush in a horizontal brushing action.

After 4 - 5 hours apply the second coat 'green on green' so that a chemical bond is achieved between the two coats. Do not apply more first coat during a day's work session than can be overcoated with a second coat **during the same day.**

When applying Vandex BB75-Z by spray using a hopper gun, ensure that the gun is held directly perpendicular to the surface at a distance of about 500mm to ensure that the maximum impact energy is applied to the surface and to prevent any shadowing across small surface imperfections. After application of the first coat by spray, brush or trowel the wet surface to remove any entrapped air.

When applied by hopper gun, Vandex BB75-Z produces a very smooth 'orange peel' finish after application which may be too smooth for the bonding other coatings, tile mortars or finishes. If other products are to be applied over Vandex BB75-Z, roughen the surface slightly by brushing or brooming the surface of the BB75-Z while it is still wet, or alternatively, seed the Vandex surface with coarse clean sand while it is still wet.

The cure time of Vandex BB75-Z is affected by both temperature and humidity. Humidity has an influence on waiting times between coats and resistance to rain. Ensure that the freshly applied BB75-Z is protected from rain for the first day, and the drying effects of the sun and wind during the first 5 days of cure.

In most waterproofing applications, Vandex BB75-Z is applied in two coats by brush, trowel or spray. Specific minimum application rates are as follows;

Ground moisture - one coat by brush, trowel or spray at an application rate of 3.0 kg / m² / coat. (Total minimum layer thickness for one coat must be 1.5 mm).

Pressureless surface water - two coats by brush, trowel or spray at an application rate of 2.0 kg / m² / coat. (Total minimum layer thickness for two coats must be 2.0 mm).

Water under pressure - two coats by brush, trowel or spray at an application rate of 3.0 kg / m² / coat. (Total minimum layer thickness for two coats must be 3.0 mm).

Curing and protection

Surfaces treated with Vandex BB75-Z **must** be kept coninuously damp and must be protected from the drying action of direct sunlight for a minimum period of 5 days after application.

Protect all treated surfaces from wind and frost, by covering with damp hessian / geotextile fabric, plastic sheeting or similar.

Potable water applications

Where potable water will be in contact with Vandex products, care must be taken to insure the surface has had adequate time to cure prior to filling. If the area is returned to service too soon 'water taint' may occur. Once adequate curing time has been left, it is good practice to complete a thorough washing down of the lining with clean water prior to the first filling. Variable atmospheric conditions will dictate how longto leave the surface prior to the wash down. As a guide please refer to the table below:

Temperature (°C)	Cure time (days)
5 - 10°C	14 days
10 - 15°C	10 days
15 - 25°C	7 days
25 - 30°C	5 days

Cleaning

Tools and equipment should be cleaned with water immediately after use.

Limitations

Vandex BB75-Z is suitable for use in open headed sewerage processing tanks. Consult Parchem for specific advise on the use of Vandex BB75-Z in closed sewerage environments where sulphuric acid concentrations may be high.

In negative pressure side applications, do not apply Vandex BB75-Z to substrates that are weeping. Use Vandex Plug to stop all water seepage before applying BB75-Z.

Note: Vandex BB75-Z is a rigid coating and as such will not accommodate any movement due to cracks or joints in the substrate beneath; in such applications an elasticised product such as BB75E-Z or Cemelast should be considered.

Supply

Vandex BB75-Z: Material Code:	25kg bag FC051005-25KG
Vandex Uni Mortar 1-Z: Material Code:	25 kg bag FC051008-25KG
Vandex Plug: Material Code:	5 and 15 kg resealable pails FC000557-5KG FC051006-15KG

Coverage

Vandex BB75-Z:	3.0 - 6.0 kg/m² 4 - 8 m² / 25 kg bag

Storage

Vandex BB75-Z has a shelf life of 18 months in original containers stored in cool, dry conditions i.e. not exceeding 35°C. Storage above this temperature may reduce storage life.

Do not use if there are lumps in the product, or a loss of workability (requiring more water to be added) is experienced.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.

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