

PRODUCT DATA SHEET

Sikadur[®]-42 PC PLUS

3-PART, EPOXY GROUTING SYSTEM FOR PILE CAPPING

DESCRIPTION

Sikadur[®]-42 PC PLUS is a three-component, castable, moisture tolerant, impermeable epoxy grouting system. Designed for pile cap applications. Suitable for use in hot and tropical climatic conditions.

USES

Sikadur[®]-42 PC PLUS may only be used by experienced professionals.

- High-strength grouting and topping of concrete pile caps and pile heads
- Structural filling of cavities in concrete
- Pile top waterproofing
- Part of SikaBit[®] T waterproofing systems

CHARACTERISTICS / ADVANTAGES

- High early strength
- Ready-to-mix, pre-batched units
- Moisture tolerant
- Non-shrink
- Corrosion and chemically resistant
- Stress and impact resistant
- High compressive strength
- High vibration resistance
- Low coefficient of thermal expansion
- Excellent adhesion to steel and concrete

PRODUCT INFORMATION

Composition	Epoxy resin			
Packaging	Pre-batched unit: 56 kg			
	Component: A	Component: B	Component: C	Component: A + B + C
	5 kg	1 kg	2 x 25 kg	56 Kg
Colour	Concrete grey			
Shelf life	12 months from date of production			
Storage conditions	Stored properly in original, unopened, sealed and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Protect from direct sunlight, heat and moisture.			
Density	~2 100 kg/m ³ (A + B + C)			

TECHNICAL INFORMATION

Compressive Strength	Curing Time	Curing Temperature (+25 °C)	(ASTM C579)
	1 d	~65 N/mm ²	
	7 d	~80 N/mm ²	
	28 d	~85 N/mm ²	
Product cured and tested at temperatures indicated. Test specimen size: 50 * 50 * 50 mm			
Tensile Strength in Flexure	~20 N/mm ²		(ASTM C580)
Tensile Strength	~15 N/mm ²		(ASTM D638)
Tensile Adhesion Strength	≥ 2 N/mm ² (or concrete failure)		(EN 1881))
Water Absorption	Water penetration depth zero (mm)		(EN 12390 P8)

APPLICATION INFORMATION

Mixing Ratio	Component A : B : C = 5 : 1 : 50 by weight Solid / liquid = 8.33 : 1 by weight		
Consumption	~2.1 kg /m ² /mm This figure is theoretical and does not include for any additional material required due to surface porosity, surface profile, variations in level and wastage etc..		
Layer Thickness	Minimum grout depth: 10 mm Maximum grout depth: 100 mm		
Product Temperature	Sikadur®-42 PC PLUS must be applied at temperatures between +20 °C and +35 °C Condition the material by also storing at this temperature for 48 hours before use.		
Ambient Air Temperature	+20 °C min. / +40 °C max.		
Dew Point	Substrate temperature during application must be at least 3 °C above dew point to avoid condensation.		
Substrate Temperature	+20 °C min. / +40 °C max.		
Substrate Moisture Content	≤ 4 % pbw		
Pot Life	(200 g, adiabatic testing)		
		+20 °C	+40 °C
	5 : 1 : 50	~100 min	~40 min
The potlife begins when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the potlife. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill components A, B and C before mixing them (Only when application temperatures are above +20 °C).			

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Mortar and concrete must be older than 28 days (dependent on minimum strength requirements).
Verify the substrate strength (concrete, natural stone

etc.).

The substrate surface (all types) must be clean, dry and free from contaminants such as dirt, oil, grease, existing surface treatments and coatings etc.

Steel substrates must be de-rusted to a standard equivalent to Sa 2.5.

The substrate must be sound and all loose particles

must be removed.
Substrate must be dry or mat damp and free from any standing water, ice etc.

SUBSTRATE PREPARATION

Concrete, mortar, stone:

Substrates must be sound, dry, clean and free from laitance, ice, standing water, grease, oils, old surface treatments or coatings and all loose or friable particles must be removed to achieve a laitance and contaminant free, open textured surface.

Steel:

Must be cleaned and prepared thoroughly to an acceptable quality standard equivalent to SA 2.5, by blastcleaning and vacuum. Avoid dew point conditions.

Surface and base plate contact area must be clean and sound. For best results, the substrate shall be dry. Remove dust, laitance, oils, grease, curing compounds, impregnations, waxes, foreign particles, coatings, and disintegrated materials by mechanical means, that is chipping with a chisel, blastcleaning etc.

All anchor pockets or sleeves must be free of water. Apply grout immediately to prevent re-oxidizing / rust formation.

MIXING

Pre-batched units:

Mix components A and B for approximately 30 - 60 seconds with a paddle attached to a low speed drill (300 - 450 rpm). Avoid aeration while mixing until the material becomes uniformly blended in colour and viscosity. Place the mixed epoxy into an appropriate mixing vessel. Slowly add the component C (to keep air entrapment at a minimum) and mix until uniform and homogeneous (approximately 3 minutes).

Mix only that quantity which can be used within its potlife.

Never mix component A and B without adding component C (as the exothermic reaction between A and B alone generates excess heat)

Leave Sikadur®-42 PC PLUS in the mixing vessel until the majority of entrained air bubbles have dispersed.

APPLICATION METHOD / TOOLS

Forming:

The consistency of the Sikadur®-42 PC PLUS epoxy grout system 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 100 mm liquid head to facilitate placement.

Application:

Pour the Sikadur®-42 PC PLUS mortar 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.

CLEANING OF EQUIPMENT

Sweep excess grout into appropriate containers for disposal before it has hardened.

Dispose of in accordance with applicable local regulations.

Uncured material can be removed with Sika Colma Cleaner. Cured material can only be removed mechanically.

IMPORTANT CONSIDERATIONS

- Do not add / mix with solvents. Solvents will prevent proper curing and change mechanical properties.
- Sikadur®-42 PC PLUS is a vapour barrier when cured.
- Mix complete units only.
- Cold ambient, substrate or material temperatures will influence the curing and flow characteristics of Sikadur®-42 PC PLUS.
- Do not subject cured epoxy grout to sudden temperature changes especially during early curing stages.
- Sikadur® resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, the long term structural design load must account for creep. Generally the long term structural design load must be lower than 20 - 25 % of the failure load. Please consult a structural engineer for load calculations for your specific application.
- Please refer also to the "Method Statement Sikadur®-42 PC PLUS"

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.

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 the exact product data and uses.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

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.

SIKA NORTHERN GULF

Bahrain / Qatar / Kuwait
Tel: +973 177 38188
sika.gulf@bh.sika.com
gcc.sika.com

SIKA SOUTHERN GULF

UAE / Oman / SIC
Tel: +971 4 439 8200
info@ae.sika.com
gcc.sika.com

SIKA SAUDI ARABIA

Riyadh / Jeddah / Dammam
Tel: +966 11 217 6532
info@sa.sika.com
gcc.sika.com



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Sika Gulf B.S.C. (c),
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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 OHSAS
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