

Sikadur[®]-31

Thixotropic epoxy resin adhesive mortar

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Construction

Description

Sikadur-31 is a thixotropic adhesive mortar based on a 2-component solvent free epoxy resin containing fillers. Sikadur-31 will bond and fill a wide variety of building and construction materials and may be used in both dry and damp conditions thereby providing an adhesive mortar ideally suited to site application. It is available in three grades: rapid, normal and long potlife for low, medium and high ambient temperatures respectively.

Uses

Sikadur-31 may be used as a thin layer levelling mortar, repair mortar or adhesive for most building materials (concrete, brick, stone, ceramics, cement mortar, GRC, fibrous cement, iron and steel and epoxy mortar). Sikadur-31 may also be used to anchor holding down bolts, starter bars etc. as a bonding bridge between old concrete and Sikadur-41 mortar. The material is also ideally suited for bonding of external reinforcement and as a general structural adhesive. Special higher strength grades of the material are available for segmental bridge and other construction.

Advantages

- Chemical resistant
- Insensitive to moisture during application, cure or whilst in service
- Applicable at low temperatures
- Excellent adhesion to most building materials even when damp
- High abrasion resistance
- Approved for use in contact with potable water
- High early strength
- High tensile and flexural strength
- Supplied in factory proportioned units
- Easily applied – thixotropic, non-sag
- Proven in service
- Shrink free
- Two components of different colours enabling visual control of degree of mixing.

Storage and Shelf Life

Minimum shelf life is approximately 3 years. Store under controlled conditions in original containers (minimum 5°C, maximum 35°C temperature range).

Instructions for Use

Surface Preparation

All surfaces must be clean, sound and free from dust, ice, oils, grease, or other surface contaminants such as form release residues and curing membranes.

Concrete, Mortar, Stone: Mechanically abrade the surface with a needle gun, mechanical wire brush, grit blast or grind. All surface laitance must be removed. Cement and concrete should be at least 3-4 weeks old.

Metals: Remove any paints, oils, grease, rust and oxide films by grit blasting. Apply Sikadur-31 without delay.

Plastics: (epoxy, polyester) abrade and rinse with Sika Colma Cleaner.

Mixing

Sikadur-31 is supplied in factory proportioned units comprising the correct quantities of Part A (Resin) and Part B (Hardener). Thoroughly stir both components separately using a slow running drill/stirrer with a helical paste mixer (max. speed 600 rpm). Decant all Part B into Part A and mix thoroughly together until a uniform mix is achieved (typically 3 mins). A streaky colouration is indicative of inadequate or incomplete mixing. Apply immediately. Small units may be hand mixed provided an even colour is achieved.

Application Apply Sikadur-31 to the prepared substrate by trowel, brush or gloved hand. Ensure the material is worked well (scrubbed) into the surface, this is particularly important on damp surfaces. There should be no standing water on concrete surfaces. When at least 2 mm thick, apply the fresh Sikadur-41 mortar immediately. If using Sikadur-31 as an adhesive, coat both adherends and press into place (on vertical and overhead situations temporary support must be provided). The adhesive layer should not be less than 2 mm and not more than 30 mm thick for Normal and Long Potlife; 20 mm for Rapid.

Cleaning Uncured material may be cleaned from application tools, etc. by using Sika Colma Cleaner (flammable solvent). Cured material can only be removed mechanically.

Technical and Physical Data

Form	Thixotropic paste			
Density	1.7 kg / litre approx.			
Volume solids	100% (solvent free)			
Mix ratio	A : B = 2 : 1 by weight and volume for Normal, Long Potlife and Rapid			
Secant Flexural Modulus of Elasticity (BS 6319) @ 7 days	Rapid @ 20°C	Normal @ 20°C	Long Potlife @ 35°C	
	5.2 GPa approx.	5.8 Gpa approx.	4.2 Gpa approx.	
Comprehensive strength @ 7 days (BS 6319) @ 24 hours	Rapid @ 20°C	Normal @ 20°C	Long Potlife @ 35°C	
	40 MPa approx.	55 MPa approx.	60 MPa approx.	
	25 MPa approx.	35 MPa approx.	40 MPa approx.	
Flexural strength @ 7 days (BS 6319)	Rapid @ 20°C	Normal @ 20°C	Long Potlife @ 35°C	
	24 MPa approx.	22 MPa approx.	22 MPa approx.	
Tensile strength @ 7 days (BS 6319)	Rapid @ 20°C	Normal @ 20°C	Long Potlife @ 35°C	
	12 MPa approx.	6 MPa approx.	9 MPa approx.	
Adhesion to concrete	3.5 MPa approx. (concrete failure all grades)			
Adhesion to steel	20 MPa approx. (Normal/Rapid)			
	15 MPa approx. (Long Potlife)			
Application Temperature (min.-max.)	5°C – 20°C (Rapid) 10°C-30°C (Normal) 20°C - 45°C (Long Potlife) (substrate and ambient temperatures)			
ASTM C881-78	Complies with Type 1, Grade 3 Class B & C			
Cure time	Initial cure 24 hours. Full cure 3-7 days (Subject to ambient temperature)			
Consumption/Coverage	1.7 kg/m ² approx. per mm thickness (dependent on surface profile, texture, temperature and wastage)			
Colour	Part A – White/Light Grey, Part B – Black			
	Mixed product uniform grey colouration			
Packaging	5 kg net pre-proportioned kits			
Potlife	Temperature	Rapid	Normal	Long Potlife
	5°C	34 mins	*	*
	20°C	15 mins	50 mins	125 mins
	35°C	*	20 mins	55 mins

*not recommended for use at these temperatures

(The temperature at which the Sikadur-31 is stored during the 24 hours before it is mixed will govern it's potlife when mixed).

Important Notes

- Do not apply Sikadur-31 to surfaces with standing water. Maximum moisture content of the concrete 10%.
- Always mix a full kit to avoid mix ratio errors.
- Only mix as much as can be applied within the stated potlife.
- Do not dilute the product with solvent as this will affect the cure and service performance.
- Constant service temperatures $>70^{\circ}\text{C}$ may affect the performance of the product.
- Minimum thickness 2 mm; maximum thickness 30 mm for Normal and Long Potlife; 20 mm for Rapid.
- For use as a segmental bridge adhesive or for bonding external reinforcement refer to our Technical Department.
- If in doubt, consult our Technical Department.
- The temperature at which the Sikadur-31 is stored during the 24 hours before it is mixed will govern its potlife when mixed.
- Compressive strengths etc. of epoxy resins must be qualified by the testing method eg. Test Standard or size of specimen under test and the rate at which the test piece is loaded while under test, as these factors will affect the result markedly. Faster loading rates will generally give higher ultimate loads and vice versa. Also, a specimen at lower temperature will show higher strengths and vice versa.

Handling Precautions

- Avoid contact with the skin, eyes and avoid breathing its vapour.
- Wear protective gloves when mixing or using.
- If poisoning occurs, contact a doctor or Poisons Information Centre.
- If swallowed, do NOT induce vomiting. Give a glass of water.
- If skin contact occurs, remove contaminated clothing and wash skin thoroughly.
- If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
- For more detailed information refer to our Material Safety Data Sheet.

Important Notification

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

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