

PIPELINE REHABILITATION

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TACKLING THE AGING INFRASTRUCTURE PROBLEM

With the increasing amount of failing infrastructure throughout the world, the demand is high for rehabilitation solutions that are not only structural, but also corrosion resistant. Luckily, we are living in a time where there are plenty of solutions. However, choosing the correct one for any particular application is extremely important. For large diameter pipes, culverts, wet wells, manholes, as well as many other structures, one particular product is claimed to be emerging as an effective solution that addresses both concerns. It is called GeoKrete® Geopolymer.



A Geokrete installation underway.

WHAT IS AGEOPOLYMER?

In the spring of 2006, Quadex, LLC, a division of the Vortex Companies, was the first to introduce a geopolymer to the underground rehabilitation industry. GeoKrete was developed to cost-effectively deliver a long-term rehabilitation solution to leaking, corroded or otherwise compromised large diameter and odd-shaped infrastructure.

A Geopolymer is a formulated mortar comprised of aluminosilicate powder with an alkaline activator to form a monolithic mineral polymer with ceramic properties. A geopolymer is not an epoxy or a plastic blended with aggregate.

GeoKrete Geopolymer cures through a process of polycondensation and possesses proven, high early and long-term compressive strength. Additionally, with superior bond strength, GeoKrete liners can be applied in layers and under multiple mobilisations. The chemical composition of GeoKrete Geopolymer makes it inherently resistant to the microbial induced corrosion prevalent in many sewer environments. Geopolymers contain greatly reduced concentrations of calcium hydroxide, commonly found in typical cementitious mortar, furthering the suitability of GeoKrete in low PH environments.

APPLICATION

The Quadex Lining System featuring GeoKrete comprises industry leading materials, equipment and QA/QC procedures designed to structurally restore large diameter pipes, culverts and tunnels of all types and shapes.

This unique combination of precision equipment, finely tuned procedures and the industry's leading geopolymer, GeoKrete®, allows for project metrics to be monitored in real time, to ensure a long-term solution. Understanding that every project presents unique challenges, the system is fully capable of integrating advanced, third party design and engineering.

Depending on the project requirements, QLS allows for GeoKrete can be spin-cast, sprayed or trowel applied. In many situations all three methods might be employed to complete the project.

GeoKrete is used primarily in pipe of 36 in (900 mm) diameter and greater, highly corrosive sewer manholes, sewer tunnels and in nearly every odd shaped sewer containment structure out there. It is extremely versatile and can be applied to brick, concrete, stone and corrugated metal surfaces. Over the past few years, GeoKrete has been used to rehabilitate miles of large diameter pipe, large brick tunnels of every shape, junction boxes, thousands of manholes and countless specialty storage tanks. While each one presents its own challenges, the design team was able to create an engineered

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Steve Vick International designs and manufactures products for the trenchless renovation and decommission of pipes worldwide. Products include Pipe Coil Trailers, Pipe Handlers and Pipe Cutting Equipment.



Developer and manufacturer of installation and support equipment for pipeline rehabilitation and lateral connections and a specialist pipeline rehabilitation contractor including building rehabilitation works.



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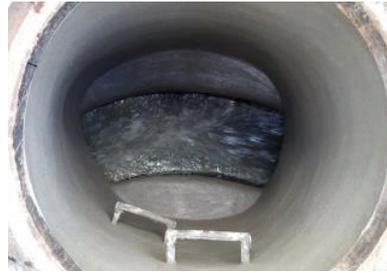
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solution for each, some very simple and easy to apply, while others were very complex where extreme corrosion, leaking and structural integrity was compromised. It is also important to note that since GeoKrete can be spun, spray or trowel applied, bends, offset joints, large voids and obstructions do not present a problem. In most cases, GeoKrete's quick cure time allows the structure to be put back into service within 24 hours of completion.



Geokrete in a manhole.

CORROSION RESISTANCE TEST

In October of 2017, Quadex announced that GeoKrete met the most demanding European test standard XWW-4, as defined by DIN 19573: Mortar for Construction and rehabilitation of Drains and Sewers Outside Buildings. This test created by the Hamburg Society ensures repair and renovation products meet the minimum standard of resistance for biogenic acid corrosion.

Many areas with corroded and damaged infrastructure have limited access to make repairs. GeoKrete utilises custom-designed installation equipment built specifically to address space and access issues. Therefore only a small construction footprint is required and its application sled and nozzles easily fit into man entry sized areas.

Due to the product's chemical make up, long-term performance, small construction footprint and custom designed application equipment, GeoKrete just recently received 'reduced carbon footprint' certification by SCS Global Services, an internationally recognised sustainability certification body. GeoKrete was evaluated for its lower overall carbon footprint as it relates to potential greenhouse gas emissions from raw material extraction through manufacturing, use and end-of-life. With QLS and GeoKrete, typically there is no digging involved. All of this adds up to less time on the job, less surface disruption, lower CO₂ emissions and less cost to the project owners.

GeoKrete is quickly emerging as a preferred method of rehabilitation for situations where other methods, although effective, are simply not viable from cost and time savings point of view. GeoKrete is fully structural, corrosion resistant and environmentally friendly. It is made to tackle the toughest of situations, all while saving time and money. Websites: www.quadex.eu or www.vortexcompanies.com



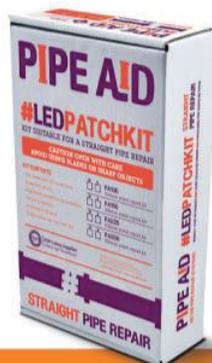
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PACKAGES

LED Complete Contractor Pack, 100-300mm

Control Box
Hose & Cable Reel
Connecting Cable
4 x Patches, 100mm - 300mm

LED Contractor Pack, 100-150mm

Control Box
Hose & Cable Reel
Connecting Cable
2 x Patches, 100 & 150mm

CAPABILITIES & BENEFITS

- 100-300mm repairs
- LED curing in 6-10 minutes
- Quick and easy to use no dig application (no disruption)
- No need for resin mixing buckets or measuring containers
- Permanent and watertight pipe repair
- Convenient kit format
- Environmentally and ecologically friendly
- DIBT approved patches
- WRc approval pending
- Chemical resistant resin and glass fibre
- Improved site efficiency



For further information on our LED patch repair kits, please contact us on sales@rsm-web.com or call 01709 864 271