



## PRODUCT DATA SHEET

# SikaShot® NS

MACHINE-APPLIED, PRE-PACKAGED, READY-TO-USE, NON-ACCELERATED, PORTLAND CEMENT MORTAR

### PRODUCT DESCRIPTION

SikaShot® NS is a pre-packaged ready-to-use, portland cement mortar formulated for application by pneumatic gun. SikaShot® NS is placed with dry process shotcrete equipment.

### USES

- Use on grade, above, and below grade on concrete and mortar.
- Use on horizontal, vertical, and overhead surfaces.
- As a structural repair material for vertical, horizontal, and overhead surfaces on parking structures, industrial plants, walkways, bridges, tunnels, dams, ramps, etc.

### CHARACTERISTICS / ADVANTAGES

- Consistent physical properties
- Gunned pneumatically, no hand application
- Simple-to-use, labor-saving system
- Easily applied to clean, sound substrate
- High compressive strength
- No added chlorides

### PRODUCT INFORMATION

<b>Packaging</b>	55 lb (25 kg) bag
<b>Appearance / Color</b>	Concrete gray
<b>Shelf Life</b>	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging.
<b>Storage Conditions</b>	Store dry at 40–95 °F (4–35 °C) Protect from moisture. If damp, discard material. Condition material to 65–75 °F (18–24 °C) before using.

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	1 day	>3000 psi (20.7 MPa)	(ASTM C-109)
	2 day	5,000 psi (34.5 MPa)	
	7 day	6,000 psi (41.4 MPa)	
	28 day	7,000 psi (48.3 MPa)	
<b>Flexural Strength</b>	7 day	800 psi (5.5 MPa)	(ASTM C-293)
	28 day	1,200 psi (8.2 MPa)	
<b>Tensile Strength</b>	7 day	600 psi (4.1 MPa)	(ASTM C-496)
	28 day	750 psi (5.2 MPa)	

## APPLICATION INFORMATION

<b>Coverage</b>	Overhead	0.45 ft <sup>3</sup> /bag
	Horizontal	0.48 ft <sup>3</sup> /bag
<small>Coverage figures do not include allowance for surface profile and porosity or material waste. Yield in service will vary according to amount of water utilized in the shotcreting process. Estimating should be based on prior experience or actual field evaluation.</small>		
<b>Layer Thickness</b>	Minimum 1/4" (6.4 mm)	
<b>Ambient Air Temperature</b>	> 45 °F (7 °C)	
<b>Substrate Temperature</b>	> 45 °F (7 °C)	

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

- Surface must be clean and sound.
- Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired.
- Be sure repair area is not less than 1/4" (6.4 mm) in depth.
- Preparation work should be done by scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of CSP-6.
- Follow this with a high-pressure water blast to remove all loose materials.
- For better adhesion, substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.

### MIXING

- Set up dry-process shotcrete equipment.
- Add SikaShot® NS powder directly into gun.
- Water is to be added at nozzle.

### APPLICATION

- At time of application, surfaces should be Saturated Surface Dry (SSD) with no glistening water.
- Apply SikaShot® NS mortar by dry spray process or trowelling for repairing vertical or overhead surfaces.
- Apply SikaShot® NS in accordance with ACI 506-R85, "Guide to Shotcrete". Important factors to observe

during shotcreting are nozzle distance (2-6 ft.), angle to substrate (90°), and consistency of mortar.

- This minimizes rebound, creates the smoothest pattern (reduces 'bumps') and properly encases the rebars. The velocity of the material is sufficient if, at a distance of 18 to 24" (4.5-6 m), the material pattern flattens out on contact with the surface and the rebars are encased.
- Immediately after application and before set, mortar consistency should be plastic, like a firm jelly.
- After applying the shotcrete, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel.
- Before applying the next layer, allow the material to reach initial set. This will take anywhere from 2-4 hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity.
- Begin and finish a given patch on the same day.
- A natural gun finish may be used. If a gun-finish is too rough, special finishes may be applied. Approximately 5-10 min. after initial set, excess material should be sliced off with a sharp-edged cutting screed. The surface may then be finished to your requirements: broomed for a rough texture, wood-floated for a granular texture, steel-trowelled for a smooth finish.

## CURING TREATMENT

- As per ACI recommendations for Portland cement concrete, curing is required.
- Moist cure with wet burlap and polyethylene, a fine mist of water or a water based\* compatible curing compound meeting ASTM C-309.
- Curing compounds adversely affect the adhesion of following lifts of mortar, leveling mortar or protective coatings.
- Moist curing should commence immediately after finishing.
- Protect freshly applied mortar from direct sunlight, wind, rain and frost.
- To prevent from freezing, cover with insulating material.

\* Pretesting of curing compound is recommended.

## LIMITATIONS

- Use only in dry-process shotcreting.
- Color may vary depending on manufacturing location.
- Protect newly applied mortar from rain. If necessary to prevent from freezing, cover with insulating materials.
- For material pre-dampening recommendations, consult Technical Service.
- Not a vapor barrier.
- 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 Hi-Mod.
- All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## 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.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## 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.

## 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.

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**Sika Corporation**

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

**Sika Mexicana S.A. de C.V.**

Carretera Libre Celaya Km. 8.5  
Fracc. Industrial Balvanera  
Corregidora, Queretaro  
C.P. 76920  
Phone: 52 442 2385800  
Fax: 52 442 2250537



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