

PRODUCT DATA SHEET

Sikacrete[®]-530

SHOTCRETE MATERIAL FOR WET-MIX PROCESS APPLICATIONS

PRODUCT DESCRIPTION

Sikacrete[®]-530 is a pre-blended and pre-packaged shotcrete material formulated for wet-mix process applications. It contains carefully selected components to enhance shooting characteristics and physical properties.

USES

Sikacrete[®]-530 can be used for applications including but not limited to:

- Rehabilitation of concrete structures,
- New construction including slope stabilization, soilnailing, shaft and tunnel linings,
- Initial and secondary tunnel support.

CHARACTERISTICS / ADVANTAGES

Sikacrete[®]-530 provides the following benefits:

- Improved adhesive and cohesive plastic properties,
- Significantly reduced rebound, resulting in lower material usage,
- Lower equipment and labor costs compared to alternative application processes.

Sikacrete[®]-530 is blended with the combination of the following optional features and benefits:

Gradation (No Descriptor)

- Blended to meet ACI 506 - Guide to Shotcrete, Table 1.1.,
- Both Gradation No. 1 and Gradation No. 2 are available options,
- By default Sikacrete[®]-530 is blended with Gradation No. 2.

Poly Fiber (PF)

- Reduces cracking caused by intrinsic stress,
- Temperature reinforcement,
- Alkali, acid, and salt resistant,
- Product with descriptor: **Sikacrete[®]-530 PF.**

Steel Fiber (ST)

- Significantly increased load carrying capacity,
- Significantly increased energy absorbing capacity (toughness),
- Significantly increased impact resistance,
- Reduced permeability,
- Reduced cracking due to drying shrinkage,
- Product with descriptor: **Sikacrete[®]-530 ST.**

PRODUCT INFORMATION

| | |
|---------------------------|---|
| Packaging | Available in 1,675 lb (760 kg), 1,700 lb (771 kg), 3,350 lb (1,520 kg), and 3,400 lb (1,542 kg) bulk bags. |
| Shelf Life | Shelf life when stored in dry warehouse conditions between 40°F and 95°F (5-35°C) is one year from the date of manufacture. |
| Storage Conditions | Sikacrete®-530 must be stored in a dry environment. If exposed or unprotected Sikacrete®-530 will absorb moisture resulting in an unusable product. Physical properties may be adversely affected if stored in temperatures below 40°F (5°C) and material should be allowed to warm to ambient underground temperatures before use. |

TECHNICAL INFORMATION

| | | |
|------------------------------|--|--------------------|
| Compressive Strength | | ASTM C 1604 |
| | 1 day | 1,500 psi (10 MPa) |
| | 7 days | 3,000 psi (20 MPa) |
| | 28 days | 4,500 psi (30 MPa) |
| Freeze-Thaw Stability | Durability Factor: 95% | ASTM C666 |
| Porosity | BOILED ABSORPTION 5% MAXIMUM VOLUME OF PERMABLE VOIDS 14% | |
| Flexural toughness | Sikacrete®-530 PF | ASTM C1018 |
| | First-Crack | 986 psi (6.8 MPa) |
| | I ₅ | 508 psi (3.5 MPa) |
| | I ₁₀ | 725 psi (5.0 MPa) |

APPLICATION INFORMATION

| | | |
|-----------------|--|----------------------------|
| Coverage | Approx. 0.5 yd ³ per 1,700 lb bulk bag (0.38 m ³ per 771 kg bulk bag) Approx. 1.0 yd ³ per 3,400 lb bulk bag (0.76 m ³ per 1,542 kg bulk bag) | |
| | REBOUND | EXTERNAL CONSULTANT |
| | Vertical | < 5% |
| | Overhead | < 10% |

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.

AVAILABILITY/WARRANTY

Each of the following descriptors / features can be used in a specific mix design, either on their own or in combination with any other descriptors / features.

Descriptors / Features of fiber dosages:

| | |
|--------------|----|
| Steel Fibers | ST |
| Poly Fibers | PF |

Descriptors / Features of other technologies:

| | |
|-----------------|-----------------|
| Gradation No. 1 | (No descriptor) |
| Gradation No. 2 | (No descriptor) |

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

- Apply in accordance with the ACI 506 - Guide to Shotcrete.
- 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.
- When using Sikacrete®-530 PF or Sikacrete®-530 ST the minimum recommended inside diameter of shotcrete hoses is 2 inches (50 mm).

Contact your Sika STM Technical Representative for more information.

SURFACE PREPARATION

- **Repair or rehabilitation:** All surfaces to be in contact with Sikacrete®-530 and its variations must be free from dust, oil, grease or any other foreign substances that may interfere with the bond of the material. Remove all loose or delaminated concrete providing a roughened surface and a minimum of 1 inch (25 mm) clearance behind any corroded reinforcing steel. The perimeter of the repair area should be saw-cut a minimum of ¼ inch (20 mm). Clean the area to be repaired with potable water, leaving the concrete saturated but free of standing water (SSD).
- **Rock surfaces:** All surfaces to be in contact with Sikacrete®-530 must be free from dust, oil, grease or any other foreign substances that may interfere with the bond of the material. Remove all loose or delaminated rock. Clean the area with potable water, leaving the substrate saturated but free of standing water (SSD).

MIXING

- Place 75% of required water into mixer and slowly introduce entire bag of Sikacrete®-530 while the mixer is running.
- Allow Sikacrete®-530 to mix for a minimum of five minutes.
- Slowly add balance of required water until desired slump has been obtained, not exceeding maximum recommended volume of water.
- Continue mixing and stop only after material has reached a consistent, homogeneous mix.

Contact your Sika STM Technical Representative for more information.

CURING TREATMENT

- Curing is essential to optimize physical properties of the shotcrete and minimize plastic shrinkage. Product should be cured immediately after material has reached initial set in accordance with ACI 308 - Guide to External Curing Concrete. Continuously moist cure for a minimum period of seven (7) days. Alternatively, moist cure for a minimum period of 24 hours and apply a curing compound that complies with ASTM C309. Curing is particularly critical in rapid moisture loss conditions such as high temperatures, high winds and low humidity.
- **Underground Environments:** Good curing conditions are beneficial to optimizing physical properties. Although the high relative humidity commonly found in underground environments provides for good curing conditions, additional curing is often appropriate and should be performed in accordance with ACI 308 - Guide to External Curing Concrete.

CLEANING OF TOOLS

Clean all tools and equipment after use with water. Once hardened, the product can only be removed mechanically.

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.**

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Product Data Sheet

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