

WATERPROOFING AND PROTECTION OF SEWAGE SYSTEMS



Environmental protection is a must

It is generally accepted that waste water is often detrimentally changed. It comprises contaminated water, non-potable or rain water, residential, industrial and factory waste water, sewage, public fountain water, leaking pipes, and much more.

Any structure which is in contact with waste water will be subject to stresses, such as:

- continuously changing degree of contamination
- environmental effects
- fluctuating liquid level
- formation of aggressive microclimates in sealed holding tanks.

Concrete is the major building material. Since it is frequently affected by the before mentioned stresses, protection is essential.

The Vandex System provides this protection.

A systematic procedure assures success:

Structural Survey

Damage Diagnosis

Reinstatement

Quality Control

Regular Inspection

This Vandex Protection System features a modular structure so that – depending on existing stress conditions – individual modules can be assembled to produce various solutions.



Spray application VANDEX POLYCEM Z

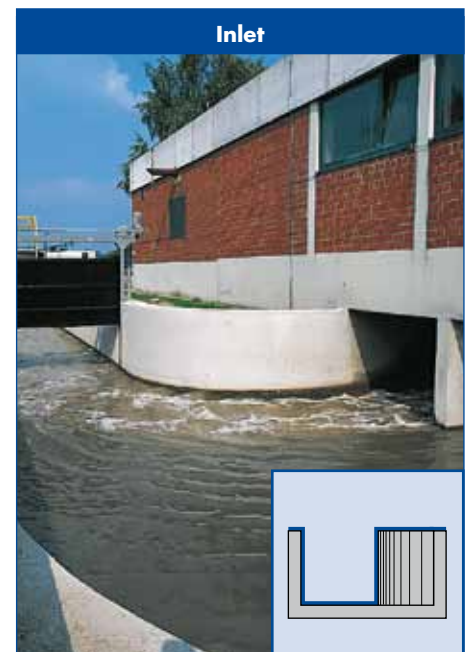
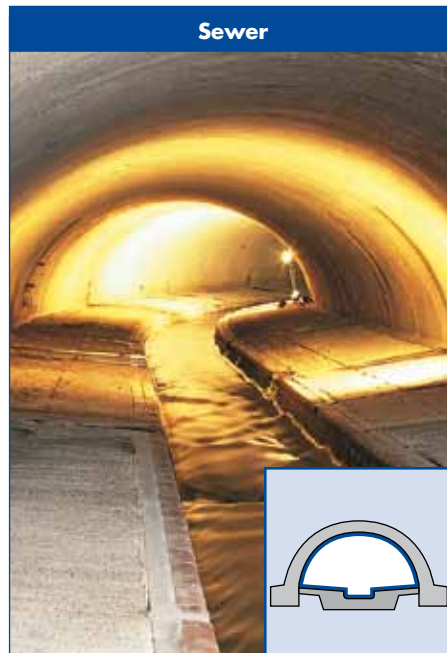


Spray application VANDEX BB 75 Z in treatment tank

Where is Vandex used

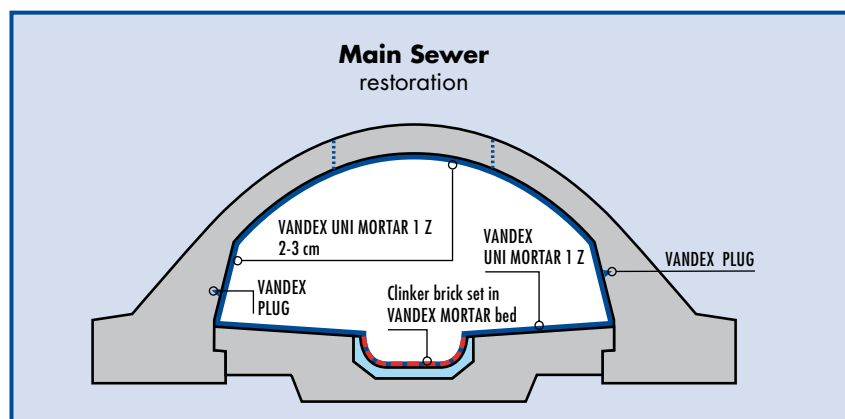
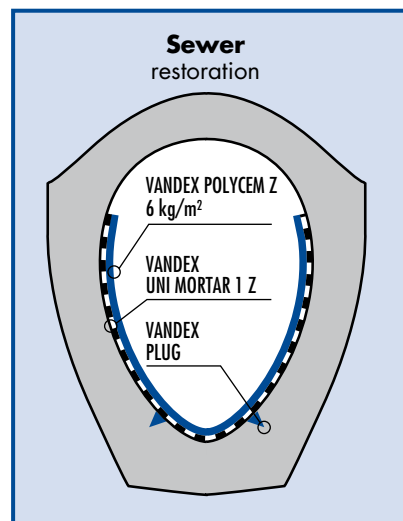
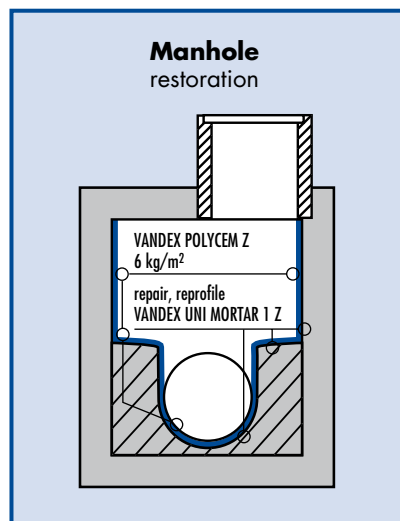
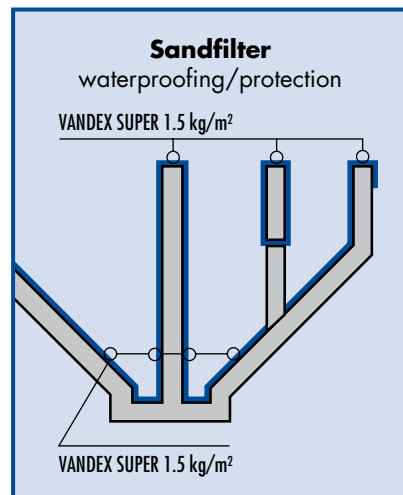
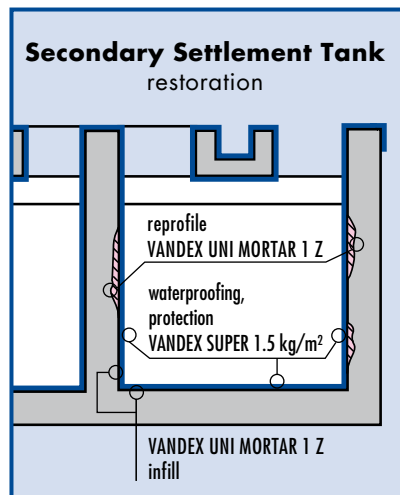
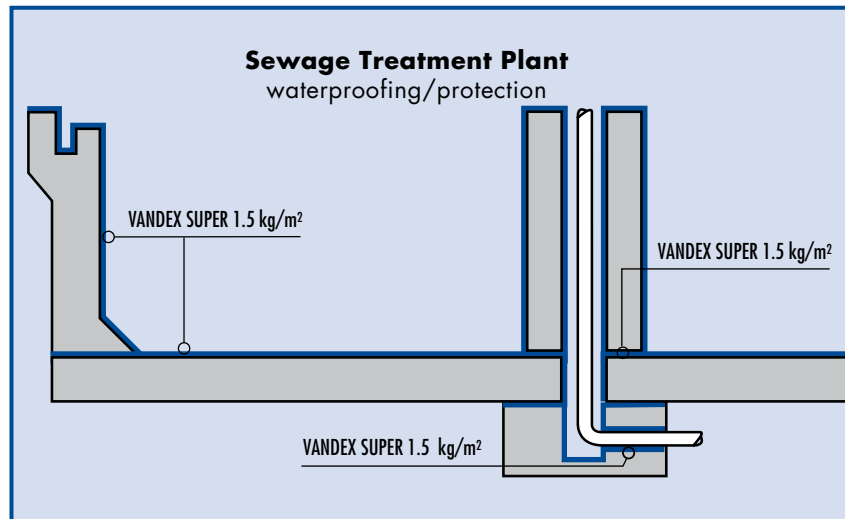
Vandex products are applied in sewage systems specifically to protect the concrete components exposed to certain types of wear and stress.

- Exposed to water
- Tidal effect
- Spillways
- Exposed to weather
- Rotating scraper blade wear
- Sandfilter beds
- Settlement and treatment tanks
- Pump sumps
- Box-outs
- Inspection shafts
- Manholes
- Channels
- Interceptors
- Inlets



Vandex offers proven systems

Vandex products allow expert application to be carried out in a few simple stages. They are packed in ready-to-use, handy containers. All of the Vandex major products can be applied either by hand or by mechanical means.



Vandex know-how guarantees safe solutions to problems

Whether in new construction or refurbishment, the project engineer must always work out additional concrete protection techniques which are both practical and cost effective.

With their ease of application, Vandex products are ideal in these circumstances.

Vandex products have been specially developed for specific situations, such as:

VANDEX SUPER or VANDEX BB 75

Waterproofing

VANDEX UNI MORTAR 1 Z

Reprofiling and coating

VANDEX SUPER or VANDEX BB 75 Z

Protection of concrete against sewage

VANDEX MINERALIT

Increasing surface resistance

VANDEX POLYCEM Z

Protection for extreme loads

These products can be combined in different ways to deal with various situations.

Prior to deciding on protective measures, an investigation of the structure or the design needs to be undertaken, and certain tests need to be performed to evaluate long term suitability of the products. The following table shows some of the criteria for the choice of the products and their coating thickness.

Planning of the respective coating systems can be broken down into the following steps:

- Stress classification
- Specific areas of test
- Optimizing the building material
- Processing specifications
- Operator information



Recommended Layer Thicknesses for Internal Coating in Sewage Treatment Plants

surface	load/problem	criteria	layer thickness (mm)		
			VANDEX UNI MORTAR 1 Z	VANDEX BB 75 Z	VANDEX SUPER
walls	external hydraulic load	waterproofing	10	3	0.75
	variable water level/ water quality	fluctuation cycle	10	3	0.75
	concrete deteriorating aggressiveness	chemical loads	10	3	
	evenness and minimum layer thickness	depth of roughness < 0.5 mm 0.5 mm – 5 mm > 5 mm	– 5 > 10	3 3 3	
	adhesion	adhesive strength < 0.8 N/mm ² < 1.0 N/mm ² < 1.5 N/mm ² > 1.5 N/mm ²	* P + 10 * P 3 –	3 3 3 3	
slabs	evenness	unevenness < 2 mm/4 m length 2 mm – 5 mm/ 4 m length > 5 mm/4 m length	– 5 10	3 3 3	
junction slab/wall	groove/fillet	waterproofing (crack formation)	r > 50 mm and min. 100 mm wide to slab and wall (r = radius of fillet)		
all areas	immediate load	increasing surface resistance	250 ml/m ² VANDEX MINERALIT	250 ml/m ² VANDEX MINERALIT	
heavily stressed surfaces	chemical corrosion	type of aggressiveness	finish with VANDEX POLYCEM Z 3 mm	finish with VANDEX POLYCEM Z 3 mm	

* P = Preparation

Vandex Special Products for the Waste Water Field



Vandex Products				Slab	Construction joint	Movement joint	Exposed to water	Tidal effect	Spillways	Walls (exposed to weather)	Rotating scraper blade wear	Sandfilter beds	Preliminary clarification tank	Activated sludge tank	Settlement tank	Aeration tank	Structural members in steel	Concrete protection	Reprofilng	
Product	Type	Consumption	Packaging																	
CORROSION PROTECTION M	purely mineralic, also suitable for drinking water tanks	2 kg/m ²	5 kg																	
UNI MORTAR 1 Z	waterproofing mortar with high sulphate resistance	12–24 kg/m ² for 6–12 mm layer thickness	25 kg	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●
SUPER	in-depth waterproofing slurry resistant against sewage	1.5 kg/m ²	25 kg	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●
BB 75 Z	waterproofing slurry with high sulphate resistance	6 kg/m ² /3 mm	25 kg	●			●	●	●	●		●	●	●	●	●	●	●	●	●
BB 75 E Z	elasticized waterproofing slurry with high sulphate resistance	6 kg/m ² /3 mm	35 kg (2 comp.)		●		●	●	●	●			●	●	●	●	●	●	●	●
PLUG	rapid setting mortar for plugging water leaks	depending on size of leak: approx. 300g/leak	15 kg	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●
POLYCEM Z	polymer modified cementitious protective coating for sewage treatment facilities	6 kg/m ² /3 mm	30 kg (2 comp.)	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●
EXPASEAL 2520/2010/1808	water-swellable waterstop for construction joints	1 m per m ² joint	Box 2520: 30 m 2010/1808: 60 m	●	●		●	●				●	●	●	●	●				
CONSTRUCTION JOINT TAPE	waterproofing tape for construction joints and cracks	1 m VANDEX CONSTRUCTION JOINT TAPE + 1 kg BB 75 E Z/m	30 m	●	●		●	●	●	●		●	●	●	●	●				
FLEXTAPE	sealing tape for movement and construction joints as well as cracks	1 m per linear meter	20 m	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●
FLEXTAPE ADHESIVE	thixotropic epoxy resin adhesive	0.8–1.1 kg per linear meter	6 kg (2 comp.)	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●

- Vandex Services:**
- Competent consultation on structural protection problems in the waste water industry
 - Problem analysis and solution proposals
 - Application instructions



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