BUILDING TRUST

PRODUCT DATA SHEET

SikaCem®-226 CI

High performance repair mortar for wet spray application

PRODUCT DESCRIPTION

SikaCem®-226 CI is a one-component, pre-packaged, ready-to-use, cementitious, silica fume, fiber reinforced, high strength shrinkage-compensated mortar. Formulated for application by trowel or low pressure spray. It is designed especially for repair of overhead and vertical surfaces.

USES

- Structural repair material for water and waste water treatment plants, parking structures, industrial plants, bridges tunnels and dams, etc.
- Vertical and overhead surfaces
- On grade, above grade, and below grade on concrete and mortar

CHARACTERISTICS / ADVANTAGES

- Ready-for-use, one-component material
- Easy to use; just add water
- Sprayable system
- Superior workability. Can be troweled and screeded after application
- Labor-saving system
- Superior abrasion resistance over conventional Portland cement mortar
- Bond strength ensures superior adhesion
- Compatible with coefficient of thermal expansion of concrete
- Increased resistance to de-icing salts
- Good freeze/thaw resistance
- High early strengths
- Very low shrinkage
- Silica Fume enhanced
- Fiber reinforced
- Contains an integral corrosion inhibitor

PRODUCT INFORMATION

Packaging	50 lb (22.7 kg) bag
Appearance / Color	Gray powder
Shelf Life	12 months from date of production if stored properly in original, unopened and undamaged sealed packaging
Storage Conditions	Store dry at 40–95 °F (4–35 °C) Protect from moisture. If damp, discard material

TECHNICAL INFORMATION

Compressive Strength	1 day	2,500 psi (17.2 MPa)	(ASTM C109) 73°F (23° C) and 50% R.H.
	7 days	6,000 psi (41.4 MPa)	
	28 days	8,000 psi (55.2 MPa)	
Modulus of Elasticity in Compression	28 days	4.37x10^6 psi (30.1 GPa)	(ASTM C469)
Flexural Strength	28 days	1,200 psi (8.3 MPa)	(ASTM C348) 73°F (23° C) and 50% R.H.
Shrinkage	28 days	< 0.07 %	(ASTM C-157 modified per ASTM C928) 73°F (23° C) and 50% R.H.
Freeze Thaw De-Icing Salt Resistance	28 days	No Scaling	(ASTM C672)
Rapid Chloride Permeability	28 Day	very low, < 1000 Coulombs	(ASTM C1202 AASHTO T277) 73°F (23° C) and 50% R.H.
Slant Shear Strength	3 day	>2,000 psi (13.8 MPa)	(TxDOT C882 Mod.) 73°F (23° C) and 50% R.H.
	28 day	>2,500 psi (17.2 MPa)	(ASTM C882 Mod.) 73°F (23° C) and 50% R.H.
Freeze-Thaw Stability	300 cycles	95% RDM	(ASTM C666 Proc A)

APPLICATION INFORMATION

Mixing Ratio	6 - 7 pints (2.8 - 3.3 L) per bag		
Coverage	0.40 ft^3 (0.01 m^3) per bag (Coverage figures do not include allowance for surface profile and porosity or material waste)		
Layer Thickness		**Min.**	**Max. in one lift**
	Overhead	3/8” (9 mm)	1 - 1.5”* (25.4 - 38 mm)
	Vertical	3/8” (9 mm)	2” (51 mm)
	*If > 1.5”, each lift should be applied as soon as the previous lift will support it.		
Product Temperature	65–75°F (18–24°C)		
Ambient Air Temperature	> 40°F (4°C)		
Substrate Temperature	> 40°F (4°C)		
Set Time	2-3 hours (Initial)		(ASTM C266)
Final set time	> 5 hours		(ASTM C266)
Fresh mortar density	135 lb/ft^3		(ASTM C138)

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.

LIMITATIONS

- 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 Hi-Mod 32.
- Refer to Sika® Antisol®-250 W product data sheet for

use.

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

0 g/l (EPA method 24)

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 3/8” (9.5 mm) in depth.
- Preparation work should be done by high pressure water blast, scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of ±1/8" (3.2 mm) (CSP-6).
- To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a pull-off test
- Substrate should be Saturated Surface Dry (SSD) with clean water prior to application. No standing water should remain during application.

PRIMING

- Reinforcing steel: Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® 110 EpoCem (consult PDS).

- Concrete Substrate: Prime the prepared substrate with a brush or sprayed applied coat of Sika® Armatec® 110 EpoCem (consult PDS). Alternately, a scrub coat of SikaCem®-226 CI can be applied prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.

MIXING

- **With water**: Pour 6.0 pints (2.8 L) of clean potable water (approximately 70 °F) into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (do not over-water). Add 1 bag while continuing to mix with a low-speed drill (400-600 rpm) and mixing paddle or in an appropriate mortar mixer. Once all the powder has been added, mix for approximately 3 minutes, until a lump-free and uniform consistency is achieved. Add up to another 1 pints (0.47 L) of water to achieve desired consistency. Do not over-water.

- **With SikaLatex® R**: Pour 6 up to 7 pints (2.8 - 3.3 L) of SikaLatex® R into the mixing container. Slowly add powder, mix and adjust as above.

- **With diluted SikaLatex® R**: SikaLatex® R may be diluted up to 5:1 (water: SikaLatex® R) for projects requiring minimal polymer modification. Pour 6 up to 7 pints (2.8 - 3.3 L) of the mixture into the mixing container. Slowly add powder, mix and adjust as above.

APPLICATION

- Conventional wet-process shotcrete equipment or low-pressure spraying equipment should be used.
- At the time of application, surfaces should be SSD but hold no standing water.
- Apply SikaCem®-226 CI by low pressure spraying or troweling for repairing vertical or overhead surfaces.
- This minimizes rebound, creates the smoothest pattern (reduces ‘bumps’) and properly encases the rebars.
- After application, allow it to stiffen for about 10 minutes before removing bumpy areas with a trowel.
- Before applying the next layer, allow the shotcrete to reach initial set.
- This will take anywhere from 45 minutes to several hours, depending on mix consistency, mix and ambient temperature, wind conditions and humidity.
- Begin and finish a given patch on the same day.

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, Sikagard® 1315 KNS or a compatible curing compound*.
- Curing compounds adversely affect the adhesion of following lifts of mortar or protective coatings.
- Moist curing should commence immediately after finishing. Protect freshly applied mortar from direct sunlight, wind, rain and frost.

* Pretesting of curing compound is recommended.

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**

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