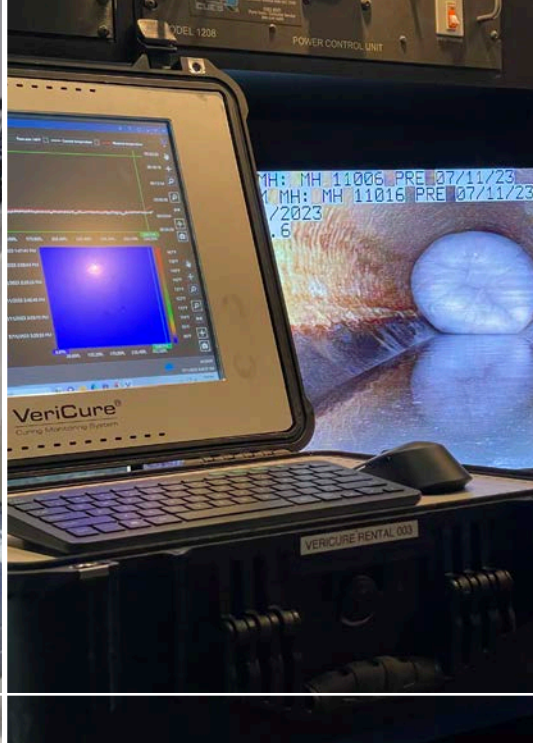


VORTEX EUROPE PRODUCT CATALOGUE

YOUR GUIDE TO REHABILITATION PRODUCTS,
CONSTRUCTION MATERIALS & EQUIPMENT

For additional product information and pricing,
email europe@vortexcompanies.com



PROVIDING TRENCHLESS TECHNOLOGY FOR TOMORROW'S WATER & SEWER INFRASTRUCTURE



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**FULLY
STRUCTURAL**

**CORROSION
RESISTANT**

Geopolymer Hybrid Cements Construction Materials

From large diameter structures such as failing sewer pipes above DN 900, storm culverts and tunnels to corroded concrete and brick manholes, **choose from our geopolymer and hybrid cements** to address these issues and much more.

A fully structural, corrosion resistant rehabilitation solution you are looking for, **our complete line** of geopolymer and hybrid cement mortars for patching and lining are the answer.

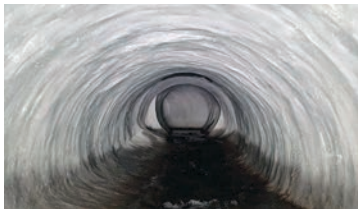
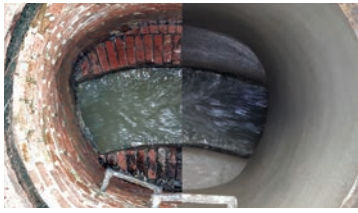
APPLICATIONS

- **DN 900 or larger gravity pipe or culverts**
- **Storm and foul sewers**
- **Manholes**
- **Non-round structures**

FEATURES & BENEFITS

- Complete Rehabilitation
- Restores Structural Integrity
- Prevents Corrosion
- Fills Voids
- Stops Leaks
- Quick Return-To-Service





GeoKrete®

GEOPOLYMER MORTAR - STRUCTURE COATING

GeoKrete® is a fully structural corrosion resistant geopolymer mortar. It is comprised of aluminosilicate powder with an alkaline activator to form a monolithic mineral polymer with ceramic properties. It cures through a process of polycondensation and possesses proven, high early and long-term compressive strength.

IDEAL FOR:

- Raw, wastewater and infrastructure rehabilitation
- Manholes
- Tunnels
- Culverts
- Pipe
- Wet Wells



Deutsches
Institut
für
Bautechnik



QM-1s Restore®

HIGH STRENGTH CEMENT BASED MORTAR - STRUCTURE COATING

QM-1s Restore® is a Portland cement based, single component, high strength, fiber reinforced, shrinkage compensated cement mortar enhanced with a monocrySTALLINE quartz aggregate. It was designed to structurally repair deteriorated metal, concrete and masonry structures. QM-1s Restore delivers a monolithic one pass vertical surface application up to 3" in thickness by low pressure spraying or centrifugal casting.

IDEAL FOR:

- Vertical and overhead repairs to concrete or masonry
- Sewer manholes
- Wet wells
- Metal pipes
- Water treatment facilities
- Tunnels
- Navigational locks and dams



Hyperform®

HIGH STRENGTH PATCHING MATERIAL

Hyperform® is a one component, rapid-setting, high early strength patching material designed for repairing vertical and horizontal concrete and masonry structures. With invert lining, flow can be released within 25-30 minutes post mixing.

IDEAL FOR:

- Filling large voids in manhole walls
- Reconstructing inverts
- Concrete repair and patching
- Pipe repair



Quad-Plug®

HYDRAULIC CEMENT

Quad-Plug® is a blend of special cements and admixtures which are designed to instantly stop running water or seepage in all types of concrete and masonry structures. Some benefits of Quad-Plug include: stops running water immediately, non-shrinking and expands as it sets.

IDEAL FOR:

- Sewer pipes and manholes
- Concrete tanks
- Elevator pits and shafts
- Cisterns
- Basements
- Concrete and masonry walls



Quad-Flow

HIGH STRENGTH INVERT REHABILITATION MORTAR

Quadex Quad-Flow® is a high strength, quick setting invert rehabilitation mortar. It was developed to work in unison with Quadex construction materials to form an abrasion resistant repair while increasing the structural integrity of damaged pipe and culvert inverts. The quick setting characteristics of Quad-Flow minimize downtime and allows crews to continue working just a few hours after its application.

IDEAL FOR:

- Restoring storm and foul sewer culvert inverts
- As a stand alone repair method
- As part of repair prior to applying a Quadex cementitious or polymeric lining solution



**PROTECTS
STRUCTURES
FROM EXTREME
CORROSION**

100% Solids Epoxy Coatings

The Quadex® family of 100% solids epoxies are developed and produced in-house to ensure the epoxy coating you choose not only **performs well, but applies quickly, easily and consistently.**

Check out the entire line to address your infrastructure located in extreme corrosion environment or where exceptional elongation and adhesion properties are demanded.

APPLICATIONS

- **Manholes**
- **Wet wells**
- **Industrial areas**
- **Wastewater facilities**
- **Water treatment facilities**

FEATURES & BENEFITS

- High Build, Single Coat Application
- Exceptional Corrosion Resistance
- Extreme Abrasion Resistance
- Quick Return-To-Service



100% SOLIDS EPOXY COATINGS



Structure Guard®

HIGH BUILD EPOXY COATING

Structure Guard® is a 100% solids, high-build epoxy coating formulated to provide long-term corrosion protection and structural enhancement for manholes, pump stations, treatment plants or any wastewater infrastructure subject to high levels of corrosion and/or abrasion to include both municipal and industrial applications. Structure Guard sets fast for a quick return-to-service in the most aggressive and turbulent environments. It finishes smooth to enhance flow and is utilized as an interior or exterior pipe lining. Structure Guard can be hand, spray or spin applied with approved plural component spray equipment.

IDEAL FOR:

- Sewer pipes and manholes
- Pump stations
- Concrete or masonry vaults and tanks
- Treatment plant headworks and diversion structures
- Steel pipes and tanks



Flex Guard®

FLEXIBLE HYBRID EPOXY COATING

Flex Guard® is a 100% solids flexible urethane/epoxy hybrid. The extreme flexibility of Flex Guard makes it the best solution for the most extreme conditions. A 100-150% elongation it is effective where other coatings fail. Flex Guard exhibits excellent adhesion to steel and concrete; providing superior protection for tanks that typically experience freeze/thaw and temperature fluctuation. Flex Guard is designed for spray or trowel applications and is engineered and formulated for concrete, brick and steel structures. Benefits of Flex Guard include: no VOCs, quick drying, can be applied in areas of high humidity, and is unaffected by freeze/thaw. Flex Guard has excellent corrosion and abrasion resistance. Key Physical Properties include: Re-coat Window — 24 hours, Full Chemical Cure — 7 days.

IDEAL FOR:

- Concrete and steel tanks
- Foundations
- Cracks
- Expansion and control joints
- Manufacturing plants
- Manhole shafts
- End seals
- Liner repair

**ELIMINATE
LEAKS DUE TO
EXPANSION FROM
FREEZE/THAW**

Flexible Mastics & Hybrid Epoxies

Cracks due to expansion and contraction caused by traffic loading and freeze/thaw conditions, **lead to leaks** that result in inflow and infiltration and increased maintenance costs. The Quadex® line of flexible **leak stop materials** lead the industry in elongation and bonding performance. Ask for more details on our complete line.

APPLICATIONS

- **Cracks caused by expansion and contraction**
- **Manhole shafts**
- **Inverts**
- **Pipe ends**

FEATURES & BENEFITS

- Superior Elongation
- Excellent Adhesion & Bonding
- Easy to Apply
- Quick Setting



FLEXIBLE MASTICS & HYBRID EPOXIES

Structure Guard®-RS

RAPID SETTING EPOXY

Structure Guard®-RS is a 100% solid, high-build epoxy coating formulated to provide long-term corrosion protection and structural enhancement for manholes, pump stations, treatment plants or any wastewater infrastructure subject to high levels of corrosion and/or abrasion. Structure Guard-RS sets fast for a quick return-to-service in the most aggressive and turbulent environments. It finishes smooth to enhance flow and is utilized as an interior or exterior pipe lining. It is also ideal for invert repairs.

Structure Guard®-FM

MICRO FIBER REINFORCED MASTIC

Structure Guard®-FM is a 100% solids epoxy mastic used to protect new infrastructure and rehabilitate existing, damaged, infrastructure. Structure Guard-FM is best applied using a trowel or with the Quadex OneGun®. Typical applications for Structure Guard-FM include: manholes, wet wells, vault, septic tanks, steel substrates, floor and wall penetrations/cracks and simple spot repair. Structure Guard-FM is known for its bonding to nearly all substrates. It also requires no mixing, is fast curing and has a ¼" build capability with no sag.

Structure Guard®-FB (AVAILABLE UPON REQUEST)

ULTRA HIGH BUILD MICRO FIBER REINFORCED MASTIC

Structure Guard®-FB is an ultra high build epoxy mastic, designed to fill gaps and voids in both new infrastructure and existing damaged infrastructure. This 100% solids formula is an ideal underlayment material for use in combination with Quadex Repair Materials. For optimal installation, trowel application is required.

Flex Guard®-FM

FLEXIBLE EPOXY MASTIC

Flex Guard®-FM flexible fiber reinforced epoxy mastic is designed to be applied to metal and concrete substrates that experience movement. With a 100-150% elongation, it is ideal for freeze/thaw and structures that experience temperature fluctuation. For best results, apply with a putty knife or trowel, depending on the voids to be filled or covered. Flex Guard-FM is recommended for concrete and steel tanks, foundations, cracks, control joints, manufacturing plants and manhole chimneys.

Chimney Guard™

DURABLE CHIMNEY SEAL

Chimney Guard™ is a one step, durable chimney seal made from a 100% solids Epoxy/Urethane hybrid. It is designed to provide a highly flexible and securely bonded seal prepared to address heavy traffic loading, extreme freeze/thaw and infiltration. It can be spray or trowel applied. Prior to application, base surface must be abraded to ensure proper adhesion and performance of Chimney Guard. Some advantages are: it is a high-build monolithic coating (2.5m per coat), and a one-step durable chimney seal.



**STOP LEAKS,
FILL CRACKS
AND VOIDS,
STABILIZE SOIL**

Inflow & Infiltration Prevention

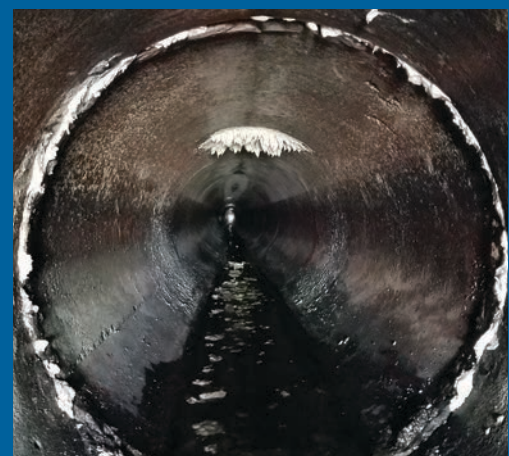
The family of I & I Guard® polyurethane foam grouts address a broad range of infrastructure problems including, inflow and infiltration, soil stabilisation and the filling of major voids.

APPLICATIONS

- **Anywhere there is inflow and infiltration**
- **Major cracks and voids**
- **Soil stabilisation**
- **Curtain grouting**

DIFFERENT GROUTS, DIFFERENT CONDITIONS

- Fast Curing Foam Grouts For High Flow Leakage
- Single Component Foam Grouts For Leak Stoppage & Crack Sealing
- Migration Foam Grouts For Stabilisation & Leak Stoppage
- Structural Two-Part Grouts



INFLOW & INFILTRATION PREVENTION

I & I Guard®-PRF

FAST CURING FOAM GROUT

I & I Guard®-PRF is used to quickly stop high flow infiltration. It is a quick response dual component hydrophobic polyurethane with a 1 – 3 second reaction time. It is designed to stop rapid water flow (up to 50 GPM) leaking from concrete or other underground structures. Since I & I Guard-PRF is hydrophobic, it will not shrink, contains no VOCs and requires no special breathing apparatus or other PPE.

Using the Quadex OneGun®, it is an easy injection application creating a curtain of grout on the outside of underground structures. Super fast cure allows for immediate reduction in infiltration. I & I Guard-PRF is recommended for water inflow and infiltration control in manholes, vaults and other concrete, brick or stone structures.

I & I Guard®-SCF

SINGLE COMPONENT FOAM GROUT

I & I Guard®-SCF is a single component, moisture-activated, blended polyurethane injection grout designed for sealing persistent water leaks. Its effectiveness and flexibility make I & I Guard-SCF an ideal solution for leak stoppage and crack sealing. This elastomeric polyurethane grout serves as an infiltration stop and is a viable method of sealing moving and non-moving cracks in concrete structures, slabs, vaults, tanks, and pipes.

Advantages of I & I Guard-SCF include: single component/no mixing, contains no volatile solvents, will not dilute in water, controlled reaction time, provides extensive coverage, non-shrinking, and quick return to service. Product applications include: sealing larger volume leaks through concrete cracks and fissures, filling voids and stabilising soil or gravel.

I & I Guard®-MSF (AVAILABLE UPON REQUEST)

MIGRATION FOAM GROUT

I & I Guard®-MSF is our premier soil stabilisation foam. It is a low viscosity, high density, deep penetrating, polyurethane injection resin that stops infiltration and stabilises soil; all the while expanding to create a solid, water-tight barrier. I & I Guard-MSF works best in low-flow situations. With a slower reaction time, it can migrate further into the void for a more effective seal. Typical uses include: voids between walls/floors/ceilings, expansion and barrel joints, cracked concrete, pipe intrusions and annular space.

I & I Guard-MSF features include: very low viscosity for good penetration, contains no volatile solvents, will not dilute in water, controlled reaction time, provides extensive coverage, non-shrinking, encapsulates and strengthens loose soil, and contains no TDI.

I & I Guard®-SSF (AVAILABLE UPON REQUEST)

STRUCTURAL TWO-PART GROUT

I & I Guard®-SSF is a high density, high strength, two-part polyurethane structural grout. This closed cell polyurethane's low viscosity and hydro insensitive nature allows for permeation of voids, under-sealing concrete and stabilising soil, while also mitigating inflow and infiltration. Typical uses include: soil stabilisation, releveling concrete slabs, filling voids, sinkhole remediation, and other various types of geotechnical grouting.

I & I Guard-SSF features include: low viscosity, no agitation necessary, high strength, hydro insensitive, quick return to service, environmentally safe, and contains no VOCs.

ADVANCED EQUIPMENT FOR QUALITY APPLICATION

Turnkey Rehabilitation Equipment

Check out our complete line of **advanced application systems** developed for use with geopolymer, hybrid cement and polymeric materials for infrastructure rehabilitation. From pipes, manholes, wet wells and tanks, to many other critical structures... **look no further for an equipment solution.**

APPLICATIONS

- **Manhole rehab**
- **Pipe and structure rehab**

*NOTE: Various pumps/mixers are available.
Please contact us to confirm our recommended manufacturers.*

MORTAR & POLYMERIC EQUIPMENT SOLUTIONS

- Mortar Trailers
- Precision Spinner Systems
- Portable Spray Systems
- Injection Grouting Equipment



TURNKEY REHABILITATION EQUIPMENT



sprayMASTER®

MANHOLE REHABILITATION RIGS

The sprayMASTER® is a completely self-contained manhole mortar lining installation system. It comes fully equipped for the precise, low-velocity spray and/or spin-cast application of cementitious and geopolymer mortar manhole lining materials. The sprayMASTER is equipped with a 250-gallon poly lined water tank and a turbo diesel engine/hydraulic power plant.



Prestige 300

MIXING, PUMPING AND SPRAYING MACHINE

The heart of the 300 is a Yanmar/Lombardini 3-cylinder industrial duty diesel motor, this power plant is indestructible! The diesel motor powers an all hydraulic drive system, which also includes its own intercooler to keep the hydraulic fluid nice and cool. The combination of a powerful motor and a well-designed hydraulic system means that the Prestige 300 can mix, pump and spray all at the same time.



CG575

TRAILER MOUNTED MORTAR OPERATIONS FOR EASE OF MOBILITY

Simple, powerful and built to last, the CG575 is ideal for mixing, pumping and spraying a wide range of materials, such as geopolymer, hybrid cements, repair mortars, finish coats, and flowable and non-flowable grouts.

The CG575 is engineered and built to continuously mix and pump the widest range of mortar and grouting materials, from thin to thick consistencies.



spinMASTER™

CENTRIFUGAL-CAST MANHOLE LINER SYSTEM – FOR MORTARS

The spinMASTER™ is a centrifugal-cast manhole liner system that speeds up the application process, and produces a consistently even coat. The spinMASTER power winch features “continuous on-time” design which eliminates normal motor breakdown (overheating). The winch can be assembled for either hand control or foot pedal operation to navigate the precision spray head up and down the vertical structure.



Spray Application Systems & Grout Pumps

CHOICE OF PLURAL OR SINGLE COMPONENT SYSTEMS

We offer several industry-leading spray systems for the application of our Quadex® line of epoxies, polymeric and polyurethane grouts. With each application demanding different performance, Vortex will specify the right sprayer or pump system for the job.

TURNKEY REHABILITATION EQUIPMENT



I-MARS Gen 1 System

LARGE DIAMETER GEOPOLYMER LINING SYSTEM

I-MARS is a field-proven and reliable system that's built to efficiently and effectively rehabilitate sewer infrastructure with the industry's best geopolymer, Quadex's® GeoKrete®. I-MARS is a versatile large diameter infrastructure rehab system that spin-casts, sprays, or trowel applies GeoKrete, and restores large diameter structures of all shapes.



I-MARS Gen 2 System

LARGE DIAMETER GEOPOLYMER LINING SYSTEM

For maximum power, efficiency and production, the I-MARS Gen2 is built to rehabilitate sewer infrastructure with the industry's best geopolymer, Quadex's® GeoKrete®. I-MARS 2 is designed to mix larger batches and pump longer distances, restore large diameter infrastructure of all shapes, making it perfect for spin-cast, spray and trowel applications.



Quadex OneGun®

DUAL COMPONENT MATERIAL CARTRIDGE DISPENSER

This extremely powerful and ultra-portable, battery operated cartridge gun is the perfect solution for applying the Quadex line of specialty epoxies, grouts and mastics. OneGun® is systematically designed to deploy the Quadex line of cartridge repair materials, whether in "1 to 1" or "2 to 1" ratios. OneGun's 20 Volt Lithium-Ion Battery will deliver up to three hours of continuous power in the most extreme conditions. Benefits of using OneGun with Quadex patching and sealing products include:

- **One delivery method, multiple repair materials**
- **Battery operation eliminates cords and hoses from the work area**
- **Resealable cartridges eliminate material waste**
- **Durable design to exist in the toughest of environments**



Quadex OneGun®



Quadex OneGun®
Mini

**HIGHLY
EFFECTIVE
RESIN
TECHNOLOGY**

Quad-Cure® CIPP Resins

Our Quadex® Division **formulates and manufactures a family of specialty resins** for a complete range of Cured-In-Place Pipe (CIPP) applications. As a proven trenchless method, CIPP continues to improve in performance, quality and versatility as both liner and resin technology are **constantly raising the bar** for this highly effective system of rehabilitation.

APPLICATIONS

- **CIPP lining**
- **Sectional repairs**

QUAD-CURE® CIPP RESINS

- Quad-Cure® UV
- Quad-Cure® SF/SM/SS



QUAD-CURE® CIPP RESINS

Quick Curing

QUAD-CURE SILICATE RESIN | SF, SM, SS

The family of Quad-Cure® Silicate Resins are formulated for sectional liners suited for isolated pipe repair and patching. We offer three different silicate resins designed for fast, medium and slow cure times that range from 15-100 minutes.

- **SF - Extremely Rapid Cure Setting**
- **SM - Fast Cure Setting for Winter**
- **SS - Fast Cure Setting for Summer**

Ranging from DN40 - DN2000 pipe diameters, Quad-Cure Silicate Resins are specifically engineered and designed to optimize sectional and point repair applications.

- **For Sectional Repairs, Shortliners, Top Hats, and HutlinerPacker**
- **Pot Life: 6 - 30 minutes**
- **Eliminates the need for costly and disruptive excavations**
- **Field tested for over 10 years**
- **50 year design life**
- **Odorless and ideal for working in confined spaces**
- **Mixing Ratio: A component : B component = 1 :2 by volume**

Environmental

QUAD-CURE® UV RESINS | UVL-400, UVLH-400

Quad-Cure® UV is a low viscosity, highly reactive UV curing resin based on **methacrylate** esters. The resin is **styrene-free** and considered an excellent solution for colder and more environmentally sensitive conditions.

UVL-400

A high-strength, styrene-free UV resin, exhibiting extreme adhesion characteristics to vitrified-clay pipe (VCP). Developed for the UV CIPP rehabilitation process. Well-suited for inversion lining and sectional liner repairs.

UVLH-400

A highly chemical resistant, styrene-free UV resin, with an extremely high glass transition temperature of 192°C. Developed for the UV CIPP rehabilitation process. Well-suited for inversion lining repairs.

CURING CONDITIONS

Quad-Cure UV resin already contains the required amount of photoinitiator. For proper curing, the resin must be irradiated by UV light (at least 10 mW/cm² from about 5 cm distance). The applied initiator allows the use of high pressure mercury lamps or UV-LEDs for curing.

STORAGE GUIDELINES

Quad-Cure UV resin should be stored indoors in the original, unopened and undamaged packaging, in a dry place at temperatures between 5°C and 30°C. Properties might slightly change during storage. Store in dark and in 100% light tight containers only. Avoid contact of the resin with day light during handling operations as day light may lead to immediate curing reactions.

- **For Main Lines and Laterals**
- **For Cold Weather and Environmentally Sensitive Areas**

**MONITOR
CIPP TEMP**

**CURE WITH
CONFIDENCE**

Curing Monitoring System



VeriCure® is a **breakthrough technology** developed to improve the CIPP curing process. Its ability to constantly monitor the temperature during the liner installation helps **ensure a 360° cure** throughout the length of the host pipe.

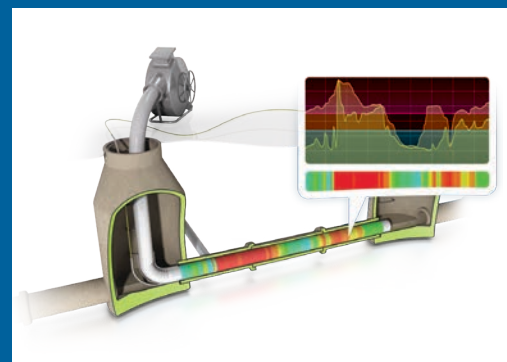
Regardless of existing flow, VeriCure **provides highly accurate and localised temperature data**; helping ensure every inch of liner is properly cured.

APPLICATIONS

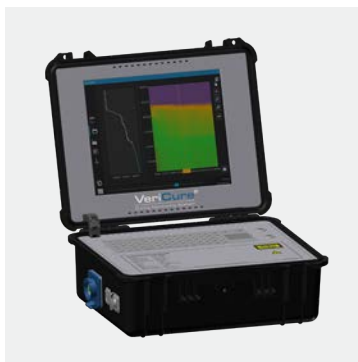
- CIPP curing monitoring

THE VERICURE® ADVANTAGE

- Optical fiber monitors temperature along entire length of CIPP liner
- VeriCure software verifies the cure and installation
- Achieve full cure in less time
- Reduce labour, equipment and fuel cost
- Comprehensive real-time and historical data



CURING MONITORING SYSTEM



Portable VeriCure® Control Box

Designed for durability and portability, the VeriCure® Control System is housed in an industrial-strength, protective pelican case for use in the field and on the job. Choose from the 1021 model that works with your PC or the 1022 model that has a built-in PC. Each system contains the following:

- DTS measuring instrument
- VeriCure software package
- Fiberoptic sensor cable connector
- LAN socket
- Mains supply socket



VeriCure® FlatTemp

VeriCure FlatTemp optical fiber cable features a rectangular profile and contains GFK elements and aramid fibers. FlatTemp is perfect for segments or pipe runs of 300m or more.

- Available in 1900m spools



VeriCure® RoundTemp

VeriCure RoundTemp cable is an armored, ultra-bendable optical fiber and exhibits exceptional crush resistance and bending radius (macro-bending) performance, making it well-suited for pipelines with multiple bends.

- Available in spools: 100m, 150m, 180m, 210m, 240m



VeriCure® Cleaning Kit

The VeriCure cleaning kit includes two cleaning pens that connect to cable ends to electrostatically remove dust from fiber and connectors, electric spray to clear blue and green adapters, located on the box, of dust and dirt, as well as alcohol wipes to clean and dry fiber adapters to improve connection.



VeriCure® Default Locator

The VeriCure Default Locator includes a pin that has a 600-nanometer laser which precisely determines if there is a fiber break, faulty splice, or faulty connection.



RUGGED AND DURABLE

POWERFUL AND EFFICIENT

Sewer Rehab Robots

The incredibly powerful Schwalm Talpa series **delivers fast and efficient grinding and cutting solutions**. Simply add one of many cutting heads and experience the power for yourself.

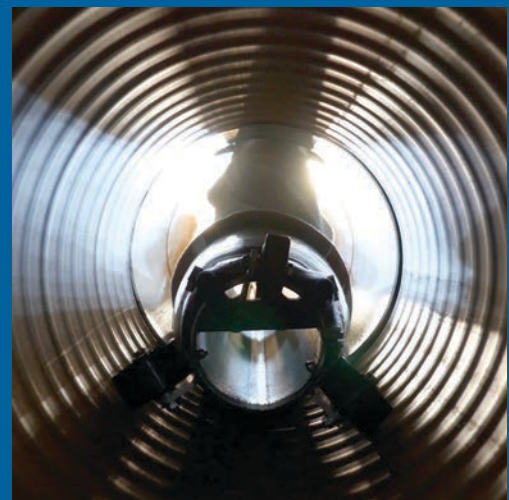
Schwalm is compatible with standard point repair systems to install pipe patches and inner pipe sealing systems.

APPLICATIONS

- Pipe cleaning
- Debris removal
- Lateral reinstatement
- Pipe inspection

SCHWALM TALPA SERIES ADVANTAGES

- Air-driven
- Rugged and durable
- Interchangeable attachments
- High-resolution camera
- Integrates with most CCTV systems



SEWER REHAB ROBOTS



Schwalm Talpa FSR 1330

FOR PIPE SIZES RANGING FROM DN 150 (LINED) TO DN 300

- Length (without connector): 765mm
- Width: 110mm
- Weight: ranges from 30-45kg

ROBOT FEATURES

- Multifunction tooling mount - allows the robot to cut, clean, reinstate, seal, grind, etc. using a broad range of attachments
- Pressurised interior space - to protect robot from water penetration
- Strain relief/reverse driving control optimizes control of your robot and Minimises damage to cables
- Modular robots: share same digital box, camera, and other accessories
- Wheels: Non-slip, Solid Rubber or Carbide Surface wheels (for traction)
- Axle extenders to upsize robot's working diameter range



Schwalm Talpa FSR 2060

FOR PIPE SIZES RANGING FROM DN 200 TO DN 600

- Length (without connector): 900mm
- Width: 150 mm
- Weight: ranges from 45-100kg

ROBOT FEATURES

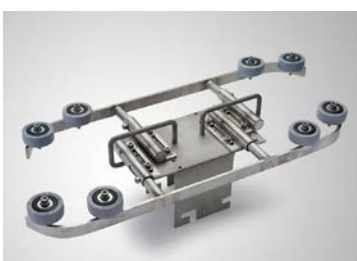
- Multifunction tooling mount - allows the robot to cut, clean, reinstate, seal, grind, chisel, etc. using a broad range of attachments
- Pressurised interior space - to protect robot from water penetration
- Strain relief/reverse driving control optimizes control of your robot and Minimises damage to cables
- Modular robots: share same digital box, camera, air motor, and other accessories
- Wheels: Non-slip, Solid Rubber (standard or jumbo wheels) or Carbide Surface wheels (for traction)
- Axle extenders to upsize robot's working diameter range



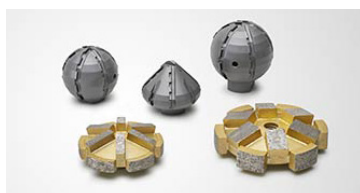
Oval / Egg Shape Pipe Accessories for Talpa FSR 2060

By using our accessories for oval pipes, the Talpa FSR 2060 can also be used in conically shaped pipes. The extension consists of a separate carriage that is used in the narrower base of the oval pipe, the position of the robot can be raised and guides stop the robot from tipping over in the wider area.

- Oval Pipe Guide for Talpa FSR 2060
- Oval Pipe Robot carriage for Talpa FSR 2060



SEWER REHAB ROBOTS



Robot Attachments

Schwalm robots are designed to accept a wide variety of attachments to make your cutting and cleaning jobs fast and efficient.

- **Mushroom Head Milling Cutter**
- **Tungsten Carbide Ball Cutter**
- **Polycrystalline Diamond (PCD) Ball Milling Cutter**
- **Chisel for Talpa 2060**
- **Air Grinder: Use your Schwalm with our Pneumatic Disc Grinder, rotating at 12,000 rpm, for removing excess material or cutting metallic objects into pieces.**



AccuPower® High-Pressure Water Jetter for Models 1330 and 2060

The Vortex Accupower High Pressure Water Jetter delivers up to 2700 Bar DN200 - DN1200 of ultra high power, water jetting performance for the most demanding pipe cleaning and cutting projects. Powered by Schwalm, the AccuPower will clean, clear, and cut through obstructions with ease in pipes ranging from DN200 - DN1200 in diameter. The conversion kit comes with everything you need and can be done on the job site.

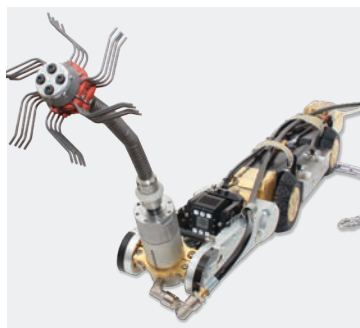


Picote Robo Tools

Picote Robo Tools are exclusively available ONLY for Schwalm Robots. A specially designed air motor can be mounted on an existing Schwalm Talpa FSR 2060 Robot to operate the new tools. The air motor runs at max 1,500 rpm. Combine Picote's exclusive Robo Tools with the advanced Schwalm Robotic System to create a powerful and versatile solution for your job site.

ROBO SMART CUTTER™

Take advantage of the fine-tuning power of the Robo Smart Cutter. Use the cutting ball and then follow up with this incredible attachment. Grind away seams, welding beads and other inconsistencies in the pipe quickly and easily. Steering option included. Available sizes: DN 150 - DN 300.

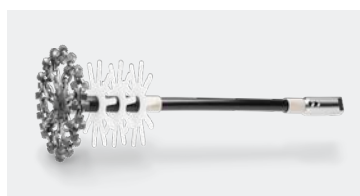


ROBO CYCLONE™

Descale pipe like never before with the Picote Premium Cyclone Chain. Mount the Robo Cyclone on a robot for efficient cleaning and grinding. Available sizes: DN 150 - DN 300.

ROBO GRABBER™

Turn your robot into a retrieval device by adding the Robo Grabber. Remove items from hard to reach places. Reclaim a tool or item, weighing up to 35 kg. Available sizes: Regular Grabber for DN 100 or larger pipes.



ROBO SMART SPIDER™

Descale fragile pipes with ease with your multi-use robot. Gentle on brass connections in water mains. Available sizes: DN 150 and DN 200.



Digital Controls

The Schwalm digital controls are built into a 19-inch housing and securely installed in a vehicle as a stationary control station. Here, the video information is merged and the operator controls all the robot interactions in the sewer. In addition, it controls the winding speed of the automatic hose-in-hose drum and the automatic cable drum.

Thanks to its compact design, the digital control module can be retrofitted into existing systems. The digital control module has several standardized video outputs which can be used to issue the video signal to external devices.

In addition to the tried and tested joystick console controls, the latest version of digital controls can also be connected to an original PlayStation DUALSHOCK®4 wireless controller.

The operator can choose between the standard controls using a joystick or using an analog stick on a controller, just like on your game console at home.



Cable Drum

The automatic cable drum from Schwalm features motorised, self-leveling, winding that automatically adjusts while winding and sorting the cable. A digital meter counter makes it much easier to use in everyday work. The cable winding automatically adapts to the robot's driving speed, but can also be set manually.

With a robust aluminum housing, it has space for cable lengths of 200 meters.

CABLE DRUM ACD 200

- **Cable output: Self-leveling winding**
- **Cable length: 200m**
- **Power supply: 110 V, 230 V**
- **Winding: automatic or manual**
- **Tensile force: manually controlled**
- **Speed: automatic or manual**
- **Counter: accurate to the centimeter**
- **Digital display**





Duo Hose-in-Hose Drum

Like the automatic cable drum, the automatic hose-in-hose supply line drum from Schwalm has motorized self-leveling winding that automatically winds and sorts the hose-in-hose supply line. The cable winding automatically adapts to the robot's driving speed.

With its robust aluminum housing, it has space for a hose-in-hose supply line with a length of 100 meters. The traction of the motorized self-leveling winding can also be continuously adjusted.

ADHD 100 HOSE-IN-HOSE SUPPLY LINE DRUM

- **Hose output: Self-leveling winding**
- **Maximum possible hose-in-hose supply line length: 100m**
- **Power supply: 110 V, 230 V**
- **Winding: automatic**
- **Tensile force: manually controlled**
- **Speed: automatic or manual**
- **Contains the item hose-in-hose supply line**



50M EXTENSION

Both ends of the hose-in-hose supply line are equipped with a special adapter, which accepts and releases the two lines, the Y-connector. Various extensions for the hose-in-hose supply line are available on request, which can be easily connected to the existing Y-connector. Extensions available in 50m.



Manual Hose-in-Hose Supply Drum

The hose-in-hose supply line can also be supplied with a manual hose reel. This offers space for a 100-meter hose-in-hose supply line and can be ordered as a stationary version for installation within the vehicles or as a mobile version with wheels.

- **Hose-in-hose supply line length: 100m**
- **Winding: manual**
- **Contains the hose-in-hose supply line**



Crane and Drum Frame

Schwalm's compact, functional crane and drum frame module is easy to install in a vehicle, either in existing setups (space permitting) or as a new custom vehicle installation. The frame is secured to the vehicle floor with six bolts and can operate on 110V or 230V.

Made from durable aluminum structural tubes, it houses a 200-meter cable drum, a 100-meter hose-in-hose line, and features a swiveling, telescopic boom with a 200-kilo chain crane. The boom and crane are operated via wired remote, allowing precise placement of robots and equipment into shafts. The drums are controlled from an integrated panel.

For storage, a full-extension, extra wide, drawer at the vehicle opening holds the robots, and three additional drawers along the gangway store tools and accessories.

SEWER MAINS SEWER LATERALS

Sectional & Point Repair Solutions

Look no further for all your sectional, and end seal repairs. From packers and top hats, to resins, laminate materials and mechanical seals, we provide it all.

COMMON APPLICATIONS

- Leaking laterals
- Longitudinal cracks
- Radial cracks
- Leaking pipe connections
- Missing wall sections
- Sealing pipe ends



SECTIONAL & POINT REPAIR SOLUTIONS



Schwalm HutlinerPacker®

The patented HutlinerPacker® are produced manually in the Schwalm manufacturing process. These are inflatable hollow bodies made from rubber and metal with a mountable protrusion on the side, the rubber hat.

These special devices developed by Schwalm serve to press short liners, which have been saturated in synthetic resin, onto sockets and tear formations in the main pipe and hat seals into lateral connections. The rubber hats, available in various sizes, are connected to the HutlinerPacker via a universal threaded mount. HutlinerPacker with a flexible packer body can even be used in curved shafts, depending on the site conditions.

There are different sizes of HutlinerPacker available for main pipe diameters from **DN 100 to DN 800**. From a diameter of 200 mm, the HutlinerPacker have a sufficiently great through-flow capacity to mean that no more pumping of waste water is required. Fitting the main pipe formats, there are different sizes of hat attachments for connections from DN 90 to DN 250.



Rubber Hats

Highly elastic rubber hats which can be used to place the synthetic resin-saturated felt caps into the lateral connections.

The universal threaded mount allows for quickly connecting and disconnecting the rubber hats. Highly elastic rubber belts position the hat brims closely around the packer body.

A total of eight different rubber hats are available for the different connection pipe diameters. Six of these can be combined freely, two rubber hat sizes (4 and 5) are dedicated.

SECTIONAL & POINT REPAIR SOLUTIONS

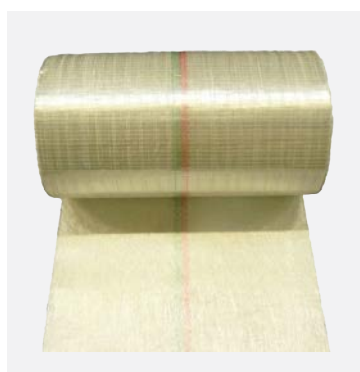


Felt Hats

Pre-assembled felt hats made from environmentally friendly polyester needle felt for renovating sewer lateral connections. **Available in the diameters DN 100, DN 125, DN 150, DN 200 and DN 250. The felt hats are available in two designs: with inclined branch angles (45°) or with straight branch angles (90°).**

MATERIAL PROPERTIES

- **Composition 100 % polyester**
- **Material thickness: 5.0 mm, ± 1**
- **Area density: 500 g/m² (DIN 12127)**
- **Shelf life: Storage at normal air humidity (50% - 70%)**



Glass Fibre Laminate

We provide you with the original Advantex glass fiber laminate. The laminate can already be cut into proper roll lengths to ensure a fit with the various pipe and sewer dimensions. It goes without saying that our glass fiber laminate is DIBt approved with respect to all the resins available from us.

WIDTH	1,086 GR. / M ²	1,387 GR. / M ²
0,35 m	✓	✓
0,44 m	✓	✓
0,53 m	✓	✓
0,65 m	✓	✓
1,30 m	✓	✓



Mechanical Pipe Seals

We offer Obduramus locking, mechanical seals to repair pipe connections from DN 150 and up. This system is flexible and manufactured using high-quality materials. Lock rings and/or stainless steel sleeves, that feature EPDM seals, are kept pressed against the inner pipe walls using specially developed and patented tension locks. This system seals the damaged spot permanently and reliably.

CIRCUM MINI

- **Compression seal**
- **Pipe diameter DN 150 - DN 800**
- **Application: Longitudinal cracks, radial cracks, leaky pipe connections, missing wall sections, abandoning unused laterals, replacing missing formwork behind inliners, part formation**



CIRCUM LEM

- **Compression seal**
- **Pipe diameter DN 150 - DN 800**
- **Application: Connecting and sealing the liner ends to pipes and structures, protecting vulnerable liner ends.**
 - ASCOPA joint rehabilitation gasket hose

EXPANDING SEAL

- **Pipe diameter DN 1000 - DN 4000**
- **Application: Sealing pipe joint gaps in accessible pipes, conical socket gaps**

SEWER LATERALS

Pipe & Drain Cleaning Tools



We offer Picote drain cleaning, pipe coating equipment and fine tuning **tools to meet all your needs.**

Picote Milling Machines and Accessories include:

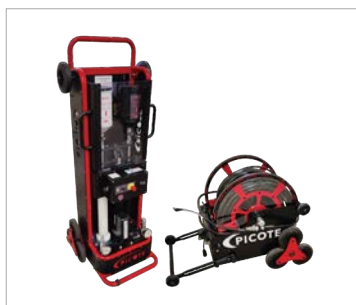
- **Epoxy Coating System**
- **Smart Cutters**
- **Cleaning chains**
- **Grinding and polishing panels**
- **Smart Spiders**
- **Twisters**
- **Shaft sockets**
- **Drill heads**
- **Hubs**
- **Curing Ccaps and compressors**
- **Adapters, grabbers and clamps**

FEATURES

- Picote's Smart Cutter was the IIST 2012 Product of the Year
- Picote products are designed for easy use with minimal breakage
- Picote training courses



PIPE AND DRAIN CLEANING TOOLS



Xpress Coating System

The Xpress brush coating system is a revolutionary rehab solution for small diameter pipes, boasting rapid cure times, zero waste and quick set up for unmatched production efficiencies.

- For DN 32 - DN 300 pipes
- 1:1, 100% solids, single color epox
- Internal resin heater
- Hose length 40m



Mini Cleaner

The Mini Cleaner is perfect for cleaning and descaling small diameter pipes with multiple bends and P traps. This specialised Miller utilizes a range of newly designed drain cleaning and cutting tools.

- For DN 32 - DN 76 pipes
- 15m of 8mm shaft
- Weighs just 26 kg
- 500 - 2900 RPM



Mini Miller

Use the Mini Miller with 51mm and 76mm Smart Cutters and Twisters. It has a lightweight aluminum frame, powers the Picote Coating System, and is ideal for building and household drains.

- For DN 50 - DN 100 pipes
- 17m of 8mm shaft with thick outer casing
- Weighs 32 kg
- 600 - 3000 rpm, 1200w output



Super Midi

The Super Midi is a multi-use machine for heavy descaling, pipe cleaning and reinstatements. It is ideal for work inside buildings and is an excellent combination of safety, force and movability.

- For DN 75 - DN 150 pipes
- 19m of 12mm shaft with normal outer casing
- Weighs 68 kg
- 110 - 230V, 1.13 - 1.5kw output



Maxi Miller

The Maxi Miller has an electric motor and safety clutch. Best for drain cleaning, powering the Smart Cutter™, Twister, Collapsed Liner Twister, Pipe Cutter and Smart Spider.

- For DN 100 - DN 200 pipes
- 30m of 12mm shaft with thick outer casing
- 95 kg
- 1400 rpm, 1130w output

PIPE AND DRAIN CLEANING TOOLS



Maxi Power Plus

The Maxi Power Plus delivers maximum power for tough cleaning projects, large diameter reinstatements, and most importantly removal of failed linings. With custom tools, like the Smart Crusher and Smart Sweeper, work is completed quickly and easily.

- For DN 150 - DN 230 pipes
- 20m of 19mm shaft can be extended by 10m
- 3-phase 16-amp 400 v / 3.5 kw / 1800 rpm

PIPE AND DRAIN CLEANING TOOLS ACCESSORIES



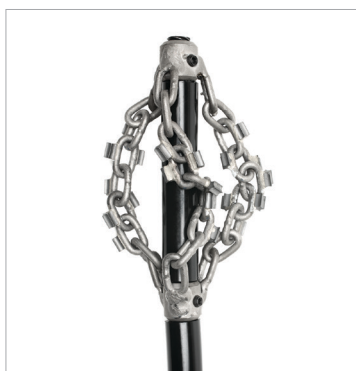
Smart Cutter™

The Smart Cutter™ is a unique lateral cutter for DN 32 – DN 200 pipes designed for cast iron, concrete and clay pipes.



Twister

- Original Twister
- Twister Concrete Remover
- Twister Liner Remover
- Twister Cleaner
- Twister Mini
- Twister Express
- Twister Metal Grinder



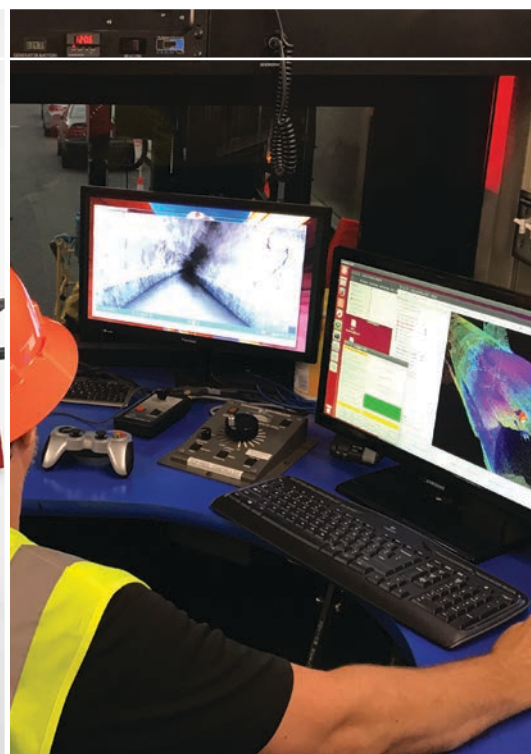
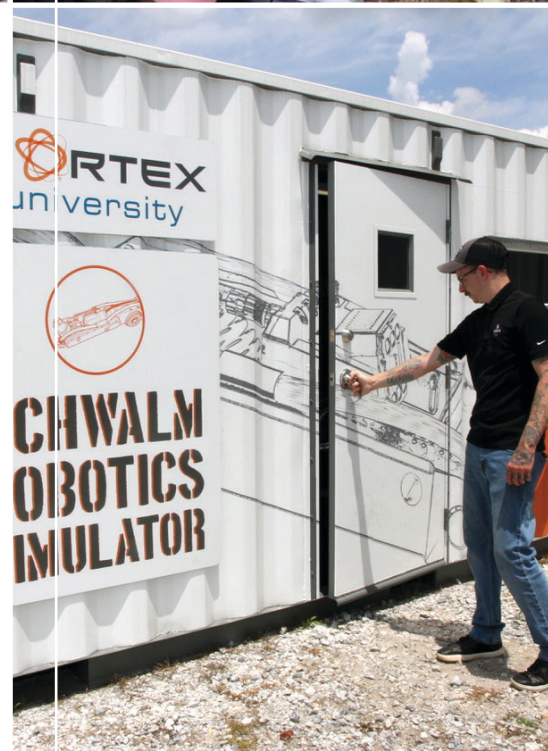
Cleaning Chains

Picote offers a large range of grinding chains for high-speed cleaning with the Picote Miller Machines:

- Premium, Regular and PVC
- Cyclone and Tornado



**PROVIDING TRENCHLESS
TECHNOLOGY FOR
TOMORROW'S WATER &
SEWER INFRASTRUCTURE**





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