GeoKrete® BY VORTEX

VORTEX

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, 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 future of spray-applied structural coatings and designed to perform where traditional cements, expensive composite systems (cement+epoxy) fall short.

KEY PERFORMANCE ADVANTAGES

GeoKrete is applied using advanced application equipment and follows strict QA/QC processes to help ensure a fully structural, corrosion-resistant and long term repair solution.

- **Can be applied in a wide range of temperatures**
- **It cures through poly-condensation resulting for superior performance**
- **Can be applied in multiple layers 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, when applied, GeoKrete forms a monolithic, inorganic polymer structure, making it extremely resistant to acids and provides longer surface durability.

Critical third party test results outperform 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%**

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 CIPP process**

BONDS TO MANY SURFACES

GeoKrete tenaciously bonds to a broad range of pipe and infrastructure materials used for sanitary and stormwater infrastructure.

- **Concrete**
- **Steel**
- **Stone**
- **Plastic**

Specify GeoKrete® for manholes, tunnels and culverts

in need of fully structural rehabilitation and 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.