Vandex® Cemelast

Technical Data Sheet

Flexible, surface applied, cement based 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 Cemelast** is a flexible cementitious membrane and does not rely on crystal growth to achieve its waterproofing. As a result, **Vandex Cemelast** can be used on most masonry surfaces, including sandstone, provided that the surfaces are adequately prepared.

Vandex Cemelast has been formulated using sulphate resisting cement making it ideal for application in pH aggressive water. It can be applied to either the positive pressure or negative pressure faces of the concrete or masonry.

Vandex Cemelast is excellent for solving the problem of water seepage through concrete and masonry where live cracks up to 0.4mm are present in both new and old structures.

Vandex Cemelast is suitable for application in potable water structures.

Advantages

- Permanently flexible and accommodates dynamic crack movement up to 0.4 mm
- Applied to either the positive pressure or negative pressure face of concrete
- Tested to withstand a water head of 15 metres
- Based on sulphate resisting cement making it suitable for use in tanks containing pH aggressive water
- Works on masonry, brick, stone and concrete blocks where crystal growth treatments are not effective
- Applied to damp concrete
- Suitable for use in potable water

Standards Compliance

Vandex Cemelast complies to AS/NZS 4020:2018 at an exposure level of 15,000mm² per litre; AWQC Report 308493.

Copies of the report are available on the Fosroc website.

Description

Vandex Cemelast is a ready-mixed, two component, polymer modified, cementitious, waterproofing membrane which is made by mixing **Vandex BB75-Z** with **Vandex Cemelast liquid**. The **Vandex BB75-Z** powder component consists of grey sulphate resistant cement, graded quartz sands and inorganic additives. The **Vandex Cemelast** liquid is the polymer component. **Vandex Cemelast** is waterproof and has been tested to a pressure of 1.5 bar (15m water head). The initial and final bonding capability of **Vandex Cemelast** 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.

Design Criteria

In most waterproofing applications, **Vandex Cemelast** is applied in 2 coats by trowel or spray at a total thickness of 2.5 mm.

Note: The maximum total thickness of all coats of the **Vandex Cemelast** system must not exceed 4 mm.

Properties

Form:	2 Components - cementitious powder + milky white liquid
Colour:	Cement grey (after curing)
Fresh wet density:	1.65
Permeability to CO_2:	S_D > 50m
Crack movement:	up to 0.4 mm dynamic crack movement
Elongation at break:	13% (20°C)
Initial setting time:	3 - 6 hours @ 20°C
Workability:	30 mins @ 20°C
Full cure time at:	5 days @ 20°C / 50% RH
Physical or chemical change:	Chemical cure
Application temperature:	5 - 30°C

Chemical Resistance

Vandex Cemelast protects concrete against agressive water, sea water, aggressive ground water and a range of chemical solutions.

Application Instructions

Surface Preparation

When applying **Vandex Cemelast** 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 or wet grit blasting in order to remove the laitance and open the pore structure of the concrete in preparation to receive the **Vandex Cemelast.**

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 6mm to 12mm. Larger repairs may be carried out using a suitable cementitious repair mortar.

Priming

Priming is not required on good quality concrete substrates, however all surfaces must be thoroughly pre-watered before applying **Vandex Cemelast.**

Movement joints

All expansion and movement joints should be sealed with a suitable joint sealant after application of the **Vandex Cemelast**.

Cracks

All shrinkage and non-moving structural cracks having a width equal to or less than 0.4 mm can be waterproofed by applying **Vandex Cemelast** directly bridging over the crack. Live cracks can be waterproofed with **Vandex Cemelast** provided that the maximum crack movement does not exceed 0.4 mm.

Water seepage

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

Application

Vandex Cemelast is supplied as 2 components. The powder component **Vandex BB75-Z** is mixed with a milky white liquid component, **Vandex Cemelast** liquid to produce a slurry which can be applied by trowel, brush or spray.

To mix, place 9 kg of **Vandex Cemelast** liquid into a clean container and add 25 kg of **Vandex BB75-Z**.

The **Vandex BB75-Z** powder and **Vandex Cemelast** liquid must be thoroughly mixed using a slow speed heavy duty electric drill (300 rpm) 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 water, simply stir the product to restore workability.

Ensure that all surfaces to which **Vandex Cemelast** will be applied are pre-watered. The correct amount of pre-watering is measured by the substrate taking on a darkened 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 Cemelast** must be pre-watered again.

Apply the first coat from the base of the wall and work towards the top using a trowel or mortar spray gun.

When applying **Vandex Cemelast** by spray using a mortar spray gun (recommended nozzle size is 6mm), 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.

After 2 to 4 hours apply the second coat “green on green” so that a chemical bond is achieved between the two coats. The first coat must be firm enough not to be damaged by application of the second coat. Do not apply more first coat during a day’s work session than can be overcoated with a 2nd coat during the same day.

Humidity has an influence on waiting times between coats and resistance to rain.

In most waterproofing applications, **Vandex Cemelast** is applied in 2 coats by trowel or spray at a total film WFT thickness of 2.5 mm.

When applied by mortar spray gun, **Vandex Cemelast** produces a rough textured finish which may need to be trowelled smooth with a steel trowel.

Curing and protection

Do not apply any moisture to the applied **Vandex Cemelast** coating - it should be allowed to cure/dry naturally.

Provide suitable protection against extreme weather conditions (e.g. rain, sun, wind, frost) while setting. The freshly treated surfaces should be protected from rain for a minimum period of 24 hours.

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

The **Vandex Cemelast** coating must be fully cured before getting in contact with water. Avoid formation of water films or condensation on top of coating during 7 days after application. Provide a relative humidity of 60–80% and good air exchange in enclosed areas.

Backfilling can be carried out 3 days after completion of the **Vandex Cemelast** treatment. If there is a risk that the layer of **Vandex Cemelast** will be damaged during back-filling (sharp-edged material) it must be protected by suitable means.

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

Vandex® Cemelast

Cleaning

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

Coatings

Surfaces treated with Vandex products which are to be coated or painted should be left to cure for at least 28 days. Coatings on top of a Vandex treatment have to be alkali resistant. Decorative coatings applied on the passive (negative) water pressure side are recommended to be water vapour permeable.

Limitations

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

Sewerage processing applications

Vandex Cemelast is only suitable for use in open headed sewerage processing tanks.

Supply

Vandex BB75-Z Material Code:	25 kg bag FC051005-25KG
Vandex Cemelast Liquid Material Code:	9 kg pail FC051009-9KG
Vandex Uni Mortar 1-Z Material Code:	25 kg bag FC051008-25KG
Vandex Plug Material Code:	5 kg plastic pail FC000557-5KG
Vandex Plug Material Code:	5 kg plastic pail FC051006-15KG

Coverage

Type of application	*Recommended total application rate:*	*Number of coats:*
Pressureless water:	2.5 - 3.5 kg / m²	2
Water under pressure:	3.5 - 5.5 kg / m²	2 - 3

Storage

Vandex BB75-Z has a shelf life of 12 months from date of manufacture printed on the packaging when stored in original containers in cool, dry conditions ie; not exceeding 30°C. Storage above this temperature may reduce storage life.

Vandex Cemelast Liquid has a shelf life of 15 months from date of manufacture printed on the packaging when stored in original containers in cool, dry conditions ie; not exceeding 30°C. Storage above this temperature may reduce storage life.

Parchem Construction Supplies Pty Ltd
1956 Dandenong Rd Clayton VIC 3168
Ph: 1800 812 864
www.fosroc.com.au ABN 80 069 961 968

Distributed in New Zealand by: Concrete Plus Ltd
150 Hutt Park Road Gracefield Ph: 0800 657 156
www.fosroc.co.nz NZBN 9429033691282