

## SYSTEM DATA SHEET

Sikacrete<sup>®</sup>-7100 3D

Fiber reinforced micro-concrete 3D printing system

## PRODUCT DESCRIPTION

Sikacrete<sup>®</sup>-7100 3D is a fiber-containing micro-concrete ink system developed exclusively for Sika's 3D printers.

## USES

Designed for concrete printing of 3D objects, elements and components with use of Sika's gantry or robot printers for:

- Building facades
- Civil engineering elements
- Precast elements
- Art, craft, visual displays, and etc.

## CHARACTERISTICS / ADVANTAGES

- Fast printing speed
- Fast setting technology using Sika's patented continuous printing process
- Sika patented dosing system for all components
- Total control multicomponent system for precise printing
- Contains fibers to prevent surface cracking and assist with layer bonding
- Fast acting material for layer build up and layer line accuracy +/- 0.5mm
- Printing at angles up to 45°
- Objects can be moved a short time after printing
- Sustainable durability

## SYSTEM INFORMATION

<b>System Structure</b>	DC-103 FB 3D	Cementitious light grey powder
	SC-202 3D	Polymer mixture pink liquid paste
	AC-401 3D	Activator off-white liquid paste
The Sikacrete <sup>®</sup> -7100 3D materials are not transferable for any other systems or uses.		
<b>Grain size</b>	Maximum ~0.04 in (1 mm)	
<b>Color</b>	Light grey	

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	Conditioned 12 h at 68°F	~1,160 psi (8 MPa)	(ASTM C109)
	Conditioned 24 h at 68°F	~3,625 psi (25 MPa)	
	Conditioned 7 d at 68°F	~8,700 psi (60 MPa)	
	Conditioned 28 d at 68°F	~10,150 psi (70 MPa)	
	Tested ~5.9 in (150 mm) cube, cured 28 d at 68°F		

<b>Modulus of Elasticity in Compression</b>	Cured 28 d at 68 °F	~3.6 x 10 <sup>6</sup> psi (25 GPa)	(ASTM C469)
<b>Flexural Strength</b>	Conditioned 28 d at 68 °F	~1,300 psi (9 MPa)	(ASTM C78)
<b>Coefficient of Thermal Expansion</b>	~8.3 × 10 <sup>-6</sup> F <sup>-1</sup> (15 × 10 <sup>-6</sup> K <sup>-1</sup> )		

## APPLICATION INFORMATION

<b>Mixing Ratio</b>	Pre-determined by Sika, contact Sika® Technical Services for additional information.		
<b>Fresh mortar density</b>	~125 lb/ft <sup>3</sup> (2.0 kg/L)		
<b>Layer Thickness</b>	<u>Width</u>	~1.0 in to 1.6 in (25 mm to 40 mm)	
	<u>Thickness</u>	~0.2 in to 0.6 in (6 mm to 15 mm)	
<b>Product Temperature</b>	<u>Maximum</u>	+77 °F (+25 °C)	
	<u>Minimum</u>	+59 °F (+15 °C)	
<b>Ambient Air Temperature</b>	<u>Maximum</u>	+86 °F (+30 °C)	
	<u>Minimum</u>	+50 °F (+10 °C)	
<b>Pot Life</b>	Up to 12 hours depending on SC-202 3D dosing.		
<b>Set Time</b>	<u>Initial Set Time</u>	<u>At 68 °F</u>	<u>5 minutes</u>
	<b>Final set time</b>	<u>At 68 °F</u>	<u>30 minutes</u>

## PRODUCT INFORMATION

<b>Packaging</b>	Refer to the individual Product Data Sheets		
<b>Shelf Life</b>	Refer to the individual Product Data Sheets		
<b>Storage Conditions</b>	Refer to the individual Product Data Sheets		

## 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

### MIXING

Mixing is an automated process with the Sika printer systems.

- Continuously monitor the pot life of the mixed material.
- Do not allow mixed material to stand in warm temperatures.

### APPLICATION

3D concrete printing is a manufacturing process using mixing, pumping and robotic placement to apply the printed concrete. All these factors play a significant role in achieving optimal results of the finished concrete component and therefore pre-trials and tests must be carried out before final manufacturing of the finished components.

- For operational maintenance, refer to the equipment instructions.

### CURING TREATMENT

Effective curing is mandatory to prevent premature drying of the printed objects. Cure in the prescribed ambient conditions with a minimum of 40 % relative

humidity.

Do not cure newly printed objects outside in the direct sun or windy conditions.

Condensation due to certain curing methods and curing agents may cause some discoloration to the surface appearance.

## CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened material can only be removed mechanically.

For further information on cleaning the printer refer to equipment instructions.

## 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](http://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.

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### System Data Sheet

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