

Surface protection coating against biogenic sulfuric acid attack

- suitable for sulfuric acid loads as in municipal and agricultural areas
- according to DIN 19573:2016-03, Annex A
- water impermeable
- resistant to municipal sewage water

Compressive strength	class R3 ≥ 25	 Vandex Isoliermittel-GmbH Industriestr. 21 DE-21493 Schwarzenbek 18 647 EN 1504-3:2005/ZA.1a PCC repair mortar for structural repair (based on hydraulic cement)
MPa Chloride ion content	≤ 0.05 %	
Adhesive bond	≥ 2.0 MPa	
Carbonation resistance	passed	
Modulus of elasticity	≥ 20 GPa	
Thermal compatibility		
Part 1: Freeze thaw with de-icing		
salt immersion	≥ 2.0 MPa	
Capillary absorption	≤ 0.5 kg/m ² · h ^{0.5}	
Reaction to fire	class E	
Dangerous substances	complies with 5.4	

MATERIAL

- 1-component PCC waterproofing coating
- graded sieve line to the level of cementitious binder
- applicable manually and with spray equipment
- high bond strength
- free of VOC

AREAS OF APPLICATION

- for concrete and masonry surfaces
- surface protection for horizontal, vertical and overhead applications
- waterproofing of sewage water facilities against positive side water pressure
- liquid manure and rainwater overflow tanks
- sewers, reservoirs and shafts containing sewage water
- sewage treatment plants

SURFACE PREPARATION

The substrate to be treated shall be sound and even, open pored, roughened and its surface shall be free from voids, large cracks or ridges. Any adhesion reducing substances like bitumen, oil, grease, remains of paint or laitance shall be removed by suitable technologies. The cleaned surface shall be roughened. Water leaks shall be stopped e.g. with VANDEX PLUG. Bond strength of treated surface shall be 1.5 MPa in average. Exposed reinforcing steel should be cleaned and the residue removed by sandblasting or by using other suitable tools (be sure to achieve SA 2½ clean rating in accordance with DIN EN 12944-4 resp. ISO 8501-1). Also remove concrete surrounding the corroded steel to a sound substrate. - For corrosion protection coating VANDEX BB 75 can be applied.

MIXING

Mix 25 kg of VANDEX POLYCEM Z 1K with 5-5.25 litres of tap water in a clean container to a lump-free, homogeneous consistency. Use a mechanical mixer (e.g. double action or forced action mixer). Mixing time of 3 minutes after complete addition of powder to the water shall not be undershot. The maximum amount of mixing water shall not be exceeded.

APPLICATION

Processing conditions and preparation

The application shall not take place below +5 °C or on frozen surfaces. Do not apply in direct sunlight. Thoroughly moisten the substrate. It shall be damp but not wet at the time of application. Any surface water on horizontal surfaces shall be removed.

Manual application

For maximum adhesion, a scratch coat is applied immediately prior to application of the first coat to seal voids and allow the air to get out of the substrate. Following this, VANDEX POLYCEM Z 1K can be applied on the green scratch coat in a working step of 2-3 mm. For local higher roughness, layer thicknesses up to 4 mm can be applied manually.

Spray application

VANDEX POLYCEM Z 1K can be applied by wet spraying with commercially available spiral spraying equipment. In order to achieve an optimal spray texture, the quantity of material, air and air pressure shall be variable.

Diameter of spraying nozzle: approx. 4-6 mm.

For maximum adhesion, especially on low porous and low absorptive surfaces, apply first a scratch coat. Following this, apply on the green scratch coat VANDEX POLYCEM Z 1K in a single working step and a layer thickness of max. 2-3 mm.

After about 2-3 hours, the surface can be rubbed off and smoothed by using a sponge board and a trowel. In a multilayer application, the surface of the first layer shall be sufficiently structured.

For multi-layer applications, the following layers shall be applied on the previous layer whilst still green. The already applied layer shall not be damaged when the following layer is applied. The waiting time between the application of two layers depends on the ambient conditions such as temperature, humidity, etc.

CONSUMPTION

Exposition class	Consumption	Layer thickness
XWW1-3, slightly up to highly aggressive chemical environment	4-6 kg/m ²	2-3 mm
XWW4, biogenic sulfuric acid attack	10 kg/m ²	5 mm

CURING

Surfaces exposed to weathering

While curing, protect for at least 5 days from extreme weather conditions (e.g. sun, wind, frost, thaw formation). Fresh applied coatings shall be protected from rain and water for at least 24 hours.

Surfaces not exposed to weathering

In closed rooms and tanks, a relative humidity of approx. 85% shall be aimed for 5 days after application.

PACKAGING/ STORAGE

25 kg PE-lined paper bag.

When stored in a dry place in unopened, undamaged original packaging, shelf life is 12 months.

HEALTH AND SAFETY

Please refer to Safety Data Sheet on www.vandex.com.

NOTE

The data on this technical data sheet are valid for the product produced by Vandex Isoliermittel GmbH. - Please note that due to other laws and norms, differing data may be valid in each country.

TECHNICAL DATA	
Allocation of exposition classes	Carbonation XC1 XC2 XC3 XC4 Chlorides other than from sea water XD1 XD2 XD3 Chlorides from sea water XS1 XS2 XS3 Freeze/thaw attack with/without de-icing agents XF1 XF2 XF3 XF4 Chem. attack XA1 XA2 XA3 Chem. attack from waste water XWW1 XWW2 XWW3 Chem. attack from biogenic sulfuric acid (H ₂ S) XWW4
Appearance	grey powder
Grain size d _{max} [mm]	0.3
Density of fresh mortar [kg/l]	approx. 2.0
Application time, 20 °C [min.]	approx. 30
Curing time, 20 °C [h]	approx. 2-4
Compressive strength [MPa]	after 1 day: ≥ 10 after 7 days: ≥ 20 after 28 days: > 40
Flexural strength [MPa]	after 28 days: ≥ 8
Bond strength [MPa]	after 28 days: ≥ 2,0
Water impermeability (penetration of liquid water), 1,5 bar [mm]	< 1
Modulus of elasticity [GPa]	after 28 days: 20,3
Further data	cf. CE marking
All data is averaged from several tests under laboratory conditions. In practice, climatic variations such as temperature, humidity, and porosity of substrate may affect these values.	

The information contained herein is based on our long-term experience and the best of our knowledge. We can, however, make no guarantee since for a successful outcome, all circumstances in an individual case must be taken into consideration. Indications of quantities required are only averages which in certain cases might be greater.



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