

GAS STATION

**Degassing, Cleaning and Lining
Technologies for Tanks,
Sumps and Pipes**



The Right Way To A Sustainable Gas Station

The durability of Wolf tank Austria systems grant important savings and the best possible total cost of ownership. A wide range of system solutions have been developed and certified according to national and international product standards.



Over 30 years of tracked installation records and trusted expertise

Wolftank Austria products have been successfully installed in over 25.000 aboveground and underground tanks for several thousand clients all over the world.

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Your Partner For Decades



SAFE

Protect your investment & environment. Extend the equipment lifetime as long as possible.



EFFECTIVE

Avoid leakages and loose products thus get affected financially and operationally.



COMPLIANT

Be compliant with local legislations, standards and best practices.

Key Figures

More than 30 years, our systems have been designed to protect the environment.

More specifically, we are teaming up with you to protect one of the most valuable resources on the planet:

air, water and soil



**More than 5M. m²
coating with
EPOFLEX® products**



**More than 1M. m² re-
furbished to double
wall / floor with the
DOPA® system**



**Operating in more
than 30 countries
across all continents**



**3,000 vacuum and
pressure leak
detection systems
(EN13160 Class 1)
installed**



**More than 11,000 sat-
isfied customers**



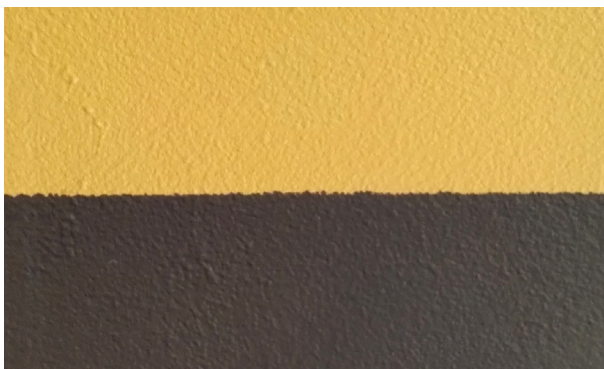
**More than 30 years of
experience**

RESEARCH & DEVELOPMENT

The integrity of tanks, pipes, sumps and forecourt of retail fuel systems is essential to avoid soil and water pollution and fuel loss in gas stations. Woltank Austria products are designed for field fabricated retrofits and refurbishments as entire linings, chemical protective coatings and batch reparation solutions. A safe operation of the plants is ensured by Woltank Austria technologies for degassing and cleaning.

Worldwide Certified Solutions

The exceptional protection Woltank Austria provides for their clients' assets is represented by the exclusive DOPA® registered trademark and embodied in the experience Woltank Austria has accumulated since our first day of work, transforming storage facilities into double-walled tanks, complemented by remotely viewable continuous monitoring in order to ensure worldwide the same quality standards.



ADAPOX DSF application

The focus of recent developments is on non flammable, solvent free materials making installation operation more safe. It requires less investment in protective equipment and lower costs in transport and storage in order to make global distribution more easy.

STAY COMPLIANT ALL OVER THE GLOBE

Training Center

As of today, Woltank Austria instructed more than 100 companies located in Europe, Asia and Africa for the application of resins. In line with the approaches of quality management, Woltank Austria trains technical people of customer as well as quality inspectors.



Technician ready to start his work

Trainings usually consist of:

- a theoretical part
- a practical part
- the supervision phase

Woltank Austria offers support not only for the training, but also for the initial supervision period for the training.


Woltank Austria's worldwide network of quality inspectors is continuously growing and regularly informed about best practice and news.

EXTRACT OF REFERENCE LIST

Final Customer	Lining Systems supplied to our Installation Partner	No. of Tanks	Project Completion
Total Italy	DOPA® Double Wall Conversion and Installation of Vacuum Leak Detection Systems in the Retail Net	> 1000	2018
EM Italy	DOPA® Double Wall Conversion and Installation of Vacuum Leak Detection Systems in the Retail Net	> 800	2017
ENI Italy, Austria & France	DOPA® Double Wall Conversion and Installation of Vacuum Leak Detection Systems in the Retail Net	>1500	2016
Total Africa	ADASYS & EPOFLEX® Structural Tank Lining in different African Countries	> 500	ongoing
Total China	DOPA® Double Wall Conversion of Underground Storage Tanks	> 50	ongoing
INA Group Croatia	ADAPOX® Structural Tank Reinforcement and DOPA® Double Wall Conversion	> 100	ongoing
BP United Kingdom	DOPA® Double Wall Conversion of Underground Storage Tanks	> 300	2013
Shell China	DOPA® Double Wall Conversion of Underground Storage Tanks	> 50	ongoing
Tamoil Italy	DOPA® Double Wall Conversion and Installation of Vacuum Leak Detection Systems in the Retail Net	> 800	ongoing
Sinopec China	DOPA® Double Wall Conversion and Installation of Vacuum Leak Detection Systems in the Retail Net	> 1500	ongoing

Single and double wall tank lining in 3 days

DOPA® systems help you achieve bringing sensible financial and risk savings while keeping your operations smooth and safe.




i Double wall tank installation with DOPA® 6n

No loss of sales by ensuring business continuity

The durability of Woltank Austria systems grants to our customers important savings and the best possible total cost of ownership. A wide range of system solutions have to be developed and certified according to national and international standards.

Safe degassing & cleaning without manhole opening

Traditional cleaning via Man-Entry is among the procedures with highest HSE exposure. As an improvement to this procedure, Woltank Austria developed degassing & cleaning technologies even able to avoid opening the manhole.

 Surface preparation with TCR® Rust Converter

No sand blasting or special equipment required

Woltank Austria's surface preparation is among the safest, fastest and cost-effective solutions to treat a corroded surface. No special equipment is necessary and even waste or residuals are completely avoided.

Safe Tank Lining

Accessible Anywhere

The changes gas stations are facing in times of new energy sources, aging assets and aggressive fuel corrosive require innovative solutions to preserve the value of the assets. Woltank Austria has focused to provide smart solution in order to repair and line tanks, pipes and sumps accessible for anybody in any country and without interrupting the stations operation to make a sustainable investment.

Over decades the fuels for mobility did not change significantly and consisted basically in diesel and gasoline. Recent tendencies lead to two main new challenges: different energy sources such as electric energy, LNG and hydrogen and bio additives to the existing fuels. Both are challenges which the existing facilities need to be made read for in order to keep competitive. As many gas stations are aging, this is an additional challenge requiring smart investments to preserve the asset values.

Rehabilitate instead of rebuild in times of decreasing fuel consumption.

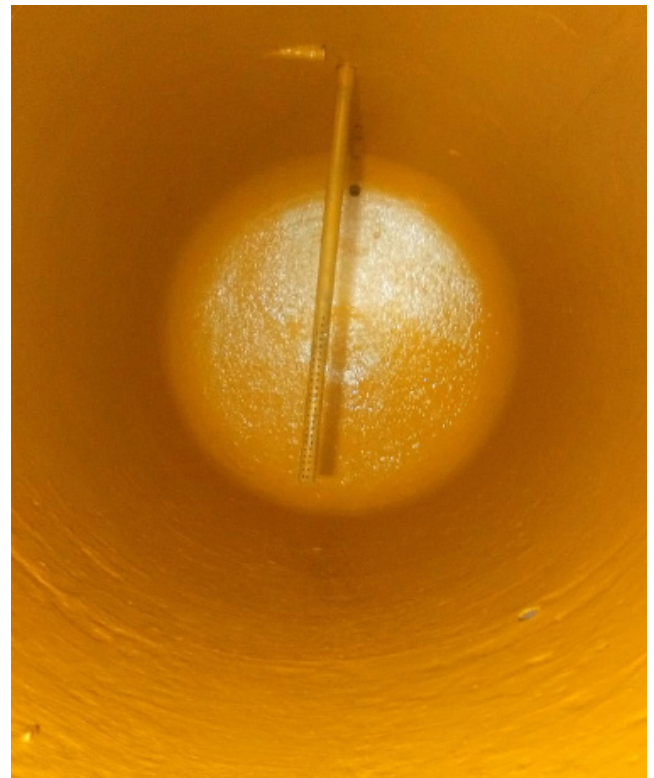
The new energy mix and the improved engine technologies lead to an overall decrease of the consumption of diesel and gasoline. However, the demand to preserve the tanks, sumps and pipes against aging and corrosion keeps unchanged. While the main reason for tank substitution in past is the requirement to increase the storage capacity, today the main challenge is to preserve the existing asset to keep it profitable despite and during the



Corroded tank surface before Woltank Austria operation

This is achieved by structural lining and double wall conversion solutions which can be

installed without or with a minimum affect on the business continuity working at open stations. The available technologies of structural tank lining are able to provide even a longer second life time to the tanks than the average lifetime of newly installed tanks.



Rehabilitated tank surface after Woltank Austria operation

The second main challenge the station owner of underground tanks are facing is the introduction of biofuels. Biofuels behave significantly more corrosive to the steel and fiberglass tanks than traditional fuels.

Make the tanks ready for long term storage of bio-fuels.

Tank and sump lining technologies can repair pit corrosions and preserve tanks against a future corrosive aggression which can lead to spills for single wall tanks and interstice integrity alarms for double wall tanks within shortest times. Lining materials have been specially designed to be solvent free, non-flammable and on long term resistant to aggressive biofuels including pure ethanol. Recent developments of envi-

Especially the recent developments of environmental friendly, solvent free lining materials allowed to make safe tank lining accessible for anybody. While traditionally only companies available to invest in expensive equipment and having big continuous campaigns were able to provide safe tank lining, now the safe and efficient technologies can also be provided to companies and countries with small retail nets. The mentioned technological transitions need to be solved everywhere, in more than 200 countries of the world!

Product Index



Tank and Sump Access

TCR® Degassing

TCR® 6/7 - Tank Cleaning

TCR® 15 - Tank Cleaning



Simplified Methods

DOPA® Lite - Double Wall Conversion

EPOFLEX® - Tank Lamination

EPOFLEX® DOM - Sump Lining

EPOFLEX® DOM - Sump Sealing



High End Methods

DOPA® 6n - Double Wall Conversion

EPOFLEX® 6n - Tank Lining

ADAPOX® DSF - GRP Tank Lining

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Wolftank Austria solutions making sump and tank access more safe.

16

Wolftank Austria simplified installation methods particularly competitive for small Campaigns (e.g. up to 30 tanks/year).

20

Wolftank Austria traditional installation methods developed for companies with tank lining as core business.

TCR[®] Degassing

Atomization of hydrocarbon encapsulating liquid to lower the presence of explosive gases as an advanced degassing solution for tanks and sumps without manhole opening and entrance into confined spaces.



**NO MANHOLE
OPENING
NECESSARY**

**READY-TO-
USE LIQUID**

**QUICK &
EASY TO
IMPLEMENT**

TCR[®] Atomizing Agent application 

Simplified Schematic Method of Statement

Prestatus:
• Safe Sump
Access

1
Empty tank
through
flange

2
Introduce TCR[®]
Atomizing
Agent

3
Measure ex-
plosive level

Key Equipment

1. Atomization Unit
2. Tools to disconnect flange
3. Explosimeter

Result:

**Temporarily
degassed and more
safe atmosphere**

TCR[®] 6/7 - Tank Cleaning


Advanced technology for washing, degreasing and degassing which can be applied without opening the manhole.

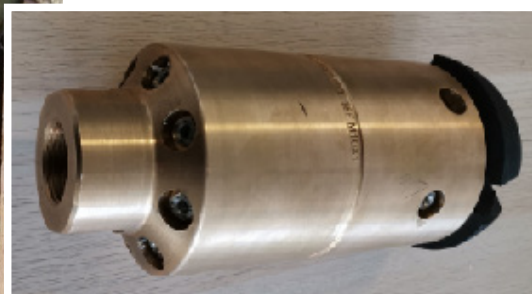



APPLICABLE
TROUGH 4"
FLANGE


EX ZONE 0
APPROVED

NO-MAN-
ENTRY
CLEANING

 TCR[®] 6 washing unit



 TCR[®] 7 suction unit

 TCR[®] 6/7 applied through the 4" flange

**Simplified
Schematic
Method of
Statement**

Prestatus:
• Safe Sump
Access

1
Empty tank
through
flange

2
Pressure
wash tank
(TCR[®]6)

3
Suck water
and post
wash
(TCR[®]7)

Key Equipment

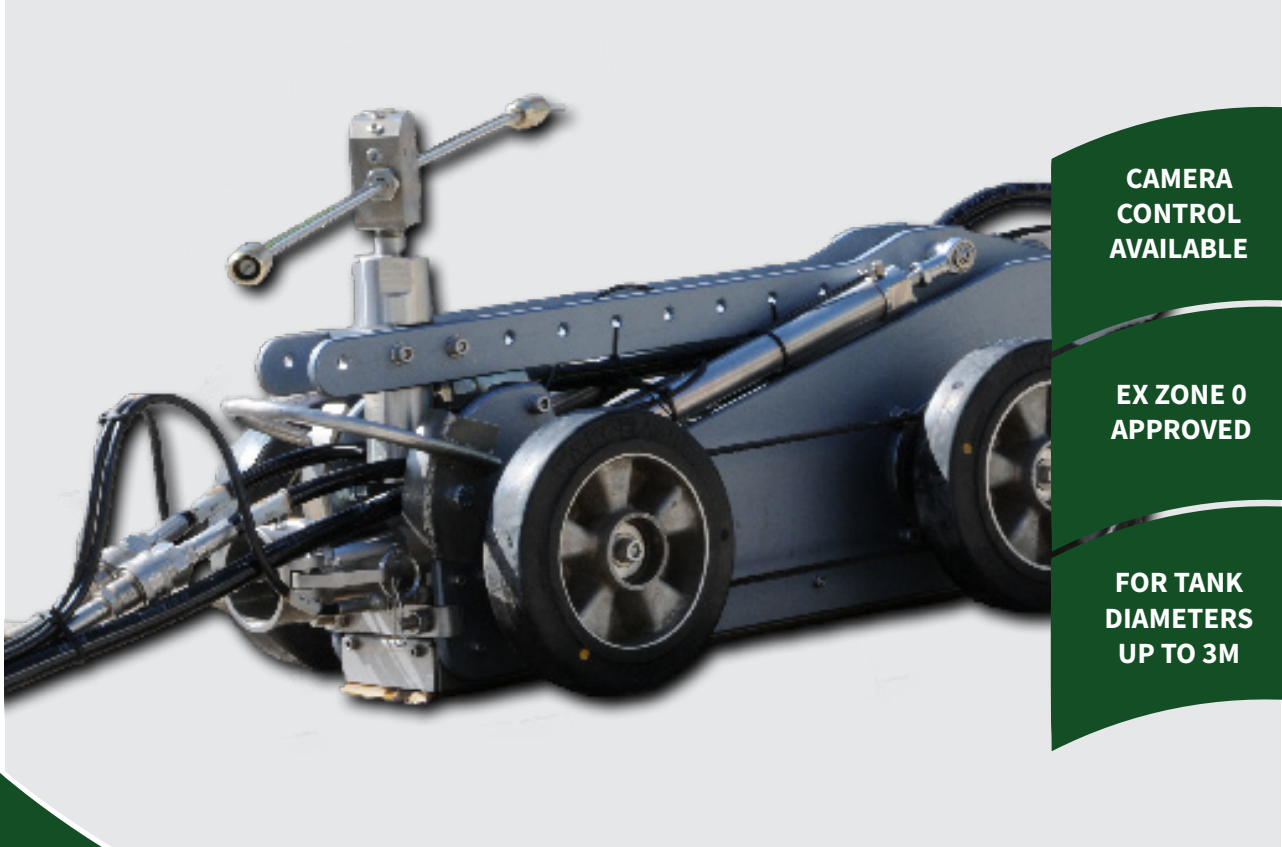
1. TCR[®] 6 washing unit
2. TCR[®] 7 suction unit
3. Cleaning truck or other suction systems
4. Tools to disconnect flange
5. Explosimeter

Result:

**Degassed and
degreased tank**

TCR[®] 15 - Tank Cleaning

High performance automatized washing, degreasing and degassing technology with optimized water consumption and robotic remote control of the process.



CAMERA
CONTROL
AVAILABLE

EX ZONE 0
APPROVED

FOR TANK
DIAMETERS
UP TO 3M

TCR[®] 15 robot 

Simplified Schematic Method of Statement

Prestatus:
• Safe Sump
Access

1
Empty tank
through
flange

2
Open
Manhole

3
Introduce TCR[®]
Atomizing Agent
(optional)

4
Wash and
suck with
TCR[®] 15

Key Equipment

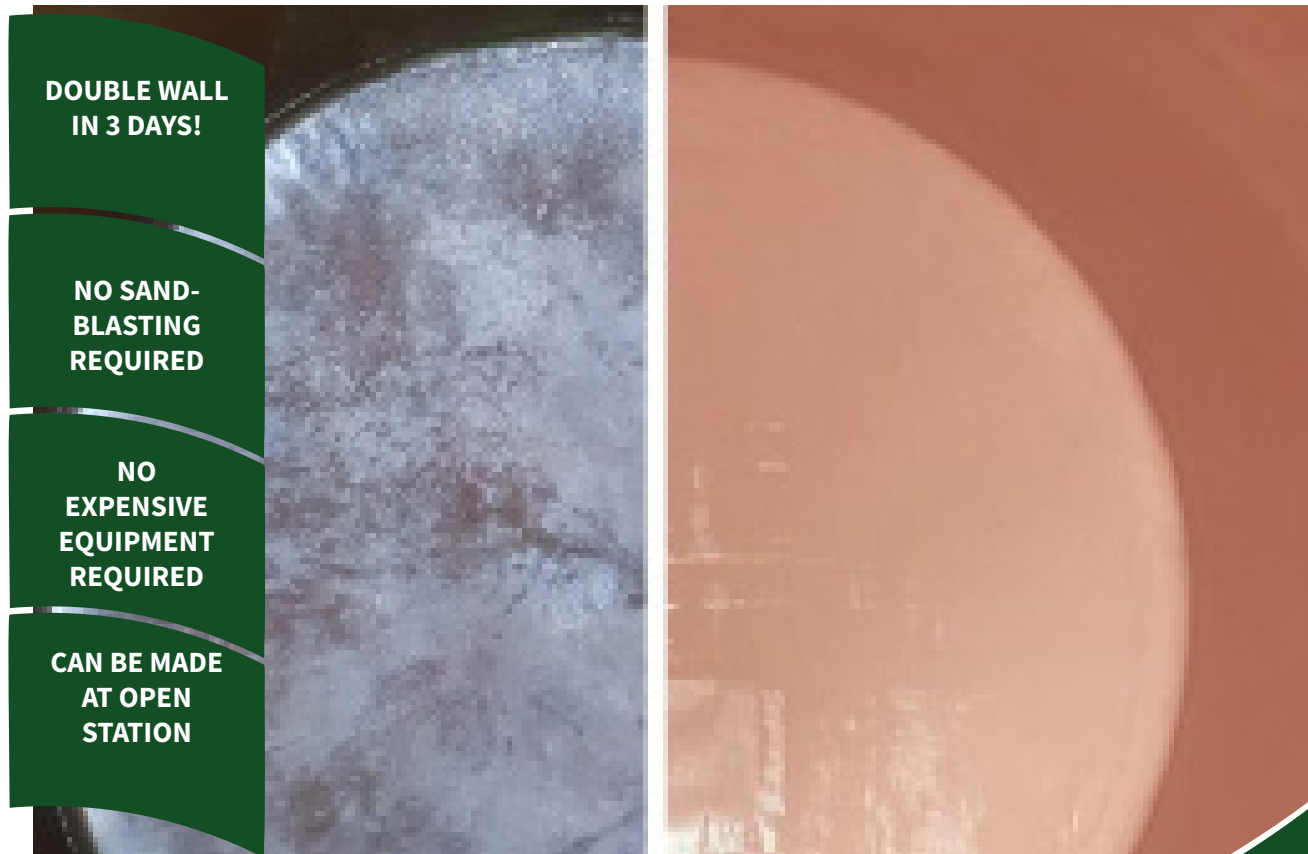
1. TCR[®] 15 robot
2. Cleaning truck or other suction systems
3. Tools to disconnect flange
4. Explosimeter
5. Atomizing Equipment
(only if degassing made before manhole opening)

Result:

Degassed and degreased tank

DOPA® Lite - Double Wall Conversion

The most easy way to make a double wall conversion with vacuum interstice monitoring without investment in expensive equipment and without any hot works and flammable materials.



i DOPA® Lite before (left) and after (right) application example

Simplified Schematic Method of Statement

Prestatus:
• Degassed
• Degreased

1
Apply primer

2
Create interstitial space

3
Apply GRP reinforcement

4
Apply top layer

5
Apply antistatic layer

Key Equipment

1. Laminate application tools
2. Tank entry equipment
3. Tank ventilation equipment
4. Quality control equipment
5. Vacuum pump
6. Spray unit
(only recommended if processed more than 30 tanks per year)

Result:

Rehabilitated 24/7 vacuum monitored double wall tank

EPOFLEX® - Tank Lamination

The most easy way to line a severely corroded tank without investment in expensive equipment and without any hot works and flammable materials.



Applied EPOFLEX® tank lining in an underground storage tank **i**

Simplified Schematic Method of Statement

Prestatus:
• Degassed
• Degreased

1
Convert rust
(TCR® Rust Converter)

2
Apply Glass
Fiber
Laminate

3
Roll top layer

4
Apply anti-static layer
(optional)

Key Equipment

1. Laminate application tools
2. Tank entry equipment
3. Tank ventilation equipment
4. Quality control equipment
5. Spray unit
(only recommended if processed more than 30 tanks per year)

Result:

**Structurally
reinforced tank with
second lifetime**

EPOFLEX® DOM - Sump Sealing

The quick way to stop water entrance in case of any local crack, hole or similar damage.

**NO INTERRUPTION
OF TANK
OPERATION**

**NO NEED OF
SPECIALIZED
INSTALLER**

**ONLY FEW
HOURS
REQUIRED**



i EPOFLEX® DOM sealing applied and restored basic functionality

**Simplified
Schematic
Method of
Statement**

Prestatus:
• Degassed
• Degreased

1

**Apply primer
or prep.
surface**

2

**Apply
sealing**

Key Equipment

1. Rubber spatula

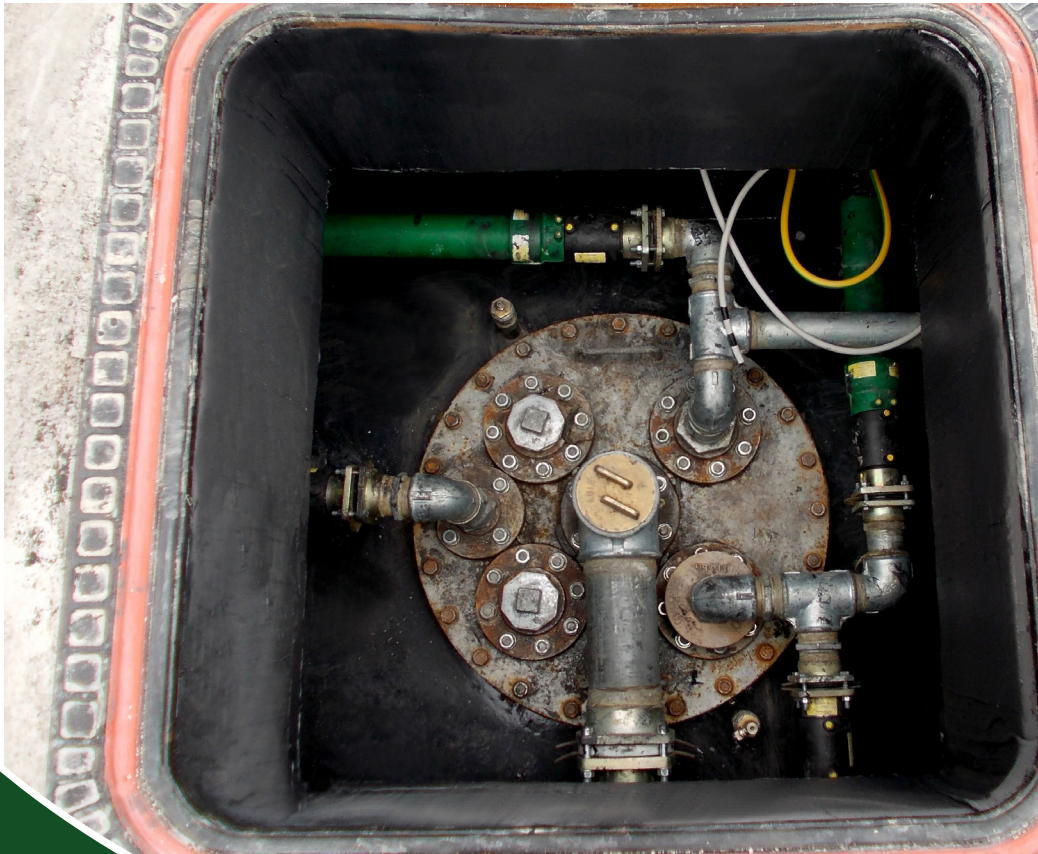
Result:

**Rehabilitated
basic functionality of
the sump**

Simplified Methods

EPOFLEX® DOM - Sump Lining

The approved way to line the sump structurally in order to avoid water entrance and soil contamination through the sump by rehabilitating the functionality of a tank in case of any local crack, hole or similar damage.




**NO
INTERRUPTION OF
TANK OPERATION**

**NO
EXPENSIVE
EQUIPMENT
REQUIRED**

**ONLY 1-2 DAYS
REQUIRED**

**APPLICABLE
FOR STEEL,
CONCRETE
AND FRP**

Structurally lined sump with EPOFLEX® DOM 

Simplified Schematic Method of Statement

Prestatus:
• Degassed
• Degreased

1
Apply primer
or prep.
surface

2
Levelling &
corner
radius

3
Apply GRP
reinforcement
antistatic lining

Key Equipment

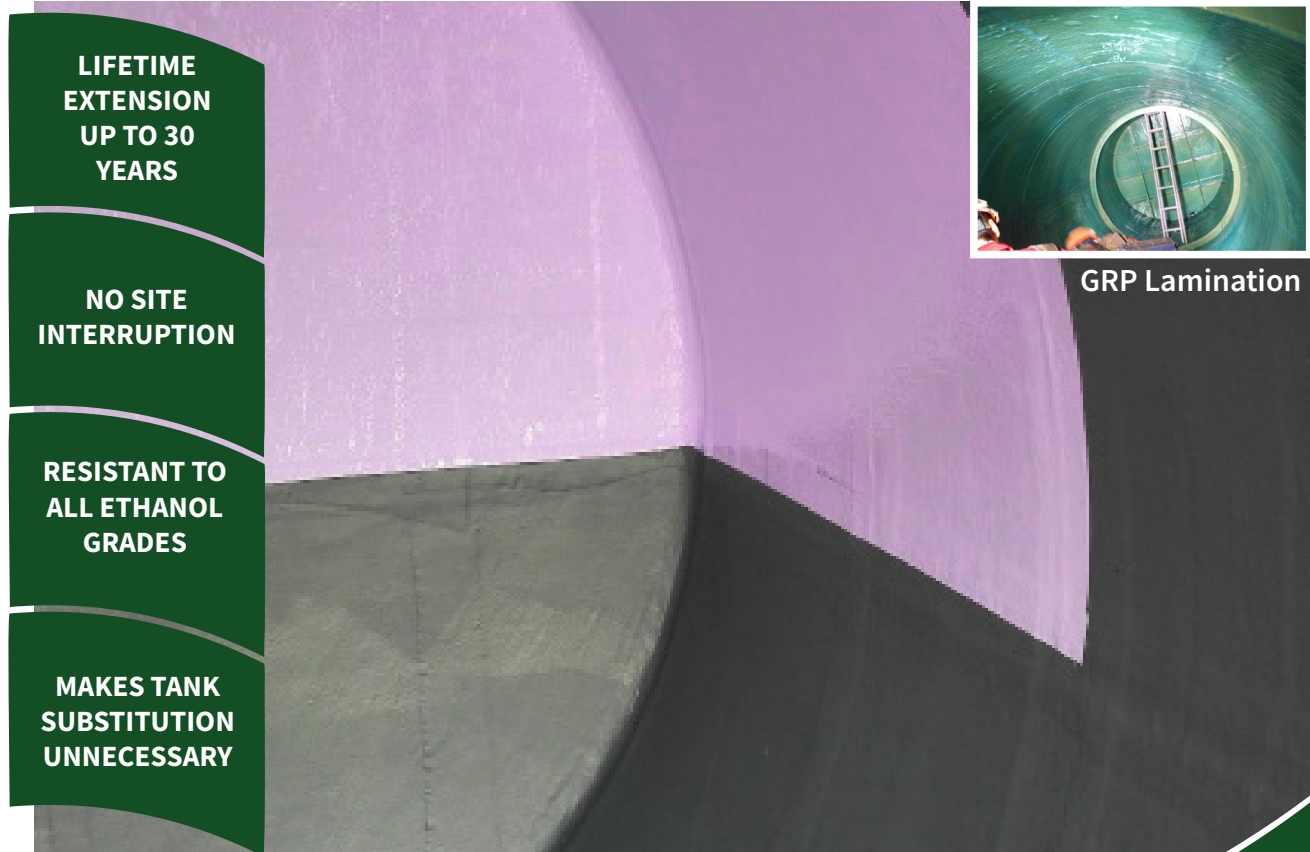
1. Sump lamination tools
2. Sump ventilation equipment
3. Surface preparation equipment


Result:

**Structurally FRP
reinforced
rehabilitated sump**

DOPA® 6n - Double Wall Conversion

The most advanced solution with longer average lifetime than new tanks. Double wall conversion with vacuum interstice monitoring gaining highest possible lifetime extension without hot works and flammable tank lining materials required.



 DOPA® 6n applied in an underdround storage tank with antistatic layer

**Simplified
Schematic
Method of
Statement**

Prestatus:
• Degassed
• Degreased

1
Prep. surface
& apply base
layer

2
Create
interstitial
space

3
Apply GRP
lamine

4
Spray top
layer

5
Apply anti-
static layer
(optional)

6
Install leak
detector

Result:

**Rehabilitated 24/7
vacuum monitored
double wall tank**

Key Equipment

1. Lamine application tools
2. Tank entry equipment
3. Tank ventilation equipment
4. Quality control equipment
5. Vacuum pump
6. Spray unit
7. Blasting equipment
(only used for the traditional method)

EPOFLEX® - Tank Lining

The approved way to protect the tank against future corrosion in order to keep the storage safe for modern aggressive fuels. Furthermore spills and soil pollution are avoided.



Reinforced tank completely protected with EPOFLEX® tank lining 

Simplified Schematic Method of Statement

- Prestatus:
- Degassed
 - Degreased

1
Prepare surface

2
Spray layer

3
Apply anti-static layer (optional)

Key Equipment

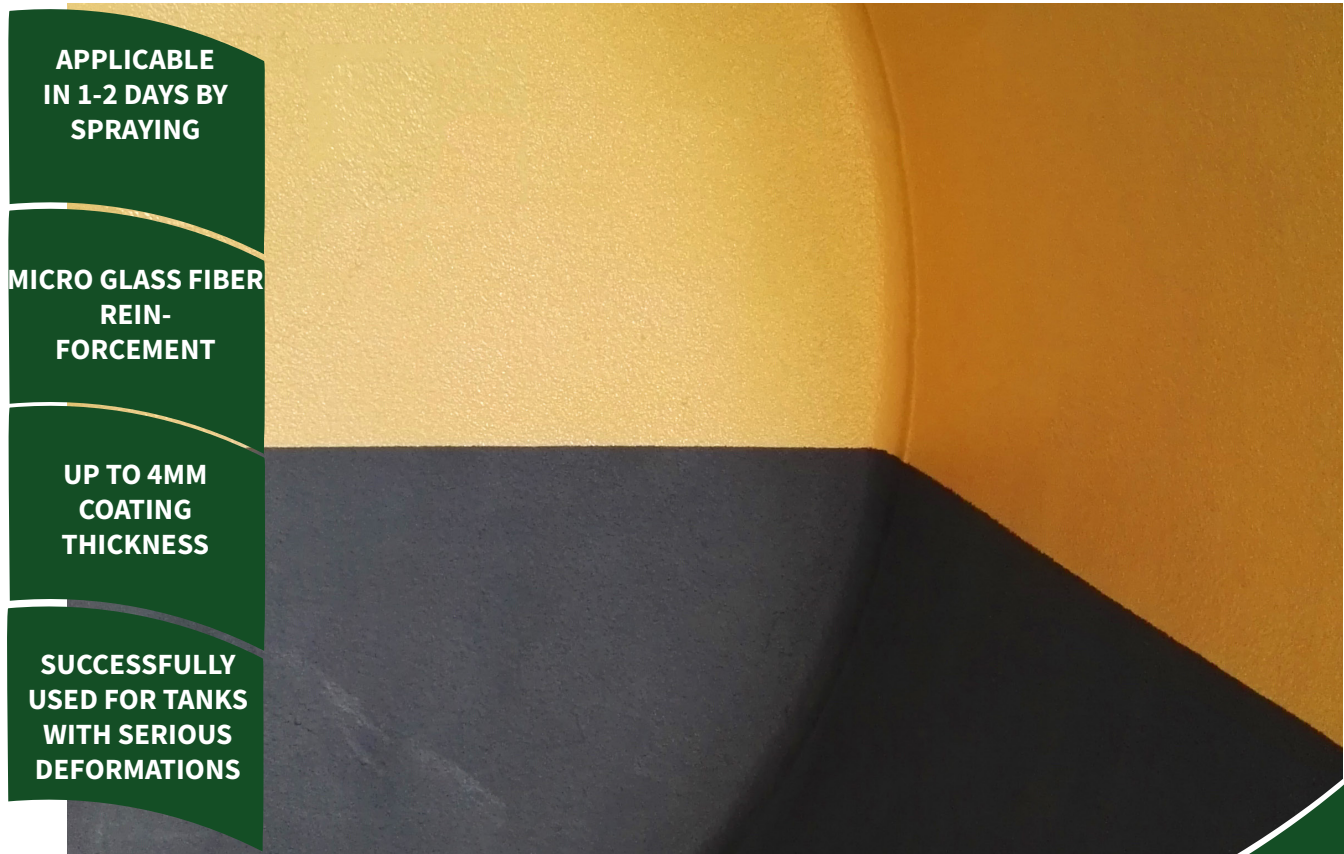
1. Tank entry equipment
2. Tank ventilation equipment
3. Quality control equipment
4. Spray unit
5. Blasting equipment
(only used for the traditional method)


Result:

Protected tank with second lifetime

ADAPOX[®] DSF - GRP Tank Lining

The thickest and strongest glass fiber reinforcement for tanks with serious structure issues.



 ADAPOX[®] DSF applied in an underground storage tank with antistatic top layer

**Simplified
Schematic
Method of
Statement**

Prestatus:
• Degassed
• Degreased

1
Prepare
surface

2
Spray GRP

3
Apply anti-
static layer
(optional)

Key Equipment

1. Tank entry equipment
2. Tank ventilation equipment
3. Quality control equipment
4. Spray unit
5. Blasting equipment
(only used for the traditional method)

Result:

**FRP reinforced tank
wall**

INTERVIEW WITH Dr. Matteo Ciarapica

Wolftank Group COO

* Interview excerpt from Oil & Gas Technology Magazine



How does continuous monitoring protect your investment in storage capacity?

Oil & Gas Technology: Why is the tank an asset to be maintained?

Matteo Ciarapica: The construction of a new storage tank is a high investment in an asset that, over the entire lifecycle, is exposed to harsh conditions such as environmental influence and storage of chemically aggressive goods. The operation of a storage tank therefore requires periodic maintenance to avoid steel corrosion, product loss as well as safety and environmental risks.

OGT: What does the 24/7 monitoring consist of?

Matteo Ciarapica: In order to enable the launch of a leak detection system it is necessary to have a tank with an interstitial surveillance space created by a double wall. We have developed a system to install a second wall that we call DOPA®. The interstice we connect to a local or remote leak detection system that identifies variations by registering the surveillance pressure. The system analyses these variations automatically and allows the preview of deviations from the default operative conditions, such as a loss of the interstice monitoring pressure, and can even identify manipulation of the system.

OGT: Which tank types can be transformed or retrofitted?

Matteo Ciarapica: Any atmospheric or underground storage tank, any steel or concrete tank, either new or in use, examples go from 5m³ up to 100m in diameter.

Generally, it can be applied on the entire tank surface. However, the most corrosion affected part in above ground flatbottomed tanks is the bottom itself. As this area can normally not be inspected visually during operation without emptying the tank, DOPA® enables its constant monitoring. In case of underground tanks, such as tanks at petrol stations, the European standard require a 360° double wall installation.



OGT: Can the double wall DOPA® system only be installed in new tanks?

Matteo Ciarapica: No, it can also be applied in older tanks later in the lifecycle. The installation requires only a few weeks of downtime, thus the process can be carried out in combination with a scheduled standard maintenance.



Follow us and never miss an opportunity!

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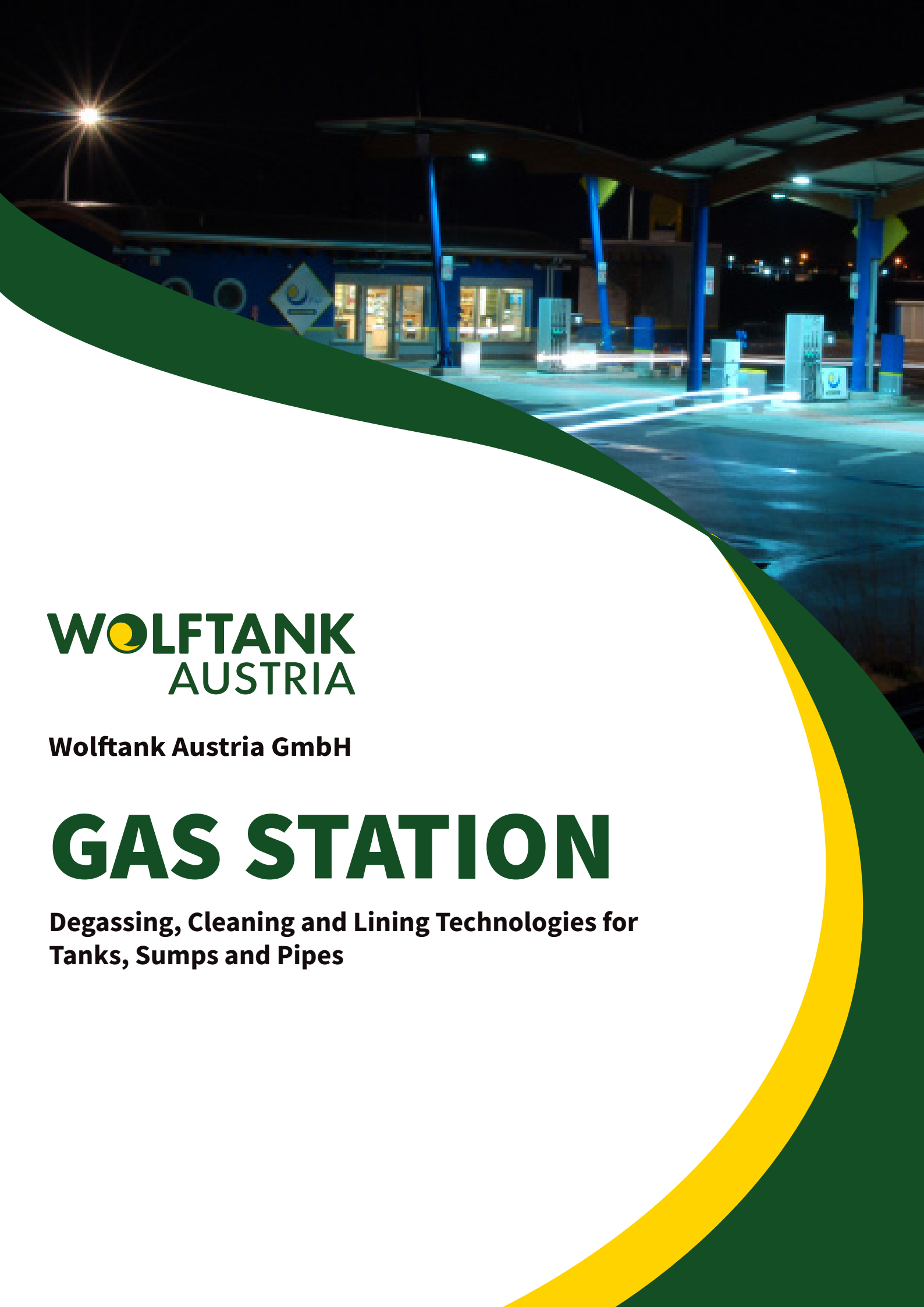


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WOLFTANK
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Wolftank Austria GmbH

GAS STATION

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Tanks, Sumps and Pipes**