



**WATERPROOFING
AND PROTECTION OF
SEWAGE SYSTEMS**

Van[®]**index**

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 POLYZEM Z

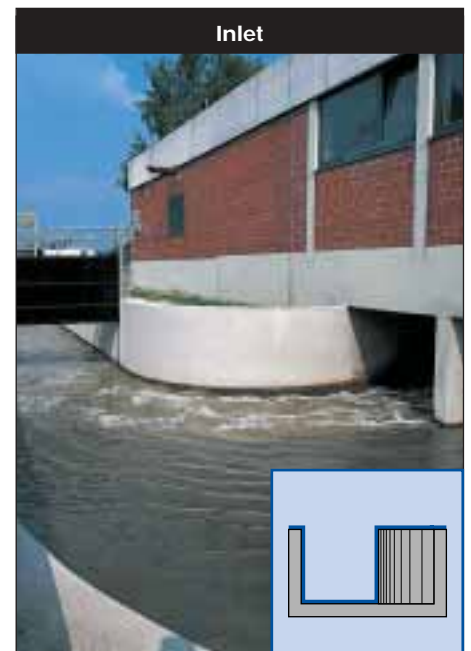
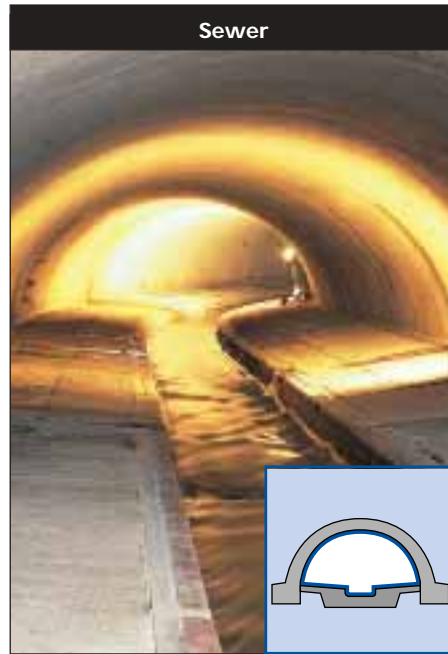


Spray application VANDEX BB 75 Z in treatment tank

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

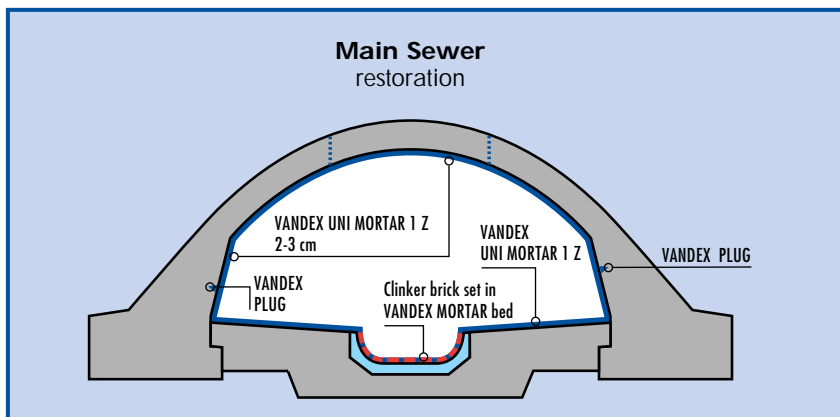
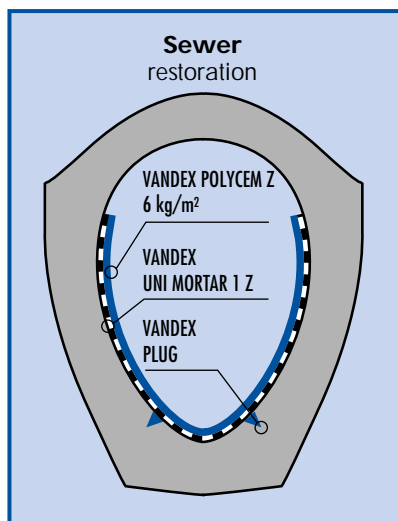
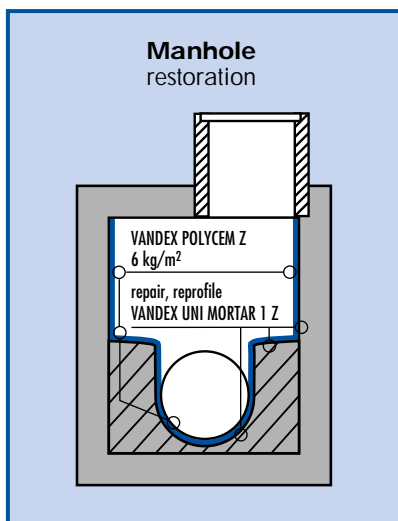
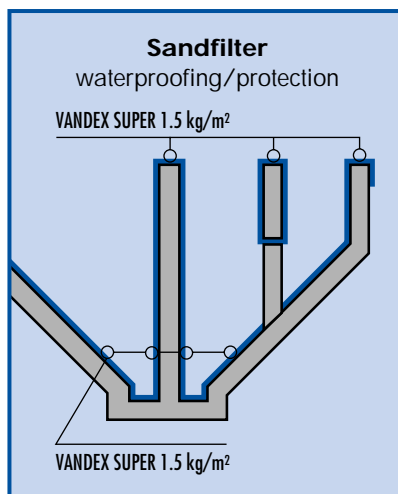
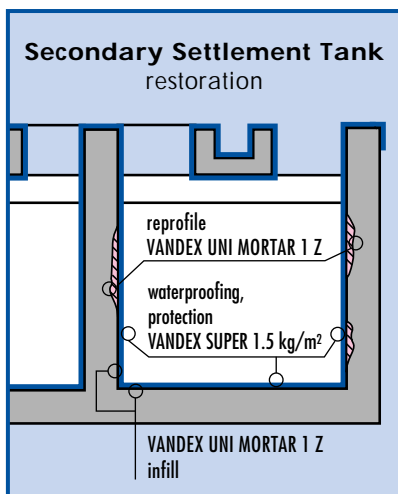
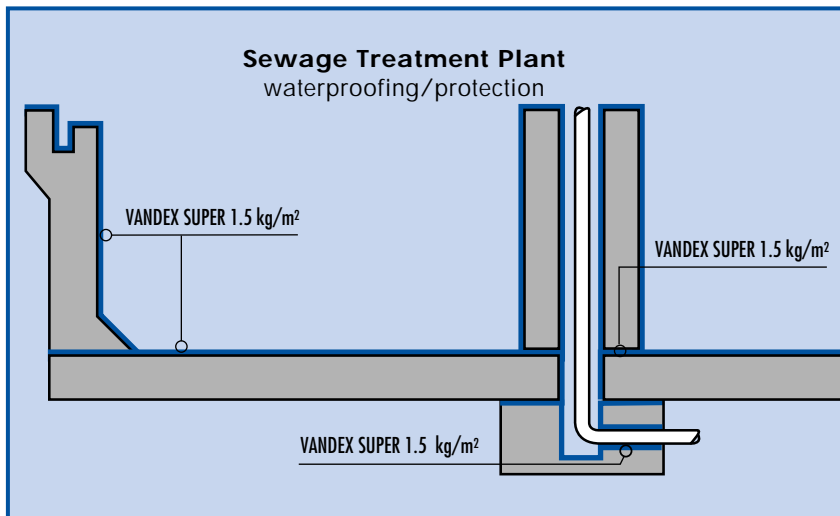


VANDEX offers proven systems

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/cavity	waterproofing (crack formation)	r > 50 mm	l > 10 cm	
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	Reprofiling	
Product	Type	Consumption	Packaging																	
CORROSION PROTECTION M	purely mineralic, also suitable for drinking water tanks	2kg/m ²	5kg															●		
UNI MORTAR 1 Z	waterproofing mortar with high sulphate resistance	12-24kg/m ² for 6-12mm layer thickness	25kg	●			●	●	●	●	●	●	●	●	●	●	●		●	●
SUPER	in-depth waterproofing slurry resistant against sewage	1.5kg/m ²	25kg	●	●		●	●	●	●		●	●	●	●	●	●		●	●
BB 75 Z	waterproofing slurry with high sulphate resistance	6kg/m ² /3mm	25kg	●			●	●	●	●		●	●	●	●	●	●		●	
BB 75 E Z	elasticized waterproofing slurry with high sulphate resistance	6kg/m ² /3mm	35kg (2 comp.)		●		●	●	●	●			●	●	●	●	●		●	
PLUG	rapid setting mortar for plugging water leaks	depending on size of leak: approx. 300g/leak	15kg	●			●	●	●	●	●	●	●	●	●	●	●		●	
POLYCEM Z	polymer modified cementitious protective coating for sewage treatment facilities	6kg/m ² /3mm	30kg (2 comp.)	●			●	●	●	●	●	●	●	●	●	●	●		●	●
EXPASEAL 2520/2010/1808	water-swellable waterstop for construction joints	1 m per m ² joint	Box 2520: 30m 2010/1808: 60m	●	●		●	●				●	●	●	●	●				
CONSTRUCTION JOINT TAPE	waterproofing tape for construction joints and cracks	1 m VANDEX CONSTRUCTION JOINT TAPE + 1 kg BB 75 E Z/m	30m	●	●		●	●	●	●		●	●	●	●	●				
FLEXTAPE	sealing tape for movement and construction joints as well as cracks	1 m per linear meter	20m	●	●	●	●	●	●	●		●	●	●	●	●	●			
FLEXTAPE ADHESIVE	thixotropic epoxy resin adhesive	0.8-1.1kg per linear meter	6kg (2 comp.)	●	●	●	●	●	●	●		●	●	●	●	●	●			

VANDEX Services:

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



CONCRETE PROTECTION AND WATERPROOFING

HEADOFFICE AND INTERNATIONAL SALES:
VANDEX INTERNATIONAL LTD
 P.O.Box, CH-4501 Solothurn/Switzerland
 Phone +41(0)32 626 36 36, Fax +41(0)32 626 36 37
 E-mail: vandex@vandex.com www.vandex.com

PRODUCTION AND SALES GERMANY:
VANDEX ISOLIERMITTEL-GESELLSCHAFT m.b.H.
 Postfach 1406, D-21487 Schwarzenbek/Germany
 Phone +49(0)4151 89 15-0, Fax +49(0)4151 89 15 50
 E-mail: vandex@vandex.de www.vandex.de

UK SALES:
SAFEGUARD EUROPE LTD
 Redkirk Close, Horsham, West Sussex, RH13 5QL, UK
 Phone: +44 (0)1403 210204, Fax: +44 (0)1403 217529
 Website: www.safeguardeurope.com