BUILDING TRUST

PRODUCT DATA SHEET

Sikadur®-33

High-performance epoxy adhesive for structural bonding

PRODUCT DESCRIPTION

Sikadur®-33 is a thixotropic 2-part epoxy structural adhesive supplied in a cartridge.

USES

The Product is used as a structural adhesive for:

- Concrete.
- Hard natural stone.
- Ceramics.
- Fibre cement.
- Mortar.
- Brick masonry.
- Hollow and solid masonry.
- Steel.
- Iron.
- Wood.

The Product is used for small concrete repairs such as:

- Corners and edges.
- Hole and void filling.
- Joint arrises.

Joint filing and crack sealing:

- Static crack filling and sealing.
- Handrails, balustrades and supports.
- Window frames, door frames, and windowsills.

CHARACTERISTICS / ADVANTAGES

- Good adhesion to damp concrete surfaces.
- Very good adhesion to many construction materials.
- Thixotropic: non-sag in vertical and overhead applications.
- Very good load capacity.
- Hardens without shrinkage.
- Styrene-free.
- EPD available.

ENVIRONMENTAL INFORMATION

- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU).
- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4.
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4.

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 1504-4:2004 Products and systems for the protection and repair of concrete structures — Structural bonding.

PRODUCT INFORMATION

Chemical Base	Epoxy resin	
Packaging	250 ml cartridge	Box of 12 × 250 ml
	400 ml side-by-side cartridge	Box of 12 × 400 ml
	Refer to the current price list for available packaging variations.	
Shelf Life	12 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +10 °C and +30 °C. Always refer to packaging. Refer to the current Safety Data Sheet for information on safe handling and storage.	
Colour	Part A	White
	Part B	Grey
	Part A+B mixed	Grey
Density	Mixed resin at +23 °C	1.35 kg/l

TECHNICAL INFORMATION

Compressive Strength	Cured 14 days at +23 °C	50 N/mm²	(EN 12190)
Flexural Strength	Cured 14 days at +23 °C	20 N/mm²	(EN 196-1)
Tensile Strength	Cured 14 days at +23 °C	13 N/mm²	(EN ISO 527-3)

Tensile adhesion strength (EN ISO 4624; EN 1542)

Curing Time	Substrate	Adhesion strength
3 days	Concrete dry	> 5 N/mm² (100 % concrete failure)
3 days	Concrete moist	> 5 N/mm² (100 % concrete failure)
3 days	Steel sandblasted	> 10 N/mm²
3 days	Brick dry	> 1.5 N/mm² (100 % brick failure)

Shrinkage	Hardens without shrinkage	
Coefficient of Thermal Expansion	9.3×10^{-5} 1/K Linear expansion between +23 °C and +60 °C	(EN 1770)
Glass transition temperature	Cured 7 days at +23 °C	+49 °C (EN 12614)

APPLICATION INFORMATION

Mixing Ratio	Part A : Part B	1 : 1 by volume
Layer Thickness	Maximum	10 mm
	Minimum	0.5 mm
Sag Flow	Non-sag, suitable for overhead application	

Product Temperature	Maximum	+35 °C
	Minimum	+10 °C
Ambient Air Temperature	Maximum	+35 °C
	Minimum	+10 °C
Relative Air Humidity	Maximum at +25 °C	85 %
Dew Point	Beware of condensation. Substrate temperature during application must be at least +3 °C above dew point.	
Substrate Temperature	Maximum	+35 °C
	Minimum	+10 °C
Substrate Moisture Content	Substrates must be dry or matt damp (no standing water).	
Pot Life	Tested at +23 °C	60 minutes

Open Time

Temperature	Open Time
+10 °C	210 minutes
+20 °C	90 minutes
+35 °C	45 minutes

Minimum cartridge temperature +10 °C

Curing Time

Temperature	Curing Time
+10 °C	3 days (80 % of performance)
+20 °C	2 days (80 % of performance)
+35 °C	1 day (80 % of performance)

Minimum cartridge temperature +10 °C

VALUE BASE

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
Damage due to excessive long-term load
Sikadur® resins are formulated to have low creep under long-term load. However, due to the creep behaviour of all polymer materials under load, the long-term structural design load must account for creep.
a) Ensure that the long-term structural design load is lower than 20 % to 25 % of the short-term failure load.
b) Consult a structural engineer for calculating the admissible load for the specific application.

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

EQUIPMENT

250ml cartridges require a standard, keyed action applicator gun.
400ml cartridges require a 1:1 ratio, side by side applicator gun, with a thrust ratio of 26:1 (available from Sika).

SUBSTRATE QUALITY

CONCRETE, MASONRY, MORTAR, STONE
Concrete and mortar must be at least 28 days old. Substrates must be sound, clean, dry or matt damp but free of standing water. Substrates must be free of contaminants such as ice, dirt, oil, grease, coatings, laitance, efflorescence, surface treatments and loose friable material.
STEEL
Surfaces must be sound, clean, dry and free of contaminants such as dirt, oil, grease, coatings and loose friable material.
WOOD
Surfaces must be sound, clean, dry and free of contaminants such as dirt, oil, grease, coatings and loose friable material.

SUBSTRATE PREPARATION

IMPORTANT
Reduced adhesion due to surface contamination
Surface contaminants such as dust and loose material, including the contaminants generated during substrate preparation, can reduce the Product's performance.
Before applying the Product, clean thoroughly all substrate surfaces using vacuum or dust removal equipment.
CONCRETE, MASONRY, MORTAR OR STONE
Suitable techniques for substrate preparation include the following:
- Abrasive blast cleaning.
- Needle gunning.
- Light scabbling.
- Bush hammering.
- Grinding.

Prepare the substrate mechanically using a suitable technique.
The substrate has an open-textured, gripping surface profile.
STEEL
Suitable techniques for substrate preparation include the following:
- Abrasive blast cleaning.
- Rotating wire brush.
- Grinding.

Prepare the substrate mechanically using a suitable technique.
The substrate has a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement.
WOOD
Prepare the substrate by planing, sanding or using other suitable equipment.

MIXING

PREPARING THE CARTRIDGE
1. Unscrew and remove the cap from the cartridge.
2. Remove the plug from the end of the cartridge.
   Note: 250 ml cartridge only.
3. Screw the static mixer nozzle to the open cartridge.
4. Place the cartridge into the application gun.

APPLICATION

IMPORTANT
Damage due to unsupported heavy components applied vertically or overhead
Full adhesion is not achieved before the Product has fully hardened. Hardening depends on ambient temperatures. Unsupported heavy components might fall down when not supported.
Provide temporary support for heavy components until the Product has fully hardened.
Hardened material in the static mixer nozzle
Note: When work is interrupted, the static mixer nozzle can remain on the cartridge after the pressure of the sealant dispenser has been released.
Attach a new nozzle if the resin has hardened in the nozzle when work is resumed.
BONDING
Preconditions
Prior to application confirm dew point conditions before and during application.
1. Pump the Product until both parts are extruded as one consistent colour.
2. Release the gun pressure and clean the static mixer opening with a cloth.
3. Discard inconsistently coloured Product parts.
4. Apply the Product to the prepared substrate using specific application gun.
5. For optimum adhesion apply the adhesive to both surfaces that require bonding.
6. For heavy components positioned vertically or overhead, provide temporary support until the Product has fully hardened.
7. Immediately clean tools with Sika® Thinner C.
8. Wash hands and skin thoroughly with warm soap water.

REPAIR
Preconditions
Prior to application confirm dew point conditions before and during application.
1. Pump the Product until both parts are extruded as one consistent colour.
2. Release the gun pressure and clean the static mixer opening with a cloth.
3. Discard inconsistently coloured Product parts.
4. Apply the Product to the prepared substrate using specific application gun.
5. Finish the surface of the repair with a spatula or trowel if required.
6. Immediately clean tools with Sika® Thinner C.
7. Wash hands and skin thoroughly with warm soap water.

JOINT FILLING AND CRACK SEALING
Preconditions
Prior to application confirm dew point conditions before and during application.
1. Pump the Product until both parts are extruded as one consistent colour.
2. Release the gun pressure and clean the static mixer opening with a cloth.
3. Discard inconsistently coloured Product parts.
4. Apply the Product to the prepared substrate using specific application gun.
5. For a smooth finish tool the surface of the joint or crack using a spatula.
6. Immediately clean tools with Sika® Thinner C.

7. Wash hands and skin thoroughly with warm soap water.

CLEANING OF TOOLS

Clean all tools and application equipment with Sika® Thinner C immediately after use. Hardened material can only be removed mechanically.

LOCAL RESTRICTIONS

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

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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