



Roediger

ABOUT US

Wastewater management with vacuum technology

Innovative solutions for environmental protection, urban development and industry

A brand of
Aqseptence Group



Protecting water. Shaping the future: A company with a vision

No life without water - a fact that obligates us all to use this resource carefully and protect it for future generations. While this should be self-evident, it's easier said than done. Climate change, population growth, and dwindling groundwater reserves are increasing the urgency of addressing the threat of water shortages. The fact that it's now time to act is demonstrated by the vehemence of daily reporting and by a change in societal thinking. How can we use water more sparingly? How can we retain precious water in cities? But also, how can we recover as much water as possible and further minimize the threat of contamination?

“There is a broad spectrum of new challenges in the global water and wastewater sector, and we provide tailored solutions to meet them.”

A significant contribution to this can be made by rethinking wastewater technology: shifting away from conventional gravity sewers towards innovative vacuum technology that reduces water consumption. This facilitates the separation of material flows and enables the recovery of energy and nutrients from wastewater. Vacuum technology ensures hygienic conditions even in the most remote and arid regions of the world. Moreover, it opens up numerous opportunities for urban planners, architects, wastewater disposal companies, construction firms, sewage treatment plants, engineers, and various industries worldwide.

No problem at all:

Roediger® vacuum technology can do this

From individual toilets to complete, kilometer-long vacuum sewer systems, Roediger® has revolutionized wastewater management with vacuum technology. When we first entered the field of vacuum technology in the 1970s, our primary concern was to collect and transport radioactive wastewater from nuclear medicine with absolute reliability, while minimizing the proportion of contaminated water.

Today, our technology is not only present in hospitals but also in nature reserves, mountainous regions, soccer stadiums, on board German Navy vessels, and in large hotel complexes and congress centers. In addition to safety and reduced water consumption, vacuum technology offers many other advantages.



Saves not only water - but
time & money

4.5m

We can lift wastewater
up to **4.50 m**

Offers the possibility of



source separation

for easier recovery of resources

No exfiltration

Can be used in
confined spaces

150cm



A shallow pipe laying depth is not a problem - on average it is only **150 cm**

Suitable for domestic and
commercial connections



6m/s



Wastewater is simply removed faster at **6 m/s**

44km

The largest vacuum station in the world is from Roediger®. It is in use on the artificial island of Palm Jumeirah. Connected to it is a **44 kilometer long pipe network**.



Whether vacuum sewer systems or vacuum sanitation technology, as the world's leading system provider, we not only supply individual components but also offer comprehensive solutions from A to Z. To ensure our customers receive the best possible support, we are pleased to provide the complete package: expert advice, on-site assistance, and continued service and after-sales support.

“ We are ...

Enablers

What drives us at Roediger® is more than just technology. With over 100 employees worldwide, a drive for progress, and numerous innovative ideas, we create new opportunities, set new standards, and shape the future. We do it for people, our environment, our world, and for future generations. We asked employees what they like about Roediger®.



Jelena Ratkovic,
Head of Service & After Sales

“We don't just move with the times; we strive to stay one step ahead. That's why we prioritize listening to our customers and providing a platform for our employees and colleagues to exchange feedback, suggestions, and ideas. This fosters an inspiring atmosphere and cultivates a sense of family within our company. At Roediger®, diversity is a core value, as people with various educational backgrounds, cultural origins, and nationalities collaborate harmoniously.”

“We take great pride in the continued excellent performance of our systems, some of which have been on the market for 40 years. This longevity not only speaks to the extraordinary quality of our products but also necessitates close coordination with our customers and a dependable team. At our core, **we are a strong team** comprising highly trained staff who consistently prioritize customer satisfaction.”



Ireneusz Kubek,
Managing Director

Experts

On the move globally



Innovative

“Roediger® boasts a remarkable 180-year legacy, with several decades of expertise in vacuum technology. Over my 30-year career, I've had the privilege of being involved in numerous highlights. One notable project is the Palm Island in Dubai, the world's largest vacuum station endeavor. Additionally, participating in various standardization committees to advance the technology has been another rewarding experience. Despite the challenges, all of this remains enjoyable, particularly from a business development standpoint.”



Marco Wanke, Team Leader Commercial Support Service and After Sales

“I began my journey at Roediger® in 1997 as an apprentice, gradually advancing through different roles to my current position as Team Leader for Commercial Support Service and After Sales. What sets our company apart is the **excellent blend of experienced and younger employees, fostering a strong sense of collegiality and teamwork.** This environment facilitates optimal knowledge transfer. We are deeply committed to training, learning from one another, and thereby perpetuating our expertise into the future.”



Dr. Volker Zang,
Business Development



Ready for the future

We are Roediger®

“Where there is no natural gradient or nearby water reservoirs, conventional wastewater technology is not viable.”

Challenging external conditions:

This is where we excel

Connecting to a functional wastewater infrastructure, protecting the environment from pollution, and using sensitive resources carefully are often taken for granted in many parts of the world. However, these pose significant challenges in other areas. In regions where the terrain lacks a natural gradient, deep excavation is not feasible, or natural water resources or protected areas are nearby, conventional wastewater technology becomes

impractical. The risk of pollution becomes too high, and the construction, installation, and operation become overly complex and costly.

However, a **vacuum system can easily overcome** what is a tough showstopper for conventional technology. Because with vacuum technology, wastewater flows through any terrain in an absolutely leak-proof and resource-saving manner - even uphill if necessary.



Preserving what we value, safeguarding what we cherish: The essence of meaningful technology

A reliable sewer system is more than just a piece of technology; with our systems, we guarantee hygienic conditions and ensure the quality of life we experience every day. We actively contribute to better living conditions by connecting remote settlements to modern technical achievements, and we prevent nature and the environment from being polluted by human or industrial wastewater.

- Vacuum sewer systems require less excavation and are therefore quick and inexpensive to install
- Vacuum sewer systems are much cheaper to operate and maintain than conventional systems
- Vacuum sewer systems are leak-proof - even in the event of a leak
- There is no unpleasant odor with vacuum sewer systems



From weekend settlement to residential area: Vacuum sewer system, Eicher See, Germany

A prime example of the strengths of vacuum technology in difficult terrain is the sewer system installed by Roediger® in the “Eicher See” housing estate. Originally designed purely as a weekend settlement without drinking water supply and wastewater disposal, the area, with its almost 700 houses, is situated directly in the floodplain of the Rhine. Strict environmental regulations, as well as the transformation of the estate into a permanently used residential area, necessitated a completely new infrastructure. The systems for drinking water and wastewater had to be installed in one go wherever possible and also be able to cope with floods of up to 5 meters. Simultaneously, it was crucial to ensure that neither surface water could enter the system nor wastewater could escape. The system developed by Roediger® went a few steps further: the installation could be carried out rapidly and cost-effectively because Roediger® managed to lay the drinking water supply and wastewater disposal in the same pipe trench. Additionally, the system's high flow velocities prevent odor nuisance from occurring, which is often an issue in similar settlements.



Flooded every few years:
The sewer system installed by Roediger® is leak-proof even under the most extreme conditions.



Establishing hygienic standards for a shopping paradise with a laying depth of just 10 cm: Forum Köpenick, Germany



As part of renovation work at Forum Köpenick in Berlin, the REWE store in the basement of the building complex is also being redesigned and equipped with a new system for collecting and transporting wastewater, e.g. for condensation from the freezers and refrigerated counters and residual liquids from the sinks of the reverse vending machines. The challenge lies in the fact that deep cuts in the floor to lay new conventional gravity pipes are simply impossible. The basement is underlaid with a so-called "white

tank," which is only 20 cm thick. This means that pipes can only be laid at a depth of 10 cm. It's a structural challenge that vacuum technology can overcome, thanks to the small-diameter vacuum pipes and the very low gradient of 0.5% required.



For the future of construction:

Flexibility. Scalability. Cleverness.

The evolving times don't bypass buildings. However, with our wastewater technology, architects and planners have the creative freedom to repurpose existing buildings cleverly, to flexibly and sustainably design new buildings from the start, and to establish the groundwork for the easy recovery of valuable resources. This paves the way for the architectural highlights of tomorrow.

From factory to appealing residential units: Building conversion

Offering people a home in an urban environment: Cities are always faced with the task of creating affordable housing, while



large derelict areas of former factories occupy valuable space. Both challenges can be solved by the clever conversion of existing buildings. We can contribute to this with our vacuum wastewater technology, which can lift wastewater up to a height of 4.5 meters and offers enormous scope when laying pipe. This means that floors can be freely planned and flexibly occupied and dead locations can be revitalized.

This also pays off in shopping malls and mixed-use properties, as vacuum technology offers the ideal conditions for the flexible occupancy of retail space, adapts to changing tenants, provides for a diverse range of uses - and thus combats potential vacancies.



Managing peak demand: from football stadiums to congress centers

While shopping centers attract a constant stream of visitors, some buildings are temporarily busy. Vacuum sanitation facilities can withstand the short-term rush of large crowds with ease, reduce water consumption to a minimum and still remain hygienically flawless - in soccer stadiums as well as convention centers.



Preserving beauty: Renovation projects and monument conservation

Those who wish to embrace the past without sacrificing modernity can benefit from another advantage of vacuum wastewater technology: the narrow pipe diameters enable particularly sensitive handling of any material and are reversible. This wastewater system not only conserves water as a resource but also preserves the original substance of buildings.



Preserve and reclaim valuable resources: Source separation

Not only building materials can be recycled, but wastewater can also be reused. Roediger® vacuum technology helps to collect and discharge different types of wastewater separately. For example, due to the low use of water during wastewater transport, the black water remains undiluted and rich in resources to generate new energy from it.



Boutique today, restaurant tomorrow: flexibility for shopping centers

Enhanced quality of life. Innovative living spaces. Blue-green infrastructure.

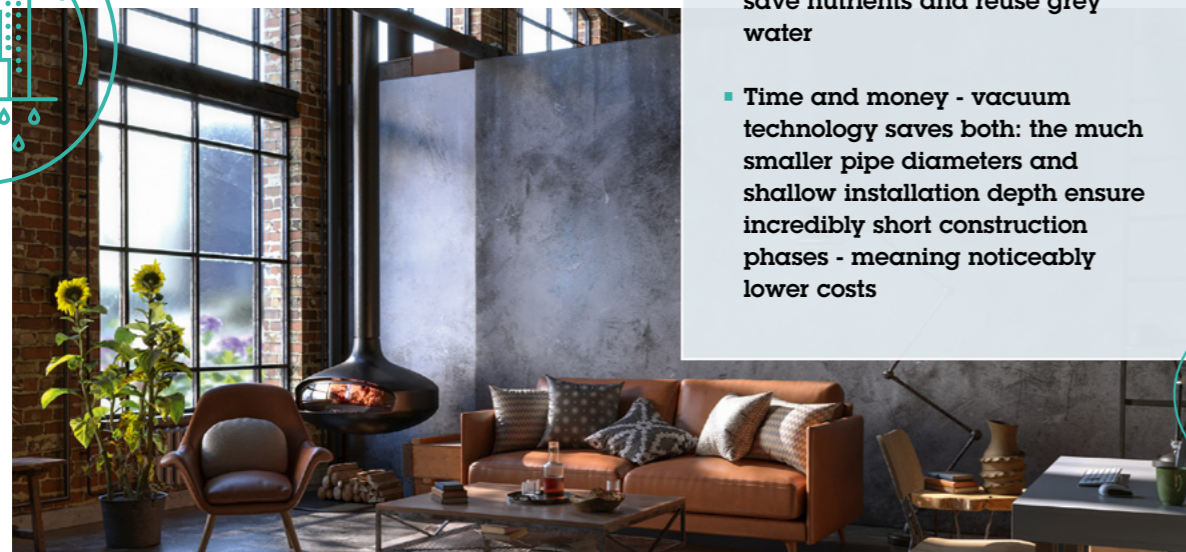
We don't dream. We solve.

Vacancies in city centers and insufficient living space, along with wasteful water consumption in metropolitan areas and untapped resources due to non-recycled grey-water, are just two of the many challenges facing today's urban planners. These problems cannot be adequately addressed with the often outdated conventional sewer systems. This is where vacuum solutions emerge as a game-changer, precisely because they were designed from the outset to tackle complex challenges.



We enable the neighborhoods of the future:

- **Whether sanitation technology, or sewer systems, or a combination of both: vacuum technology can be installed and expanded at any time, flexibly and in stages**
- **Genuine sustainability: vacuum technology enables material flow separation and thus helps to recover energy from wastewater, save nutrients and reuse grey water**
- **Time and money - vacuum technology saves both: the much smaller pipe diameters and shallow installation depth ensure incredibly short construction phases - meaning noticeably lower costs**



Inner cities | New development areas | Water cycle | Repurposing | Neighborhood management

Applied high-tech for urban planning: Hamburg-Jenfeld, Germany

A new district with continuous green infrastructure: the integrated vacuum solution from Roediger® is living proof of what is already possible with this technology.

Two questions for the Head of Technical Project Management, Christian Rüter:



Why is Hamburg-Jenfeld so special, Mr. Rüter?

"Through our end-to-end consultancy services and integration of sanitation and sewer systems on a large scale, we've successfully separated and managed resources within the buildings. Utilizing a vacuum sewer network, we transport these resources to a central mechanical plant for processing. As a result, we can discharge grey water from washbasins, showers, dishwashers, and washing machines separately, directing it into a specially constructed wetland. This wetland, in turn, replenishes the lake at the heart of the estate."



What can urban planners learn from this?

"Imagine using a site in a completely novel manner. What was once a German army site, with all the challenges such sites typically pose, is now home to almost 3,000 people enjoying the highest quality of life around a small lake. And with our technology, we've seamlessly addressed and overcome all these challenges."



"Jenfeld is the most ingenious project we have ever realized in Germany."

A clean affair – for construction sites, festivals and temporary solutions



Whether for pleasure, out of necessity, or due to job requirements, if you have to temporarily swap your home or workplace for a tent or container, you can still rely on a functioning sanitary infrastructure, whether in the city or in the countryside, on a festival site, a large construction site, or in a disaster area. But what sets Roediger® wastewater vacuum technology apart from conventional technology?

Hygienic environment in the smallest of spaces

In environments with limited space and many changing visitors, maintaining hygiene is paramount. Vacuum toilets extract wastewater using negative pressure, ensuring a hygienic one-way street for bacteria and viruses. They operate drip-free and without forming an aerosol cloud, contributing to a cleaner and safer environment for all.



Easy to install: Plug & Play

Here today, gone tomorrow - the mobile sanitary unit can be easily installed on site and just as easily removed when needed.

Increased storage capacity thanks to water-saving technology

Removal by vacuum significantly reduces water consumption per flush, thereby allowing for efficient use of the capacity of the fresh water and wastewater tanks.

A shower bus for homeless people: GoBanyo

Being able to wash oneself is a fundamental need, yet it's not easily met for homeless individuals. In Hamburg, GoBanyo addresses this need by bringing bathrooms to where they are urgently needed, utilizing a converted bus. To ensure that the capacities of the fresh and wastewater tanks on board are fully utilized, water consumption is significantly reduced thanks to vacuum sanitary technology. The closed system also ensures 100% leakage protection, allowing hygienic standards to be achieved even in small and mobile spaces.





Protecting people. Where it matters.



For hygiene standards that have long been valued not only in the care sector, but also everywhere that many people come together.

When the immune system is weakened and particularly susceptible to bacteria, viruses, and germs, extra protection must be provided. While many people think of disinfectants, face masks, and strict cleaning measures, few realize that vacuum wastewater technology can also make a significant contribution to reducing the spread of pathogens and germs in hospitals and care homes, particularly in toilets and bathrooms.

cloud of aerosol interspersed with bacteria that spreads throughout the bathroom. The wastewater is simply and safely extracted without splashing. Sinks and showers can also be connected to vacuum suction units without traps to reduce the germ load. And as for the radioactive wastewater, it is transported safely and drip-free in a closed system to a decay unit and reliably stored.

In order to create a particularly hygienic environment for patients in nuclear medicine departments, we developed the Roediger® vacuum toilet in 1978. This not only laid the technical groundwork for significantly reducing the amount of radioactive wastewater but also for keeping the germ load in check. Unlike conventional systems, the flushing cycle of a vacuum toilet does not create a

In a nutshell:

- **Reduces and separates contaminated wastewater**
- **No discharge of germs, no aerosol clouds**
- **Certified for radioactive plants**
- **Separation of sensitive areas possible**



Ireneusz Kubek,
Managing Director



Because vacuum systems are self-contained, we can collect and transport wastewater - whether domestic, industrial or even contaminated or radioactive - with absolute tightness."



Expanding cancer patient care: Vacuum sanitation technology at Charité, Germany

One of the largest university hospitals in Europe and one of approximately 80 nuclear medicine centers equipped with our technology is the renowned Charité hospital in Berlin. At its Virchow Hospital, there are two convincing advantages. Firstly, the installed vacuum toilets use only 1 liter of water per flush, creating capacity for more patients and treatments as the capacity for contaminated wastewater in the drainage system is utilized more efficiently. Secondly, thanks to the system's absolute leakage safety, patients, hospital staff, and the public are not exposed to any danger.



Indoor. Outdoor. Large. Small. Stationary. Mobile.

Our systems are used all over the world

Punctuality. Speed. Convincing price/performance ratio. These are at the top of the agenda for all railway operators, and they are also obligations we uphold with systems that are in use all over the world, day in, day out. Our wealth of experience aids us, as does the fact that our technology is compatible with all major standards in Europe, North America, Asia, and Australia.

Flexibility is another of our strengths: our systems precisely meet the individual requirements and specifications of each customer and are able to scale up as conditions change.



Andreas Bayerlein, Head of Competence Center Supply and Disposal

“Whether it’s a stand-alone solution or a plant with over 100 supply and disposal stations, every Roediger® system represents a piece of the future.”

Variety, speed, hygiene

- Supply and disposal of drinking water and toilet wastewater
- Water treatment systems with water recycling from train washers
- Unrivaled short downtimes thanks to ultra-fast technology



High-speed technology for express trains: ICE maintenance depot, Cologne-Nippes, Germany

Modern, sustainable, ultra-fast - and trouble-free operation since 2018: Deutsche Bahn can maintain a large number of ultra-modern ICE 4 trains every night at its maintenance depot in Cologne-Nippes. And there is a significant advantage: the downtime of the trains has been minimized to an absolute minimum.

Andreas Bayerlein, Head of the Supply and Disposal Competence Center at Roediger®, knows how this was made possible: In Cologne-Nippes, we achieve the perfect balance of quality and quantity. With one vacuum station dedicated to the maintenance hall and another for the interior cleaning system in the outdoor area, we are optimally equipped in terms of capacity. Additionally, we utilize the most advanced components currently available.

With a very essential advantage for Deutsche Bahn AG: “Our systems are so efficient that they drastically reduce train downtimes, thereby significantly increasing passenger traffic on the existing rail network. In essence, we help maximize rail capacity,” explains Bayerlein.

So Roediger® is the absolute specialist for maintenance stations in XXL format? Yes, but not only, says Bayerlein, emphasizing that Roediger® also provides tailored solutions for small railway companies. “We are capable

of assembling precisely the right package for every railway operator. Whether it’s for indoor or outdoor use, stationary or mobile, manual or automated, in extremely cold or hot conditions, for a single station or a comprehensive system for maintenance depots with multiple supply and disposal tracks.”

Andreas Bayerlein points towards the world map behind his workstation. “That’s why you can find our systems deployed worldwide. We’re already partnering with railway operators across the globe.”





Smooth Sailing

We ensure that

Offering passengers all the comforts while ensuring that visits to picturesque bays and fascinating landscapes are free of harmful residues, cruises are in vogue. At the same time, there is a constant debate about how sustainable they can be. We are therefore proud that our vacuum technology can be found on board the Celebrity Flora, a ship that was built to the highest standards for visiting the Galapagos Islands, which are in need of protection.

Absolutely leak-proof - regardless of swell height

Anyone spending extended periods on a ship expects toilets to reliably perform their duties. They should work efficiently, collect wastewater safely, and maintain hygienic standards. Ideally, they should also conserve fresh water and optimize the use of onboard collection tanks, just like Roediger® vacuum toilets do on river cruise ships and vessels of the German Navy.

Reliable partner with industry expertise

We are well-versed in the stringent specifications, guidelines, and requirements that must be adhered to. Our team possesses industry-specific expertise, making us a dependable partner for a variety of challenges. Naturally, our priority always lies in ensuring the longevity, reliability, and durability of the vacuum sanitary system.



On a grand expedition: Roediger® vacuum toilets aboard the Celebrity Flora



The Celebrity Flora stands as one of the most exclusive expedition ships globally, offering unparalleled comfort and a premier experience. Built specifically for journeys to the protected Galapagos Islands region, the ship undertakes a delicate mission due to the unique local flora and fauna. From the outset, equal emphasis was placed on both exclusivity and sustainability during the design phase. At Roediger®, we contribute to ensuring a pleasant stay aboard with our reliable vacuum sanitation technology. Our vacuum toilets, designed with aesthetics in mind, maintain the highest standards of hygiene while securely collecting wastewater, drip-free and leak-proof.



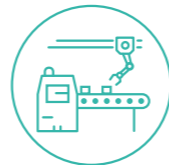
Food production | Chemical plants | Pharmaceutical industry | Paint and varnish production | Manufacturing industry

Progress, change, growth:

We make change plannable

Wherever production occurs, wastewater is inevitably generated, often in significant volumes and frequently containing contaminants. This alone necessitates solutions that are absolutely secure and free from leaks. However, challenges intensify when companies undergo changes such as adopting different production methods, introducing new production lines, or expanding their machinery. Those still reliant on conventional wastewater disposal methods face numerous concerns. Conventional systems require precise flow gradients, not to mention the complexities and depths involved in

laying new sewer pipes. This presents a daunting array of challenges - challenges that vacuum technology effortlessly overcomes. Vacuum systems require only minimal gradients, capable even of extracting wastewater upwards if necessary. Deep excavation is unnecessary, thanks to this technology's capabilities. Moreover, vacuum technology inherently guarantees leak-proof operation. In summary, as your company expands, connecting new machinery to the wastewater disposal system becomes a swift and seamless process with vacuum technology.



“ Extensive test series in advance guarantee that the system is ideally dimensioned for your purposes.”

In a nutshell: The three strongest arguments for Roediger®, industrial solutions

Argument 1: Flexible adaptation of system dimensioning

“Vacuum technology offers incredible adaptability to virtually any project. This is particularly exciting for the industrial sector where requirements or dimensions often undergo fundamental changes. For instance, in the case of large halls that need drainage solutions. This is where true engineering expertise comes into play - and we excel at it.”

Georg Maurer,
Head of Construction



Argument 2: Smart solutions for monitoring and control

“Our systems can be equipped with smart monitoring and management systems upon request. Operators have precise insights into their system's status and upcoming maintenance needs. Moreover, in case of malfunctions, the exact source of the fault is immediately localized and displayed. This efficiency saves significant resources, including personnel, who can be better scheduled and possibly reassigned to other, more urgent tasks.”

Jelena Ratkovic,
Head of Service & After Sales



Argument 3: Reliable transport of complicated substances

“In the industrial sector, wastewater often contains challenging substances such as paints, varnishes, plasters, or fatty wastewater and biowaste. It's crucial to prevent these substances from clogging the pipes at all costs. Vacuum systems offer a reliable solution due to their incredibly high flow rates, which prevent deposits from forming in the first place. To ensure accurate calculations from the outset, we conduct thorough test series for our customers. This results in state-of-the-art solutions, such as our vacuum sewer system with extraction units for 80 workstations. This system has been successfully implemented at a leading company in the coatings industry since 2020, operating error-free, safely, and environmentally friendly.”

Srdjan Draganovic,
Senior Area Sales Manager



Reliable, safe and, above all, blockage-free: Roediger® solutions have also been in use in the paint and coatings industry for decades.



Roediger®:

Global trendsetter
for vacuum technology

Vacuum sewer technology:

Sewer systems, sewer renovation, sewer management
and control

Vacuum sanitary technology:

Buildings, hospitals, ships

Railways:

Train depots, train wash facilities, Smart Services

Service:

Consulting, maintenance, trainings



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