

**High performance, crack accommodating, 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 where live cracks are present. Vandex BB75E-Z is a flexible cementitious membrane and does not rely on crystal growth to achieve its waterproofing. As a result, BB75E-Z can be used on most masonry surfaces, including sandstone, provided that the surfaces are adequately prepared.

Vandex BB75E-Z has been formulated using sulphate resisting cement making it ideal for application in sewerage environments. It can be applied to either the pressure or non-pressure faces of the concrete or masonry.

Vandex BB75E-Z is excellent for solving the problem of water seepage through concrete and masonry where live cracks are present in both new and old structures.

Vandex BB75E-Z is ideal in applications where the high pressure face is not easily accessible. 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.

Other applications include; basement walls, lift pits, water storage and drainage tanks, sewer aqueducts etc.

## Advantages

- Permanently flexible and accommodates dynamic crack movement up to 0.5 mm
- Applied to either the pressure or non pressure face of concrete
- Based on sulphate resisting cement making it suitable for use in sewerage processing tanks
- Works on masonry, brick, stone and concrete blocks where crystal growth treatments are not effective
- Approved for potable water contact
- Non-toxic
- Suitable for permanent sunlight exposure after curing
- Tested to withstand a water head of 70 metres
- Colour compatible with the host concrete
- Can be applied to damp concrete



## Description

Vandex BB75E-Z is a ready-mixed, two component, polymer modified, cementitious, waterproofing membrane which is made by mixing Vandex BB75E-Z with Vandex Elasticiser PK 75. The BB75E-Z powder component consists of grey sulphate resistant cement, graded quartz sands and inorganic additives. The Elasticiser PK 75 is the polymer component. Vandex BB75E-Z is waterproof and has been tested to a pressure of 7.0 bar (70 m water head). The initial and final bonding capability of BB75E-Z is excellent, making it suitable for application to both vertical and horizontal surfaces. It is durable, resistant to frost and heat after setting and remains permeable to water vapour.

## Test reports and approvals

### Australian Standard AS/NZS 4020:1999

- Potable water compatibility

### Official Materials Testing Institute Clausthal-Zellerfeld

- Mechanical properties / waterproofing
- Cracking strain / tensile strength / bridging capacity / H<sub>2</sub>O-vapour diffusion / absorption coefficient / water penetration

### Official Materials Testing Institute Clausthal-Zellerfeld

- Waterproofing - water penetration

## Design Criteria

In most waterproofing applications, Vandex BB75E-Z is applied in 2 coats by trowel or spray. Specific minimum application rates are as follows;

Ground moisture - 2 coats by brush, trowel or spray at an application rate of 2.0 kg / m<sup>2</sup> / coat. (Total minimum layer thickness for 2 coats must be 2.0 mm).

Pressureless surface water - 2 coats by brush, trowel or spray at an application rate of 2.0 kg / m<sup>2</sup> / coat. (Total minimum layer thickness for 2 coats must be 2.0 mm).

Water under pressure - 2 coats by brush, trowel or spray at an application rate of 2.5 kg / m<sup>2</sup> / coat. (Total minimum layer thickness for 2 coats must be 2.5 mm).

Note: the maximum total thickness of all coats of the BB75E-Z system should not exceed 4 mm.

## Properties

<b>Form:</b>	2 Components - cementitious powder + milky white liquid
<b>Colour:</b>	Cement grey (after curing)
<b>Density (wet mix):</b>	1.7 kg / L
<b>Crack movement:</b>	0.5 mm dynamic crack movement
<b>Initial setting time:</b>	3 - 4 hours
<b>Full cure time at 20°C 50% RH:</b>	5 days
<b>Physical or chemical change:</b>	Chemical cure
<b>Application temperature:</b>	5 - 30°C

## Chemical Resistance

Vandex BB75E-Z protects concrete against sewerage water, sea water, aggressive ground water and a range of chemical solutions.

## Maintenance

No special requirements, any damage identified during normal inspections should be water blasted clean, repaired and recoated as appropriate.

## Specification Clauses

Where so designated on the drawings, surfaces to be waterproofed shall have a surface applied, flexible cementitious waterproofing membrane installed. The waterproofing product will be produced by mixing a cementitious powder component with a liquid polymer component. 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. The waterproofing treatment must be flexible and be capable of accommodating long term cyclic crack movement up to 0.5 mm without any loss of waterproofing integrity. It must have a proven capability of sustaining pressures of 7.0 bar (70 metre water head) even after sustaining 0.5 mm cyclic crack movement. The setting time for the waterproofing must be in the range 3 - 4 hours and the bulk density of the mixed product must be in the range 1.80 - 2.20 kg / litre.

The cementitious waterproofing membrane must be non toxic and 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.

The waterproofing must be installed by a prequalified contractor nominated by the supplier and both the manufacturer and supplier must be accredited to ISO9001.

Vandex BB75E-Z supplied by Parchem is such a product.

## Surface Preparation

When applying Vandex BB75E-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 wire brushing in order to remove the laitance and open the pore structure of the concrete in preparation to receive the Vandex BB75E-Z.

Concrete surfaces should be free from major imperfections. All major imperfections must be 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 a suitable cementitious repair mortar.

## Priming

Priming is not required on good quality concrete substrates. All surfaces must be pre-watered before applying Vandex BB75E-Z.

## Movement joints

All expansion and movement joints should be sealed with a suitable joint sealant after application of the Vandex BB75E-Z. Consult the local Parchem sales office for advice on the joint sealing method best suited to your application.

## Cracks

All shrinkage and non-moving structural cracks having a width equal to or less than 0.5 mm can be waterproofed by applying Vandex BB75E-Z directly bridging over the crack. Static cracks wider than 0.5 mm must be routed out to form a 'V' shaped groove with a hand or power chisel to a depth and width of approximately 25 mm. These larger cracks must be repaired by priming the chiselled out crack with 2 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 can be waterproofed with Vandex BB75E-Z provided that the maximum crack movement does not exceed 0.5 mm. In the event of larger crack movement, consult your local Parchem sales office for advice regarding the most appropriate waterproofing system.

## Water seepage

All water seepage must be stopped using Vandex Plug prior to the application of Vandex BB75E-Z. Do not attempt to apply BB75E-Z over weeping or seeping substrates no matter how slow the seepage, as the BB75E-Z will be damaged by the seepage water before it has a chance to cure.

## Application instructions

Vandex BB75E-Z is supplied as 2 components. The powder component BB75E-Z is mixed with a milky white liquid component, Elasticizer PK 75 to produce a slurry which can be applied by trowel, brush or spray.

To mix, place 25 kg of Vandex BB75E-Z into a clean container and add 10 kg of Elasticizer PK 75.

The Vandex BB75E-Z powder and Elasticizer PK75 must be thoroughly mixed using a slow speed electric drill (300 rpm) or Festo type mixer fitted with a grout mixing paddle (PC 770163) 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 water, simply stir the product to restore workability.

Ensure that all surfaces to which Vandex BB75E-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 BB75E-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 2 coats. Do not apply more first coat during a day's work session than can be overcoated with a 2nd coat during the same day.

When applying Vandex BB75E-Z by spray using a Vandex Hopper Gun, ensure that the gun is held directly perpendicular to the surface at a distance of about 500 mm 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 BB75E-Z produces a very smooth 'orange peel' finish after application which may be too smooth for the bonding other coatings or finishes. If other products are to be applied over Vandex BB75E-Z, roughen the surface slightly by brushing or brooming the surface of the BB75E-Z while it is still wet.

The cure time of Vandex BB75E-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 BB75E-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 BB75E-Z is applied in 2 coats by brush, trowel or spray. Specific minimum application rates are as follows;

Ground moisture - 2 coats by brush, trowel or spray at an application rate of 2.0 kg / m<sup>2</sup> / coat (total minimum layer thickness for 2 coats must be 2.0 mm).

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## Curing and protection

Surfaces treated with Vandex BB75E-Z must be protected from rain, ponded water and the drying action of direct sunlight for a minimum period of 5 days after application.

Protect all treated surfaces from wind, frost, rain and water seepage by covering with plastic sheeting, tarpaulin or equivalent.

## Cleaning

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

## Limitations

Vandex BB75E-Z is suitable for use in open headed sewerage processing tanks. Consult Parchem for specific advice on the use of Vandex BB75E-Z in closed sewerage environments where sulphuric acid concentrations may be high. In negative side applications, do not apply Vandex BB75E-Z to substrates that are weeping. Use Vandex Plug to stop all water seepage before applying BB75E-Z.

# Vandex® BB75E-Z

## 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 long to 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

## Estimating

### Packaging

Vandex BB75-Z:	25 kg bag
Elasticizer PK 75:	10 kg pail
Vandex Uni Mortar 1-Z:	25 kg bag
Vandex Plug:	15 kg plastic pail
Coverage	
Vandex BB75E-Z:	3.0 - 5.0 kg / m <sup>2</sup> 7 - 11 m <sup>2</sup> / 35 kg mix
Vandex Uni Mortar 1-Z:	6 - 12 kg / m <sup>2</sup>

## Vandex Construction Tape

### Material synthetic rubber

Thickness [mm]:	approx. 0.7
Total width [mm]:	approx. 180
Width of fabric web [mm]: approx. 30	
Roll length [m]:	30
Elongation at lateral failure [%]:	260
Water vapour diffusion resistance index:	45'000

### Important notice

A Safety Data Sheet (SDS) and Technical Data Sheet (TDS) are available from the Parchem website or upon request from the nearest Parchem sales office. 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.

## Storage

12 months in original containers stored in cool, dry conditions i.e. not exceeding 30°C. Storage above this temperature may reduce storage life.

## Equipment

Slurry application - trowel, plasterers brush - Vandex short handled brush or Vandex long handled brush.

Spray application - use fine mortar spray equipment, recommended nozzle size is 6 mm.

