BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-42 MP Slow

3-part, multi purpose epoxy grouting system

DESCRIPTION

Sikadur®-42 MP Slow is a three-component, multipurpose, moisture tolerant, epoxy grouting system. Suitable for use in hot and tropical climatic conditions.

USES

Sikadur®-42 MP Slow may only be used by experienced professionals.

High-strength grouting and fixing of:
- Starter bars
- Anchors
- Fasteners
- Tie rods
- Crash barrier posts
- Fence and railing posts

Under-grouting and bedding of:
- Base plates
- Machine bases, seat base-plates for light and heavy machinery including heavy impact and vibratory machinery, reciprocating engines, compressors, pumps, presses, etc.
- Bridge bearings
- Mechanical joints (i.e. road/bridge/deck types etc.)

Sleeper-less, direct rail fixing:
- Crane tracks
- Light rail and permanent way in tunnels
- Light rail and permanent way over bridges

FEATURES

- 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

CERTIFICATES AND TEST REPORTS

- Testing according to EN 1504-6.

PRODUCT INFORMATION

Composition	Epoxy resin

Packaging

Standard unit: 28 kg, 24 kg and 70 kg

Component: A	Component: B	Component: C	Component: A+B+C
3.34 kg	0.66 kg	24 kg	28 kg
3.34 kg	0.66 kg	20 kg	24 kg
8.35 kg	1.65 kg	2 x 30 kg	70 kg

Bulk packaging: 140 kg and 120 kg unit

Component: A	Component: B	Component: C	Component: A+B+C
16.7 kg	3.3 kg	5 x 24 kg = 120 kg	140 kg
16.7 kg	3.3 kg	5 x 20 kg = 100 kg	120 kg

Colour	Concrete Grey

Shelf life

Component A	24 months from the date of production
Component B	24 months from the date of production
Component C	12 months from the 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	~2 130 kg/m³ (A+B+C)

TECHNICAL INFORMATION

Compressive strength (ASTM C579)

Curing time	Curing temperature		
	+23 °C	+30 °C	+40 °C
1 day	~74 N/mm²	~80 N/mm²	~89 N/mm²
3 days	~80 N/mm²	~87 N/mm²	~94 N/mm²
7 days	~95 N/mm²	~96 N/mm²	~99 N/mm²
28 days	~100 N/mm²	~103 N/mm²	~105 N/mm²

Product cured and tested at temperatures indicated.
Test specimen size: 50 * 50 * 50 mm

Modulus of elasticity in compression	~20 000 N/mm²	(ASTM D695-96)
Effective bearing area	≥ 85 % (high)	(ASTM C1339)
Flexural-strength	~37 N/mm²	(ASTM C580)
	~42 N/mm²	(EN 53452)
	~32 N/mm²	(ISO 196)
Modulus of elasticity in flexure	~15 000 N/mm²	(EN 53452)
Tensile strength	~15 N/mm²	(ASTM D638)
	~18 N/mm²	(ISO 527)
	~15 N/mm²	(ASTM C 307)
Modulus of elasticity in tension	~12 500 N/mm²	(ASTM C580)

Tensile strain at break	~1.6 %	(ASTM D638)
	0.1 ± 0.05 % (7 d at +23 °C)	(ISO 75)
Shrinkage	–0.032 %	(ASTM C531)
	–0.02 %	(EN 52450)
Creep	0.9 % at 4.14 N/mm² (600 psi) / 31 500 N (+60 °C)	(ASTM C1181)
	0.11 % at 2.76 N/mm² (400 psi) / 21 000 N (+60 °C)	
	API requirements: ≤ 0.5 % with 2.76 N/mm² load	
Tensile adhesion strength	> 36 N/mm² (concrete failure) (slant shear)	(ASTM C882)
	~11 N/mm² (on steel)	(ISO 4624, EN 1542, EN 12188)
	> 3.5 N/mm² (concrete failure)	
Thermal compatibility	No delamination / pass	(ASTM C884)
Coefficient of thermal expansion	2.1 x 10^{-5} [1/°C] or [1/K], (-30 °C to +30 °C)	(ASTM C531)
	3.8 x 10^{-5} [1/°C] or [1/K], (+24 °C to +100 °C)	
	2.6 x 10^{-5} [1/°C] or [1/K], (-20 °C to +60 °C)	(EN 1770)
Service temperature	-40 °C to +60 °C	
Heat deflection temperature	+54 °C (7 d / +23 °C)	(ISO 75)
Water absorption	0.055% (7 d) (coefficient W)	(ASTM C413)

APPLICATION INFORMATION

Mixing ratio	**28 kg unit, 70 kg unit and 140 kg unit** Component A : B : C = 5 : 1 : 36 by weight Liquid (A+B) / solid (C) = 1 : 6 by weight **24 kg unit and 120 kg unit** Component A : B : C = 5 : 1 : 30 by weight Liquid (A+B) / solid (C) = 1 : 5 by weight
Layer thickness	Minimum grout depth: 10 mm Maximum grout depth: 150 mm

Temperature	Layer thickness max.
20 °C – 30 °C	150 mm
30 °C – 40 °C	100 mm*

* no reduction of fillers; apply only with Mixing Ratio A : B : C = 5 : 1 : (30 - 36)

Peak exotherm	41 °C (at +23 °C) (ASTM D 2471)
Material temperature	Sikadur®-42 MP Slow 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)

	+23 °C	+40 °C
5 : 1 : 30	100 – 110 min	45 – 50 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 (i.e. only when application temperatures are above +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

- Minimum substrate temperature: +20 °C. The material must be conditioned by being stored in an area with an ambient temperature between +20 °C and +30 °C for a minimum of 48 hours before using. Do not thin with solvents. Solvents will prevent proper curing and change mechanical properties.
- Sikadur®-42 MP Slow is a vapour barrier when cured. Minimum grout depth: 10 mm. Maximum grout depth: 150 mm per lift. The last lift must be kept at 50 mm. Component C must be kept dry. For specific bolt grouting applications please refer to Sika Technical Department. For proper seating, allow the grout to rise above the bottom (3 mm) of the base plate.
- Avoid splitting prebatched units to mix. Mix complete units only. Cold ambient, substrate or material temperatures will influence the curing and flow characteristics of Sikadur®-42 MP Slow. Do not subject cured epoxy grout to sudden temperature changes especially during early curing stages. Contact Sika Technical Department for control joint spacing on large base plate grouting projects.
- Possibility to adjust mixing ratio, depending on required flowability: Component A : B : C = 5 : 1 : (27-36) by weight, Solid / Liquid = (4.5-6) : 1 by weight.
- 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 MP Slow”

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

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 i.e. 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, i.e. 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.
For optimum results:
When grouting areas or equipment that is sensitive to vibration, it is recommended that the contact surfaces are prepared according to the latest edition of the American Petroleum Institute’s Recommended Practice 686 “Machinery Installation and Installation Design”, Chapter 5.

MIXING

Pre-batched units
Mix components A and B in the component A pail 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 contents of component C (to keep air entrapment at a minimum) dependent on flow requirements (observe the correct mixing ratio) and mix until uniform and homogeneous. (approximately 3 minutes)
Mix only that quantity which can be used within its potlife.

Bulk packing (not pre-batched)
First, stir each component thoroughly. Add the components in the correct proportions into a suitable mixing pail. Mix the components. Use an electric low speed mixer etc as above for the pre-batched units.

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 MP Slow to stand in the normal mixing vessel until the majority of entrained air bubbles have dispersed.

APPLICATION METHOD / TOOLS

Forming
The consistency of the Sikadur®-42 MP Slow epoxy grout system requires the use of permanent or temporary forms to contain the material around base plates, for example. In order to prevent leakage or seepage, all of these formers must be sealed. Apply polyethylene film or wax to all forms to prevent adhesion of the grout. Prepare the formwork to maintain more than 100 mm liquid head to facilitate placement. A grout box equipped with an inclined trough attached to the form will enhance the grout flow and minimize air encapsulation.

Application
Pour the mixed grout into the prepared forms from one or two sides only, to eliminate air entrapment. Maintain the liquid head to ensure intimate contact to the base plate. Place sufficient epoxy grout in the forms to rise slightly above the underside (3 mm) of the base plate. The minimum void depth beneath the baseplate shall be 12 mm. Where the void beneath the base plate is greater than 150 mm, place the epoxy grout in successive 150 mm lifts or less, once the preceding lift has cooled.
Once hardened check the adhesion by tapping with a hammer.

For further information, please refer to the Method Statement of Sikadur®-42 MP Slow for related application and General Application Guidelines - Method Statement for epoxy resin based grouts.

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.

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.

Sika Gulf B.S.C. (c)
Tel: +973 177 38188
Email: info@bh.sika.com
Sika Kuwait Cons. Mat. & Paints Co WLL
Tel: +965 22 282 296
Email: sika.kuwait@kw.sika.com
Web: gcc.sika.com

Sika UAE LLC
Sika UAE LLC (Branch)
Sika International Chemicals LLC
Tel: +971 4 439 8200
Email: info@ae.sika.com
Web: gcc.sika.com

Sika Saudi Arabia Limited
Riyadh / Jeddah / Dammam / Rabigh
Tel: +966 9200 22167
Email: info@sa.sika.com
Web: gcc.sika.com

Sika MB LLC
Oman
Tel. +968 22 826 500
Email: info@om.sika.com
Web: gcc.sika.com

ISO 9001, 14001, 45001 – SGS:
- Sika UAE LLC
- Sika International Chemicals LLC
- Sika Gulf B.S.C. ©
ISO 9001, 14001 – SGS:
- Sika Saudi Arabia Limited
ISO 9001, 14001 – TÜV:
- Sika UAE LLC (Branch)
ISO 9001 – URS:
- Sika MB 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.