

PRODUCT DATA SHEET

SikaCem[®]-900 Geo W

HIGH STRENGTH GEOPOLYMER SHOTCRETE MATERIAL FOR WET-MIX PROCESS APPLICATIONS

PRODUCT DESCRIPTION

SikaCem[®]-900 Geo W is a one-component, pre-packaged, ultrafine, fiber reinforced, high strength, and shrinkage-compensated geopolymer shotcrete material formulated for wet-process applications.

USES

- Structural material for repair and reline surfaces for sewers, pipes, culverts, inverts, tunnels, manholes, water and wastewater treatment plants, and industrial plants
- Vertical and overhead surfaces
- Multiple application techniques including spraying and centrifugal casting
- On grade, above grade, and below grade on concrete and mortar

CHARACTERISTICS / ADVANTAGES

- Ready-for-use, one-component material; just add water
- Increased resistance to acids and other highly caustic environments
- Superior workability and shooting pumpability
- Superior abrasion resistance over conventional Portland cement mortar
- High bond strength ensures superior adhesion
- Compatible with coefficient of thermal expansion of concrete
- Good freeze/thaw resistance
- High early strengths
- Very low shrinkage
- Fiber reinforced

PRODUCT INFORMATION

Packaging	65 lb bag (29.5 kg) 2000 lb supersack (907 kg)
Shelf Life	12 months in original, unopened packaging
Storage Conditions	Store in a dry, covered area, protected from the elements For optimum performance it is recommended to store the material between 40°F - 95°F (5°C - 35°C) Protect from moisture. If damp, discard material.

TECHNICAL INFORMATION

Abrasion Resistance		ASTM C1138
	28 Days	0.039 kg (0.26%) mass loss 1.22 in ³ (0.28%) volume loss
Compressive Strength		ASTM C39/ C109
	1 day	2,500 psi (17.25 MPa)
	28 days	8,000 psi (55.0 MPa)
Flexural Strength	28 days	1,200 psi (8.25 MPa) ASTM C78
Modulus of Elasticity in Flexure	28 days	3.9 x 10 ⁶ psi (26.8 GPa) ASTM C469
Tensile Strength	28 days	520 psi (3.5 MPa) ASTM C496
Shear Strength	Bond Strength	ASTM C882
	28 days	3000 psi (20.5 MPa)
Shrinkage	28 days	0.02% ASTM C596
Rapid Chloride Permeability	28 days	< 600 Coulombs ASTM C1202
Chemical Resistance	Sulfuric Acid (pH 1.0)	Zero mass loss Zero volume loss ASTM C267
Freeze-Thaw Stability	300 Cycles	Zero mass loss ASTM C666
	No cracking or severe deterioration with light surface scaling	

APPLICATION INFORMATION

Fresh mortar density	144.2 lb/ft ³ (2.31 kg/L)	
Coverage	0.51 ft ³ (0.014 m ³) per 65 lb bag 0.58 yrd ³ (0.450 m ³) per 2000 lb Supersack Yield figures do not include allowance for surface profile and porosity, or material waste	
Ambient Air Temperature	40 °F - 95 °F (4 °C - 35 °C)	
Mixing Ratio	7.8 - 8.3 pints per 65 lb bag (3.7 - 4.0 L per bag) 30 - 32 US gal per 2000 lb supersack (113.5 - 121.5 L per supersack) 0.120 - 0.128 pints of water per lb of product	
Substrate Temperature	40 °F - 95 °F (4 °C - 35 °C)	
Set Time	Initial	20 - 30 min
	Final	30 - 40 min
	Time begins when product is applied to substrate.	

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

- Surfaces must be clean and sound. Remove all deteriorated concrete, dirt, dust, oil, grease, contaminants and other bond-inhibiting materials from the area to be repaired
- To ensure optimum repair results, the effectiveness of decontamination and substrate preparation can be assessed by a Pull-Off test (i.e Tensile Adhesion test per ASTM C1583)
- Saw cutting the perimeter edges of the repair area is recommended, preferably cut at a dovetail angle
- Remove any and all protruding material i.e brick, concrete, mortar, etc.
- Ensure that any and all leaks are stopped prior to application

MIXING

- Pour 7.8 pints (3.7 liters) of clean water per 65 lb bag into a suitably sized mixing container
- Add product to the container while continuously mixing with a low-speed rotary drill (400 - 600 rpm), and paddle or a concrete mixer
- Add up to an additional maximum 0.5 pint (0.23 liter) of water, if needed, for the desired consistency
- Do not overwater. Excess water may cause segregation
- Mix to a uniform consistency, maximum 5 minutes. Thorough mixing and proper proportioning are necessary

APPLICATION

Apply in accordance with the ACI 506 "Guide to Shotcrete" publication.

Performance of in-place shotcrete relies heavily upon application techniques. The shotcrete material, equipment and key personnel should be pre-qualified prior to project start-up to ensure optimum quality of in-place shotcrete.

OPTIMUM PERFORMANCE

- Product should not be applied when ambient, substrate, and material temperatures are below 40 °F (5 °C) or above 95 °F (35 °C).
- For adverse temperatures, follow ACI recommendations for Cold/Hot Weather Concreting.

FINISH

- If needed, a troweling finish can be done following initial set of the surface in an upward direction. Do not over trowel the surface. For standard sewage repair, a smooth finish is not recommended, as it will decrease the water discreted from the product during final set and curing.

Contact your Sika STM Technical Representative for more information.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling 1-800-933-7452.

Sika Corporation

201 Polito Avenue
Lyndhurst, NJ 07071
Phone: +1-800-933-7452
Fax: +1-201-933-6225
usa.sika.com



Product Data Sheet

SikaCem®-900 Geo W
April 2024, Version 01.04
020302030200000063

SikaCem-900GeoW-en-US-(04-2024)-1-4.pdf

