



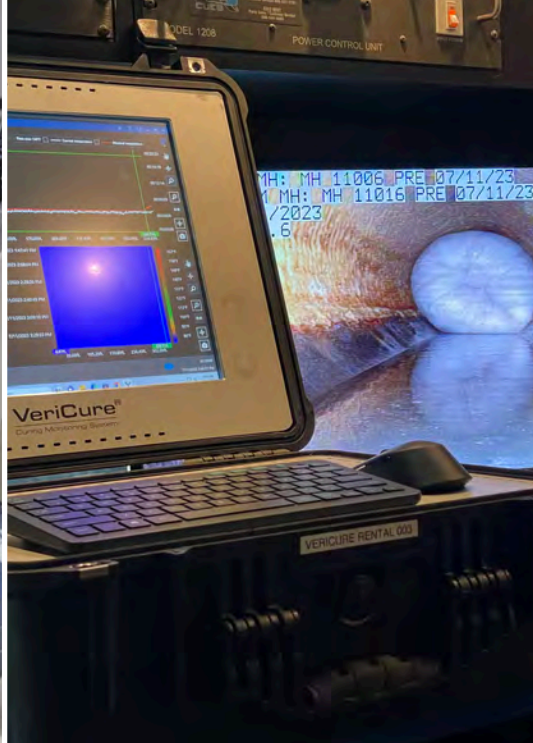
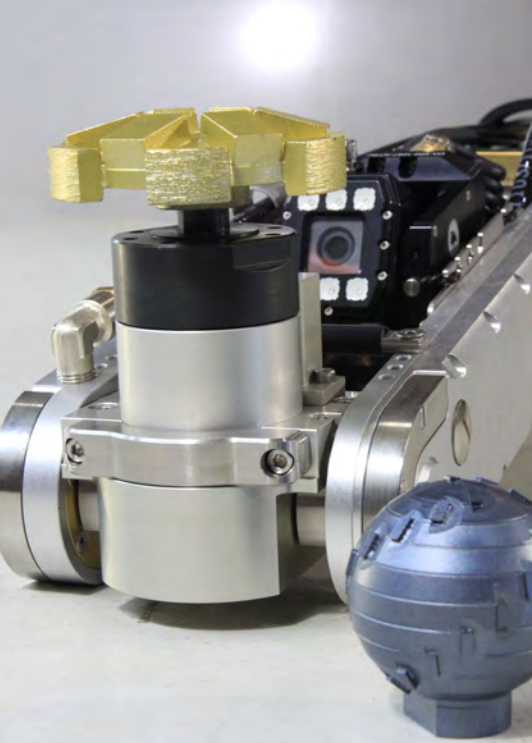
VORTEX
europe



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
& WASTEWATER
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.

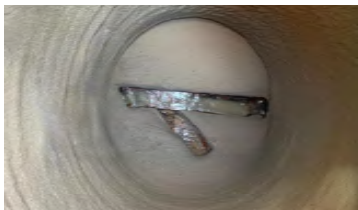
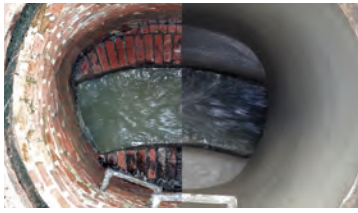
APPLICATIONS

- **Various structures, of all sizes and diameters, chambers and pipes**
- **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 (CO₂ SAVING)

GeoKrete® is a fully structural, UV and 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
- Shafts
- Tunnels
- Culverts
- Wet wells
- Coating, masonry, grout and repair mortar



Deutsches
Institut
für
Bautechnik



DIN19573 - XWW4
(BSK-BESTÄNDIG)



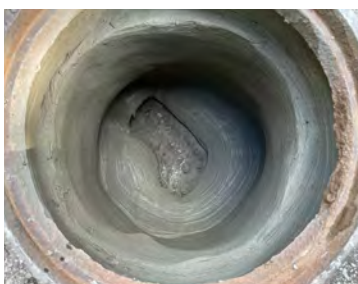
GeoKrete®-RS

GEOPOLYMER MORTAR, HAND-SPRAYED OR SPIN-CAST STRUCTURAL COATING

GeoKrete®-RS is a fully structural, UV and corrosion resistant Geopolymer mortar. Ideal for manual processing, but also for can be used mechanically.

IDEAL FOR:

- Pipe, sewage and infrastructure rehabilitation
- Shafts
- Tunnel
- Culverts
- Wet wells
- CO₂ savings



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 monocryalline 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 76,2 mm in thickness by low pressure spraying or centrifugal casting.

IDEAL FOR:

- Vertical and overhead repairs to concrete or masonry
- Manhole
- Wet wells
- Metal pipes
- Water treatment plants
- Tunnel
- Locks and dams
- Coating, masonry and repair mortar
- DIN19573 - XWW3



Hyperform®

HIGH STRENGTH PATCHING MATERIAL

Hyperform® is a shaft mortar, masonry and repair mortar, 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 cavities in manhole walls
- Reconstruction of base vaults
- Concrete repair and repair
- Pipe repair - shaft head rehabilitation
- Construction of the berm and chan



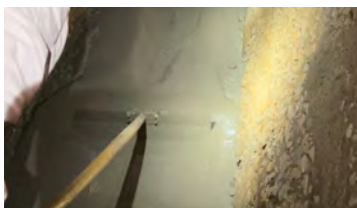
Quad-Plug®

HYDRAULIC CEMENT

Quad-Plug® is an accelerator and grouting mortar with 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:

- Sewage pipes and sewer shafts
- Concrete tanks
- Elevator shafts and pits
- Cisterns
- Cellar
- Concrete and masonry walls
- Against infiltration
- Accelerators and grouting mortar



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:

- Restoration of rainwater and sewer inlets
- As a standalone repair method
- As part of a repair prior to the application of a Quadex mortar or polymer lining
- Grouting mortar
- Self-leveling



**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



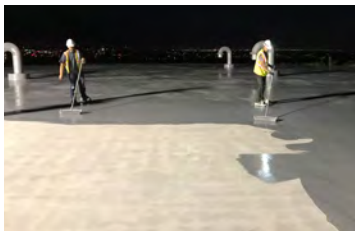
Structure Guard®

HIGH BUILD, UNFLEXIBLE 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:

- Sewage pipes and sewer shafts
- Pumping stations
- Vaults and tanks made of concrete or masonry
- Inlet structures and diversion structures of
 - Treatment plants
 - Steel pipes and tanks
 - Separators (grease & oil)
 - Chemical stresses
 - UV-resistant



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
- Fissures
- Elongation and
- Control joints
- Production
- Shafts
- End seals
- Liner repair
- Shaft heads

**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



Structure Guard®-RS

RAPID SETTING EPOXY (CHEMICAL LOADS)

Structure Guard®-RS is a 100% solids, thick film epoxy coating that provides long-term corrosion protection and structural enhancement for sewer manholes, pump stations, wastewater treatment plants or any other wastewater infrastructure subject to high levels of corrosion and/or abrasion. Structure Guard-RS cures quickly and allows for rapid return to service in the most aggressive and harsh environments. The surface is smooth to improve flow and is used as an inner or outer pipe liner. It is also ideal for sole 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 up to 6.4 mm build capability with no sag.

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 durable one-pass monolithic manhole head seal made from a 100% solids epoxy/urethane hybrid. It is designed to provide a highly flexible and securely adhering seal designed to withstand heavy traffic loading, extreme freeze/thaw and infiltration. It can be sprayed or applied. Prior to application, the base surface must be roughened to ensure proper adhesion and performance of Chimney Guard.



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

Inflow & Infiltration Prevention

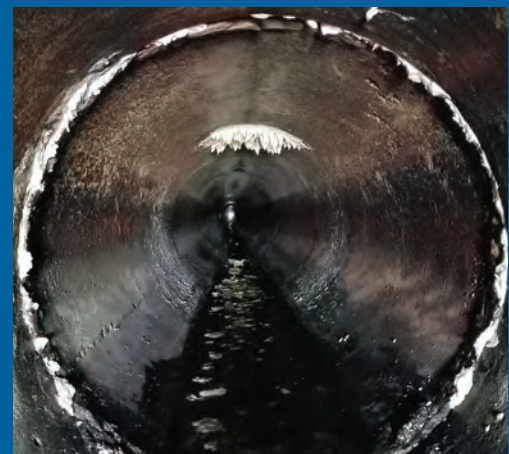
The family of Maverick polyurethane foam grouts address a broad range of infrastructure problems including, inflow and infiltration, soil stabilisation and the filling of major voids.

APPLICATIONS

- **Anywhere there is inflow and infiltration**
- **Major cracks and voids**
- **Soil stabilisation**
- **Curtain grouting**
- **Lifting and leveling**
- **Stops Leaks, Fills Voids, Levels Concrete and Stabilises Soil**

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



Maverick I & I-2410

FAST CURING FOAM GROUT (STRONG FOAMING)

Maverick I & I-2410 is used to quickly stop high water flow rates. It is a fast-reacting two-component hydrophobic polyurethane with a reaction time of 1 – 3 seconds and is designed to stop rapid water flow rates (up to 190 l/min) leaking from concrete or other Maverick I & I-2410 structures. Because Maverick 2410 is hydrophobic, it does not shrink and does not contain volatile organic compounds.

Using the Quadex OneGun® or a hand pressure gun, it is a simple injection application, creating a seal on the exterior of underground structures. The super-fast cure allows for immediate reduction of infiltration. Maverick 2410 is recommended for controlled water inflow and infiltration in manholes, vaults and other concrete, brick or stone structures.

Maverick I & I-1190

SINGLE COMPONENT FOAM GROUT

Maverick I & I-1190 is a single component, moisture-activated, blended polyurethane injection grout designed for sealing persistent water leaks. Its effectiveness and flexibility make Maverick I & I-2410 an ideal solution for leak stoppage and crack sealing. This elastomeric polyurethane grout serves as a infiltration stop and is a viable method of sealing moving and non-moving cracks in concrete structures, slabs, vaults, tanks, and pipes.

Advantages of Maverick 1190 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.

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. Please enquire about our extensive rental equipment.

MORTAR & POLYMERIC EQUIPMENT SOLUTIONS

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





M-Tec Duo-Mix 2000

MANHOLE REHABILITATION DEVICE

Mixer, pump and compressor compact & mobile Ideal for processing the GeoKrete®-RS using the wet spraying or centrifugal method. Delivery capacity of the geopolymer mortar up to approximately 30 meters 400V connection, includes 10-meter mortar hose, cleaning unit and various accessories .

- Ideal for GeoKrete®-RS

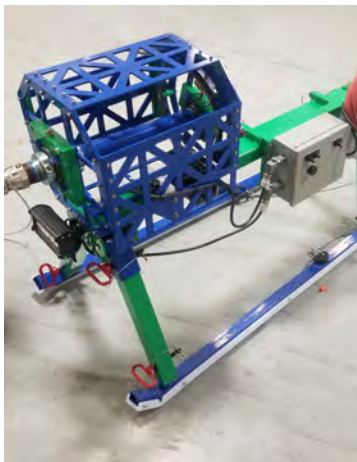


Prestige 300

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 convey – all at the same time.

- Ideal for GeoKrete® and Quad-Flow



Quadex® Gyro Sled™

The Gyro Sled™, an integral component of Quadex Lining System®, was developed by Vortex. It is a proprietary spray system refined over the past decade to deliver the most durable, precise spin-cast application of GeoKrete® geopolymer available. Engineered around its rugged sled body and high-performance rotary spray nozzle, the Gyro Sled drives the nozzle through a controlled cone-shaped rotation while GeoKrete is pumped directly through the nozzle's center. Spun at high rpm, the material is centrifugally cast into a uniform lining that bonds to the inner pipe wall for long-lasting protection. Pulled smoothly through the pipeline by the Quadex Retrieval Device at a constant speed, the Gyro Sled coats the full pipe length with a precisely controlled, consistent thickness—delivering repeatable, specification-grade results on every run. Can also be used in egg-shaped profiles.

Exclusively designed to work with Vortex approved mortar pump systems. Please enquire.

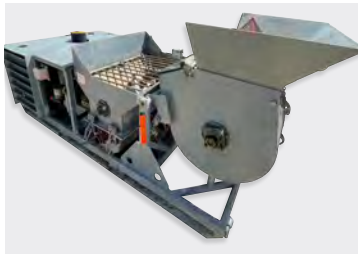


spinMASTER™

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. Suitable for round and rectangular structures.

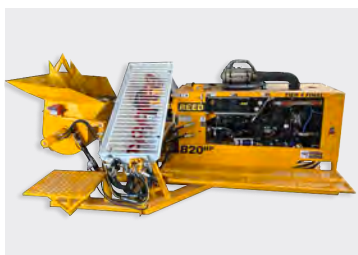
- Ideal for GeoKrete® and GeoKrete®-RS



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.



E-Mix MT

ELECTRIC VARIABLE SPRAYER FOR EPOXY COATINGS

The E-Mix MT, from Graco, is the easiest to operate variable ratio sprayer on the market. Dependable and durable, the E-MIX MT has been developed to work with all Quadex epoxy systems. Designed to handle spray ratios from 1:1 up to 6:1, it is an ideal sprayer for practically every job.

- Structure Guard®
- Structure Guard®-Water
- Structure Guard®-RS
- Structure Guard®-QS
- Chimney Guard™
- Flex Guard



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



Manual Cartridge Gun

HIGHLY EFFECTIVE RESIN TECHNOLOGY

Silk resins and UV 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**

SILK RESINS AND UV RESINS

- Quad-Cure® UV
- Quad-Cure® Slow, Medium, Fast, Ultra Fast



Quick Curing

QUAD-CURE® SILICATE RESIN | SLOW, MEDIUM, FAST, ULTRA FAST

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.

- **Slow - fast curing for summer**
- **Medium - for climate-controlled environments where cure time is not critical**
- **Fast - fast curing for winter**
- **Ultra Fast - extremely fast curing**

Ranging from DN 40 - DN 2000 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.

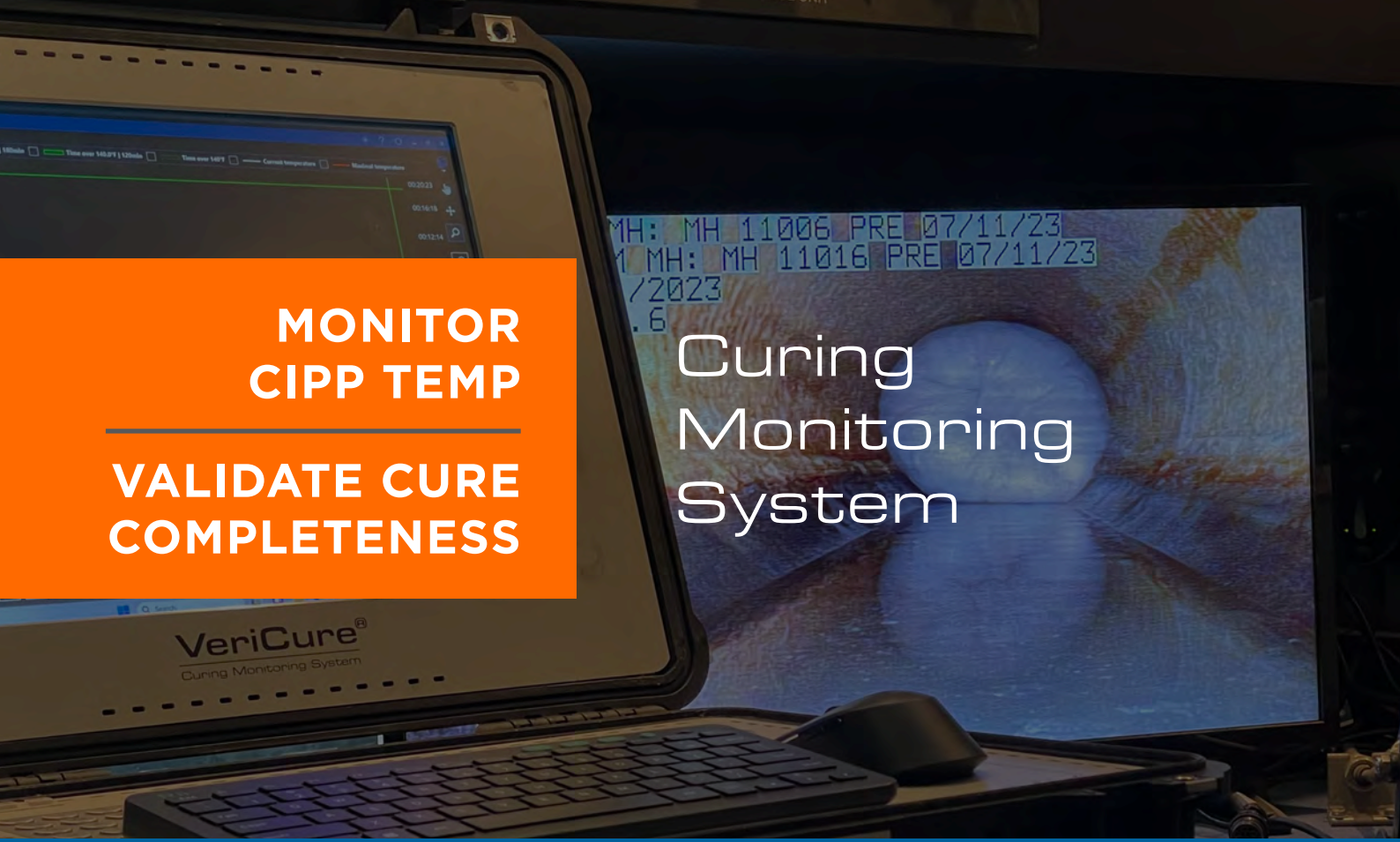
CURING CONDITIONS

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

VALIDATE CURE COMPLETENESS

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.

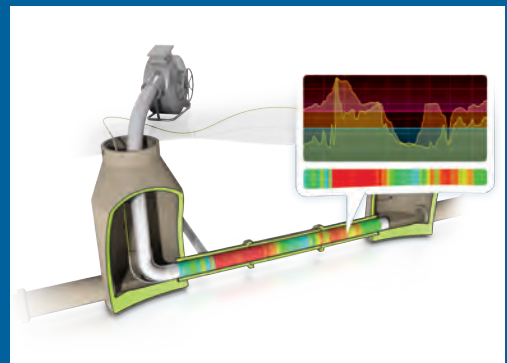
Regardless of existing flow, VeriCure **provides highly accurate and localised temperature data**; helping ensure every inch of liner is properly cured.

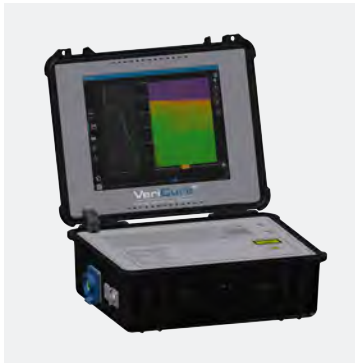
APPLICATIONS

- CIPP curing monitoring
- Approved for both heat and UV cured liners

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





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.

Each system contains the following:

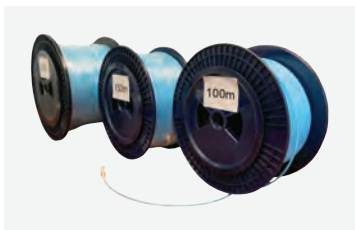
- **DTS measuring instrument**
- **VeriCure software package**
- **Fiberoptic sensor cable connector**
- **LAN socket**
- **Energy supply socket**



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 300 m or more.

- **Available in 1900 m 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: 100 m, 150 m, 180 m, 210 m, 240 m**



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.

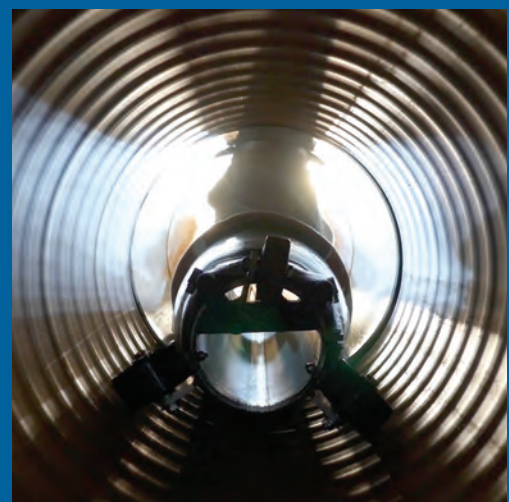
Schwalm is compatible with standard point repair systems to install pipe patches and inner pipe sealing systems.

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





Schwalm Talpa FSR 1330

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

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

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): 900 mm
- Width: 150 mm
- Weight: ranges from 45-100 kg

ROBOT FEATURES

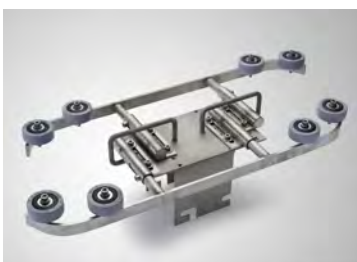
- Multifunction tooling mount - allows the robot to cut, clean, reinstate, seal, grind, chisel, etc. using a broad range of attachments
- Pressurised interior space - to protect robot from water penetration
- Strain relief/reverse driving control optimizes control of your robot and minimises damage to 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



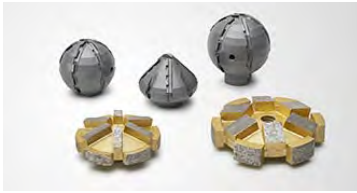
Oval / Egg Shape Pipe Accessories for Talpa FSR 2060

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 Jet Device for Models 1330 and 2060

The Vortex Accupower High Pressure Water Jetter delivers up to 2.700 bar DN 200 - DN 1200 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 DN 200 - DN 1200 in diameter. The conversion kit comes with everything you need and can be done on the job site.

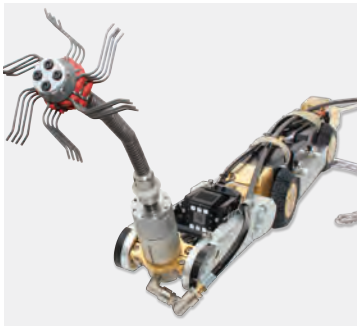


Picote Robo Tools

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: 200 m**
- **Power supply: 110V, 230V**
- **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: 100 m**
- **Power supply: 110V, 230V**
- **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 50 m.



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: 100 m**
- **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.



Portable Schwalm System

For flexible use of a Schwalm system in the field or in confined spaces.

- Easy Transport thanks to pallet.
- Operating weight max. 500 kg.
- Dimensions: 120 × 100 × 145 cm.

Equipped with integrated 51-liter water tank and pump for camera flushing. Operates in conjunction with a mobile compressor and an external 230V/50Hz power supply (generator or power pack).

Consists of a Schwalm ACD 200 m cable reel (rotatable 0-90°) and a manual hose-in-hose supply reel (100 m).

Customized configuration with Schwalm Talpa FSR 1330 and/or Talpa FSR 2060 robots possible, housed in the heavy-duty pull-out drawer provided for this purpose.

Also available for rent at any time.

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





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.

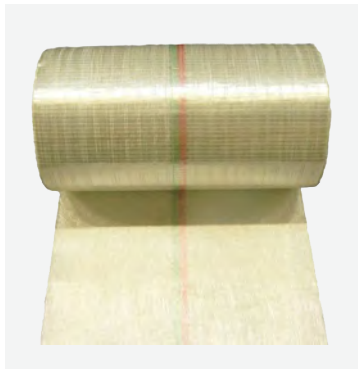


Felt Hats

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	✓	✓

A photograph of a Vortex UV curing system, a large industrial machine with a control panel and a glass-enclosed curing chamber. The machine is white and has the 'VORTEX' logo on top. The background is slightly blurred, showing an outdoor setting.

**HIGH
PERFORMANCE**

**ADVANCED
TECHNOLOGY**

UV Curing Systems & Equipment

Vortex designs and manufactures a proven and robust line of UV curing equipment for sewer pipes and laterals for a faster and more efficient lining solution.

VORTEX UV-CURING SYSTEM DN 150-1600 | 6"-63"

- UV-Curing System: 12 kW (8x1500 Watt)
- Light Chain MINI for DN 150-200 | 6"-8"
- Light Chain SMALL for DN 150-600 | 6"-24"
- Double-Core for DN 700-1600 | 28"-63"
- Packer Set for DN 150-600 | 6"-24"

VORTEX UV LED POINT REPAIR SYSTEM DN 150-300 | 6"-12"

- UV LED Packer in two lengths
- Control Unit
- Cable reels in various length
- Enddisc sets for DN 150-300 | 6"-12"
- Bladder for DN 150-300 | 6"-12"
- UV Patches DN 150-300 | 6"-12"



Vortex UV Curing System (12 KW)

PLC CONTROL AND SUFFICIENT POWER FOR UV CURING UP TO DN 1600

The Vortex UV curing system cable drum with PLC control features a high strength aluminum frame. All equipment can be operated via the PLC with a brightly illuminated Siemens SIMATIC touch screen located at the front of the unit. The cable drum is electrically driven, has a cross-guide spindle and built with 305 m of heat-resistant UV curing cable.



DETAILS

- **Dimensions:** (L x W x H) 2000 x 1065 x 1455 mm | 79 x 42 x 57"
- **Weight:** approximately 920 kg | 2030 lbs.
- **Control:** Siemens Simatic with Remote Access (Service)
- **Chassis:** strong aluminum frame
- **Fanless PC with documentation/control software**
- **3 Monitors for installation at the operator workplace**
1 x for PC / 2 x for Live-Video (Front and Back camera)



SAVA Lumeniq

SAVA Lumeniq is a sleek, portable UV curing system engineered for mainline rehabilitation in limited-access locations. Designed with intelligent light technology and Vortex IQ on the inside, SAVA Lumeniq delivers a smart, reliable solution for restricted-access UV CIPP installation challenges. Each system includes:

DETAILS

- **Power:** 3.2 kW - 5.2 kW
- **Cable Length:** 200 m | 656 ft.
- **Diameter Range:** DN 150-600 | 6-24"
- **Size (L x W x H):** 1500 x 700 x 1100 mm | 59" x 28" x 66"
- **Weight:** 522 kg | 1,150 lbs.



VORTEX UV LIGHT CHAIN MINI (DN 150-200 | 6"-8")

The Vortex UV Light Chain MINI was specifically developed for use in small diameters (DN 150 | 6") where pipe offsets and deformations are present. These can cause the Light Chain to become stuck during curing when using a regular Light Chain. This would require expensive excavation and opening of the liner.

DETAILS

- **2 Light Chains with 4 UV lamps each**
- **2 IR temperature sensors per Light Chain**
- **Connection adapter**
- **Wheelset: DN 150 | 6"**
- **Wheelset: DN 200 | 8"**



VORTEX UV LIGHT CHAIN SMALL (DN 150-600 | 6"-24")

The Vortex Light Chain SMALL has eight centrally arranged and power-controlled UV lamps from 400-650W, depending on the pipe diameter. By exchanging the spring-mounted wheel sets, the Light Chain is optimally and smartly adapted to different pipe diameters.

DETAILS

Pipe Dimensions:

- 2 Light Chains with 4 UV lamps each
- 2 IR temperature sensors per Light Chain
- Connection adapter
- Wheelset DN 150 - DN 600 | 6"-24"
- Total Power 3,2 kW/5,2 kW (8 x 400/650 Watt)



VORTEX UV DOUBLE CORE (DN 700-1600 | 28"-63")

The Vortex UV double core consists of two cores connected with a connecting adapter. Each core is equipped with four UV lamps (1000-1500W) located on the electrically extendable wheel arms. This allows the lamps to move outward when the core is installed in the pipe, placing them closer to the liner material. This ensures improved illumination of the liner.

The compact installation dimensions of just 400 mm in diameter (wheel arms retracted) ensure an easy installation of the cores.

DETAILS

- 2 Cores with 4 UV lamps each
- 2 IR temperature sensor per Core
- Connection adapter
- Working area DN 700-1600 | 28"-63"
- Total Power 8,0 kW/9,6 kW/12,0 kW (8 x 1000/1200/1500 Watt)



UV Packer Set DN 150 - DN 600

With the help of UV packers, the GRP liners are tied in and set up in a user-friendly manner. Set consists of 5 pairs for nominal sizes DN 150 - DN 600. The stainless steel packers are equipped with matching air couplings for a compressor connection.

DETAILS

- 5 pairs DN 150-600 | 6"-24" stainless steel
- 1 connection each for blower, compressor and measuring hose
- Easy-to-open lids





Vortex UV LED Point Repair System (DN 150-300 | 6"-12")

For fast and seamless repair of cracks, offsets, root growth, and other damage to pipes in the DN 150-300 | 6"-12" range.

Powerful UV LEDs ensure safe and fast curing within minutes.

The Vortex UV LED packer is available in two lengths to safely cure our patches with a length of either 50 cm | 20" or 100 cm | 40".

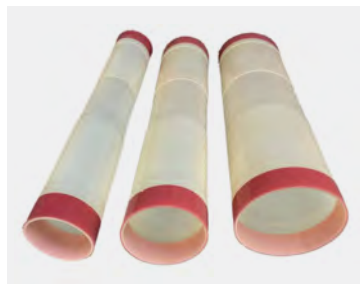


Adaptation to the required nominal diameter is achieved by exchanging the end caps and the corresponding silicone hose.

A change in size is completed within minutes.

For connecting to our control box we are offering loose connecting cables as well as a cable reel for easy unwinding and winding.

Loose connecting cables are available in lengths of 25 m | 82 ft., 50 m | 164 ft. and 75 m | 246 ft.



The cable reel is available in lengths of 50 m | 164 ft. and 75 m | 246 ft.

Special lengths are available upon request.

DETAILS

- **Powerful UV-LED-Packer in 2 Lengths**
- **Seamless rehabilitation with minimal reduction in flow capacity**
- **Restores pipe sections with permanent bonding**
- **Patches are available in 50 cm | 20" or 100 cm | 40" lengths, for the dimensions DN 150 | 6", DN 200 | 8", DN 250 | 10" and DN 300 | 12"**



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 caps 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





Mini Multi-Cutters

Enduring, powerful, robust. The mechanical multi-cutter precisely converts the high speed and torque of the Mini Miller +C into performance. It delivers impressive results in underground or vertically laid pipes – with minimal space requirements and without a large compressor.

Multiple 90° bends are no obstacle. With DN 100-150 and a range of up to 26 m, the Mini Multi-Cutter is ideal for side entries and for removing concrete or collapsed liners.



Prolite 6 & 8

HIGH-SPEED CLEANING. COMPACT, POWERFUL, BATTERY-OPERATED.

Picote ProLITE Millers are designed for professional cleaning, descaling, and unblocking of small to medium-sized pipes. Thanks to their particularly lightweight, compact design, they are ideal for precise work in confined spaces. The 18V Li-ion battery offers maximum cleaning power and mobility on the construction site.



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 epoxy
- Internal resin heater
- Hose length 40 m



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
- 15 m of 8 mm shaft
- Weighs just 26 kg
- 500 - 2900 rpm



Mini Miller

Use the Mini Miller with 51 mm and 76 mm 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
- 17 m of 8 mm 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
- 19 m of 12 mm shaft with normal outer casing
- Weighs 68 kg
- 110 - 230V, 1.13 - 1.5 kW 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
- 30 m of 12 mm 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.

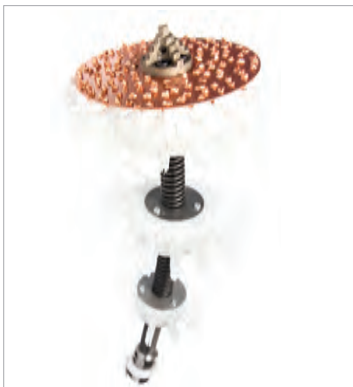
- For DN 150 - DN 230 pipes
- 20 m of 19 mm shaft can be extended by 10 m
- 3-phase 16-amp 400V / 3.5 kW / 1800 rpm

PIPE AND DRAIN CLEANING TOOLS ACCESSORIES



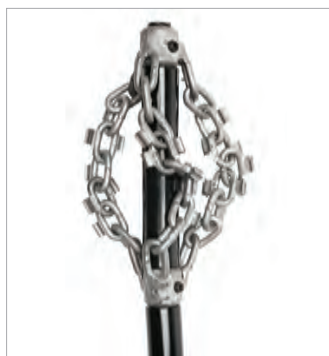
Smart Cutter™

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



The Viper

A compact, steerable jet-powered inspection system with a motorized drum. With the Viper, you are able to steer, view, and clean branch and lateral lines with a single system.

KEY FEATURES (ALL VIPER MODELS)

- Full HD: 1920 x 1080
- Fiber Free
- Pipe Sizes: DN 75-600 | 3"-24"
- Passes through and steers into multiple 45° bends in lines DN 75 | 3" and larger
- Passes through and steers into multiple 90° bends in lines DN 100 | 4" and larger
- Working pressure up to 4,350 psi | 300 bar
- Hose diameter: DN 10 | 3/8"
- Required water supply 1.600 psi | 110 bar, 8 gpm | 30 l/min
- Fresh water and recycled water operation



VIPER LIGHT

- With 100 ft. | 30m hybrid hose 3/8"
- w x d x h: 26 x 9.5 x 29 inch | 66 x 24 x 73 cm
- Weight: 64 lbs. | 29 kg including 100 ft. | 30 m hybridhose 3/8"



VIPER COMPACT

- With 200 ft. | 60 m hybrid hose 3/8"
- w x d x h: 23 x 20 x 28 inch | 58 x 52 x 70 cm (handle retracted)
- w x d x h: 23 x 20 x 43 inch | 58 x 52 x 110 cm (handle extended)
- Weight: 119 lbs. | 53 kg including 200 ft. | 60 m hybridhose 3/8"



VIPER LONG RANGE

- With 265 ft. | 80 m hybrid hose 3/8"
- w x d x h: 23 x 25 x 28 inch | 58 x 64 x 70 cm (handle retracted)
- w x d x h: 23 x 25 x 43 inch | 58 x 64 x 110 cm (handle extended)
- Weight 139 lbs. | 63 kg including 265 ft. | 80 m hybridhose 3/8"





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





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