



# GEOKRETE® GEOPOLYMER TECHNICAL DATA SHEET

Rev. 09-2020



A VORTEX COMPANY

## REPAIR MATERIALS

### Typical Performance Characteristics\*

- Compressive Strength (ASTM C39 & C109)  
28-days >8,000 psi | 55.1 MPa
- Flexural Strength (ASTM C78)  
28-days >800 psi | 5.5 MPa
- Bond Strength (ASTM C882)  
28-days >3,000 psi | 20.7 MPa
- Modulus of Elasticity (ASTM C469)  
28-days =  $5.49 \times 10^6$  psi | 37.8 GPa
- Chemical Resistance (ASTM C267)  
0% mass loss in 12 week  
sulfuric acid @ pH 1.0 immersion
- Chloride Ion Penetration Resistance  
(ASTM C1202)  
28-Day < 250 Coulombs (very low)
- Split Tensile Strength (ASTM C496)  
28-days >900 psi | 6.2 MPa
- Shrinkage (ASTM C1090)  
28-days  $\leq$  0.02%
- Freeze Thaw (ASTM C666)  
No visible damage after 300 cycles
- Abrasion Resistance (ASTM C1138)  
6 Cycles at 28 Day - loss <1.0%

### STRUCTURAL REHABILITATION MORTAR

#### DESCRIPTION

Quadex® GeoKrete® geopolymer is formulated to provide corrosion resistant protection in a high hydrogen sulfide environment, restore structural integrity and eliminate the infiltration of groundwater in deteriorated structures. GeoKrete is a factory blended, one-component (just add water), eco-friendly, micro-fiber reinforced geopolymer mortar synthesized from reactive  $\text{SiO}_2$  and  $\text{Al}_2\text{O}_3$  from industrial byproducts, enhanced with monocrystalline quartz aggregate. The GeoKrete geopolymer reaction mechanism is alkali-activated polycondensation which yields superior physical properties and chemical resistance. It can be applied in one pass up to several inches thick on horizontal or vertical surfaces by low pressure spraying or spin cast application process.

#### RECOMMENDED FOR

Structural restoration of large diameter pipes, culverts and tunnels, including raw, storm and wastewater, consisting of metal, concrete, stone, masonry and others. Other structures such as manholes, wet-wells, and treatment plant structures also benefit from the superior strength and corrosion resistance properties of this advanced geopolymer material.

#### FEATURES AND BENEFITS

- Quality controlled, one-component blend for uniform results.
- High early and ultimate compressive, flexural and bond strengths.
- Resistant to acid attack in wastewater streams with pH as low as 1.0 and temperature exceeding 212°F | 100°C for industrial effluent.
- Extremely low permeability.

\* The values stated in inch-pound units are to be regarded as the standard. The values given in International System are for information only.



Compared to Baseline for  
Trenchless Repair Systems for  
Structural Rehabilitation of  
Civil Infrastructure

## PACKAGING

GeoKrete geopolymer is supplied in 60 lb. | 27.2 kg. poly-lined bags or 1,000 lb. | 454kg super sacks.

## YIELD

One 60 lb. | 27.2 kg bag of GeoKrete geopolymer will yield approximately 0.45 cu. ft. | 0.013 cu. m. and will cover 10.8 sq. ft. | 1.0 sq. m. at a 1/2-inch | 12.7 mm thickness.

## PROCEDURE

Prepare surface to be patched by removing unsound concrete, dirt, dust, oil and other debris using high pressure (3,500 PSI | 241.3 bar) water blasting. Stop active infiltration. Then rinse with potable water to remove all remaining dirt, sand and loose debris. This will provide a clean, damp surface to allow for a good bond.

Use approximately 0.48 to 0.57 gallons | 1.82 to 2.16 liters of potable water per 60 lb. | 27.2 kg bag of GeoKrete geopolymer. For 1,000 lb. | 454 kg. supersack use approximately 8.0 to 9.5 gallons | 30.3 to 36 liters of potable water. First add water to mixer, start the mixer and add GeoKrete geopolymer until mortar is completely mixed. Once all geopolymer material and water has been added to mixer, it needs to mix for approximately five (5) minutes prior to being transferred into the material hopper. Once fully mixed, additional water may be added, as approved by Quadex, should it be necessary for proper consistency.

Apply GeoKrete geopolymer by low pressure spraying or the spin cast application process on horizontal or vertical surfaces to a monolithic minimum thickness of 1/2-inch | 12.7 mm for a protective layer to new or non-corroded infrastructure and 1.0-inch | 25.4 mm for structural restoration of existing infrastructure.

## CURING

Cure in accordance with manufacturer's recommendations.

## WARRANTY

Quadex warrants its products to be free of defects in material and workmanship. Quadex will replace any product proved to be defective when applied in accordance with manufacturer's instructions. Quadex's obligation shall be limited solely to such replacement. There are no other warranties by Quadex, expressed or implied.

## PRECAUTIONS

Avoid eye contact or prolonged contact with skin. Wash thoroughly after use. Persons using Quadex GeoKrete geopolymer should wear necessary PPE consisting at minimum of eye protection, dusk mask and rubber gloves. Read all product labels and technical literature prior to use.

