



2023 | English



# LIQUISHIELD - FLUID CONTAINMENT LINING SYSTEMS

INDUSTRIAL LININGS

WATERPROOFING

ROOFING

TURNKEY SOLUTIONS

# THE LIQUISHIELD ADVANTAGE

## Fast spray application process

VIP Liquishield containment systems are rapidly and seamlessly spray applied to virtually any substrate including geotextile blankets making earthen bunds a cheap construction alternative for secondary containment safety bunds.

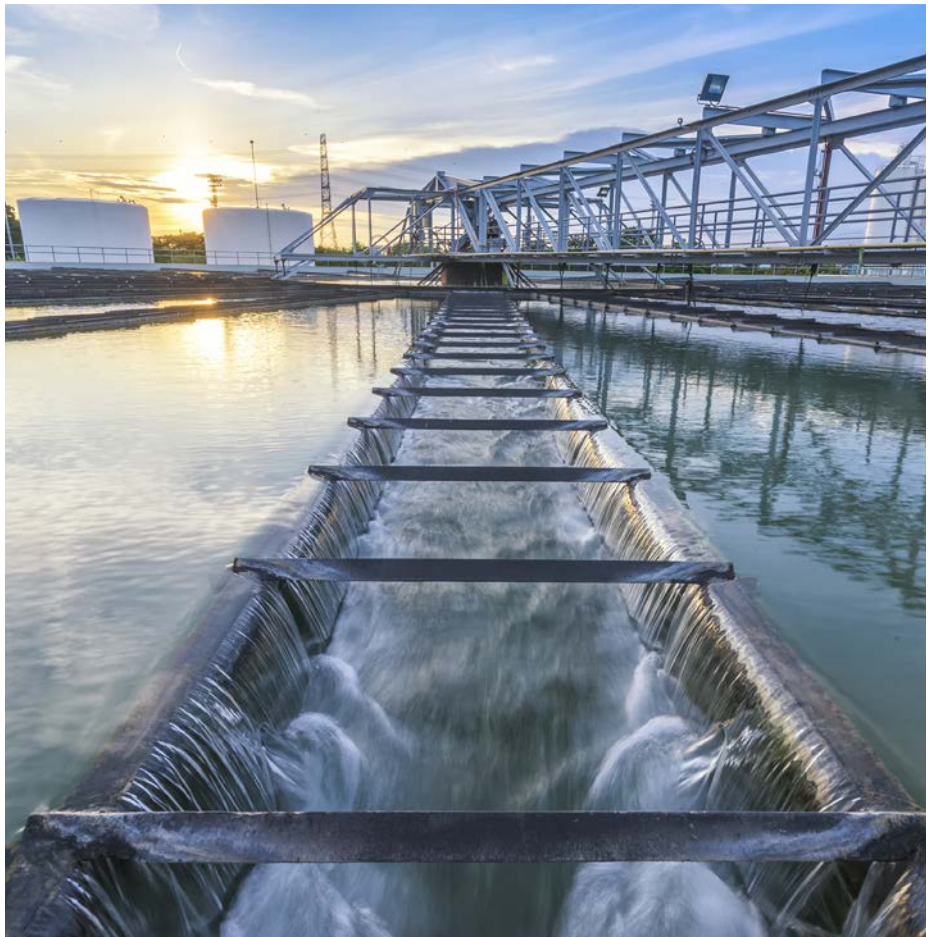


## Rapid cure

VIP Liquishield containment systems provide instant curing properties resulting in very short return to service times providing industry with substantial down time cost savings.

## Completely seamless

VIP Liquishield containment systems are completely seamless even across multiple substrate types eliminating joint welding and gluing providing faster application, faster return to service and many years of trouble free performance.





## Excellent bonding to substrates

VIP Liquishield containment systems exhibit high bond strength to correctly prepared substrates. In most cases the bond strength is greater than the pull off strength of the substrate itself.



## Chemical, UV and abrasion resistant

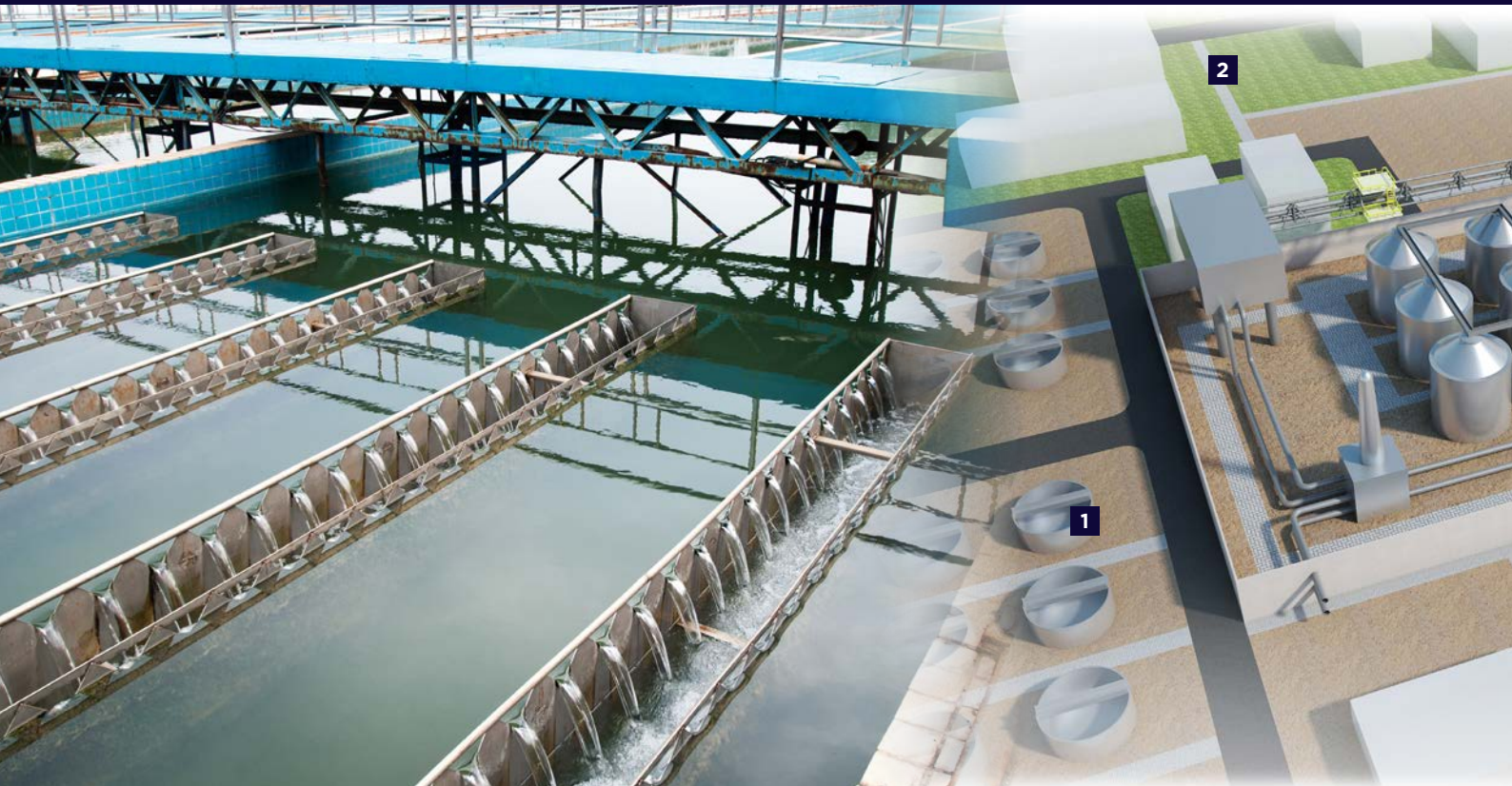
VIP Liquishield containment systems are designed to withstand large temperature variations making them suitable for application in both the coldest and hottest environments around the world. Excellent impact, abrasion and chemical resistance, coupled with a rapid, seamless instant curing application, results in significant cost savings over traditional rigid epoxy and FRP systems.



## Successful track record in containment projects

VIP Liquishield containment systems have been successfully used around the world in many applications including desalination plants, potable water applications, fuel storage farms and chemical manufacturing plants.

# LIQUISHIELD SYSTEM

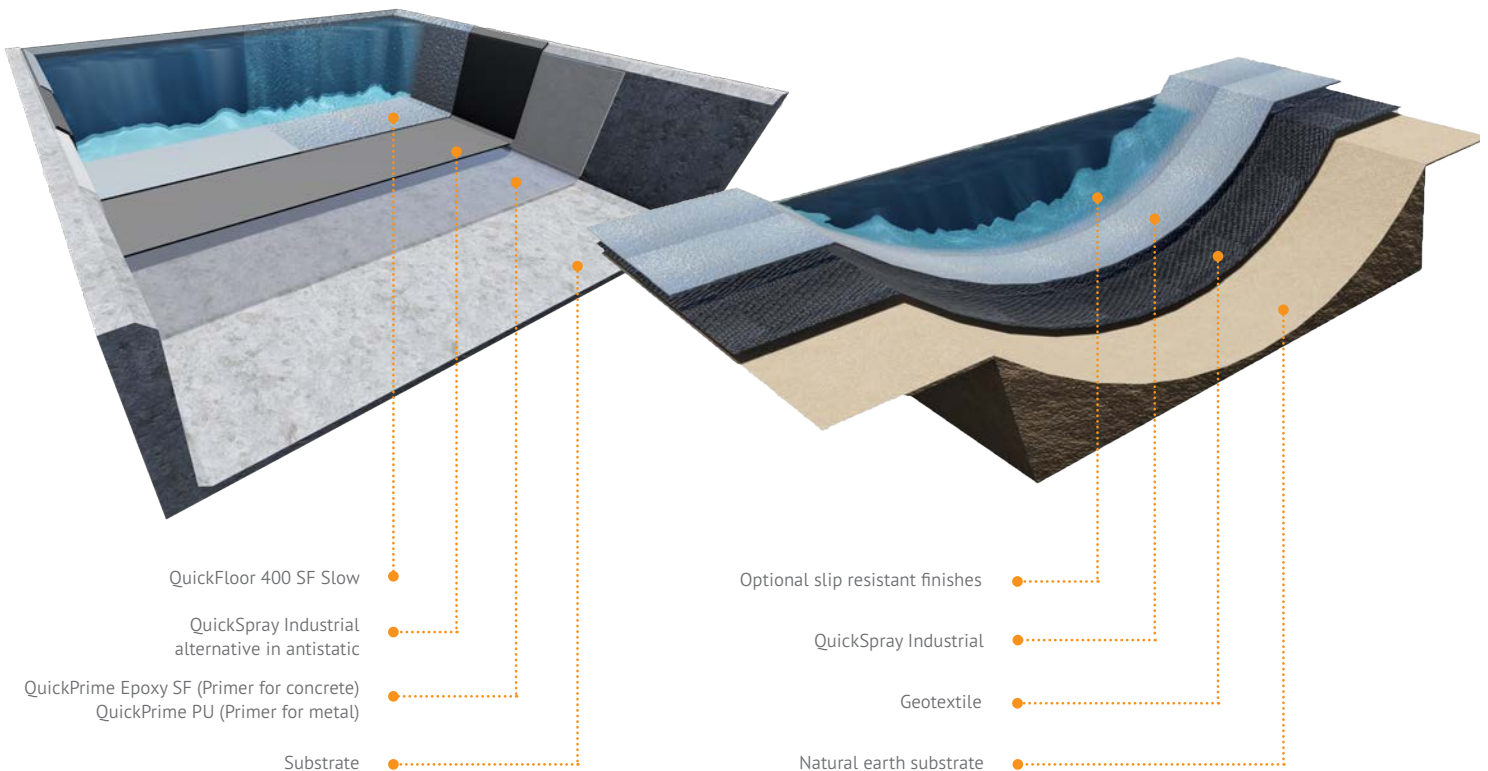


## 1 LIQUISHIELD Supreme

High Chemical resistant liquid containment system with optional slip resistant surface finish.

## 2 LIQUISHIELD Geo

Liquid containment system using a formed earth substrate.



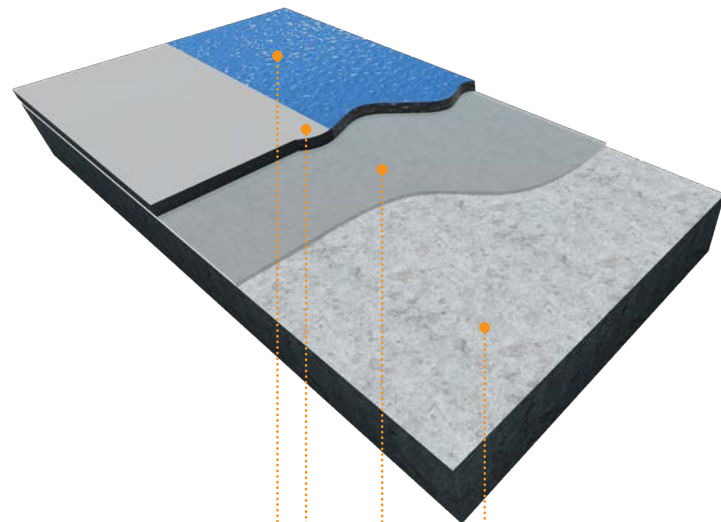
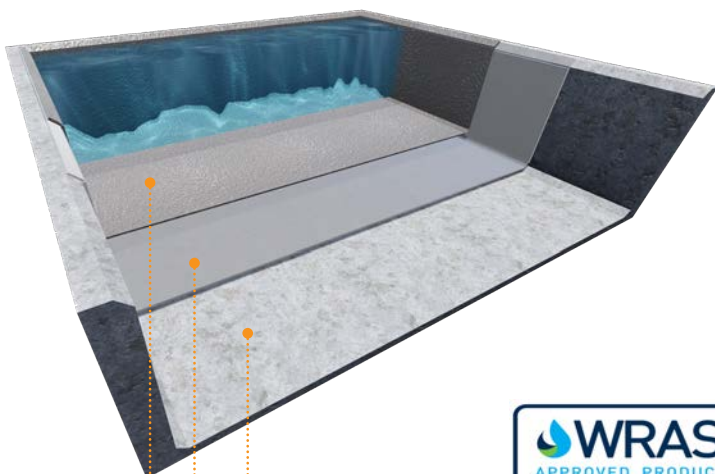


### 3 LIQUISHIELD Aqua

Potable water approved containment system applied to tanks, pipes and other drinking water storage vessels.

### 4 LIQUISHIELD Standard

Moderate chemicals containment, with optional color stable coating in exposed areas.



- Substrate
- QuickPrime Epoxy SF (Primer for concrete)  
QuickPrime PU (Primer for metal)
- QuickSpray Industrial W (WRAS approved)  
QuickSpray Supreme W (KTW approved)

- Optional Top Coat  
with slip resistant finishes
- QuickSpray Industrial  
alternative in antistatic
- QuickPrime Epoxy SF
- Concrete

# LIQUISHIELD KEY FEATURES



## High chemical resistance

- Resistant to most standard chemicals, acids, alkalies and fuel oil – Long term resistance against corrosion
- Excellent resistance against abrasion (Slurry tanks)
- Remains flexible over a large temperature range
- Completely resistant to Hydrogen Sulphides



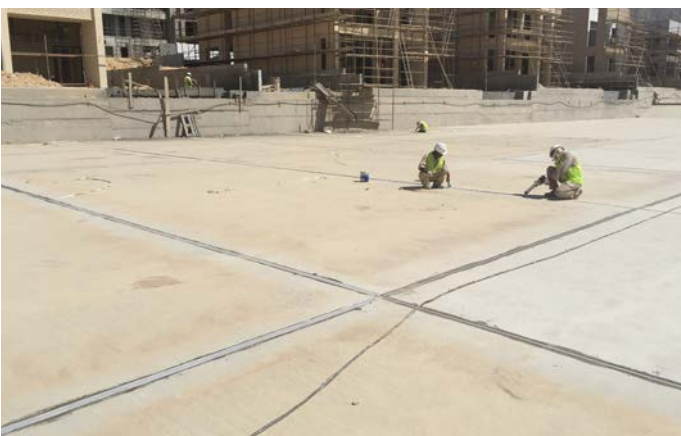
## Excellent strength

- Very high tensile strength
- Very high impact and abrasion resistance
- Optimum resistance to high shear forces
- High crack bridging ability
- Resistant to tearing and root penetration
- Excellent elongation at break properties
- Seamless, flexible solution that will not crack or peel



## 100% volume solids

- Completely solvent free
- VOC free
- Potable water approved versions



## Quickprep repair products

- A full range of fully compatible substrate repair products are provided as part of the VIP Quickprep range
- Crack injection and filling materials can be overlaid within 10minutes

# LINING SYSTEM RANGE

## **VIPSHIELD**

Combo-protect system

## **QUICKDECK**

Car park decking system

## **LIQUISHIELD**

Fluid containment & lining

## **LEISURELINE**

Lagoons & waterparks

## **CLEANCOAT**

Clean & hygienic coatings for food & pharma

## **QUICKFLOOR**

Superfast industrial flooring system

# LIQUISHIELD PROJECT REFERENCES

## UMM AL QUWAIN DESALINATION PLANT



The Middle East and North Africa is the most water scarce region in the world and relies on desalination to meet its drinking water needs.

Once finished in 2022 the desalination plant in Umm Al Quwain will be the 5th largest plant in the world producing 683.000m<sup>3</sup> of potable water a day.

For all desalination plants a lining system is needed that is both chemical resistant and suitable to be in contact with potable water.

Time constraints meant that the client was looking for an alternative to the original specified system and QuickSpray Industrial W was chosen as it met and in some cases exceeded the clients requirements.



<b>Client</b>	Naqaa
<b>Consultant</b>	Capital Engineering Consultancy
<b>Coating Contractor</b>	Veolia Sidem and China Gezhouba
<b>Project</b>	Deslination Plant UAQ
<b>Area</b>	220.000 m <sup>2</sup>
<b>Construction Date</b>	2022
<b>VIP System</b>	VIP LiquiShield Aqua Potable water approved containment system



## WATER & POWER PROJECT, QATAR



<b>Client</b>	Ras Girtas Water & Power Projects
<b>Contractor</b>	Hyundai
<b>Consultant</b>	Parsons Brinckerhoff
<b>Coating Contractor</b>	HiTech Projects WLL
<b>Project</b>	Lining of Potable Water tanks
<b>Area</b>	29.000 m <sup>2</sup>
<b>Construction Date</b>	2009
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Aqua – Potable water approved

This drinking water storage reservoir required a long term solution for the protection of the internal concrete structure. Curing and settling / stress cracks could provide an opportunity for water penetration into the concrete structure causing corrosion and eventually degradation of the concrete. Such an outcome would threaten the quality of the water and the integrity of the structure.

VIP provided a fully approved potable water lining solution that displayed excellent crack bridging properties, very high tensile strength, elongation and flexibility.

Being spray applied the lining solution was completely seamless removing the potential for problems at welded joints or rigid coating failures due to substrate cracking.

# LIQUISHIELD PROJECT REFERENCES

## WASTE WATER CONCRETE TANKS, SAUDI ARABIA



GEMS Saudi handles waste water recycling for major Oil & Gas companies in the region. The concrete tanks were lined with a non VIP polyurea 6 months back and had drastically failed due to the inexperience of the applicator overlooking the overcoat windows. VIP was called in for an appropriate and immediate rectification. GEMS wanted to carry out in house applications so VIP trained GEMS as an approved applicator. The entire rehabilitation of 4,000 sqm was carried out in one month and the recycling plant is recommissioned successfully.

Application steps:

- 1) Surface preperation
- 2) Priming
- 3) Application of 3mm QuickSpray Industrial- hot spray applied



<b>Client</b>	GEMS
<b>Consultant</b>	GEMS
<b>Coating Contractor</b>	GEMS
<b>Project</b>	Recoating of waste water concrete tanks
<b>Area</b>	4.000 m <sup>2</sup>
<b>Location</b>	Damman, Saudi Arabia
<b>VIP System</b>	VIP LiquiShield QuickSpray Industrial QuickFill ME

## FEWA-AL ZAWRA RO PLANT-AJMAN, UAE



<b>Contractor</b>	Teknocoat Engineering
<b>Consultant</b>	Federal Water Authority and Electricity, UAE
<b>Coating Contractor</b>	VWS Emirates LLC & Essa Engineering & Marine Services
<b>Area</b>	6.200 m <sup>2</sup>
<b>Location</b>	Al Zawra, UAE
<b>Construction Date</b>	2014
<b>VIP System</b>	QuickSpray Industrial W

VIP QuickSpray Industrial W was approved for the modifications to the SWRO Pre-treatment plant at Al Zawra. The original specifications called for a non-toxic solvent free potable water approved epoxy.

After comparing the physical properties the consultant chose VIP's solution over the original epoxy specified. VIP QuickSpray Industrial W provided not only excellent corrosion protection but also additional benefits over the epoxy system such as very high tensile strength, impact resistance, abrasion resistance, elongation and superior crack bridging properties.

# LIQUISHIELD PROJECT REFERENCES

## WATER AND SEWERAGE BOARD, INDIA



BWS SB and Indian Hume Pipe Co. Ltd. chose the reliability, and experience of VIP's partner in India to supply and apply a Polyurea coating solution to prevent corrosion and abrasion of sewage pipes.

Processing took place in the following steps:

1. Grinding sharp edges and undulations.
2. Filling up the pores with filler material.
3. Primer application – Left tack free 3 hrs.
4. Polyurea coating thickness of 1.5 mm.

A qualified team of applicators was set-up to meet the stringent requirements of the government board. The coated pipes were randomly tested by BWSSB engineers and an independent laboratory. The coating – product and application met all requirements of the specifying engineers.



<b>Client</b>	Indian Hume Pipe Co. Ltd
<b>Consultant</b>	BWSSB
<b>Coating Contractor</b>	TEVO Performance Coatings
<b>Project</b>	Polyurea coating for sewage pipes
<b>Area</b>	10.000 m <sup>2</sup>
<b>Location</b>	Bangalore, India
<b>Construction Date</b>	2015
<b>VIP System</b>	VIP LIQUISHIELD

## POTABLE WATER TANK/DESALINATION PLANT, UAE



The ADDC at Delma Island faced enormous problems with the applied GRP coating for their potable water storage tanks in their new desalination facility. With climatic conditions varying from 10 to 50 degrees Celsius; the storage tanks developed cracks on the concrete after not even one year and the 30 Mio USD plant was stopped. The complete potable water supply of Delma Island was at risk.

Therefore VIP was contacted by the consultants due to their long-time experience in the field of water & wastewater linings combined with the trouble shooting competences of the VIP Crew. Together with VIP's technical team the consultants designed a recoating solution based on

QuickSpray Supreme W, a WRAS and Dubai Municipality potable water approved lining with high elongation and crack bridging properties and a legendary track record.

The old coating was removed, the surface prepared and the VIP linings applied. 2 days later tanks were washed down, tested and filled with water - application finished, down time finished, facility back in process.

Even 3 months later zero reduction in water levels, no cracks, nothing but a completely satisfied client impressed by the speed of the application, convenience and system performance.

<b>Area</b>	Two tanks with 8.800 m <sup>2</sup> in total
<b>Client</b>	Abu Dhabi Distribution Company /ä Corodex Industries
<b>Location</b>	Delma Island, Abu Dhabi, UAE
<b>Coating contractor</b>	FAMECO
<b>Consultant</b>	Dr. M. H. Ali El-Saie Consulting Engineers, UAE
<b>VIP System</b>	QuickFill Express QuickFill QuickPrime SF ME QuickSpray Supreme W @ 2mm approved



# LIQUISHIELD PROJECT REFERENCES

## DUBAI SEWERAGE TREATMENT PLANT



The Dubai Municipality's new mega sewerage treatment plant was built in order to cater for the growing population of Dubai. Such a huge investment in public infrastructure must be protected to ensure the design life expectations can be met.

The Dubai mega sewer plant required 75.000 m<sup>2</sup> of concrete surfaces to be protected against raw sewerage and processed waste water. The proposed solution had to be able to handle substrate movement, impact, abrasion and chemical attack.

VIP's LiquiShield Standard spray applied lining solution met all the requirements and more.

VIP Technical Services supervised the application by a VIP Approved "Elite" application team ensuring a quality controlled application that met the strict specification and application schedule.



<b>Client</b>	Dubai Municipality
<b>Consultant</b>	AECOM / BESIX
<b>Coating Contractor</b>	VIP's applicator network
<b>Project</b>	Lining of sedimentation tanks and digesters
<b>Area</b>	75.000 m <sup>2</sup>
<b>Construction Date</b>	2018
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Standard

## TUMBA WATER TOWER



<b>Applicator</b>	Polyurea Sverige
<b>Location</b>	Tumba, Sweden
<b>Project</b>	Lining of Potable Water Tower
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Aqua – Potable water approved

The water tower for potable water was built in 1961 and serves as a buffer in case of leakage of other pipes in the network. The tower has been empty for several years due to problems with leaks and also visible concrete damage. So it was decided to renovate the tower's inside and outside.

First the old epoxy layer and the damaged concrete was taken away with a highpressure waterjet cutting.

To build back the concrete molds were built and concrete was sprayed to the original thickness. Afterwards a diamond grinding of all surface internal was done and a filler was used to close pinholes.

For building up a new surface protection/water sealing VIP's Quick-Prime 2K Epoxy SF21 and QuickSpray Supreme W (with potable water approval Sweden) were used.

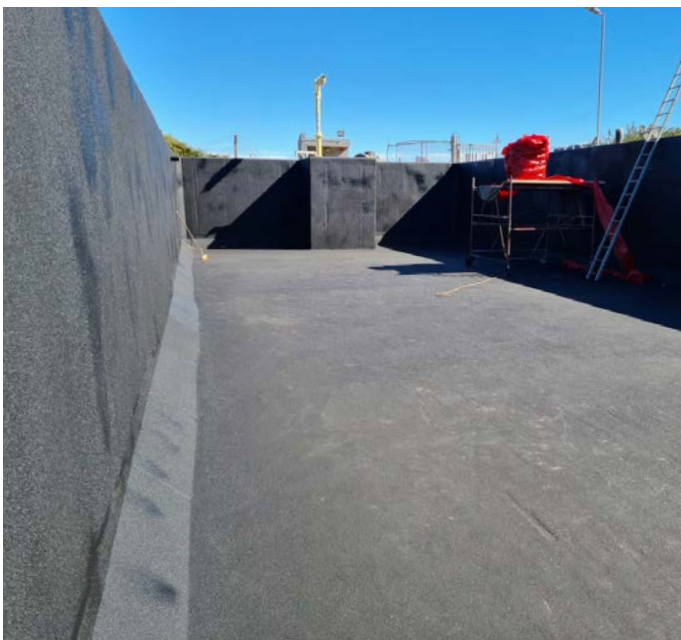
# LIQUISHIELD PROJECT REFERENCES

## ATLANTIS WASTE POND



Polyurea linings and waterproofing was supplied for the new Atlantis waste pond at the water treatment facility at Witsand, Atlantis, about 40km north of Cape Town on the West Coast.

First, the 600 m<sup>2</sup> concrete surfaces of the pond was made even. The entire surface was then coated with VIP QuickPrime 2K SF epoxy primer before a 3 mm coating of VIP QuickSpray Industrial was sprayed onto the internal walls, floor, and over the top of the pond's concrete parapet.



<b>Location</b>	Witsand, Atlantis, South Africa
<b>Applicator</b>	a.b.e. Construction Chemicals
<b>Contractor</b>	Civils 2000
<b>Project</b>	Polyurea lining and waterproofing of the water treatment facility
<b>Area</b>	600 m <sup>2</sup>
<b>Construction Date</b>	2021
<b>VIP System</b>	VIP LiquiShield



## BURAIMI RESERVOIRS



When the Oman Water Authority wanted to refurbish their reservoirs in Buraimi, they turned to VIP Coatings for a solution. The reservoirs were originally constructed of concrete back in 2006 without any internal lining. The Authority wanted to protect an important resource and at the same time prolong the use of the reservoirs.

Liquishield Aqua was chosen as the preferred system as it has WRAS approval and is approved for use with water intended for human consumption and provides a seamless membrane that will extend the life of the reservoirs considerably.

The project was supplied through VIP's Oman distributor, Colossal and the application was carried out by Anticor.



<b>Client</b>	Oman Water Authority
<b>Location</b>	Buraimi, Oman
<b>Supplier</b>	Colossal
<b>Applicator</b>	Anticor
<b>Project</b>	Lining system for water reservoir (Potable water approval required)
<b>Construction Date</b>	2019
<b>VIP System</b>	VIP LiquiShield Aqua – Potable water approved

# LIQUISHIELD PROJECT REFERENCES

## SEA WATER DISCHARGE CULVERT, UAE



This seawater discharge culvert is located 250km's from Abu Dhabi at the Borouge Plastics plant. The culvert was leaking and seawater was permeating into the plant and causing corrosion of the plants pipes and infrastructure support systems. Long term structural damage was being done to the concrete culvert as well.



Long term rectification of the problem was the first priority however minimizing the shutdown time was also a very high priority for the project engineers.



VIP Technical Services were approached in the early stages of the project to provide a solution that not only provided a long term fix for the concrete structure and the plant infrastructure but also a solution that minimized the shutdown time required. The entire project was successfully completed in just 11 days.

<b>Client</b>	Borouge Abu Dhabi
<b>Contractor</b>	Gogas / Granite Construction Co.
<b>Consultant</b>	Tebodin Middle East Ltd.
<b>Coating Contractor</b>	Petro Projects Group Est
<b>Project</b>	Sea water discharge culvert
<b>Area</b>	11.000 m <sup>2</sup>
<b>Construction Date</b>	February 2013
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Standard.

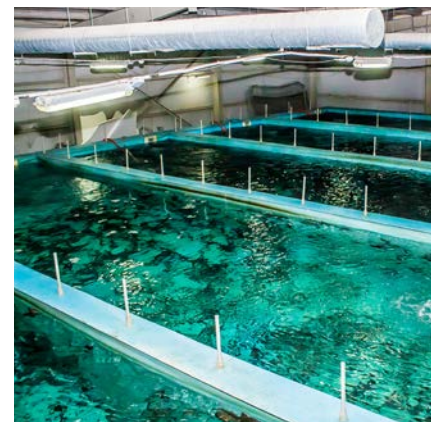
## FISH FARMS, NORWAY



Following a failed lining project Nofitech contacted VIP Technical Services for a solution. VIP Technical Services visited the project site and assessed the problems before providing a solution.

Nofitech entrusted the surface protection of future fish farm constructions to VIP's potable water approved VIP LiquiShield Aqua ,a spray applied seamless, flexible lining exhibiting excellent crack bridging properties, elongation and tensile strength.

VIP Technical Services provided training and technical support services to Nofitech's own application team ensuring a quality application was completed every time.



<b>Client</b>	NOFITECH
<b>Contractor</b>	Norway
<b>Consultant</b>	NOFITECH Engineers
<b>Coating Contractor</b>	NOFITECH
<b>Project</b>	Lining system for Fishtanks ( Potable water approval required)
<b>Area</b>	Various tanks between 3.500 and 4.500 m <sup>2</sup>
<b>Construction Date</b>	2017
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Aqua – Potable water approved

# LIQUISHIELD PROJECT REFERENCES

## DESALINATION PLANT LIMASSOL, CYPRUS



This desalination plant in Cyprus required long term substrate protection against raw salty sea water in the primary collection tanks and a lining that was suitable for storing potable drinking water once the water had been desalinated and refined.

VIP's LiquiShield standard was used in all raw salt water tanks and LiquiShield Aqua (Potable water approved) was used in all desalinated processing and storage tanks.

VIP's solution of providing multiple product formulations to the project saved the customer money and yet still met all the project requirements of a very fast application, fast return to service and a long life time expectancy.



<b>Client</b>	Limassol Desalination Plant
<b>Contractor</b>	Polymer Group
<b>Consultant</b>	Bitelman Architects Ltd
<b>Coating Contractor</b>	Eco&Logi
<b>Project</b>	Lining of the sea water and potable water tanks
<b>Area</b>	3.000 m <sup>2</sup>
<b>Construction Date</b>	2013
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Standard VIP LiquiShield Aqua – potable water approved

## SEWERAGE TUNNEL, IRAN



<b>Client</b>	Water Authority
<b>Contractor</b>	Zharf Kar
<b>Consultant</b>	Mahab Ghodss
<b>Coating Contractor</b>	Anticor Limited, Dubai
<b>Project</b>	Refurbishment of old sewage tunnel
<b>Area</b>	90.000 m <sup>2</sup>
<b>Construction Date</b>	2010
<b>VIP System</b>	QuickPrep concrete repair systems VIP's LiquiShield Standard



This 7 year old sewerage tunnel had badly degraded being fully exposed to sewer water with no substrate protection having been installed at the time of installation. Replacement was not an option.

In order for the pipe to have any hope of lasting its intended design life it needed a long term protective coating solution capable of bridging cracks and remaining flexible to handle future substrate movements. In addition the lining solution had to exhibit high abrasion resistance, high elongation at break properties and excellent tensile strength to handle substrate movements.

Despite the extreme operating environment the complete solution was installed from start to finish in 4 months and has been operating without any issues since 2010.

# LIQUISHIELD PROJECT REFERENCES

## SEWAGE TUNNELS LAHORE, PAKISTAN



The Water and Sewerage Authority of the Punjab province in Pakistan required a high performance lining solution to protect new under road sewage tunnels. The “cut and fill” construction method required an external coating that could provide impact protection against back filling operations and survive a life time buried under the road.

The internal substrates of the tunnel required protection against hydrogen sulphide attack and due to the very high silt levels in the sewer water the lining system had to exhibit very good abrasion protection as well.

VIP’s LiquiShield standard lining system met all these criteria and due to its excellent crack bridging properties and flexibility provided long term protection against substrate settling cracks.



<b>Client</b>	WASA (Water And Sewerage Authority- Punjab Govt.)
<b>Location</b>	Lahore, Punjab, Pakistan
<b>Consultant</b>	National Engineering Services Pakistan (Pvt) Limited (NESPAK)
<b>Coating Contractor</b>	AHT Services LLC, Dubai, UAE
<b>Project</b>	Internal and external lining of under road sewer tunnels
<b>Area</b>	26.000 m <sup>2</sup>
<b>Construction Date</b>	2015
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Standard

## FISHFARM, SCOTLAND



Marine Harvest a leading fish farming company required a tank lining system that would protect the internal tank surfaces, be easy to clean and provide a smooth surface that would not damage the fish.

VIP's LiquiShield Aqua lining system was chosen due to its potable water certifications, seamless spray applied application and due to its speed of application.

VIP Technical Services provided on-site technical support during the application process to ensure a high quality, within specification application was achieved.



<b>Client</b>	Marine Harvest
<b>Location</b>	Inchmore , Scotland
<b>Consultant</b>	Inhouse
<b>Project</b>	Lining system for Fishtanks ( Potable water approval required)
<b>Area</b>	5000 m <sup>2</sup>
<b>Construction Date</b>	2018
<b>VIP System</b>	QuickPrep concrete repair systems VIP LiquiShield Aqua – Potable water approved

# VIP'S FAST TRACK COATING SOLUTIONS: TOUGH, SUSTAINABLE & COST EFFECTIVE.



EN-LS 01/2021



VIP is a leading solution provider of high performance surface protection systems. Our integrated system approach includes substrate repair and preparation products, priming and pre-treatment systems, high performance coatings and superior aesthetic finishes.



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