

PRODUCT DATA SHEET

Sikadur®-42 MP IN

3-part, multipurpose epoxy grouting system

DESCRIPTION

Sikadur®-42 MP IN is a three component, multipurpose, solvent-free, moisture tolerant epoxy grouting system. For use at temperature between +25°C and +40°C.

USES

High-strength grouting and fixing of :

- Starter bars
- Anchors
- Fasteners
- Tie rods
- Crash barrier 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 of :

- 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
- High compressive strength
- High vibration resistance
- Low coefficient of thermal expansion

PRODUCT INFORMATION

Composition	Epoxy resin	
Packaging	Pre-batched unit A+B+C	21.6 kg x 2 sets
	Part A	3.00 kg plastic container
	Part B	0.60 kg metal container
	Part C	18.00 kg bag
Colour	Part A	hazy
	Part B	reddish yellow
	Part C	grey
	Part A+B+C mixed	grey
Shelf life	12 months from date of production	

Storage conditions

Store properly in original unopened, sealed and undamaged packaging, in dry conditions at temperatures between +20°C and +40°C. Protect from direct sunshine.

Density

Part A+B+C mixed : 2.2 ± 0.1 kg/liter (at +30°C)

TECHNICAL INFORMATION

Compressive strength	1 day	≥ 75 N/mm ²	(ASTM C 579)
	3 days	≥ 80 N/mm ²	
	7 days	≥ 90 N/mm ²	
	14 days	≥ 95 N/mm ²	
	Curing Temperature +30°C		
Effective bearing area	> 85%		(ASTM C 1339)
Flexural-strength	≥ 25 N/mm ² (after 7 days at +30°C)		(ISO EN 196)
Tensile strength	≥ 10 N/mm ² (after 7 days at +30°C)		(ASTM D 638)
Tensile adhesion strength	≥ 10 N/mm ² , concrete failure (after 7 days at +30°C)		(ASTM C 882)
Heat deflection temperature	+55°C (7 days / +30°C)		(ASTM D 648)
Water absorption	< 1%		

APPLICATION INFORMATION

Mixing ratio	Part A : B : C = 5 : 1 : 30 (by weight)		
Consumption	~ 2200 kg/m ³		
Layer thickness	Minimum grout depth	25 mm	
	Maximum grout depth	125 mm	
Peak exotherm	~ 42°C (at +30°C)		(ASTM D 2471)
Material temperature	+20°C min. / +40°C max.		
Ambient air temperature	+5°C min. / +35°C max		
Dew point	Beware of condensation ! Substrate temperature during application must be at least 3°C above dew point to avoid condensation.		
Substrate temperature	+5°C min. / +35°C max		
Pot Life	~ 45 minutes (100 g mass at +30°C)		(FIP 5.1)
	The pot life 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 pot life. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill parts 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 Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Rate of strength generation may drop with drop of curing temperature
- Minimum substrate temperature +5°C
- The material must be conditioned by being stored in an area with an ambient temperature between +20°C and +40°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 IN is a vapour barrier when cured. Minimum grout depth: 25 mm. Maximum grout depth: 125 mm per lift. The last lift must be kept at 25 mm.
- Component C must be kept dry.
- For specific bolt grouting applications please refer to Sika® Technical Services.
- For proper seating, allow the grout to rise above the bottom (3 mm) of the base plate.
- Avoid splitting pre-batched units to mix. Mix complete units only.
- Cold ambient, substrate or material temperatures will influence the curing and flow characteristics of Sikadur®-42 MP IN.
- Do not subject cured epoxy grout to sudden temperature changes especially during early curing stages.
- Contact Sika® Technical Services for control joint spacing on large base plate grouting projects.
- 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 the specific application.
- Please refer also to the "Method Statement - Sikadur®-42 MP IN".

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.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

Mortar and concrete must be older than 28 days (dependent on minimum strength requirements). Verify the substrate strength (concrete, masonry, natural stone). The substrate surface (all types) must be clean and free from contaminants such as dirt, oil, grease, existing surface treatments and coatings etc. Steel substrates must be de-rusted and cleaned. 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 / bricks

Substrates must be sound, clean and free from laitance, 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 by blast cleaning 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, blast cleaning 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 approx. 30-60 seconds with a paddle type mixer 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 (approx. 3 min).

Mix only that quantity which can be used within its pot life.

When using multiple units, one after the other. Do not mix the following unit until the previous one has been used in order to avoid a reduction in handling time.

APPLICATION METHOD / TOOLS

Forming

The consistency of the Sikadur®-42 MP IN 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 baseplates shall be 25 mm. Where the void beneath the base plate is greater than 100 mm, place the epoxy grout in successive 100 mm lifts or less, once the preceding lift has cooled.

Once hardened check the adhesion by tapping with a hammer.

Working at high temperatures :

It is recommended when working with Sikadur®-42 MP IN at temperatures above 30°C, that the following guidelines should be observed:

- Prior to use store the unmixed materials in a cool, preferably temperature controlled environment, avoiding exposure to direct sunlight or other heat sources.
- Refer to the data sheet of the specific product and closely follow the instructions in the section "storage conditions".
- Keep all equipment cool, arranging shade and protection where necessary. It is especially important to keep cool all surfaces that will come into direct contact with the material.
- Try to avoid application during the hottest times of the day.
- Provide sufficient material, plant and labour to ensure that the application is a continuous process and that the grout does not stop moving during flow application process.

Important Note: When both the materials and/or the substrates are too hot, the pot life will decrease drastically !

Please also refer to Method statement - Sikadur®-42 MP IN for detailed information on application.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with Sika® Colma Cleaner immediately after use. Hardened / cured material can only be mechanically removed.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product 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.

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