ROHRTECHNIK INTERNATIONAL

SOLUTIONS FOR A CLEAN ENVIRONMENT

PROVIDING SOLUTIONS

ABOUT RTI ROHRTECHNIK INTERNATIONAL

RTi Rohrtechnik international GmbH is a globally operating corporate group with its headquarters in Austria.
The group specialises in civil engineering and for more than 35 years also in inspection and in all sorts of trenchless technologies for pipe rehabilitation projects including wastewater, drinking water, gas and oil pipes.

OUR SERVICES

PIPE REHABILITATION
Page 4-14

Renovation methods
- Lining with cured-in-place pipes
- Lining with close-fit pipes
- Lining with continuous pipe
- Lining with discrete pipes
- Lining with pipe segments
- Lining with spirally wound pipes
- Coating technology

Repair methods
- Robot system
- Sealing rings
- Short liner system
- Flooding method
- Rehabilitation of lateral connections

Structural rehabilitation
- Injection
- Coating
- Manual repair
- Manhole frame rehabilitation
- Internal lining

Replacement and renewal methods
- Pipe bursting
- Pull-in-place method

CIVIL ENGINEERING
Page 15

- Pipeline construction
- Outdoor facilities
- Other civil engineering works

INSPECTION
Page 16-22

- Cleaning
- CCTV-Inspection
- Shaft inspection
- Shaft maintenance
- Pressure testing
- Leak detection
- Software
- Cleaning and inspection at landfills

WHAT YOU MAY EXPECT

Quality
Our products and services are characterised by high quality, reliability and compliance with schedules.

Know-how
Continuous technological advancements and ongoing staff training programmes assure that our company keeps abreast of the latest developments and state-of-the-art technology.

Innovation
Together with our in-house research and development department, we continuously improve and upgrade our technologies,
systems and products. These advancements are further enhanced by our close collaboration with customers and suppliers.

PIPE REHABILITATION

Pipelines around the world are in danger due to ageing, deposits and corrosion. Leaky fittings and cracks are an environmental hazard and cause the loss of valuable resources such as drinking water, gas, or oil. Open-cut pipe replacement is very time-consuming, expensive, noisy and often causes significant traffic disruptions. Our trenchless technologies provide a modern solution and we have been applying these technologies successfully throughout many years in rehabilitation projects for public as well as private pipe network operators to facilitate a quick, efficient and environment-friendly repair and renewal of piping systems.

Trenchless pipe rehabilitation boasts a number of unique benefits:

- Preservation of surface and underground infrastructure
- Minimal traffic disruption
- Low noise and dust pollution for neighbourhood residents
- Protection of the environment due to CO2 emission reduction
- Extremely short turnaround times
- High cost efficiency
- Restoration of the functionality of a pipeline system for many decades to come

Rohrtechnik international group offers a comprehensive portfolio of trenchless pipe repair, rehabilitation and renewal technologies.

RENOVATION METHODS

LINING WITH CLOSE-FIT PIPES

RTi Rohrtechnik international group has been using the r.tec® Close Fit method successfully for more than 25 years.

In close cooperation with leading plastic pipe manufacturers, RTi has continuously advanced this system to provide a cutting-edge technology for the rehabilitation of drinking water, gas, industrial and wastewater pipelines. This pipe rehabilitation technology is based on a HDPE pipe which gets temporarily deformed by the factory.

The deformation process reduces the diameter of the new pipe by about 25–30%, so it can be more easily pulled into the damaged pipe. Once the deformed pipe has been pulled in, pressure and hot steam are applied to cause the pipe to return to its original shape. As a result, the PE pipe "fits closely" to the interior wall of the host pipe.

This method allows to install pipe lengths of several hundred metres within one work day and is suited for pipe diameters ranging from DN 150 to 400 mm.

r.tec® Close-Fit

r.tec® Close-Fit installation

SPECIFICATIONS (Lining with deformed pipes)

Application		Wasser, Gas, Öl, Abwasser, Industrie, Sonderanwendungen
Diameter range DN	(mm)	150–400
Diameter to wall thickness ratio	SDR	17, 26, 32
Host pipe material		Für jedes Material möglich
Maximum rehabilitation length	(m)	Dependent on size; several 100 metres
Terminal integration		Standard solutions for PE pipes, e.g. sleeves, fittings, etc.
Connection technology		Standard solutions for PE pipes, e.g.drilling saddles

Advantages at a glance:

- New PE pipe without joints
- Suited for pressure as well as gravity pipes
- Suited for a wide range of media such as drinking water, gas, oil, and wastewater
- Installation lengths of several hundred metres can be executed in one step
- No annular space, hence only little diameter loss
- Operating pressures of up to 10 bar, higher pressures are possible depending on host pipe

CURED-IN-PLACE (CIPP) LINING FOR GRAVITY PIPES

Impregnated liner

GRP liner installation

RTi Rohrtechnik international group has been successfully applying the cured-in-place lining method for more than 20 years. Materials and equipment have been continuously improved to meet market requirements. These pipe rehabilitation technologies are based on resin-impregnated, flexible liners that are inserted into the host pipe and are then cured. The flexibility of the CIPP liner allows installation lengths of 200 metres and more to be executed in one step. The CIPP method usually also accommodates bends in the pipe.

Epoxy resin liner

- Needle felt liner with PE/PP coating
- On-site impregnation with epoxy resin
- Inversion process
- Steam curing
- DN 50–1400 mm

GRP liner

- Glass layer construction with external and internal foil
- Polyester resin (ISO-NPG) or vinyl-ester resin
- Factory-impregnated
- Pull-in-place method
- Curing with UV technology
- DN 150–1600 mm

Polyester resin liner

- Needle felt liner with PE/PP coating or with integrated external and internal coating
- Polyester resin (ISO-NPG) / vinyl-ester resin available
- Factory-impregnated
- Inversion process with hot steam or water curing
- Pull-in-place and inversion techniques may also be combined
- DN 150–1600 mm

Advantages at a glance:

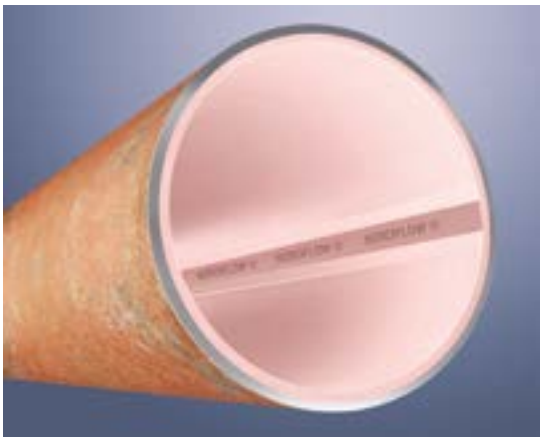
- System without pipe joints
- Optimum hydraulic properties
- Long installation lengths possible
- High flexibility
- Large diameter range

SPECIFICATIONS (Lining with CIPP for Gravity Pipes) (CIPP = Cured In Place Pipes)

Application		Sewage and all other gravity pipes
Nominal width	(mm)	50–1600
Wall thickness after curing	(mm)	3–30
Resins employed		Epoxy resin, polyester resin, vinyl ester resin
Coating		PE, PP
Host pipe material		For every type of material
Maximum rehabilitation length	(m)	500 (depending on size and wall thickness)
Terminal integration gravity pipes		Injection method, manual lamination or liner end rings
Connection technology		Rehabilitation robots, hat profiles
Host pipe conditions acc. to ATV M127-2	(Class)	ARZ 1, 2, 3

CURED-IN-PLACE (CIPP) LINING FOR PRESSURE PIPES

While the CIPP method was originally used only for the rehabilitation of sewer pipes, RTi Rohrtechnik international group has adapted this technique also for use in municipal and industrial pressure pipes. Depending on host pipe conditions, static requirements and application areas, different liner systems are in use. We offer basic, semi-structural and fully structural systems.



NORDIFLOW

Fully structural system (class A):

When a fully structural pipe liner is installed, all functions (including internal pressure absorption) are passed on to the liner.

- Liner made of glass and felt layers
- High-quality epoxy resins optimised for compounding with glass fibre layers
- On-site impregnation
- Inversion or pull-in-place method
- Hot steam or water curing
- DN 150–1400 mm

Semi-structural system (class B):

Unlike basic liners, semi-structural liners are endowed with annular rigidity, which allows them to absorb external loads.

Basic liner (class C):

If the host pipe remains capable of bearing internal pressure and external loads, it can be rehabilitated by installing a thinner, interactive liner. This allows to repair leaks, improves the hydraulic properties and provides lasting protection against corrosion.

- Round woven textile liner with PE, Hytrel or TPU coating
- Optionally with resin carrier mat
- High-quality epoxy resins with excellent adhesion and flexibility
- On-site impregnation
- Inversion method
- Hot steam or water curing
- DN 80–1200 mm

CIPP liner installation

SPECIFICATIONS (Lining with CIPP for Pressure Pipes)

Application		Water, gas, oil, sewage, industry, special applications
Nominal width	(mm)	80–1400
Pressure range		Up to PN 30, depending on system
Wall thickness after curing	(mm)	3–25
Resins employed		Epoxy resin
Coating		PE, PP-PE copolymer, TPU or Hytrel (depending on medium)
Host pipe material		For every type of material
Maximum rehabilitation length	(m)	500 (depending on size and wall thickness)
Terminal integration for pressure pipes		Standard solutions such as liner end rings
Connection technology		r.tec® coupling, standard fittings
Classification AWWA M28	(Class)	2, 3, 4
Classification EN ISO 11295	(Class)	A, B, C

LINING WITH CONTINUOUS PIPE

Lining with continuous pipe

This lining method uses flexible pipes that are delivered in bundles or individually. Individual pipes are joined to form a strand on site. After cleaning, calibration and inspection of the host pipe, the complete pipe strand is installed by pulling. PEHD pipes are used predominantly. This method is suited for diameter ranges from DN 100 up to DN 1400 mm. For larger diameters, lining with discrete pipes is usually more cost efficient. Bends and angles of up to 15° can be accommodated. The insertion length depends on the diameter and can be 500 m and more.

LINING WITH DISCRETE PIPES

Lining with discrete pipes

With this method factory-made pipe modules are inserted one by one into the pipeline to be rehabilitated. Depending on the pipe material, this system may be used for pressure and gravity pipes in drinking water, wastewater and industrial applications. The pipes used with this technology are usually made of GRP, PVC, PE etc. The system is suited for circular pipes as well as special profiles with diameters ranging from DN 150 mm to more than DN 3000 mm. The annular gap resulting between the host pipe and the new pipe is usually filled with grout.

LINING WITH PIPE SEGMENTS

Lining with pipe segments

Lining with pipe segments is used in the rehabilitation of walk-in pipes and culverts. Prefabricated panel segments made of polymer concrete, GRP, stoneware or PE are mounted to the interior wall of the structure to be rehabilitated. A distinction is made between partial linings and full linings.

COATING TECHNOLOGY

Our coating technology (cement mortar coating) consists in applying a coat of cement-bonded building material to pipes or shafts. The different techniques in use include the manual coating method, the wet gunite lining method, the spray lining method and the displacement method.

SPECIFICATIONS (Lining with continuous pipes and lining with discrete pipes)

Medium		No restriction (suitability depends on new pipe)
Nominal width	(mm)	80->3000
New pipe material		All common materials, but primarily PE, PP, PVC, GRP, steel and cast iron pipe
Host pipe material		No restriction
Max. installation length	(m)	1000
Terminal integration		Standard profiles, depending on the pipe system
Connection technology		Standard profiles, depending on the pipe system

LINING WITH SPIRALLY WOUND PIPES

This method uses prefabricated profile strips made of PVC or HDPE which are machine-wound into an endless pipe string. There are four different technologies available. Depending on the technology used, the winding machines are either installed inside the shaft or move through the pipeline system.

Lining with spirally wound pipes is suited for the trenchless rehabilitation of all sorts of circular pipes and special profiles with up to 5,500 mm in diameter. It is the only rehabilitation method worldwide where trenchless technology works for all pipe diameters. The spiral-wound new pipe is designed as a self-supporting structure and installed either as a close-fit system or with annular space grouting.

SPR™

SPR™ is a lining system with spirally wound pipes for the rehabilitation of circular pipes and special profiles with diameters ranging from DN 800 to 5500 mm. SPR™ uses steel-reinforced, interlocking PVC pipe sections that are filled with self-supporting annular space grouting after installation.

SPR™ PE

SPR™ PE lining system with spirally wound pipes can be used to rehabilitate all circular pipes with large diameters ranging from 900 to 3000 mm. The fully enclosed steel reinforcement provides a highly rigid spirally wound pipe suited for exposure to high structural loads. The annular space is subsequently filled with grout to stabilise the position.

SPR™ EX and SPR™ RO

SPR™ EX and SPR™ RO are close-fit spirally wound pipe systems where the static properties are transferred to the bars of the PVC profiles. After completion of the rehabilitation procedure, the spirally wound pipe closely adheres to the interior wall of the host pipe.
The SPR™ EX method is used for pipe diameters ranging from DN 150 to 750 mm, whereas SPR™ RO is the technology of choice for diameters from DN 800 to 1800 mm.

SPR™

SPR™ PE

SPECIFICATIONS (Lining with spirally-wound pipes)

	SPR™	SPR™ PE	SPR™ EX	SPR™ RO
Nominal width	800–5500 mm	900–3000 mm	150–750 mm	800–1800 mm
Material	PVC-U	HDPE	PVC-U	PVC-U
Host pipe profile	All profiles without restrictions	Circular	Circular	Circular
Type of installation	Annular gap with high-performance mortar	Annular gap with sealant	Close fit	Close fit

Advantages at a glance:

- 100% trenchless rehabilitation of DN 150–5500 mm pipes
- Suited for circular pipes and special profiles
- Rehabilitation of host pipes regardless of condition
- Minimal space requirement at the building site
- Possibility of rehabilitation under defined flow conditions

REPAIR METHODS

In many cases it is more cost-efficient to repair only defective spots in a sewer instead of rehabilitating the entire pipeline system. We offer suitable methods also for this application.

Robot system

ROBOT SYSTEM

Besides their use in milling operations, rehabilitation robots may also be used for repair works such as countersinking and smoothing cracks or leaky fittings, as well as for correcting faulty pipe connections. They are often also combined with other rehabilitation techniques such as for preliminary works like milling roots.

Sealing rings

SEALING RINGS

Partial rehabilitation by means of inserted rings is a purely mechanical rehabilitation method where a pneumatic or hydraulic device is used to place a stainless steel ring with an EPDM seal or a ring made of EPDM rubber with tensioning bands on the defective spot, thus permanently sealing it off. Sealing rings can be used for all common pipe systems starting from DN 150 mm.

SHORT LINER SYSTEM

The short liner system can be used to rehabilitate punctually damaged pipe sections ranging from 0.5 to 4.0 metres in length. A resin-impregnated felt or glass hose is inserted into the existing inspection manholes and positioned next to the damaged spot under TV camera surveillance. The hose is pressed to the wall of the host pipe until sufficiently cured, thus repairing the damaged spot. We use this method to rehabilitate sewer pipes ranging from DN 100 to 600 mm in size.

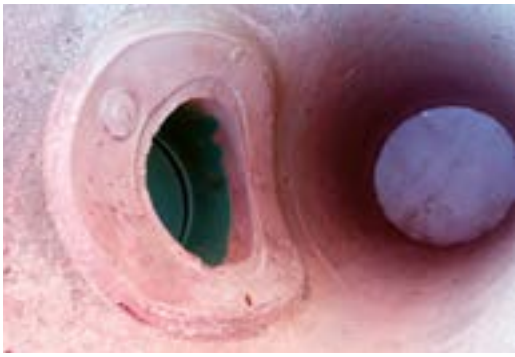
FLOODING METHOD

The flooding method is used to seal off damaged spots in sewers of up to DN 400 mm in diameter by using a two-component silica gel. Both components are poured into the pipe system one after the other and allowed to permeate through the leaky spot into the adjoining soil. The reaction of both components results in a water-tight compound which seals off the leaky spot. The fluid remaining inside the pipe can be recovered and reused

REHABILITATION OF LATERAL CONNECTIONS

The rehabilitation of lateral connections is a robot-assisted process for repairing lateral service lines. This simple and efficient technique is particularly recommended for house connections and to ensure that after a slip-lining project all lateral connections are tightly sealed.

Short liner system



Rehabilitation of lateral connections

STRUCTURAL REHABILITATION / REPAIR OF CONCRETE STRUCTURES

Crack grouting with resin injection

Cement paste injection in low pressure process

Another key component of our service portfolio is the rehabilitation of defective sewer and drinking water systems. Depending on the type of damage, we offer a wide array of processes for the repair of buildings and structures:

INJECTION

The great variety of different injection methods allows us to deal with damage patterns in buildings and structures on an individual basis. Injection methods are primarily used in concrete or masonry structures, where the challenge is to rehabilitate man-accessible sewer sections, shafts, basements and other structures.

The main technical options are:

- Blocking of infiltration water:
  High-pressure injection of highly reactive polyurethane foam
- Grouting of cracks and joints:
  High-pressure injection of epoxy, PU or acrylate resins
- Masonry stabilisation and gap filling:
  Low-pressure injection of cement paste
- Sealing of buildings and structures:
  Grid injection of acrylate gel

COATING

The rehabilitation of shafts, tanks and other structures is an integral part of asset maintenance in the wastewater disposal and drinking water supply sector.

Subsoil preparation by high-pressure water blasting or sandblasting forms the basis for all subsequent corrosion proofing, reprofiling and priming operations. All procedures are performed by our own staff, using our own equipment and applying only high-quality materials. The final coat is either applied by centrifugal spraying or manually and mostly consists of cement-bound materials suited for the specific requirements.

Coating

MANUAL REPAIR

Manual repair includes the repair of defective spots, the rehabilitation of faulty pipe connections, the repair of defective shafts and the replacement of damaged ascending aids or ladders.

Manhole frame rehabilitation

MANHOLE FRAME REHABILITATION

Manhole frame rehabilitation is a method recommended for lowering or raising protruding or sunk manholes.

INTERNAL LINING

This method is used in particular for the rehabilitation of tanks, structures and shafts. Prefabricated polyethylene panels are mechanically implanted in the subsoil and the panel edges are welded. The use of spacers allows grouting of the void between the structure and the liner.

PIPE REPLACEMENT AND RENEWAL METHODS

Pipe bursting

Pull-in-place method

PIPE BURSTING

RTi group uses pipe bursting technologies in the rehabilitation of pressure and gravity lines and applies the static as well as the dynamic pipe bursting method.

Pipe bursting is a trenchless technique for the renewal of pipes with diameters ranging from DN 50 mm to DN 1000 mm. During the renewal process, the existing pipe is destroyed by means of a bursting tool and the broken fragments are pressed into the surrounding soil by a cone. This cone also creates an installation tunnel, and the new pipe is pulled into this tunnel concurrently. This technology allows to increase the pipeline diameter by at least one nominal size.

PULL-IN-PLACE METHOD

This method uses the same machines and procedures as the pipe bursting method and serves to replace pipelines made of ductile materials such as steel, cast iron, PE etc. Instead of bursting tools, a roller cutter is used to cut the old pipe open along its axis.

Advantages at a glance:

- Trenchless renewal
- Independent of host pipe and its condition
- Solutions for drinking water, gas, wastewater, oil and leachate draining
- Quick installation by bursting the old pipe and inserting a new pipe
- Cross section can be increased by at least one size

SPECIFICATIONS (Pipe bursting)

Application		Water, gas, sewage, industry
Nominal width	(mm)	50–1000
New pipe material		HDPE multi layer pipe, PP, ductile cast iron pipe
Host pipe material		For every type of material (except reinforced concrete)
Average rehabilitation length	(m)	150
Terminal integration		Standard solutions for plastic pipes, e.g. sleeves, fittings, etc.

CIVIL ENGINEERING

PIPELINE CONSTRUCTION

Our building companies are also experienced in the conventional construction of pipe networks, which has been part of their service portfolio for more than 60 years. In addition to its focus on sanitary engineering (sewers, drinking water lines), our group also caters to customers in application areas including gas supply, district heating network and industry.

Our service portfolio for the construction of supply lines covers the entire value-added chain, ranging from competent planning and design to integrated services for all pipeline systems.

Services:
- Planning of pipe networks for gas, drinking water and district heating
- Network monitoring
- Troubleshooting
- Performance of services

Welding work on gas lines

OUTDOOR INSTALLATIONS

Especially for private customers, our group of companies offers planning and execution services for outdoor installations.

Excavation of a fat separator

OTHER CIVIL ENGINEERING PROJECTS

Apart from our traditional services, we also provide support in engineering projects including cable installation, special foundations, road construction, earthworks etc.

Inspection systems

INSPECTION

A CRUCIAL STEP ENSURING THE SUCCESS OF A PIPE REHABILITATION PROJECT

Before pipes and shafts can be thoroughly and effectively rehabilitated, they need to be carefully cleaned, inspected and analysed. A complete inspection also includes taking inventory of existing shafts and structures as well as performing leak detection and pressure tests in the piping system.

WHEN IT COMES TO INSPECTION, RTi IS THE PARTNER YOU NEED

RTi has more than 35 years of experience and a long track record of success in pipe, shaft and structural inspections. Our service range comprises:

- Cleaning
- TV inspection
- Shaft maintenance
- Pressure testing
- Leak detection
- Sewer smoke testing
- Software and analysis
- Cleaning and inspection at landfills

SPECIALISED SOLUTIONS

RTi is your competent partner for specialised solutions. The RTi team assists you in developing strategies for carrying out inspections in a special environment or in situations where special requirements have to be met.

What are your specific project requirements?

Please let us know and our team at RTi will be happy to work out customised solutions for your specific needs.

Specialised projects that require customised inspection procedures:

- Mobile inspection systems for boats and ships
- Surveying of a submerged mine stope which was previously accessed by reverse circulation drilling
- Shaft of a quarry (open-pit mine), 200 metres deep, 8,000 mm in diameter and with a longitudinal profile at 10-metre intervals
- Inspection of a power plant line 3,200 metres in length without intermediate shafts
- Landfill inspections

CLEANING

Thorough cleaning and calibration of pipes are the key to the success of a rehabilitation project.

PIGGING

"Pipe pigs" may be used in the cleaning of pressure pipes with diameters of 50 mm and larger. These cleaning devices are inserted into the pipeline via pig gates, allowing to clean several kilometres of piping without digging or disconnecting the pipe. The pipe pigs are propelled through the pipe by water pressure. The highly accelerated leak water flow between the pipe pig and the inner pipe wall provides the cleaning effect, which can be further improved by using special adaptors like scrapers, brushes, or beads. The dissolved pollutants are carried along by the water flow ahead of the pipe pig and are collected and disposed of at the receiving gate.

Pipe pigs for cleaning of pressure pipes

HIGH-PRESSURE FLUSHING – UP TO 240 BAR

High pressure flushing is used to clean sewers or to remove non-solid deposits. The pipeline is flushed with water by using a high pressure pump, a hose and variable nozzle adapters. Flow rates up to 300 l/min and pressures up to 240 bar may be achieved. Particularly tough deposits can be removed by hydromechanical tools (e.g. chain scrapers). Our vehicles are usually equipped with a suction device, which enables the controlled disposal of cleaning water.

Carriage for high-pressure cleaning

ULTRA-HIGH-PRESSURE CLEANING – UP TO 1.550 BAR

The ultra-high-pressure cleaning unit ensures a metallically clean, greaseand corrosion-free pipe surface and optimally prepares the pipe for subsequent rehabilitation with a pipe liner. These state-of-the-art pressure cleaners generate pressures of up to 1550 bar.

TV INSPECTION

RTi has been a reliable partner providing TV inspection services for pipes, shafts and structures throughout many decades.

To evaluate the condition of the piping system, pipes and shafts are inspected by using specialised TV cameras. Our cutting-edge camera equipment allows us to document the real extent of damage in a defective pipe or shaft. The data are collected, analysed and transmitted by using specialised inspection software. This ensures conformity with all relevant European standards and guidelines.

In close collaboration with camera manufacturers, RTi provides inspection systems for the following areas:

- Inspection of sewers
- Inspection of shafts and building structures

Inspection of shafts with scan technology

SHAFT MAINTENANCE

RTi also offers maintenance services for shaft structures in a piping system. The purpose of shaft maintenance is to ensure the functionality of shafts and other structures through regular inspections.

Shaft maintenance

The following results are recorded in detail:

- Review of data relating to pipe condition as recorded in the Pipeline Information System (LIS)
- Identification of changes
- Early identification of defects

PRESSURE TESTING

All newly installed or rehabilitated pipes, shafts and structures have to undergo pressure testing in conformity with European standards, regardless of their use for wastewater disposal or water supply. Pipes, shafts and structures are leak-tested by pressurised air or water to ensure they are tight. The testing procedure is documented in detail by means of a computer-controlled time-pressure diagram.

Pressure testing of a gravity pipeline

LEAK DETECTION

Defects and leaks are identified quickly and accurately by means of cutting-edge technology. This allows for targeted repair and speeds up the rehabilitation of a leaky pipe. Depending on the problem, adequate localisation methods are applied to efficiently and accurately identify the defect.

Leak detection – quickly and accurately identification of damaged spots.

RTi offers pressure testing in the following areas:

- Gravity pipelines
- Pressure pipelines
- Water pipelines
- Power station pipelines
- Snow system pipelines
- Shafts
- Buildings and structures

CLEANING AT LANDFILLS

High pressure cleaning at landfills

Drainage or leachate collection lines at landfills are exposed to high loads and thermal stress. Additionally, they are often prone to heavy incrustations and may entirely break down when pipe openings become clogged. The inevitable build-up of leachate jeopardises the stability of any landfill.

The current Landfill Ordinance therefore requires the performance of continuous TV inspections by means of explosion-protected TV camera systems at yearly intervals. Such inspections include documentation of the state of repair of drainage pipes, their incrustation level, pipe temperature as well as elevation surveys to define the settlement profile at the landfill bottom.

Thorough high-pressure cleaning of feed pipes is essential to obtain conclusive results during TV inspection. RTi Rohrtechnik international specialises in such technical operations and is the market leading in this segment.

High-efficiency rinse-and-suction vehicle for cleaning landfill drainage pipes

RTi Group has invested in the purchase of a specialty vehicle for high-pressure cleaning of leachate drainage pipes at landfills and municipal transport lines. This high-efficiency equipment allows us to perform high-pressure cleaning operations in piping systems which are up to 800 metres in length and have no intermediate shafts. A high-performance vacuum unit additionally allows us to accomplish suction heights of up to 35 metres.

Advantages at a glance:

- Cleaning lengths of up to 800 metres without intermediate shafts
- Suction depths of up to 35 metres
- Parallel operation of two HD pumps
- Low-noise water ring pump
- Suitable for driving high-efficiency nozzles
- Removes even persistent incrustations in a pipe-friendly manner
- Environment-friendly motor
- Digital measurement of pipe lengths
- Pump outlet pressure is continuously adjustable
- Suitable for use in industrial applications or municipal transport lines
- Diameter range: DN 80-2000mm

Landfill-specific incrustations

INSPECTION AT LANDFILLS AND SURVEYING

Infiltration of water into or underneath the landfill body may pose a risk to landfill stability. Therefore a reliable drainage system must be a top priority for all landfill operators.

We clean drainage pipes of up to 1000 metres in length by using high-capacity jetter-vac combo trucks. High-efficiency nozzles remove even obstinate incrustations from pipes and drainage openings, thus restoring hydraulic pipe performance.

Explosion-protected special TV inspection systems allow to inspect lines of up to 650 metres in length while also measuring temperature and gradient. Pipe deformations can be accurately measured by using state-of-the art technology.

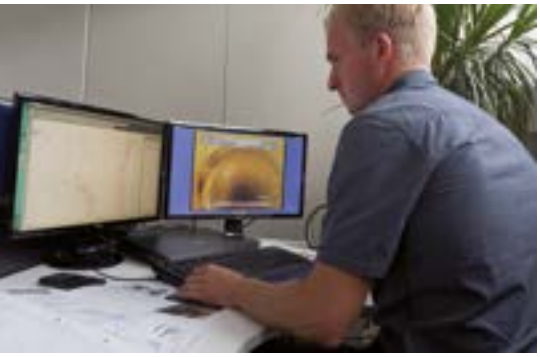
Our modern inspection equipment is operated by certified specialists with many years of experience in landfill engineering. They ensure the flawless operation of leachate collection pipes and slope dewatering lines.

Inspection at landfill

Elimination of encrustation at landfill

SOFTWARE AND ANALYSIS

Die RTi bietet ein umfangreiches Programm von Softwarelösungen an, die für die Erfassung und Überwachung von Inspektionsdaten eingesetzt werden können.



Tailored maintenance management

Network information system

INSPECTION SOFTWARE

The WinCan software is a special application for the inspection of pipe networks. It offers a variety of solutions ranging from the collection and compilation of inspection data to their transmission into a pipeline information system (LIS). It encompasses the core function for the collection and administration of data derived from sewer inspection, the storage of the data in a database as well as the logging and printout of the data in the form of an inspection protocol with a graphical representation of the sewer system. The data can be forwarded to the client by using the integrated data review programme. Moreover, WinCan features all functions which are necessary for processing the inspection data in the office.

MAINTENANCE SOFTWARE

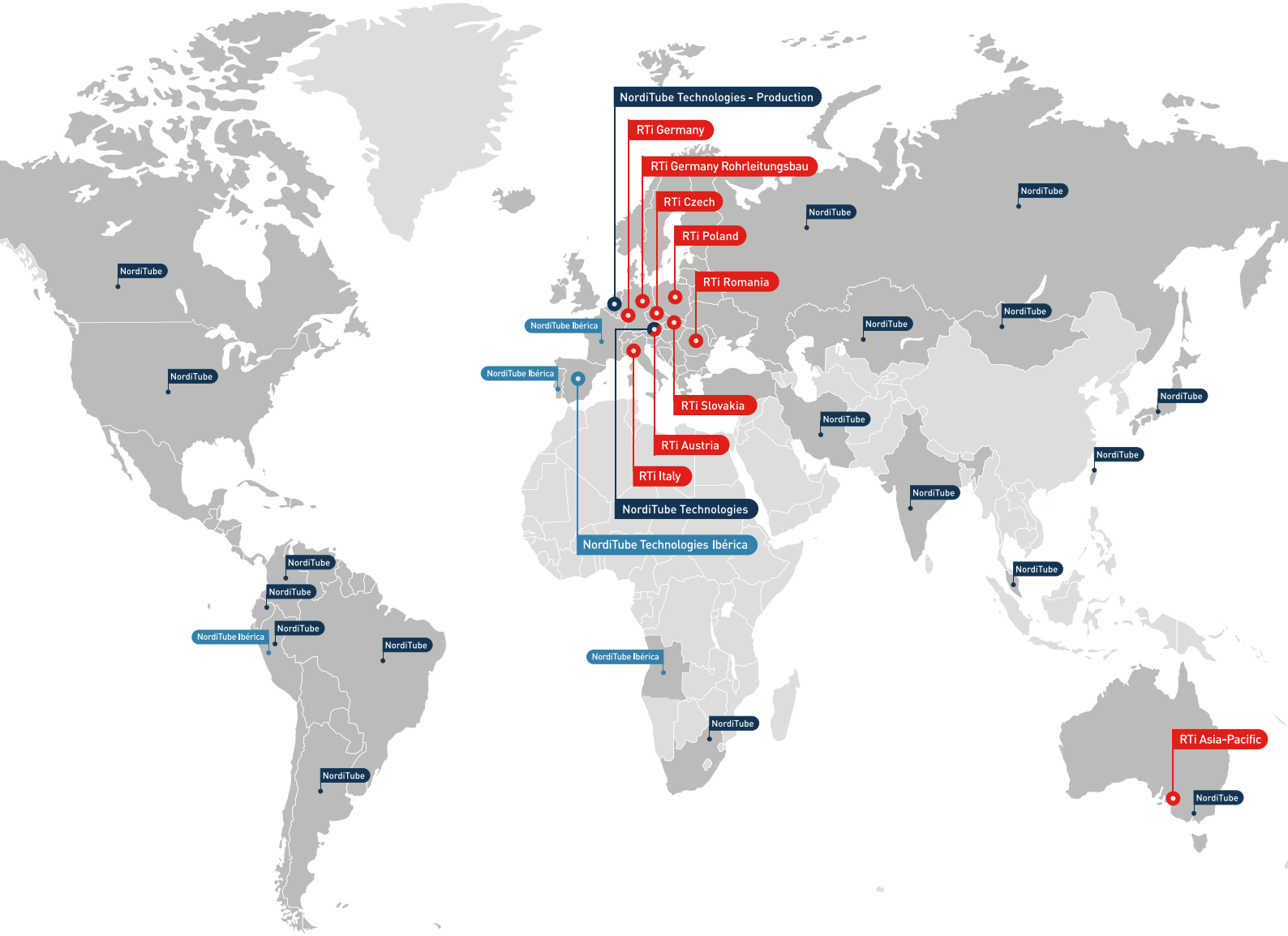
To assure that the pipe network can be sustainably maintained, an effective asset maintenance programme is needed.Our company provides monitoring services and related software solutions for assetmanagement.

PIPELINE INFORMATION SYSTEM (LIS)

BaSYS is a modular, scalable geospatial information system (GIS) specialised in the planning and management of line-related technical information. The focus is on sewer, water and gas applications. BaSYS covers the entire network management workflow and supports all steps of data collection, compilation and evaluation, calculation, planning, optimisation and rehabilitation of networks. It offers solutions for the planning of asset operation and maintenance, asset evaluation and the management of connected owners (indirect dischargers cadastre). BaSYS offers different interfaces for specialists and users with different functionalities that access the same database.

DATA TESTING PROGRAMMES

PIETS is used to test and correct ISYBAU XML data as well as to convert old ISYBAU data to ISYBAU XML.



RTi GROUP

RTi Rohrtechnik international has its head office in Austria and unites under its umbrella nine construction companies, with an extensive network of subsidiaries operating worldwide, as well as the global production and trading company NordiTube with its own production in Belgium and Spain.

- RTi companies - Construction
- NordiTube companies - Production & Sales
- NordiTube partner countries - Overseas
- NordiTube Ibérica partner countries

ROHRTECHNIK
INTERNATIONAL

PROVIDING SOLUTIONS

office@rti.eu
www.rti.eu

RTi Rohrtechnik international GmbH
Bruckbachweg 23
4203 Altenberg bei Linz, Austria
+43 (0) 7230 8686 0
office@rti.eu

RTi Austria GmbH
Bruckbachweg 23
4203 Altenberg bei Linz, Austria
+43 (0) 7230 8686 0
austria@rti.eu

RTi Italy s.r.l.
Zona Artigianale 11
39040 Varna (BZ), Italy
+39 380 100 300
italia@rti.eu

RTi Germany GmbH
Am Pferdemarkt 61 b
30853 Langenhagen, Germany
+49 (0) 511 725 358 0
germany@rti.eu

RTi Czech s.r.o.
Rašínova 422
392 01 Sobeslav, Czech Republic
+420 (0) 381 521 423
czech@rti.eu

RTi Austria GmbH Sp. z o.o., Oddział w Polsce
ul. Żupnicza 17 lok. 7,
03-821 Warszawa, Poland
+48 609 520 001
poland@rti.eu

Rohrtechnik RTi Romania SRL
Str. Barbu Vacarescu Nr. 42A
Corp Dinu Vintila, Etaj 5
Sector 2, Bucharest, Romania
+40 (0) 21 326 25 12
romania@rti.eu

RTi Slovakia s.r.o.
Bystrická 1
841 07 Bratislava, Slovakia
+421 (0) 2544 10852
slovakia@rti.eu

RTi ASIA-PACIFIC PTY LTD
Level 1 / 29 Rundle Street
Kent Town SA 5067, Australia
+61 (0) 410220382
office@rti.eu

RTI JAPAN Pipe Solutions Co.,Ltd.
103-8 Kawai-honcho, Asahi-ku
241-0803 Yokohama-city, Japan
+81 45 465 6859
japan@rti.eu