

PRODUCT DATA SHEET

Sikacrete[®]-114 PC

PUMPABLE, FREE FLOWING, SHRINKAGE COMPENSATED MICRO-CONCRETE

DESCRIPTION

Sikacrete[®]-114 PC is a cementitious, pre-bagged, free flowing, one component, non-shrink precision micro-concrete with high early and ultimate strength. Suitable for use in hot and tropical climatic conditions.

USES

Sikacrete[®]-114 PC precision micro-concrete is used for repair in various applications such as:

- Retrofitting of concrete structures for improvement of load carrying capacity
- Concrete Jacketing using form and pump, form and pour technique
- Re-profiling of damaged concrete members and re-profiling of pile tops using formwork for both pouring and pumping techniques.
- Part of Sikaplan[®] WP/WT waterproofing pile head treatment system
- Part of SikaBit[®] T waterproofing pile head treatment system
- Filling of cavities, gaps, recesses and section enlargement

CHARACTERISTICS / ADVANTAGES

Sikacrete[®]-114 PC is an easy to use precision micro-concrete requiring only the addition of water. It offers the following beneficial properties:

- High ultimate strength
- Shrinkage compensated
- Adjustable consistency
- Moderate heat of hydration
- Compatible with the properties of parent concrete
- Good flow characteristics
- Non-flammable
- Easy to mix

PRODUCT INFORMATION

Composition	Portland cement, selected fillers and aggregates, special additives
Packaging	40 kg, 50 kg bag
Shelf life	12 months minimum from date of production
Storage conditions	Store in original unopened packaging in a cool and dry condition between +5 °C and +35 °C. Protect from direct sunlight, heat and moisture.
Appearance and colour	Grey powder
Maximum grain size	~5 mm

TECHNICAL INFORMATION

Compressive strength	+25 °C	1 Day	7 Day	28 Day	(ASTM C109)
	W/P = 0.12	~25 N/mm ²	~45 N/mm ²	≥ 65 N/mm ²	
*Testing cubes 50 x 50 x 50 mm					
Tensile adhesion strength	≥ 1.5 N/mm ² (or concrete failure)				(EN 1881)
Water absorption	~2.1% (28d)				(EN 1881-122)

APPLICATION INFORMATION

Mixing ratio	L water per 50 kg bag	L water per 40 kg bag	Water / Powder Ratio
	6.0-7.0	4.8-5.6	0.12-0.14
Fresh mortar density	~2.3 kg/l (25 °C)		
Yield	~19.6 L / 40 kg bag ~24.5 L / 50 kg bag		
Layer thickness	Min. 25 mm per pour Max. 300 mm per pour		
Ambient air temperature	+5 °C min. / +35 °C max.		
Substrate temperature	+5 °C min. / +35 °C max.		
Pot Life	~60 min (20 °C)		

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Ensure formwork is secure and watertight to prevent movement and leaking during placing and curing.
- When maximum thickness exceeds 300 mm, consider the use of Sikacrete® -114 AE.
- At high temperatures, use chilled water for mixing to keep the grout temperatures below < 30 °C.
- In hot weather, base plates and foundations must be shaded from direct sunlight. Condition bags < 30 °C prior to use.
- Depending on requirements and site condition, the addition of dry, single size, clean coarse aggregates is possible up to 100 % by weight of the dry grout powder. Trials are recommended to confirm suitability of aggregates to be employed.
- For additional information on Sikacrete®-114 PC or other grouting materials contact Sika Technical Department.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete:

The concrete shall be thoroughly clean, rough, free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials. De-laminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means. Absorbent surfaces should be saturated thoroughly with clean water.

The application of a suitable bonding agent, such as Sikadur®-32 LP or SikaTop® Armatec®-110 EpoCem®, will improve adhesion on large areas or where particularly dense concrete substrates are involved.

Steel Reinforcement:

Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed. Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting to SA 2 (ISO 8501-1) Embedded steel reinforcing should be treated with a suitable anticorrosion coating such as SikaTop® Armatec®-110 EpoCem®.

Reference shall be made to EN1504-10 for specific requirements.

MIXING

Add water according to the desired consistency into a clean mixing vessel before slowly adding the Sikacrete®-114 PC powder. Sikacrete®-114 PC is best mixed in a forced action mixer, for 2 to 3 minutes or until the mix is free of lumps, not longer than 5 minutes. Slow speed drill (maximum 500 rpm) can be also used for mixing. Normal tumble type concrete mixers are not suitable. Do not mix more grout than can be placed within 15 to 20 minutes. Do not add extra water or other ingredients. Mix only full bags for the best result.

APPLICATION

Application

Before pouring let the mixed grout stand for approximately 5 minutes after mixing in order to release entrapped air.

Pour the Sikacrete®-114 PC micro concrete onto the pile cap surface or into a prepared opening (hopper) and maintain enough static pressure to achieve the desired flow. The mortar may be spread by steel trowel to the required thickness levels. Ensure that entrapped air can easily escape. Large volumes have to be poured in layers. Pour next layer as soon as the previously applied layer has hardened and started to cool.

Forming

The consistency of the Sikacrete®-114 PC microconcrete requires the use of permanent or temporary forms to contain the material on top of the pile cap and around base plates. In order to prevent leakage or seepage, all of these formers must be sealed. Prepare the formwork to maintain more than 300 mm liquid head to facilitate placement.

If Sikacrete®-114 PC is used as part of a Sikaplan® WP/WT waterproofing system, forming will be provided by the Sika® Waterbar.

Maximum level of the Sikacrete®-114 PC should be below the last top rib of the waterbar. Ensure the last rib of the waterbar is encapsulated by Sikadur-42 PC.

CURING TREATMENT

Treat exposed surfaces with Antisol®-WB curing compound or use other approved curing methods such as polyethylene sheeting or wet hessian. Do not commence fogging until final set has been reached.

CLEANING OF EQUIPMENT

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

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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ISO 9001: Sika UAE LLC,
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ISO 14001: Sika UAE LLC,
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Sika Saudi Arabia Limited,
Sika International Chemicals LLC,
ISO 45001: Sika UAE LLC,
Sika Gulf B.S.C. (C),
Sika International Chemicals LLC.

All products are supplied under
a management system certified
to conform to the requirements
of the quality, environmental
and occupational health &
safety standards ISO 9001,
ISO 14001 and ISO 45001.

Sikacrete-114PC-en-AE-(09-2022)-2-2.pdf

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September 2022, Version 02.02
020201010010000288

