



**REPAIR
MATERIALS**

QUADEX®
A VORTEX COMPANY

GEOKRETE® GEOPOLYMER MORTAR FOR RAW, STORM AND WASTEWATER INFRASTRUCTURE REHABILITATION

MANHOLES | TUNNELS | CULVERTS | PIPE | WET WELLS | AND MORE...

Formulated for Versatility in Applications

GeoKrete® is a formulated mortar comprised of aluminosilicate powder and an alkaline activator, that when mixed with water, forms a durable inorganic polymer. Contrary to typical cements which hydrate to bind aggregates, a geopolymer uses water as the catalyst to trigger a chemical reaction. This reaction yields very high early and long-term strength, exceptional bonding properties and ideal conditions for precision mixing, pumping and spraying.

Geopolymer mortars are the next generation of spray-applied structural coatings and are designed to perform where traditional cements, expensive composite systems (cement+epoxy) and other rehab methods fall short.

Recommended uses:

- Pipe/Culverts 30" and greater
- Tunnels (circular, box, arch, elliptical, egg and odd-shaped)
- Wet wells and junction boxes
- Manholes

Key Performance Features

For optimum performance and consistent results, Quadex developed an advanced line of application equipment and strict QA/QC processes to help ensure a quality installation.

A few of GeoKrete's performance features:

- Can be applied in wide range of temperatures exceeding traditional cement-based mortars.
- It cures through poly-condensation resulting in many of its superior performance features.
- It can be applied in multiple layers installed at different times.
- Can be pumped far distances without the risk of "set-up".
- Delivers fully structural and corrosion resistant liner.

Designed for Harsh Sewer Environments

Considered one of the only true geopolymers on the market, once applied, GeoKrete forms a monolithic, inorganic polymer structure, making it extremely resistant to acids and provides longer surface durability.

Third party performance testing in critical areas lead the industry:

- Chemical Resistance (ASTM C267)
0% mass loss in 12 week sulfuric acid test @ pH 1.0 immersion
- Shrinkage (ASTM C1090)
28-days ≤ 0.02%
- Freeze Thaw (ASTM C666)
No visible damage after 300 cycles
- Abrasion Resistance (ASTM C1138)
6 Cycles at 28 Day - loss <1.0%

Bonds to a Multitude of Surfaces

The inherent physical properties of GeoKrete allow it to tenaciously bond to a broad range of pipe and infrastructure materials typically used for sanitary and stormwater infrastructure, including:

- Concrete
- Stone
- Steel
- Plastic

Certified as a Reduced Carbon Footprint Product

SCS Global Services, a nationally recognized third party testing and assessment facility certified GeoKrete as an official Reduced Carbon Footprint product when compared to other trenchless rehabilitation systems for structural rehabilitation.

- 51% less than Portland cement-based mortars
- 59% less than Calcium Aluminate cement-based mortars
- 95% less than Cured-In-Place Pipe (CIPP) process





SPECIFY GEOKRETE® FOR MANHOLES, TUNNELS & CULVERTS

In Need of Fully Structural Rehabilitation & Corrosion Protection



129' Deep Manhole/350' Egg-Shaped Culvert Rehabilitation

Lakewood, OH

Owner:

City of Lakewood, OH

Problem:

A 129' deep brick manhole constructed in 1912, along with a 350' of 78"H x 66"W brick culvert built in 1915, had reached the end of their useful lives and were in a state of imminent failure.

Challenges:

- Shear depth of the manhole presented challenges. A specially equipped man lift was used to lower crew into manhole.
- 15 large baffles originally built into the manhole structure had to be removed and the voids repaired.
- The culvert outfall was at the base of a steep slope with 60° incline; made access difficult.

Solution:

The Quadex Lining System® featuring GeoKrete geopolymer. Installation thickness optimized applying varying thicknesses ranging from 1" to 3" to provide a fully structural renewal and eliminate I&I.



10-Year Follow-up on GeoKrete Lined Manholes

Neenah, WI

Owner:

City of Neenah, WI

Problem:

15 manholes located in Northern Wisconsin, previously coated with a polyurea, were already failing after one year. Extensive flaking and peeling was present indicating a complete failure was imminent.

Solution:

Quadex® GeoKrete geopolymer was specified to correct the problem and applied with the spinMASTER® system to ensure a consistent lining from top to bottom. A trowel was then used to smooth-out the finish. Since GeoKrete has an quick cure time, the manholes did not have to be taken out of service.

Ten Year Inspection:

In 2016 the manholes were re-inspected. There were no signs of failure or degradation.



Brick Sewer Rehabilitation In Front of Boston General Hospital

Boston, MA

Owner:

Boston Water & Sewer Commission
Dimensions

Problem:

A section of an old sewer was odd shaped, contained obstructions and could not be CIPP lined. Since it was located near the hospital entrance a trenchless solution was the only option.

Solution:

The Quadex Lining System, featuring GeoKrete, was used to reline and structurally restore 415' of 54"H x 36"W brick sewer. It was spray-applied to the odd-shaped sewer and was able to cover the obstructions as well.

One Year, Post Inspection:

GeoKrete Geopolymer liner is still in the same condition as the day it was installed.