BUILDING TRUST

PRODUCT DATA SHEET

Sikacrete®-6000 Geo Hybrid

High Performance Self Consolidating Concrete Mix with Mass Pour Capabilities

PRODUCT DESCRIPTION

Sikacrete®-6000 Geo Hybrid is a one component, high performance, self consolidating concrete containing factory blended coarse aggregates. This self consolidating concrete mix is silica fume enhanced and contains supplemental cementing materials that result in improved sustainability vs. comparable products.

USES

Sikacrete®-6000 Geo Hybrid may only be used by experienced professionals.
- In deep pour concrete repairs
- As an overlay on horizontal surfaces
- For repairs to slab on grade, above grade and below grade concrete conditions
- For repairs to vertical and overhead surfaces when formed and poured or formed and pumped
- As a structural repair material for parking facilities, industrial plants, water and wastewater treatment plants, walkways, bridges, abutments, beams, columns, walls, tunnels, dams, balconies, etc.
- As a filler for large voids and cavities

CHARACTERISTICS / ADVANTAGES

- Self consolidating concrete; high flow for easy placement
- Deep pour applications; up to a maximum 36 inches (91 cm) in one lift
- Excellent freeze/thaw resistance
- Silica fume enhanced
- Prepackaged with a blend of coarse, nonreactive aggregates
- Eliminates the risk of extending with reactive aggregates in the field
- Can be poured or pumped into forms
- Coefficient of Thermal Expansion similar to concrete
- Maximum aggregate size; typical 3/8 inch (10 mm)

PRODUCT INFORMATION

Chemical Base	Portland cement based formulation containing select fillers, aggregates and special additives
Packaging	65 lb. (29.5 kg) bag; 48 bags per pallet
Shelf Life	12 months from date of production if stored properly in original, unopened and undamaged, sealed packaging.
Storage Conditions	Store in a cool, dry, well-ventilated conditions, out of direct sunlight at 40 - 95 °F (4 - 35 °C). Protect powder from moisture. If permitted to become damp, discard material.
Density	142 lbs / cubic feet

TECHNICAL INFORMATION

Compressive Strength	**1 day** 7 days 28 days	**2,000 psi (13.8 MPa)** 5,000 psi (34.5 MPa) 6,000 psi (48.3 MPa)	(ASTM C39) 3"x6" cylinders 73 °F (23 °C), 50% R.H.
Flexural Strength	28 days	700 psi (4.8 MPa)	(ASTM C78) 73 °F (23 °C) 50% R.H.
Shrinkage	28 days	0.05%	(ASTM C157) 73 °F (23 °C) 50% R.H.
Expansion	28 days	<0.02%	(ASTM C157) 73 °F (23 °C)
Tensile Adhesion Strength	7 days	240 psi (1.65 MPa) Failure in concrete	(ASTM C1583) 73 °F (23 °C) 50% R.H.
Coefficient of Thermal Expansion	28 days	7.5 x10^{-6} in/in	(ASTM C531) (TX DOT 428A)
Sulfate Resistance	28 days	Excellent	(ASTM C1012) 73 °F (23 °C)
Electrical Resistivity	28 days	27.6 kOhms-cm	(ASTM C1876)
Slant Shear Strength	28 days	3000 psi (21.2 MPa)	(ASTM C882) 73 °F (23 °C) 50% R.H.
Freeze-Thaw Stability	28 days	>94% @ 300 cycles	(ASTM C666)
Splitting tensile strength	28 days	600 psi (4.1 MPa)	(ASTM C496) 73 °F (23 °C) 50% R.H.
Rapid Chloride Permeability	28 days	<1000 Coulombs	(ASTM C1202) 73 °F (23 °C) 50% R.H.
Mixing Ratio	7.5 to 8.0 pints (3.5 to 3.8 liters) of clean, potable water per 65 lb. (29.5 kg) bag		
Coverage	0.50 ft3 (0.01 m3) per bag (Coverage figures do not include allowance for		

surface profile and porosity or material waste)

Layer Thickness	Minimum	Maximum in One Lift*
	1 inch (25 mm)	36 inches (91 cm)
	* If repair requires multiple lifts, each lift should be applied as soon as the previous lift has developed enough initial strength to support it.	
Product Temperature	Condition to 65 - 75 °F (18 - 24 °C) before use	
Ambient Air Temperature	40 °F (4 °C) minimum / 95 °F (35 °C) maximum	
Substrate Temperature	40 °F (4 °C) minimum / 95 °F (35 °C) maximum	
Flowability	**Time**	**Spread** (ASTM C1611) 73 °F (23 °C) 50% R.H
	Initial	27 to 32 inches (68 - 61 cm)
	At 30 min	> 26 inches (66 cm)

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.

USES

- Avoid application in direct sunlight, during precipitation, and/or when strong winds prevail.
- Apply to sound and well prepared substrates.
- Use only clean, potable water when mixing.
- Do not use any other types of admixtures (e.g. plasticizers, accelerators, retarders, etc.) or add cement to Sikacrete®-6000 Geo Hybrid.
- Egg beater paddles are not recommended for use with Sikacrete®-6000 Geo Hybrid as they tend to entrap excessive air in the mix.
- Do not use resin based, wax based or solvent based curing compounds on finished, exposed Sikacrete®-6000 Geo Hybrid surfaces.
- Sikacrete®-6000 Geo Hybrid does not form a vapor barrier when cured.
- Elevated temperatures will decrease working time and slump.
- Rate of strength gain will be reduced at colder temperatures. On site testing is recommended.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts, etc. with an appropriate epoxy such as Sikadur®-32 HiMod.

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. DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC Per Section 9 of the current Safety Data Sheet, VOC content of Sikacrete®-6000 Geo Hybrid is not applicable.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Concrete

- Surfaces must be clean and sound. Remove all deteriorated concrete, dirt, oil, grease, laitance, contaminants and other bond inhibiting materials from the area to be repaired.
- Be sure repair area is not less than 1 inch (25 mm) deep.
- Preparation work should be done by abrasive blasting, high pressure water jetting, scarifying, scabbling or other appropriate mechanical means. Obtain an exposed aggregate surface with a minimum surface profile of + 1/8 inch (3 mm) [i.e. ICRI CSP-6 to CSP-7] on clean, sound concrete.
- To ensure optimum repair results, the effectiveness of decontamination and substrate preparation can be assessed by a Pull-Off test (i.e. a Tensile Adhesion Strength test per ASTM C1583).
- Saw cutting the perimeter edges of the repair area to a depth of 1 inch (25 mm) is recommended.
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water or frost should remain on prepared surfaces during application.
- Mask off and protect any adjacent surfaces that should not receive contact with Sikacrete®-6000 Geo Hybrid.

Steel

- Steel reinforcement should be thoroughly prepared by mechanical cleaning (e.g. blast cleaning, wire brushing) to remove all traces of rust and scale (reference: SSPCSP5 / NACE 1).
- Where corrosion has occurred, the steel should be high-pressure washed with clean water after mechanical

cleaning.

Priming

▪ Concrete: Prime the prepared substrates with a brush or spray applied coat of Sika® Armatec® or Sikadur®-32 Hi-Mod bonding agent products. Please consult applicable current Product Data Sheets for additional information. Sika® Armatec® requires an SSD condition while Sikadur® -32 Hi-Mod does not.
▪ Alternately in lieu of a bonding agent, a scrub coat of Sikacrete®-6000 Geo Hybrid can be applied to the SSD substrate. While the scrub coat is still wet, place the remaining thickness of Sikacrete®-6000 Geo Hybrid needed to complete the repair.
▪ If installations of a bonding agent or a scrub coat of Sikacrete®-6000 Geo Hybrid are not possible, other suitable means should be employed such as pumping under pressure to ensure good intimate contact with the prepared substrate within a form is achieved.
▪ Reinforcing Steel: For priming and corrosion protection of reinforcing steel, use Sika® Armatec® corrosion protection products. Please consult the applicable current product data sheets for additional information.

MIXING

▪ Initially wet down all contact parts of mixing equipment.
▪ Pour the appropriate volume of clean water, approximately 70 °F (21 °C) into a suitable mixing container or appropriate mortar mixer.
▪ Start with a minimum of 7.5 pints (3.5 liters) of water. An additional half pint (0.3 liter) can be added if needed. DO NOT OVER WATER! Excess water may cause segregation. ▪ Ambient and material temperatures should be as close as possible to 70 °F (21 °C). If higher, use cold water. If colder, use warm water.
▪ While mechanically mixing, slowly add the entire bag's contents of powder to the water.
▪ Mix thoroughly with a low speed (400 - 600 rpm) drill using an appropriate mixing paddle, or in an appropriate mortar mixer to avoid entraining too much air and until homogenous with no lumps. Scrape side walls of container to ensure a proper mix.
▪ Mix until visibly uniform in consistency for a maximum 3 minutes (typical). Thorough mixing and proper proportioning are necessary. Do not over mix.

APPLICATION

▪ Ensure substrate is properly prepared and saturated surface dry (SSD) before installation.
▪ Ensure good intimate contact with the substrate is achieved either by use of a bonding agent, a scrub coat application or other suitable means such as pumping under pressure.

Horizontal, Flat Installations

▪ After filling repair area, screed the material. Allow Sikacrete®-6000 Geo Hybrid to set to desired stiffness, then finish with a broom or burlap drag for a rough finish, or a wood or sponge float for a smooth surface. For a smoother finish, a magnesium float can also be used.
▪ To assist in the finishing process, use SikaFilm® finishing aid. Please consult with the current product data sheet for additional information.

Form and Pour / Form and Pump Installations

▪ Tap form lightly while pouring or pumping. DO NOT VIBRATE
▪ Pump with a variable pressure concrete pump. Continue pumping until a 3 to 5 psi (20 - 34 kPa) increase in normal line pressure is evident, then STOP pumping.
▪ Form should not deflect.
▪ Vents are to be capped when steady flow is evident. Forms are stripped when a sufficient amount of cure time has elapsed, based on actual temperature conditions.
▪ Refer to ACI 305R, the "Guide for Hot Weather Concreting" or ACI 306R, the "Guide for Cold Weather Concreting" when there is a need to place Sikacrete®-6000 Geo Hybrid while either hot or cold temperatures prevail. Thinner placements will be more sensitive to actual temperature conditions

CURING TREATMENT

▪ As per ACI recommendations for Portland cement concrete, curing is recommended.
▪ Depending upon actual ambient and substrate temperatures, formwork should be left in place as long as possible to reduce the rate of moisture evaporation (typical minimum 3 days or longer).
▪ Moist curing should commence immediately after finishing exposed surfaces.
▪ Moist cure with wet burlap and polyethylene, a fine mist of water, or a water based compatible* curing compound compliant with ASTM C309 (e.g. Sikagard®-1315 KNS).
* Pretesting of non-Sika water based curing compound for compatibility is recommended. Curing compounds will adversely affect the adhesion of following layers of mortars, leveling mortar or protective coatings.
▪ Protect newly applied material from direct sunlight, wind, rain and frost.
▪ To prevent from freezing, cover with insulating material (e.g. curing blanket)

CLEANING OF TOOLS

Uncured material can be removed from equipment surfaces and finished surfaces with water. Surfaces should be cleaned immediately after use. Cured material can only be removed from surfaces by mechanical means.

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