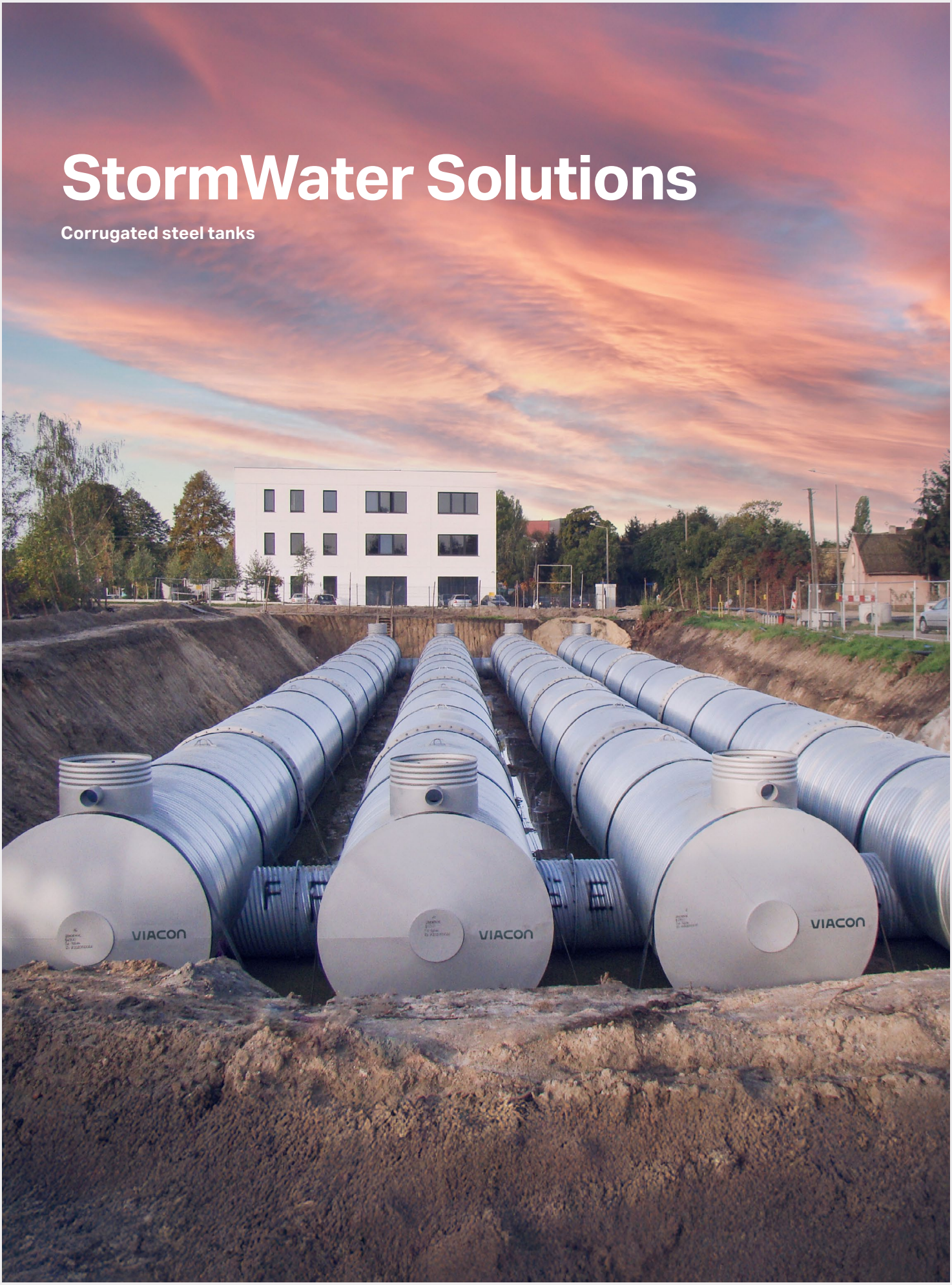
StormWater Solutions

Corrugated steel tanks



Learn more at viacongroup.com

VIACON

ViaCon StormWater solutions, critical solutions for managing increasing weather volatility

ViaCon's StormWater solutions, made of helically wound corrugated steel pipes, offer a robust and versatile approach to water management. These systems can be utilised for various applications, including storage of rainwater and firefighting water, gravity-based rainwater drainage, infiltration systems for industrial and environmental applications, precipitators for primary wastewater disposal, oil separators for removing surface water contaminants, and vertical pump chambers.

ViaCon water tanks are used in a wide range of applications, including:

- Irrigation of agricultural fields, parks, gardens, and sports facilities
- Cooling of data centres and process water for industrial applications
- Rainwater use in residential complexes and public buildings
- Infrastructure projects such as data centres, parking lots, roads, warehouses, and logistics centres
- Community facilities like housing, schools, supermarkets, and parks

Durability in aggressive environments

High-strength steel, corrosion protection, and a simple structure all ensure longevity of ViaCon tanks in all kinds of environments, including aggressive ones.

Customisation & value engineering

ViaCon's bespoke solutions combine retention, infiltration, and carrier piping creates cost-effective solutions that reduce space requirements and eliminate the need for extra manholes. Our pipes can be custom made in different diameters and lengths.

Cost advantages

Take advantage of total cost advantage versus competing materials, such as plastics and concrete for larger projects subject to loads, water contamination, and space constraints.

Supporting sustainability goals

Up to 70% reduced CO2e footprint when compared to similar solutions made of other materials. Steel is also environmentally friendly as it is 100% reusable.

Time-saving installations with easy maintenance access

Experience up to 80% faster installation, paired with simple maintenance through standard manholes – making our solution a practical, cost-effective, and sustainable choice for stormwater management.

Designed to bear traffic loads

ViaCon steel tanks are designed to withstand traffic loads throughout their service life and can support temporary construction traffic, including trucks and cranes, with appropriate load calculations. Please contact us to carry out such calculations.

ViaCon **Reuse**

Tap into the possibilities of rainwater harvesting to capture, store and treat rainwater for sustainable reuse applications, such as data centre cooling and irrigation.

ViaCon **Storm**

Manage and store stormwater to mitigate the challenges of increased rainfall or drought due to climate change.

ViaCon **Fire**

Provide reliable, accessible water for firefighting at industrial, commercial, or remote sites to ensure greater fire safety.

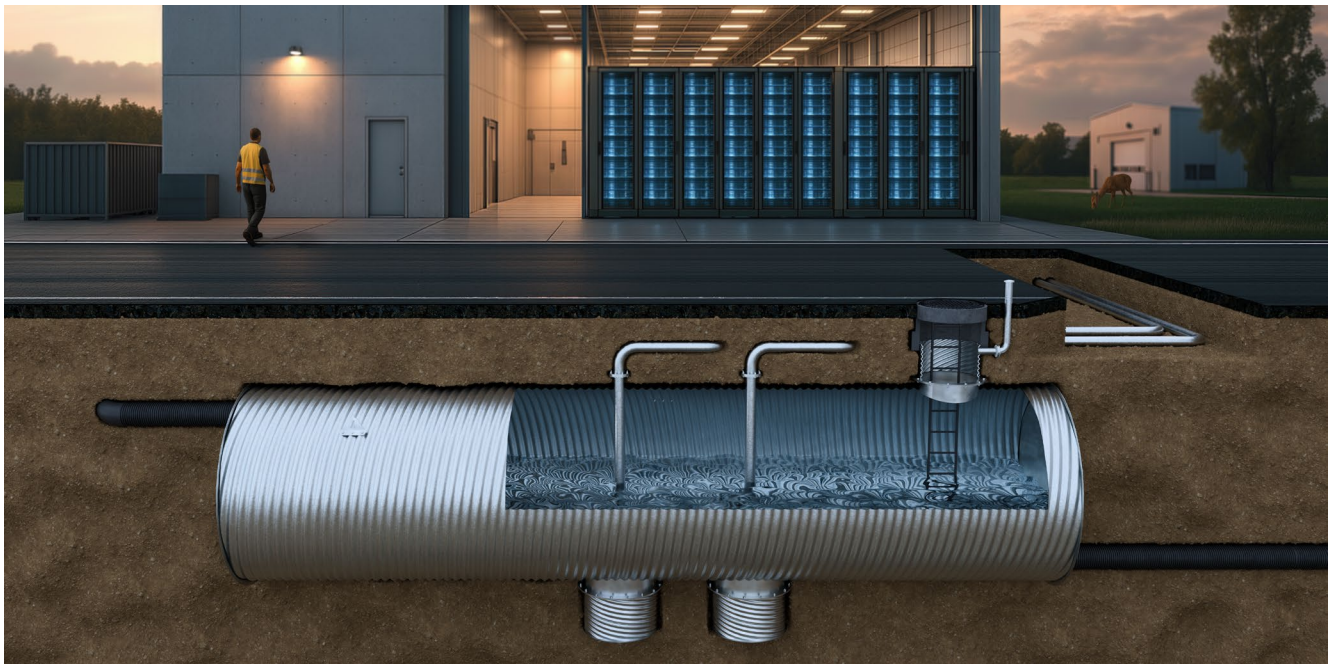
ViaCon **Treat**

Treat stormwater to reduce load on downstream filtration systems and improve water quality for stormwater attenuation tanks.

ViaCon **Reuse**

One effective solution to address climate-change-driven water management challenges is capturing and reusing rainwater. This approach helps maintain balance in water resources while mitigating the risks of unpredictable flooding.

Water is a valuable resource that can be utilised not only for irrigation in agricultural facilities but also for cooling data centres. By utilising water tanks for storage and reuse, high-volume water management becomes more efficient and sustainable.



Case Study: Managing water resources at the Hippodrome race course

Heatwaves and water shortages are becoming increasingly common across Europe. As a result, the sustainable management of water resources has become a pressing challenge. Unpredictable flash floods and sudden droughts are reshaping daily life and placing additional pressure on water supplies. This calls for effective solutions, such as water tanks that support both water conservation and flood prevention. At a Hippodrome racecourse in France, these challenges were addressed through the implementation of water reuse systems and stormwater management solutions to mitigate flooding risks.

Case Study: Harvesting rainwater for a sustainable cooling solution

In 2020, ViaCon Sweden was tasked with finding an alternative water source for data center cooling, as the local municipality couldn't meet the demand.

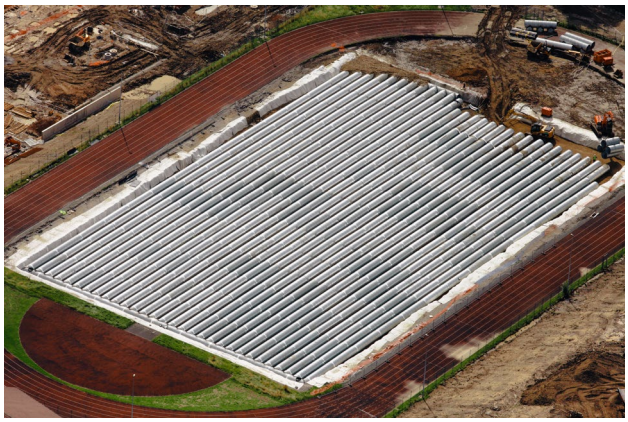
The solution: harvesting rainwater from an industrial roof using ViaCon Reuse water tank systems. Designed, delivered, and assembled by ViaCon, the system provided a cost-effective, eco-friendly alternative to concrete and plastic tanks – offering superior sustainability, lower costs, and quicker installation.

ViaCon **Storm**

With climate change intensifying, cities are increasingly confronted with challenges, such as sudden and unpredictable flooding. To maintain the functionality of urban infrastructure, even during heavy rainfall, effective stormwater management is essential.

Urban planners are recognising the critical role of stormwater retention, infiltration, and surface drainage in sustainable city planning. Underground water tanks play a key role in flood prevention and groundwater infiltration, ensuring efficient management of excess water.

Large stadiums, for example, rely on water tanks to handle heavy rainfall without the risk of flooding. By capturing and storing rainwater, these systems help keep playing fields in optimal condition while contributing to sustainable water management. This approach benefits both the environment and the experience of fans, creating practical and eco-friendly solutions.



Case Study: Stormwater Attenuation for Educational Facilities

As part of the Building Schools for the Future programme, Greenhead School needed a solution to manage runoff from its large sports grounds. Based on past success, the contractor chose ViaCon's steel tank system. A 6,541 m^3 Twinstore tank – the largest of its kind at any UK school – was installed beneath the sports field and running track, connecting to the public sewer. Remarkably, it was assembled in just 12 working days.

Case Study: Innovative Soakaway Solution

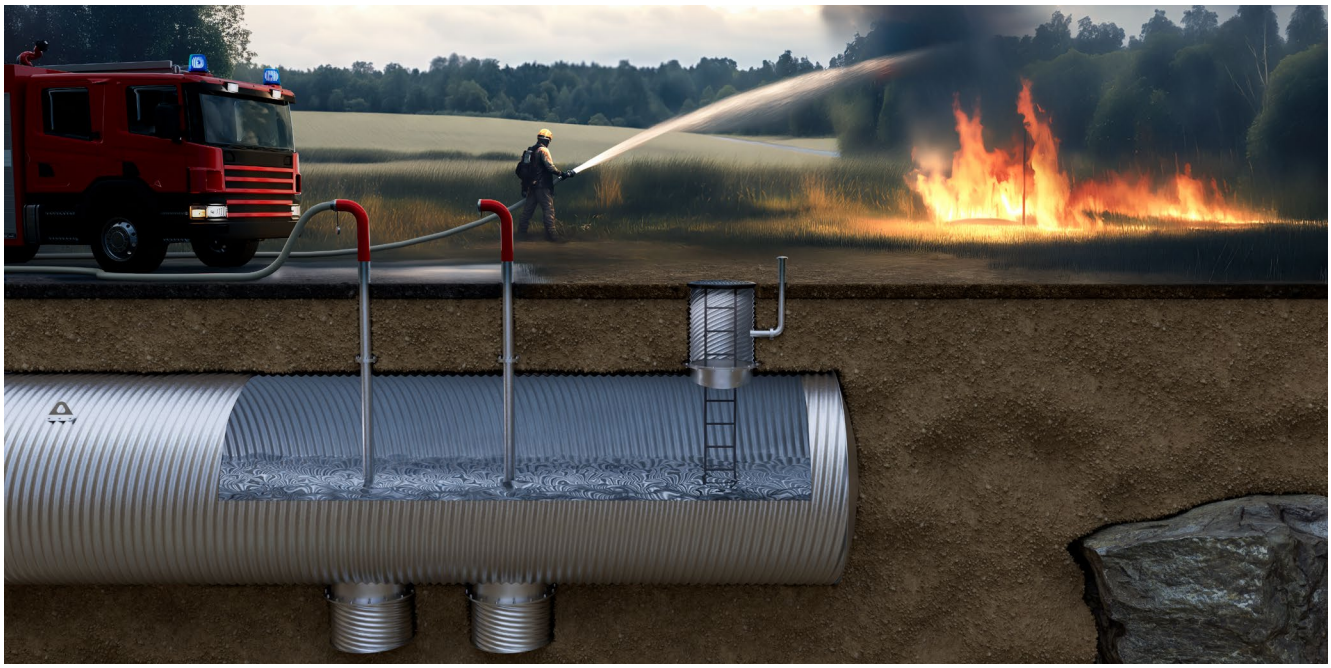
During the construction of the "Junction" gateway at Newlands Park, Luton, initial ground tests revealed insufficient percolation at standard depths. ViaCon UK engineered a bespoke solution: a 3,300 mm diameter perforated steel soakaway tank, structurally designed for a 10-meter installation depth. This innovative approach ensured effective stormwater management within a constrained footprint, overcoming challenges that traditional materials couldn't address.

ViaCon **Fire**

Fire tanks are specialised water storage systems designed to provide a reliable and accessible water supply for firefighting purposes. Typically installed at industrial sites, commercial properties, and remote and residential areas, fire tanks can be equipped with pumps and hoses to deliver water quickly in the event of an emergency. These tanks are usually built to comply with local fire safety regulations and are often located in areas where water pressure may be insufficient or unreliable.

The use of a filtration system can be added to filter out any contaminants due to runoff or heavy rainfall to ensure the water remains safe for use in firefighting.

An alternative use can be the collection of the effects from firefighting in certain industries, with the tanks collecting the run-off for managed removal by a waste management company.



Case Study: Installation of fire water tanks in Vilnius city

At a commercial construction site in Vilnius, limited space required an innovative firewater storage solution. ViaCon Baltic engineered a compact, high-capacity system by integrating a suction pipeline into a custom-built pit, allowing the entire tank volume to be fully usable.

Two separate tanks were installed – serving indoor and outdoor fire suppression – each equipped with an automated filling valve and integrated overflow system. The design minimised footprint while maximising efficiency, reducing both installation time and overall cost.

Case Study: Retaining a more sustainable fire tank solution

In Kaunas, Lithuania, the original plan for a 204 m^3 fiberglass fire tank with a concrete base was reconsidered mid-project. ViaCon engineers proposed a spiral corrugated steel solution – a more durable, cost-efficient, and sustainable alternative.

The switch significantly reduced both material and installation costs, while offering greater structural integrity and long-term performance. This case highlights how value engineering can improve both project economics and environmental impact.

ViaCon **Treat**

ViaCon vortex separators are highly efficient at separating solids like sand, grit and debris from liquids, reducing the load on downstream filtration systems and improving water quality for our stormwater attenuation tanks. Their compact design and low maintenance requirements make them effective and popular in both small-scale and large-scale systems.

ViaCon vortex separators are advanced hydrodynamic separation (HDS) units designed for sustainable urban drainage systems (SUDS) to ensure reliable water quality treatment. These manufactured treatment devices (MTDs) exceed German stormwater standards (DWA M153 D24 & D25) and meet NJDEP 2021 testing requirements. They can be used both online or offline, with or without an external bypass unit, incorporating multiple water purification processes.

Advantages

Long-term efficiency and low maintenance

ViaCon vortex separators are designed for long-term performance with minimal maintenance, reducing costs and enhancing reliability. Their robust and compact design ensures efficient operation over time, reducing the need for frequent servicing. A smart choice for both small and large-scale stormwater management systems.

Flexibility in installation

It can be used both online and offline, with or without an external bypass unit. Factory-fitted in a ViaCon prefabricated chamber with an approved lifting ring, it ensures safe and easy installation. Designed for integration into various chamber types, including steel, concrete, PE, and GRP, it also offers a wide range of connection possibilities.

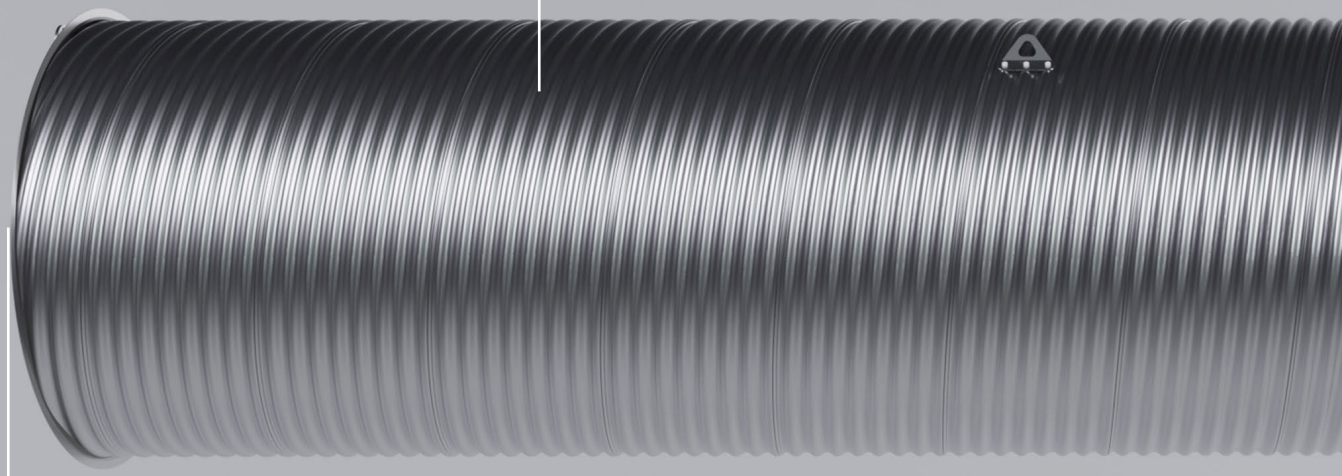
Certified quality

Meets and exceeds all German stormwater treatment standards under DWA M153 D24 and D25 and has been tested according to NJDEP 2021 and DiBT requirements.

Advantages during operational use

It can be maintained using conventional equipment, with floatables retained and easily removed from the water surface layer. Settled solids and sludge are prevented from remobilisation and can be accessed via the hinged platform.

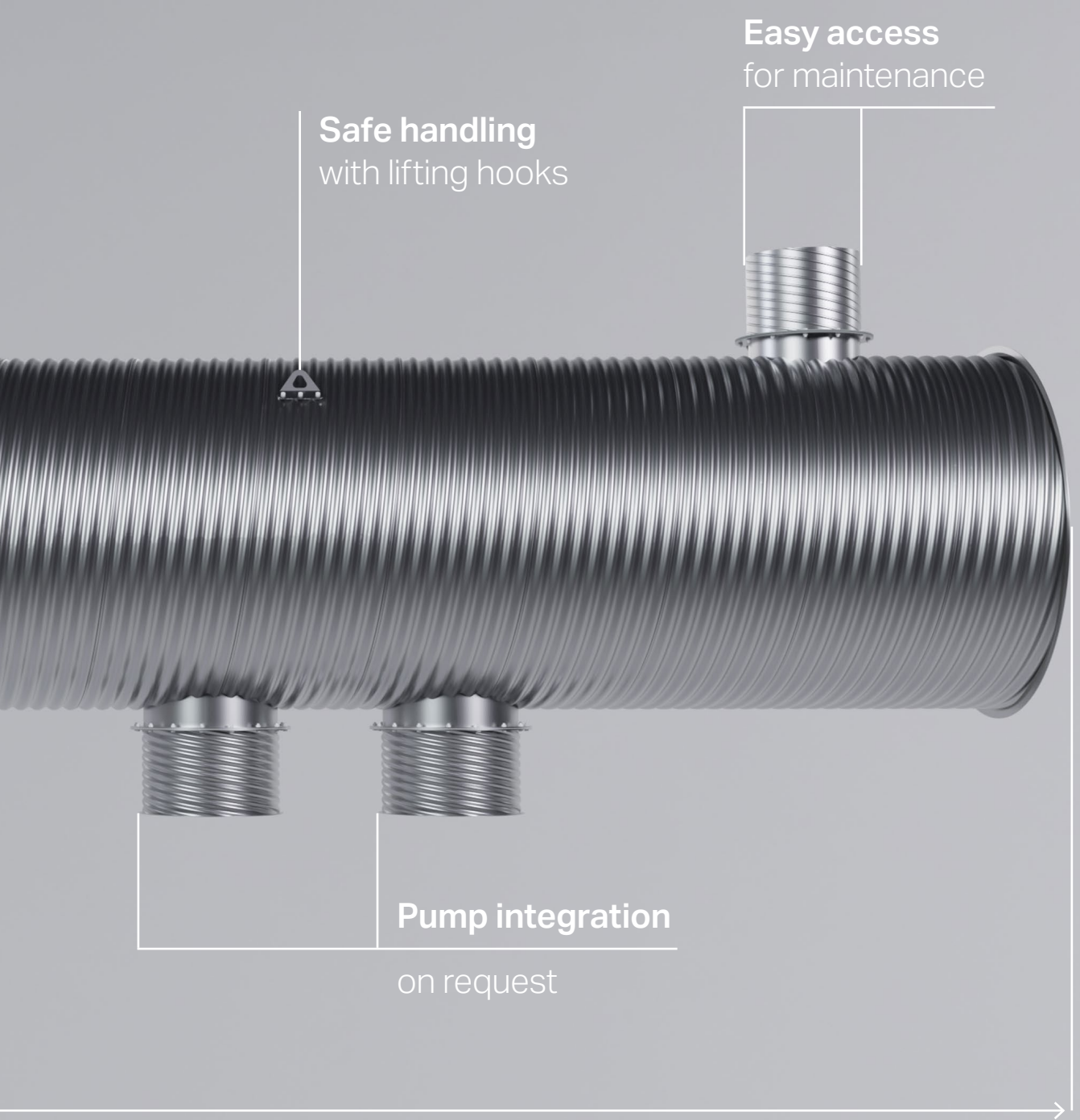
High durability
Zinc-coated steel.
Optional polymer protection



Any length

Our tanks are fully customisable*

**The example shown is one of many configurations. Design, dimensions, and features are tailored to each project based on requirements, model, application, and production site.*


Easy access
for maintenance
Safe handling
with lifting hooks
Pump integration
on request

ViaCon tank construction

Tanks of various diameters from 1000 mm to 3800 mm (including compressed profile tanks) are available. Production includes the manufacturing of the reservoir body itself as well as the manufacturing of end caps, inspection wells with ladders, inlet and outlet nozzles and connections between reservoirs. The reservoirs are manufactured in sections and, if necessary, connected using gaskets-fitted flanges on site.

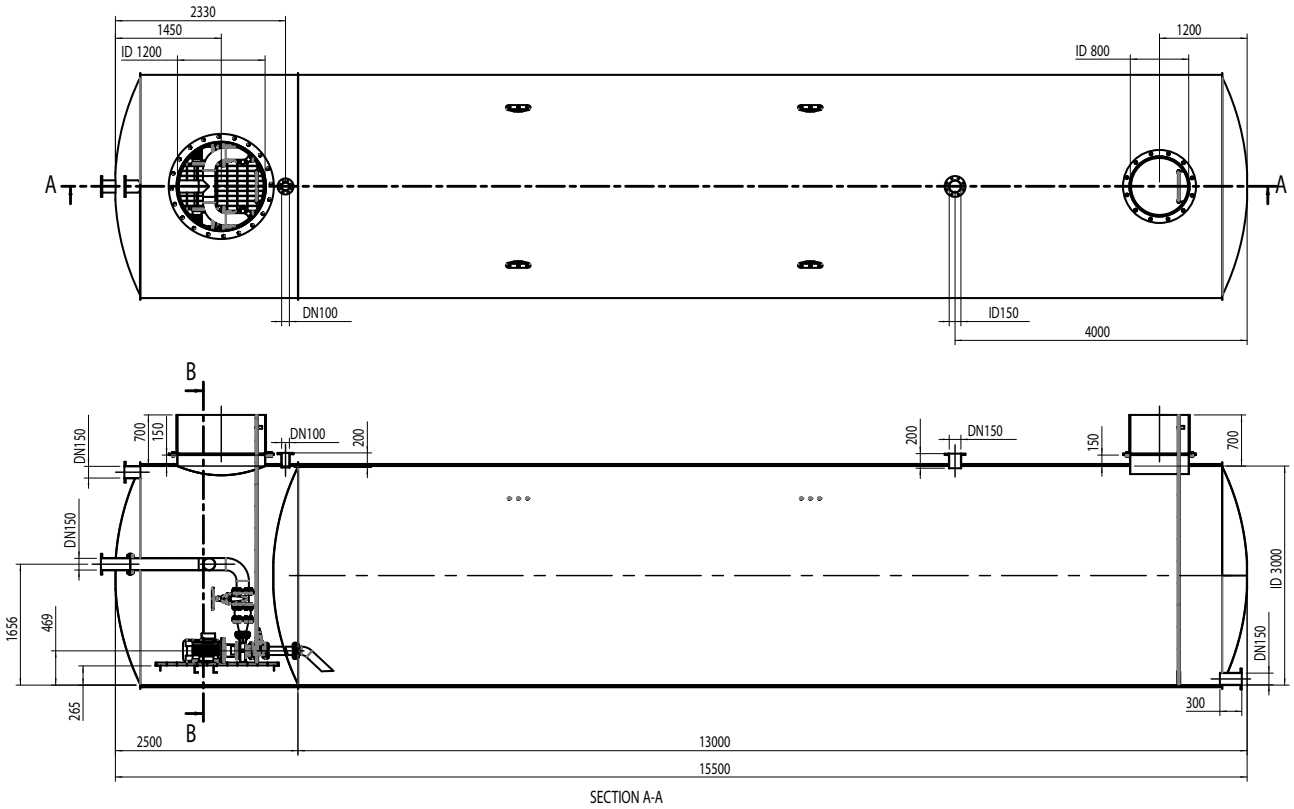
Steel of class S250GD or DX51D used for the manufacture of tanks is protected against corrosion with:

- 42 µm thick zinc coating in accordance with the requirements of EN 10346 standard.
- If necessary, an additional layer of polymer coating of at least 250 µm thickness on both sides of the sheet, which significantly increases the corrosion resistance, in accordance with the requirements of EN 10169. The durability of corrosion-protected steel in aggressive environments is over 100 years.

Value Engineering & Customisation

Smarter design, lower costs, lasting performance.

We optimise every project through innovative solutions, customised piping, and sustainable choices — reducing waste, saving space, and cutting unnecessary costs without compromising quality.



Example drawing: Dimensions and design may vary depending on the model and customer requirements.

HelCor pipes, from which tanks are made, are mainly used for laying sewage pipes and other water transmission facilities, as well as for the construction of road culverts. Due to the optimal properties of the materials, it is ideal for the construction of devices with constant contact with running or standing water.

ViaCon water tanks are a great alternative to expensive and labour-intensive reinforced concrete, plastic or fibreglass tanks. Spirally corrugated steel pipes have excellent strength parameters, so they can withstand the high load caused by interaction with the soil. For this reason, pipes and tanks made from corrugated steel can be operated underground at great depths, with a layer of soil several metres or more above them.

Reservoir end caps and inside partitions are made of an analogous sheet metal used to make the tank body. The back cap is connected to the tank casing by an angle welding seam with a thickness of at least 3 mm. The tightness of the seam is checked by the penetrating paint method. In the event of a positive leak test, the welds are protected against corrosion by a zinc-saturated paint coating and an additional polymer coating.

Similarly, nozzles of various diameters for liquid inflow, outflow, overflow, as well as for air ventilation, inspection wells, etc., can be welded to the tank body or end caps. If necessary, flanges of various pressure classes (PN) can also be welded to the nozzles. Pipes, swirl damping plates, pumps, etc. can be installed inside the tank.

The anti-corrosion treatment of all steel elements, as well as welds, edges and fasteners, is performed by the manufacturer indoors.

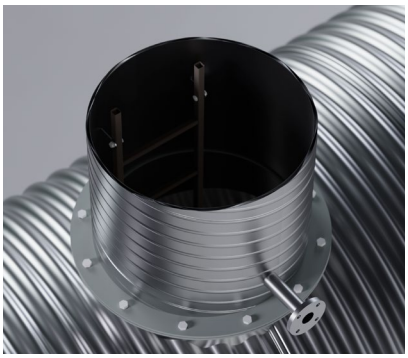
-77%

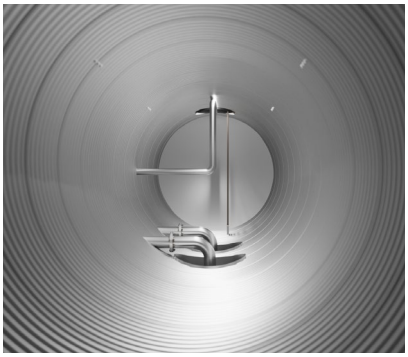
Less CO2 emissions compared to concrete

A study commissioned by the Canadian Corrugated Steel Pipe Institute (CSPI)* concluded that corrugated steel pipes cause 77% less CO2 emissions in their entire life cycle compared to reinforced concrete pipes.

The greatest advantage of corrugated steel pipes over concrete pipes is their significantly lower mass.

To learn more about the carbon footprint of ViaCon solutions, visit the carbon calculator for your country on our website.





*Comparative life cycle assessment of CSPI's 1,800 mm corrugated steel pipes with North American reinforced concrete pipes, Groupe GECO

Why steel?

Galvanised steel pipes offer several advantages over plastic or concrete pipes, making them a popular choice for various applications due to a number of key benefits galvanised steel pipes provide:

Durability and strength

Galvanised steel pipes are highly durable, have a high resistance to impacts, external pressure, and heavy-duty usage. Ideal for environments subject to mechanical stresses, such as industrial and construction sites, they offer long-lasting performance.

Lifespan

ViaCon tanks are designed for a service life of at least 60 years, which can extend to up to 120 years when using polymer-coated steel, subject to site conditions and proper installation.

Corrosion, fire and temperature resistance

The zinc coating on galvanised steel pipes provides exceptional protection against rust and corrosion, significantly extending their lifespan in most environments. Additionally, their fire resistance makes them a safe choice for fire protection systems and high-risk environments. Galvanised steel pipes can withstand temperatures ranging from -40°C to 100°C, outperforming many plastics in extreme conditions.

Maintenance and environmental impact

With easy repair options and minimal maintenance needs, such as access shafts for cleaning, galvanised steel tanks are cost-effective in the long run. Additionally, they are fully recyclable, offering a sustainable alternative to concrete and plastic pipes.

Transport and unloading

The tanks are delivered to the construction site by road vehicles. During loading and unloading, all safety requirements described in the separate installation instructions for the tanks must be observed.

Please contact ViaCon specialists for installation instructions.

Installation

General instructions

The installation requirements for the tanks are described in separate tank installation instructions. Please contact ViaCon specialists for the installation instructions.

Installation equipment and tools

The installation is carried out manually and using mechanical equipment such as a crane, excavator, loader, vibratory plate with an internal combustion engine.

Installation work is usually performed by a small team.

Restoration of anti-corrosion coating

Local damage to the anti-corrosion coating during the transportation, unloading and installation of ViaCon StormWater tanks can be easily repaired using the anti-corrosion coating materials supplied by the manufacturer with the tanks.

The surface restored according to the manufacturer's recommendations ensures no worse quality than the factory-made product. The restoration of the anti-corrosion coating of the tanks is described in a separate instruction.

For instructions on restoring the anti-corrosion coating, please contact ViaCon specialists.

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Constructing connections.
Consciously.

www.viacongroup.com

ViaCon is a leader in infrastructure construction solutions. Built on strong Nordic roots, ViaCon embodies a practical, human perspective that brings together technology and verifiable sustainability. The long-term view defines our vision, and by driving smart, future-friendly construction solutions for bridges and culverts, geotechnical and stormwater solutions, we will continue to shape and lead our industry.

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