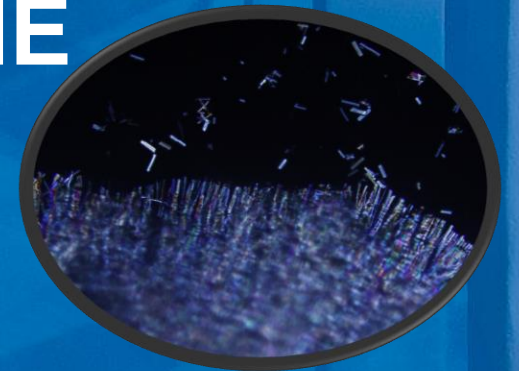


Vandex



VANDEX SUPER CRYSTALLINE PRODUCT FAMILY





VANDEX SUPER Product Family



- VANDEX History
- Vandex Super Product Family
- Technically speaking: Crystalline – what does it mean, CE, Waterproofing, Testing, Norms and approvals
- Application of the Products
- Use of Vandex Super in Construction industry
- Support required – check this out: web, sharepoint, references
- Discussion: Price Margin, USP vs Competition
- Q&A

History

The meaning of **VANDEX** is „water out“



1946

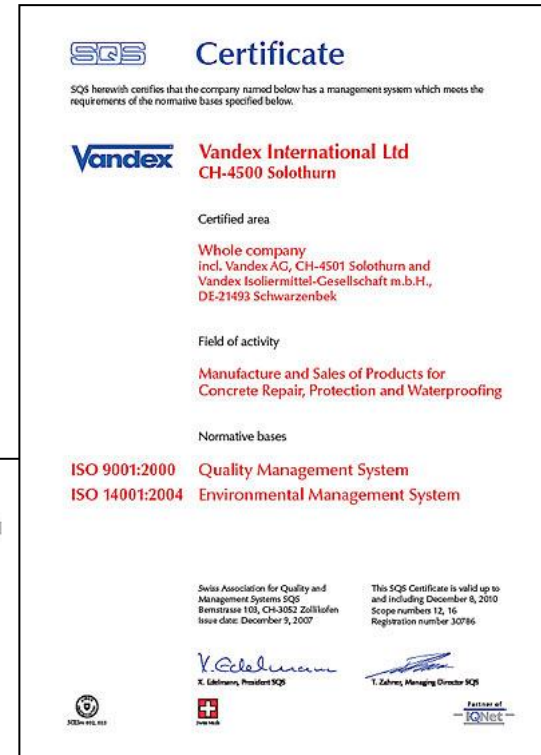


An **RPM** Company

2006

VANDEX Quality assurance system

- ISO 9001/14001 certification
- consistently high product quality
- innovative products responding to customer needs
- technical consultation and application service



VANDEX products

QUALITY CONFIRMED

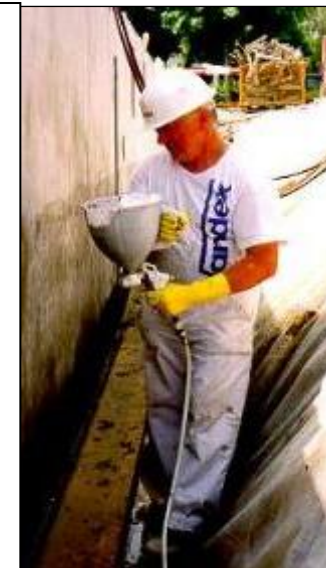


Vandex Super family

Product	Mixing Liquid	Powder	CE	Waterproof	Potable water	Waste water
Vandex Super	H ₂ O	Grey	EN1504-3	10, 13.8 & 20 bar	Yes	
Vandex Super White	H ₂ O	White	EN1504-3	10 & 13.8 bar	Yes	
Vandex Concrete Grey	H ₂ O	Light Grey	EN1504-3	13.8 & 20 bar		
Vandex Premix	H ₂ O	Grey	EN1504-3	3 bar not official		
		Not a decorative coating.				

Affiliated Products:	Crystalline Admixture	Powder	CE	Waterproof	Potable water	Waste water
Vandex AM 10 CE	Concrete	Grey	EN934-2	Sure, not required	Yes	Yes
Vandex AM 10	Concrete	Grey	NO	13.8	Yes	Yes

- Vandex Super = Beton bauschlemme / Concrete Slurry
 - Thin brushable material – 1mm – waterproofing integral to concrete
 - Can NOT be applied with a trowel
 - Can be sprayed by Hopper air gun, or peristaltic spray pump
 - Dry sprinkled to fresh concrete slabs



CE marked – fit for construction in Europe, spec or break is up to you!

- EN1504-3

Compressive strength	class R2 ≥ 15 MPa	CE 0761
Chloride ion content	$\leq 0.05\%$	
Adhesive bond	≥ 0.8 MPa	Vandex Isoliermittel-GmbH Industriestr. 21 DE-21493 Schwarzenbek 09 001 EN 1504-3:2005/ZA.1a CC fine mortar for non-structural repair (based on hydraulic cement)
Carbonation resistance	no performance determined	
Modulus of elasticity	≥ 20 GPa	
Thermal compatibility:		
Part 4: Dry thermal cycling	≥ 0.8 MPa	
Capillary absorption	≤ 0.5 kg/m ² ·h ^{0.5}	
Reaction to fire	class A1	
Dangerous substances	complies with 5.4	

CC fine mortar for non-structural repair
 (based on hydraulic cement)
 Applying mortar by hand (3.1)
 Spraying mortar (3.3)

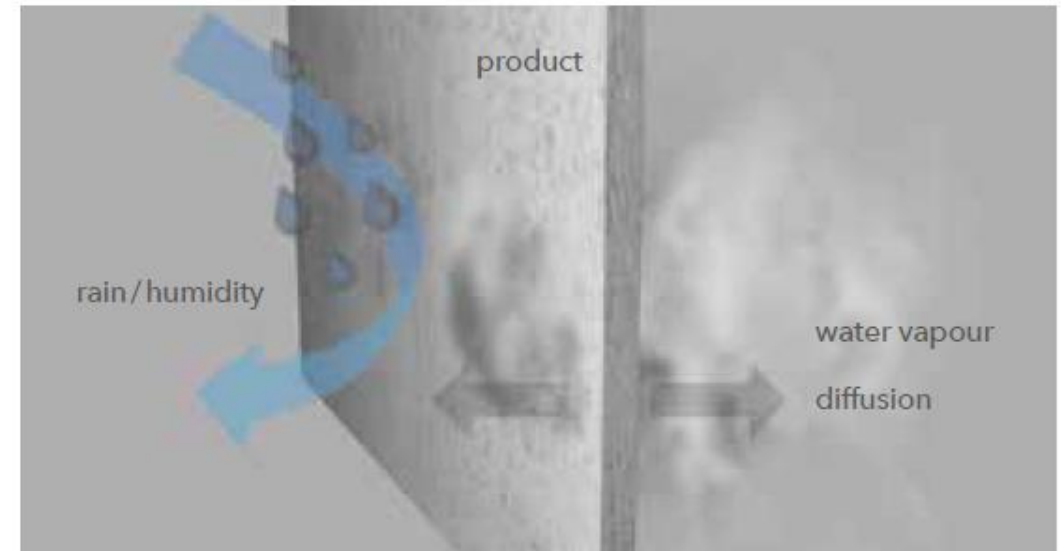
Structural waterproofing

Vandex Super Family Products properties:

- Waterproofing slurry
- In-depth waterproofing and protection up to 14 bar water pressure
- Approved for potable water contact
- Crack bridging up to 0.3 mm
- Vapour permeable
- Premix in combination with VANDEX SUPER only



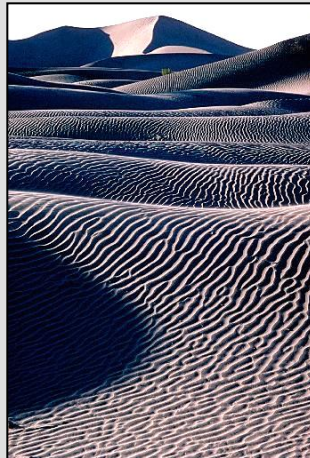
Vandex



COMPOSITION

VANDEX SUPER

Graded quartz sands



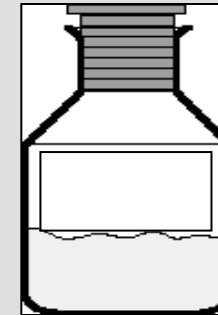
VANDEX PREMIX

Portland Cement



VANDEX CONCRETE GREY

Chemical additives

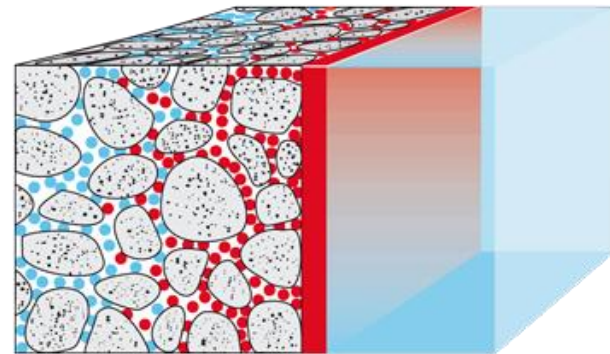
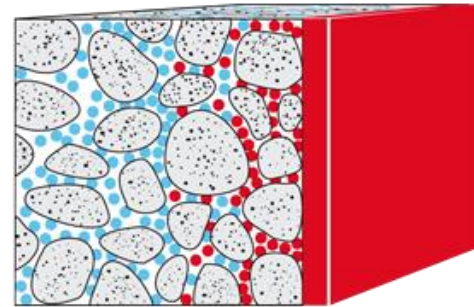
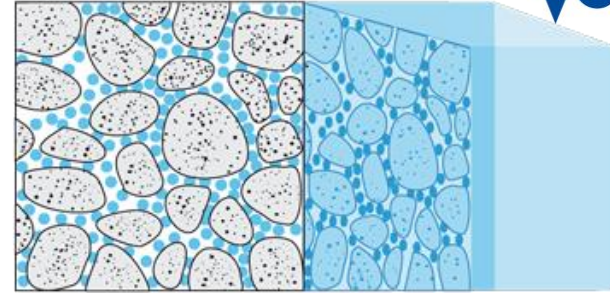


PROPERTIES

- VANDEX SUPER waterproofs the concrete by blocking the capillaries.
- It is not a membrane type product but a capillary active product.
- It becomes an integral part of the concrete.

IN-DEPTH WATERPROOFING

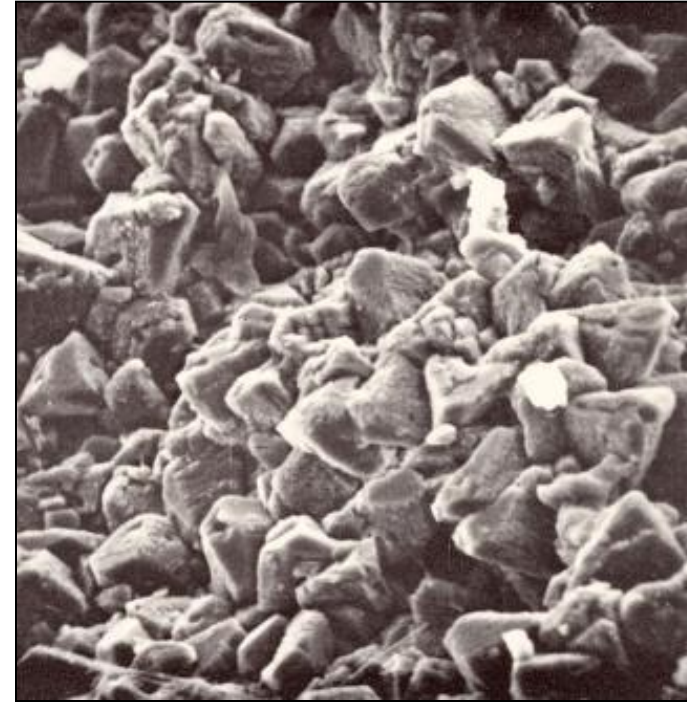
1. Concrete wall exposed to water. The water has forced its way into the capillaries. Long-term effect: leaky, damaged concrete.
2. After Vandex treatment: The reaction between the free lime, moisture and the Vandex active chemicals has set in. Vandex penetrates the concrete forming insoluble crystalline complexes which block the capillaries.
3. The concrete is now watertight but still allows water vapour to pass. The Vandex crystalline complexes remain in the concrete, ready to reactivate upon any further contact with water.



CRYSTALLISATION



Untreated concrete specimen
at 552× magnification



VANDEX treated concrete
specimen with clearly visible
crystallisation at 552×
magnification

WATERPROOFING

Several test reports from all over the world confirm waterproofing up to **14 bars** positive or negative water pressure. (test report 05-012/00)

VAPOUR PERMEABILITY

VANDEX SUPER coating brings a reduction of the vapour permeability up to **63.5%** but is still vapour permeable (test report 05-007/00).

BBA Approval – British Board of Agreement

Potable water compatibility, Sulphate resistance, Performance (test report no. 04-044/01)

CHLORIDE PENETRATION

VANDEX SUPER coating highly increases the resistance against chloride ion penetration (test report 05-021/00).

SULPHATE RESISTANCE

VANDEX SUPER coating helps to prevent sulphate attack to the treated concrete (test report 05-009/00).

COMPRESSIVE STRENGTH





VANDEX SUPER brings an increase of compressive strength of the treated concrete of up to **7.3%** (test report 05-004/00).

PENETRATION DEPTH

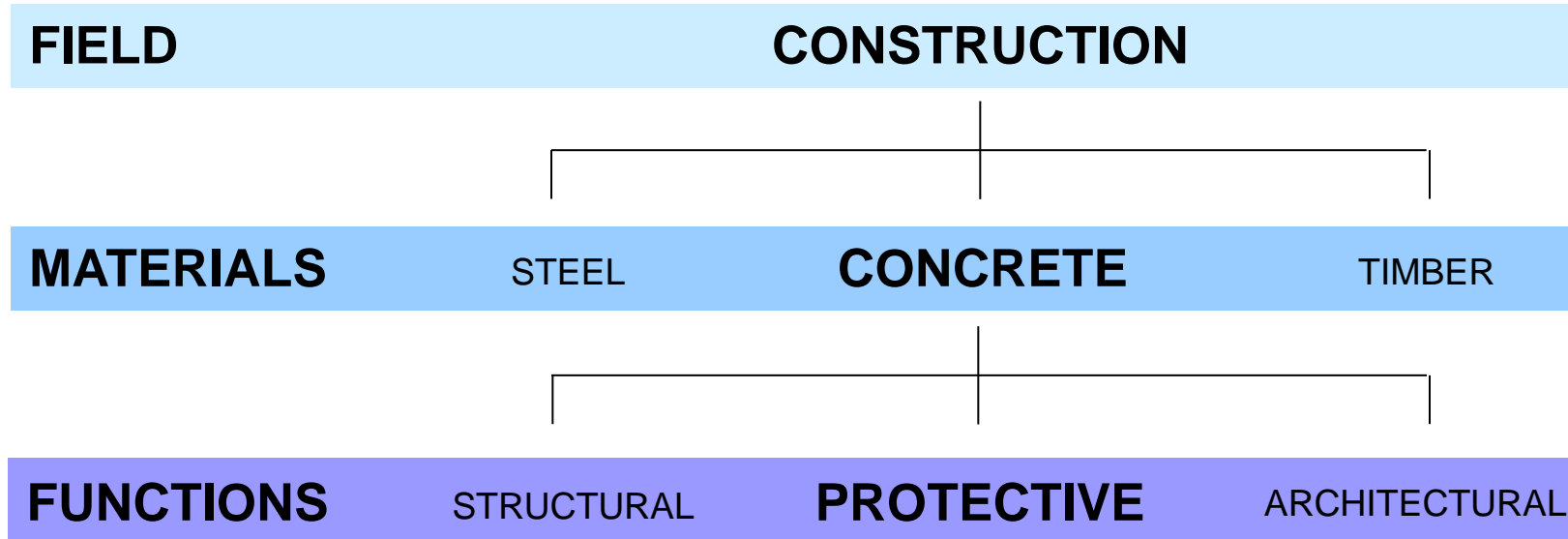
VANDEX SUPER reaches a penetration depth up to **150 mm** into the concrete (test report 09-001/00).

CRYSTALLINE IMPROVED CONCRETE FACTS

Topic	Improvement	Benefit
Chloride-Barrier	5 fold reduction of Chloride diffusion	✓ higher abrasion resistance of the concrete
Sulphate Resistance	Virtually eliminate sulphate attack for a period of 20 – 30 years	✓ higher ageing resistance of the concrete
Wear / Abrasion	Weight loss by abrasion reduced 70 – 75 % by Taber-Abraser	✓ concrete protection against: sea water, waste water, aggressive ground water, chemical solutions
Vapour diffusion	When using VANDEX SUPER below an Epoxy floor coating no blisters formed.	✓ concrete is still able to breathe
Waterproofing	... after partial removal of VANDEX SUPER no moisture detected ...	✓ waterproofing function remains integral in concrete
Compressive strength	Up to +7.3 % increase when powder sprinkled	✓ increased performance of concrete generally

Approved Products: Drinking water reservoirs			Approvals			
VANDEX	Refer also to Technical Data Sheet	Consumption	 DWI / WRAS	 DVGW	 EPAL	 others available
Substrate hardening						
CEMLINE STON	substrate hardening agent	250 ml/m ²	✓			
Repair and levelling mortar						
PLUG	cementitious waterproof plugging compound	approx. 200 g/ 100 cm ³ H ₂ O	✓			
BB 75	corrosion protection for reinforcement steel	2 kg/m ²	✓	✓		SK/PL
Sanitary coating						
SUPER	slurry in-depth waterproofing and protection, grey	1 - 1.5 kg/m ²	✓			SK/PL/ IT/FR
SUPER WHITE	slurry in-depth waterproofing and protection, white	1 - 1.5 kg/m ²				PL/IT
BB 75	waterproofing slurry, grey	4 - 6 kg/m ²	✓	✓		PL
CEMLINE FS GREY/ WHITE	final protective coating for drinking water, grey/white	4 - 8 kg/m ²		✓		
CEMLINE PRO WHITE	Highly soft water resistant inner coating for drinking water, white	6 kg/m ²		✓	✓	
CEMLINE MG 4 FF & FFH (White)	waterproofing slurry, grey increased resistance	6 - 30 kg/m ²		✓	✓	
VANDEX BB WHITE/ CEMLINE BB-W	waterproofing slurry, white	6 kg/m ²	✓		✓	PL

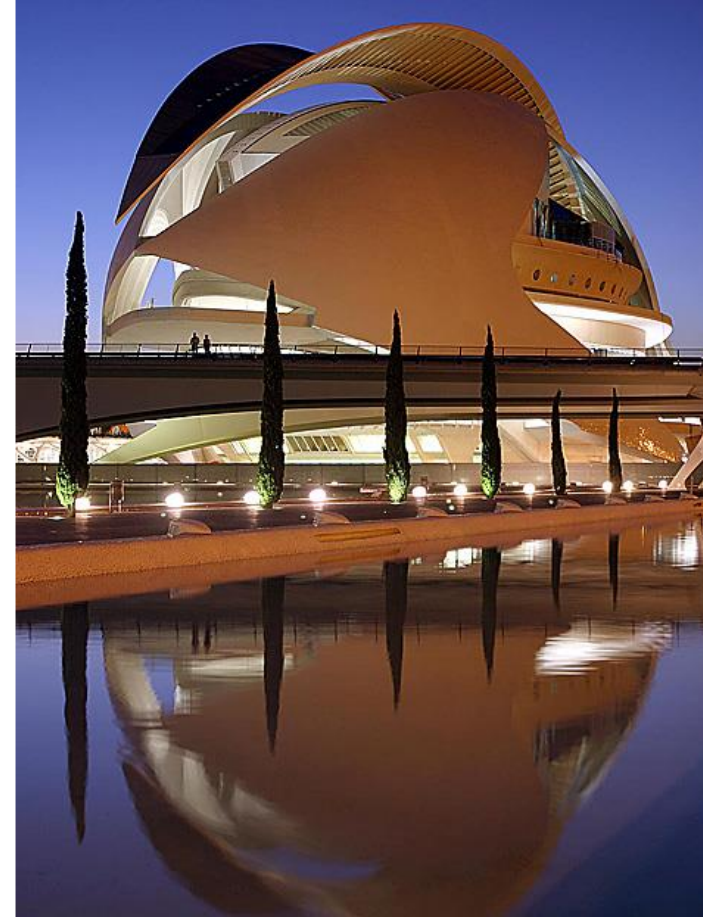
Application fields



WATERPROOFING
CONCRETE PROTECTION
CONCRETE REPAIR

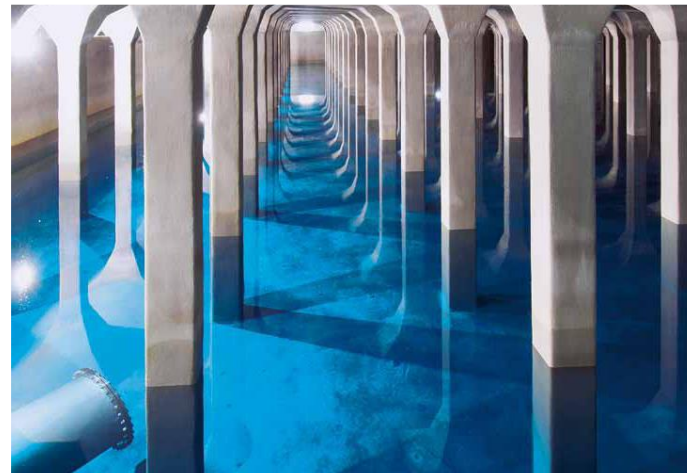
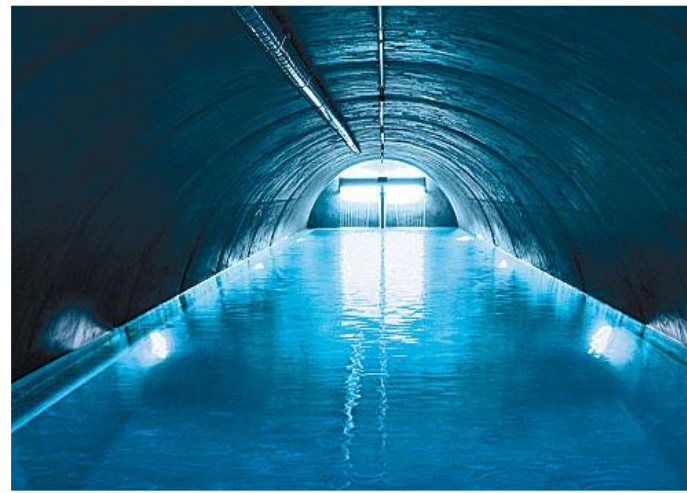
Civil engineering

- Foundations
- Tunnels, ducts
- Basement waterproofing

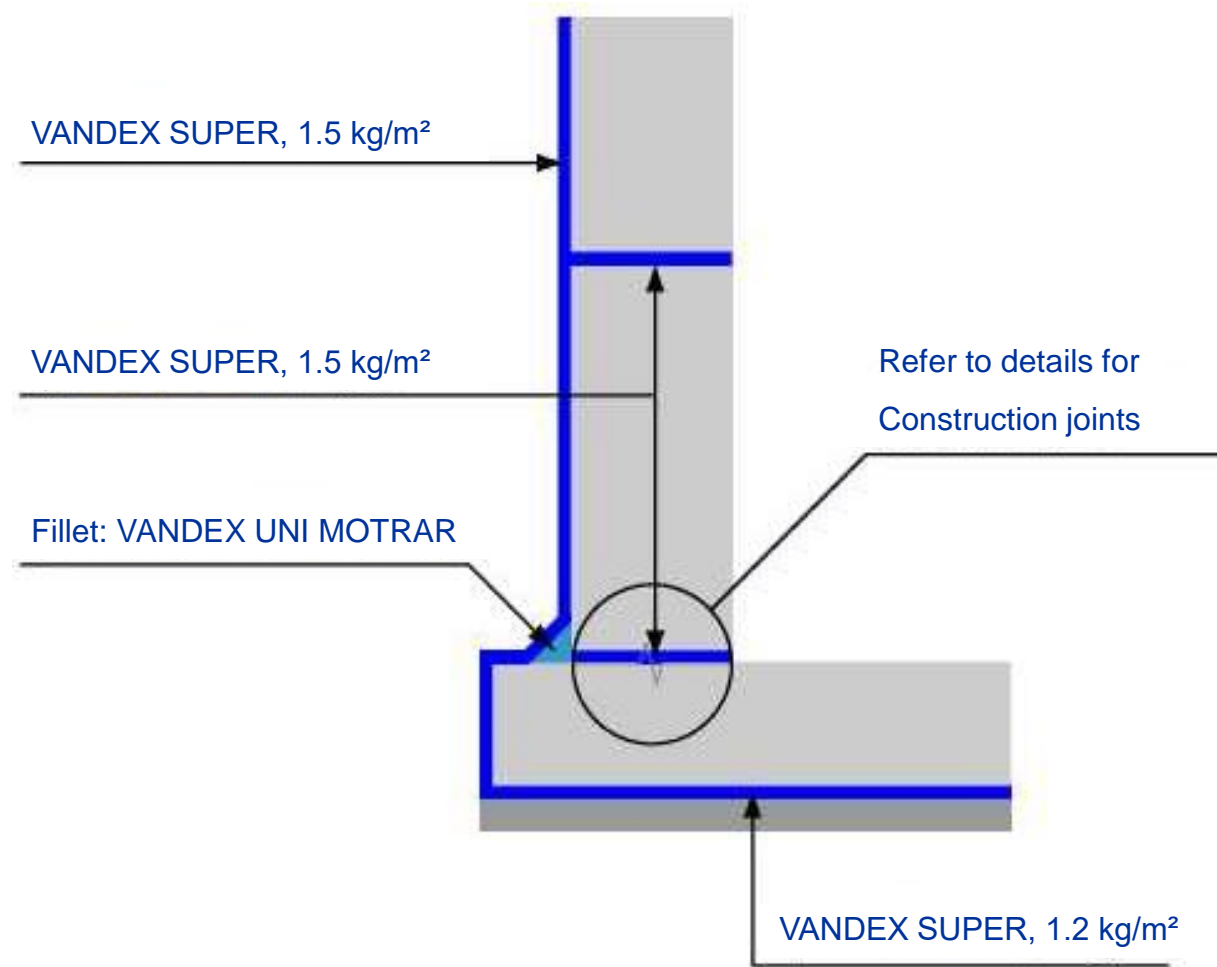


Drinking water

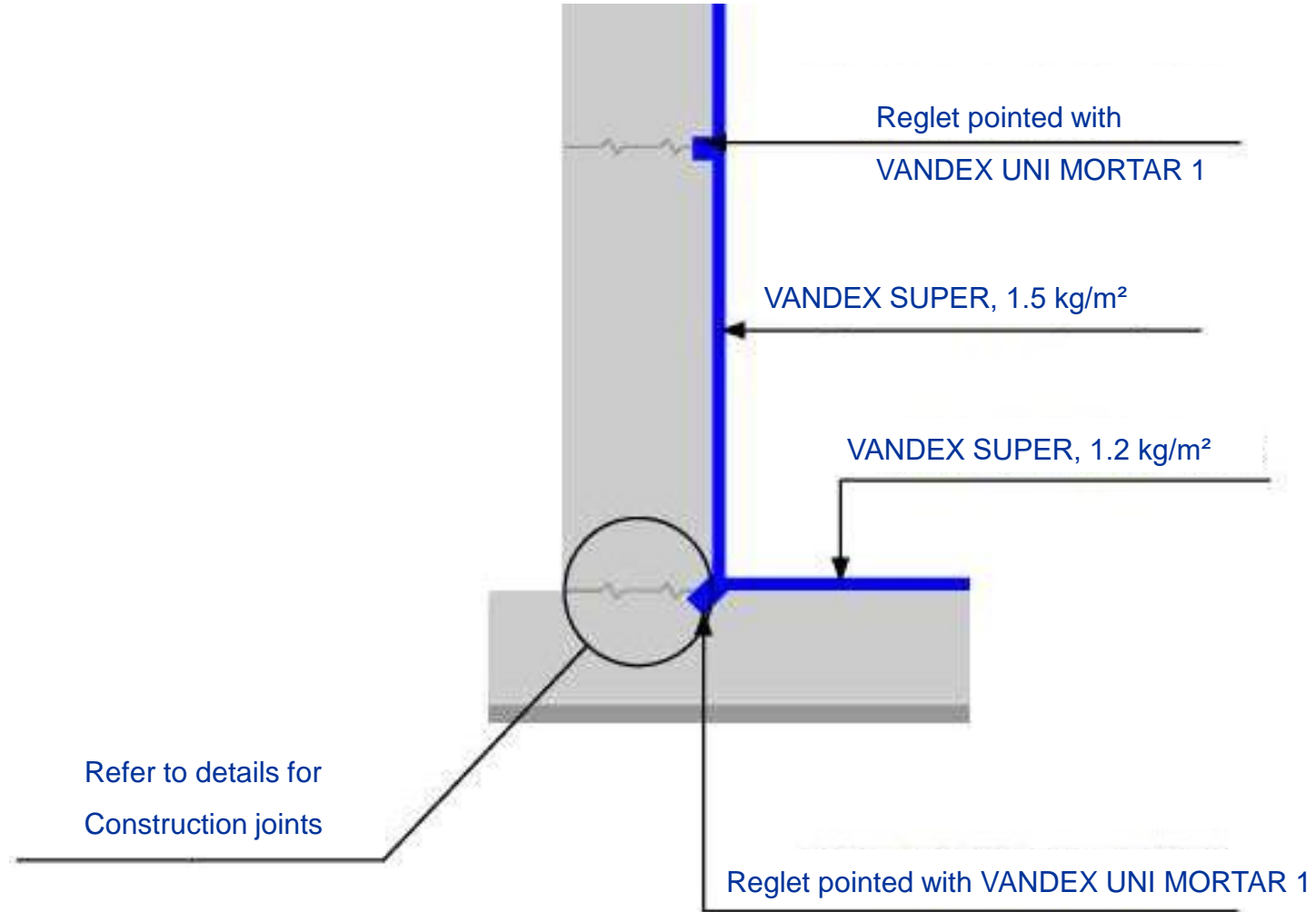
- Reservoirs
- Pipes
- Water retaining structures



BELOW GROUND WATERPROOFING – EXTERNAL **Vandex**

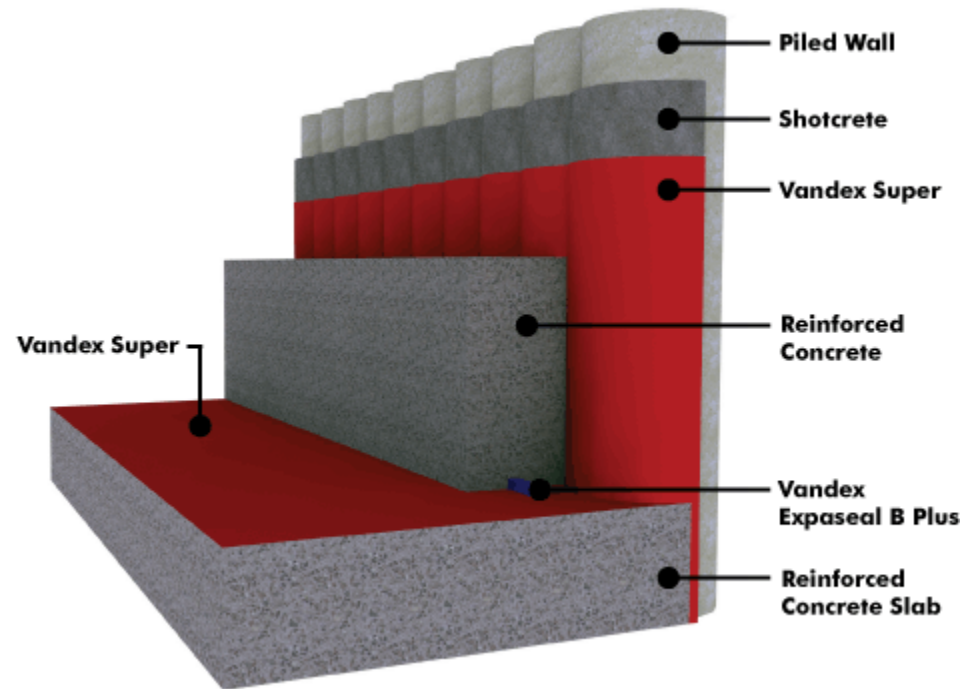
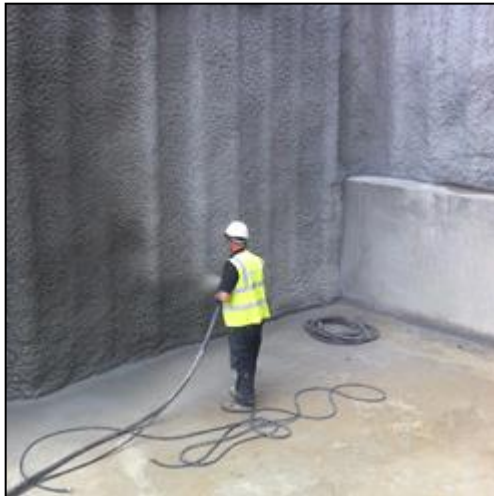


BELOW GROUND WATERPROOFING – INTERNAL **Vandex**



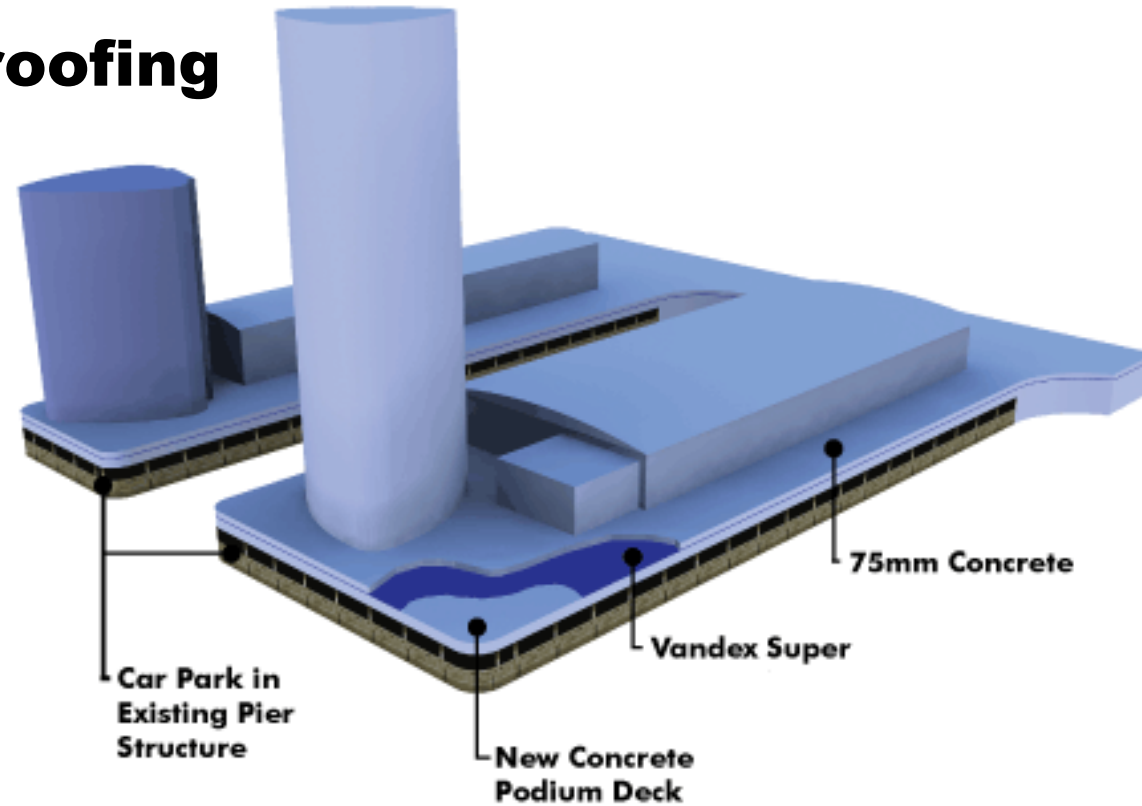
RECENT NEW APPLICATIONS

Piled walls



RECENT NEW APPLICATIONS

Deck waterproofing





VANDEX SUPER dry-sprinkled as powder immediately after initial setting of concrete.



Working the powder into the surface by machine or hand trowel.

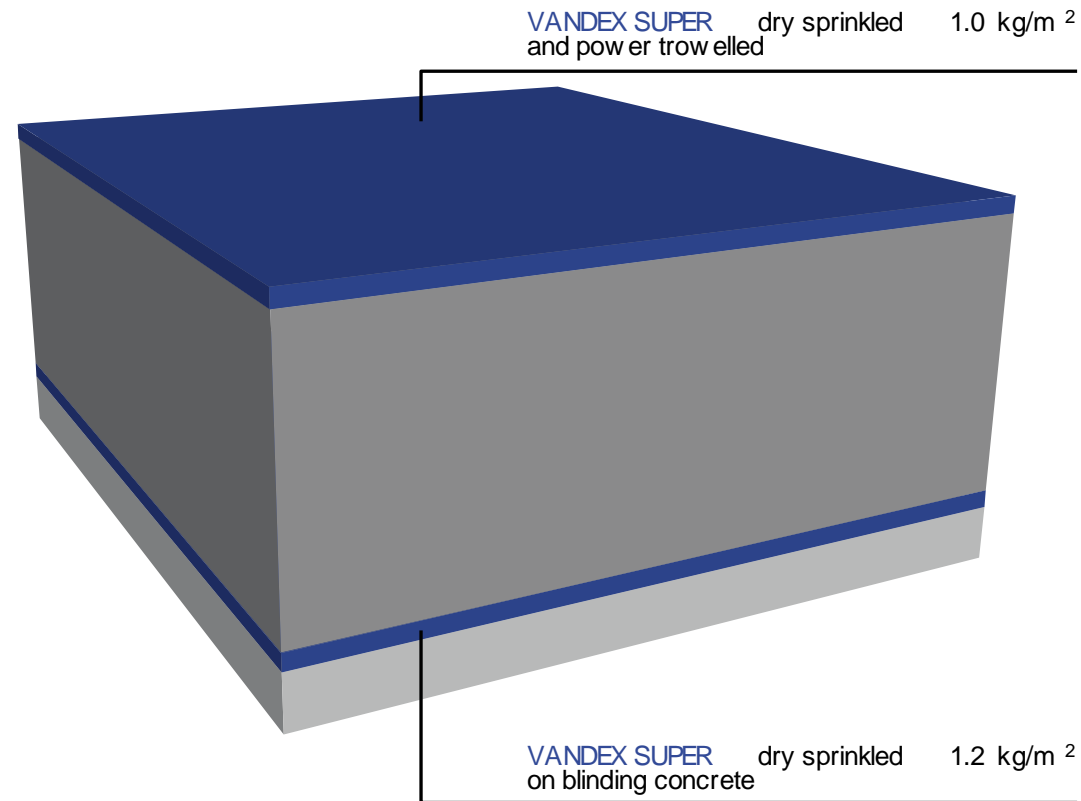


Curing and protection for 5 days against evaporation by sun and wind.



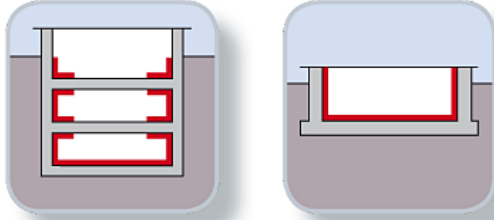
- economical, easy and simple application
- tested to 14 bar
- applied to pressure or non-pressure face
- becomes an integral part of the concrete structure
- drinking water approval

VANDEX SUPER APPLICATIONS - DRY SPRINKLE / SANDWICH SITUATION -

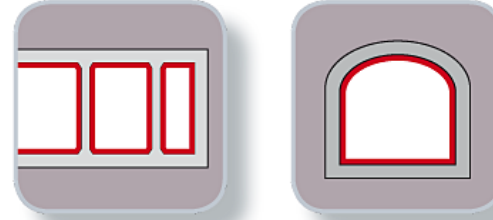


VANDEX PRODUCTS AT WORK

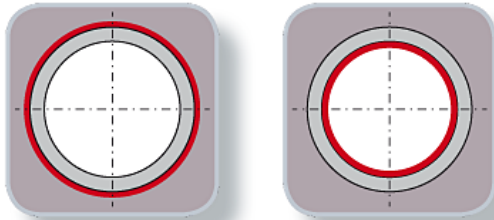
Structural and industrial engineering



Drinking water reservoirs



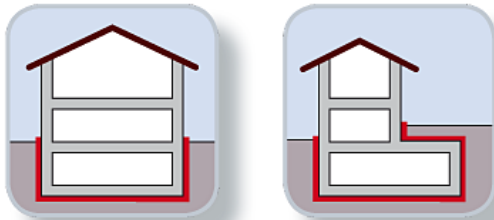
Tunnel



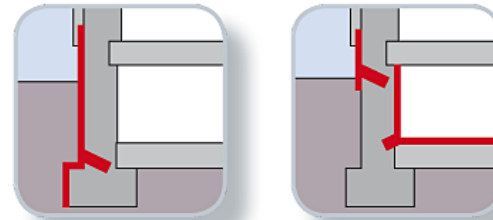
Sewage water treatment



Civil engineering



Refurbishment of old buildings



Thank you!

