BUILDING TRUST

PRODUCT DATA SHEET

SikaGrout®-800

High-performance cementitious grout with reduced carbon footprint and sustainability benefits

PRODUCT DESCRIPTION

SikaGrout®-800 is a cementitious, high-performance, shrinkage-compensated engineering grout. It contains supplementary cementitious materials (SCMs) and can reduce the carbon footprint when compared to a reference cementitious grout in a Life Cycle Assessment.

USES

SikaGrout®-800 is used for:

- Grouting heavy equipment or machine bases.
- Grouting under support base plates.
- Bedding joints in precast concrete sections.
- Sealing around penetrations.
- Steel reinforcement anchoring.
- Repairing concrete structures and components.
- Interior and exterior applications.
- Concrete exposure classes XC 1-4, XF 1-4, XD 1-3, XS 1-3 and XA 1-2 as described in EN 206.

Please note:
- The Product may only be used by experienced professionals.

CHARACTERISTICS / ADVANTAGES

- Uses supplementary cementitious materials (SCMs) for improved sustainability.
- Application thickness range 6 mm to 300 mm.
- Dust-reduced.
- Sulphate-resistant.
- High final strength.
- Shrinkage-compensated both in plastic and hardening stage.
- Fluid consistency.
- No segregation or bleeding.
- Ready to use, just add water.
- Easy to mix and apply.
- Can be pumped or poured.
- Low permeability.
- Non-corrosive.
- Very low VOC emissions.
- Suitable for EN 206 concrete exposure classes: XC 1-4, XF 1-4, XD 1-3, XS 1-3 and XA 1-2.
- Reaction to fire Euroclass A1.

ENVIRONMENTAL INFORMATION

- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4 — 1 point.
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Sourcing of Raw Materials under LEED® v4 — 1 point.
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4 — 1 point.
- Contributes towards satisfying Materials and Resources (MR) Credit: Environmental Product Declarations: Option 1 under LEED® v4.1 — 1 point.
- Contributes towards satisfying Materials and Resources (MR) Credit: Sourcing of Raw Materials under LEED® v4.1 — 1-2 points.
- Contributes towards satisfying Materials and Resources (MR) Credit: Material Ingredients: Option 2 under LEED® v4.1 — 1 point.
- Contributes towards satisfying Indoor Environmental Quality (EQ) Credit: Low-Emitting Materials under LEED® v4 — 1–3 points.
- Specific Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by BRE Global.
- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU).
- VOC emission classification GEV Emicode EC1^{plus}.

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 1504-3:2005 Products and systems for the protection and repair of concrete structures — Structural and non-structural repair.
- CE marking and declaration of performance based on EN 1504-6:2004 Products and systems for the protection and repair of concrete structures — Anchoring reinforcing steel bar.
- Combination products ÖNORM B 3309-1, SikaGrout®-800, Hartl, Test Report No. 013595/4.
- Sea water resistance NF P 18-837, SikaGrout-800.
- Drinking Water Certificate: Water Regulations Advisory Scheme Ltd (WRAS) Approval Number: 250855043.

PRODUCT INFORMATION

Chemical Base	Sulphate-resistant cement, supplementary cementitious materials, selected aggregates and additives.	
Packaging	Standard bag — 25 kg Refer to the current price list for available packaging variations.	
Appearance / Colour	Grey powder	
Shelf Life	Standard bag — 12 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to the packaging. Refer to the current Safety Data Sheet for information on safe handling and storage.	
Maximum Grain Size	2 mm	
Soluble Chloride Ion Content	≤ 0.05 %	(EN 1015-17)

TECHNICAL INFORMATION

Compressive Strength	Cured 24 hours at +21 °C	~30 MPa	(EN 12190)
	Cured 7 days at +21 °C	~55 MPa	
	Cured 28 days at +21 °C	~80 MPa	
Modulus of Elasticity in Compression	Cured 28 days at +21 °C	~32 GPa	(EN 13412)
Flexural Strength	Conditioned 24 hours at +20 °C	~6 MPa	(EN 12190)
	Conditioned 7 days at +20 °C	~8 MPa	
	Conditioned 28 days at +20 °C	~10 MPa	
Pull-Out Resistance	≤ 0.6 mm at load of 75 kN		(EN 1881)
Shrinkage	Linear: ≤ 0.7 mm/m after 91 days		(EN 12617-4)
Restrained Shrinkage / Expansion	≥ 2.0 MPa		(EN 12617-4)
Tensile adhesion strength	≥ 2.0 MPa		(EN 1542)
Thermal Compatibility	≥ 2.0 MPa (Part 1 - Freeze-Thaw)		(EN 13687-1)
Reaction to Fire	Euroclass A1		(EN 13501-1)
Carbonation Resistance	dk ≤ control concrete MC (0.45)		(EN 13295)

APPLICATION INFORMATION

Mixing Ratio	Fluid consistency	3.10 L to 3.25 L
	Fluid consistency — water ratio by weight	12.4 % to 13 %
Consumption	~2.3 kg of powder per m² per mm layer thickness **NOTE:** Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply the Product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.	
Yield	~12.7 litres of mortar per 25 kg bag **NOTE:** Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply the Product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.	
Layer Thickness	Maximum	300 mm
	Minimum	6 mm
Product Temperature	Maximum	+35 °C
	Minimum	+5 °C
Ambient Air Temperature	Maximum	+35 °C
	Minimum	+5 °C
Substrate Temperature	Maximum	+35 °C
	Minimum	+5 °C
Pot Life	At +20 °C	~60 minutes
	Pot life depends on temperature. **NOTE:** Pot life will be shorter at higher temperatures. Pot life will be longer at lower temperatures.	
Fresh mortar density	~2.25 kg/l	(EN 1015-6)

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.

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

NOTES ON INSTALLATION

- Do NOT exceed maximum water addition.
- Use only clean, potable water for mixing.
- Do NOT use vibrating pokers.
- If mixing with a drill and paddle:
  - The drill shall be high torque, slow speed (i.e. 300 to 500 rpm) with a suitable grout stirrer.
  - Use a clean, rigid mixing vessel - flexible containers (e.g. 'gorilla tubs') are unsuitable.
  - Add the appropriate quantity of clean, potable water to the mixing vessel first and gradually add the powder to the water, mixing continuously.
  - Keep the mixing head in the material - refrain from lifting in and out, as this will introduce air.
  - Once all powder has been added, mix until homogeneous (i.e. at least 3 minutes).
  - Do NOT try and mix too many bags at a time! Most drills and paddles are only capable of mixing one bag at a time. Large volumes require specialist machinery.
- Once fully mixed, leave the grout to de-gas for 2 to 3 minutes before use.
- Use only on clean, sound substrates (concrete shall be soaked to saturated-surface-dry (SSD) condition).
- Avoid application in direct sun and / or strong wind.
- Pour or pump continuously from one side only (keep header boxes / hoppers topped up for the duration of the application).

- Keep exposed surfaces to a minimum.
- Do NOT add additional water during the surface finishing, as this will cause discoloration and / or cracking.
- Protect freshly applied material from freeze-thaw action.
- If applying in cold conditions (i.e. at 0°C to +5°C) the application area should be covered (e.g. use of a heated tent system) to create a micro-climate, which should then be heated to ~+20°C for a minimum of 2 days prior to application. Store the Product, water and equipment in this environment until also at ~+20 °C.
- Following application and if applied in cool conditions, or if cold conditions are expected, the use of insulating blankets or heated curing blankets is recommended for at least 72 hours to protect the fresh grout from cold temperatures and frost.
- To avoid cracking in warm temperatures, keep bags cool and use cold water.
- When the ambient temperature is warm, protect the working area from direct sunlight with temporary shelters or canopies. Do NOT expose equipment, materials or application to direct sunlight.
- When working in warm conditions and if being used, cover hoses with white membranes (or similar) to reflect heat and keep the hoses cool (or, if possible, do NOT use black / dark coloured hoses).

SUBSTRATE PREPARATION

CONCRETE
The substrate must be structurally sound, thoroughly clean, free from oil, grease, dust, loose material, surface contamination and materials which will reduce adhesion strength. Prepare the concrete to provide a mechanical key and to remove any contamination which will impair the grout flow or reduce adhesion strength.

1. Remove laitance, delaminated, weak, damaged and deteriorated substrate using suitable mechanical preparation techniques such as high-pressure water jetting or abrasive blast cleaning equipment.
2. Clean any pockets or holes for structural fixings from all debris and water.

The substrate shall be structurally sound, thoroughly clean, and have a textured finish exposing the aggregate.
PRE-WETTING

1. Thoroughly saturate the prepared concrete substrate with clean, potable water.
2. Do not allow the substrate to dry within this time.
3. Remove all water from within the formwork, cavities or pockets.

The final prepared surface shall have a dark matt appearance (saturated-surface-dry) without glistening.
STEEL
Surfaces must be sound, clean, dry and free of contaminants such as dirt, oil, grease, coatings and loose friable material. Prepare the steel to remove any contamination which will impair the grout flow or reduce adhesion strength.
Suitable techniques for substrate preparation include the following:

- Abrasive blast cleaning.
- High-pressure water-blasting.
- Grinding.

1. Prepare the substrate mechanically using a suitable technique.
2. Apply the Product immediately to prevent re-oxidizing and rust formation.

The substrate shall be thoroughly clean, free from oil, grease, rust or scale, with a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement.
SHUTTERING OR FORMWORK

1. Select suitable formwork (permanent or temporary) of sufficient strength to contain the grout around areas such as base plates.
2. Ensure all edges and joints of the formwork are sealed tightly to prevent leakage or seepage of the grout.
3. If vacuum extraction equipment is not used to remove pre-wetting water, ensure the formwork comprises outlets for the pre-wetting water to drain.
4. Coat all surfaces of the formwork that will come into contact with the grout with polyethylene film or release agent to prevent adhesion.
5. Construct a header box or hopper on one side of the formwork to maintain a minimum grout head of 150 mm to 200 mm during the grouting process.

MIXING

ELECTRIC SINGLE OR DOUBLE PADDLE MIXER
IMPORTANT:
Do not add more water than the maximum specified

1. Pour the minimum amount of clean, potable water into a suitable clean mixing container (please note, flexible, 'gorilla tubs' are unsuitable - rigid vessels shall be used).
2. Stir the water slowly with a spiral paddle (300 to 500 rpm).
3. Add the complete bag of powder into the water.
4. Mix continuously for 3 minutes to achieve a uniform and lump-free smooth consistency.
5. Within the mixing time, add more water up to the maximum allowed until the required consistency is achieved.
6. Wait for 2 to 3 minutes to release entrained air bubbles.
7. Remix briefly for maximum 1 minute.

FORCED ACTION PAN MIXER (NOT CONTINUOUS)
IMPORTANT:
Carry out equipment trials
Carry out equipment trials to make sure the Product can be mixed satisfactorily before full project application.
IMPORTANT:
Do not use continuous mixing equipment
The Product is not designed for processing with continuous mixing equipment.

1. Pour the minimum water ratio in the correct proportion into the grout mixer.
2. While stirring the water, slowly add the powder.
3. Within the mixing time, add more water up to the maximum allowed until the required consistency is achieved.
4. Mix continuously for a minimum of 3 minutes. For larger mixes the mixing time must be extended to approximately 5 minutes, or as necessary.

5. Mix until the material achieves a lump-free, smooth consistency.

APPLICATION

IMPORTANT:
Strictly follow installation procedures
Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.
IMPORTANT:
Risk of cracking due to application in direct sun or strong winds
- Do not apply the Product in direct sun, strong winds or both.

IMPORTANT:
Risk of reduced strength gain and impaired physical properties in cold weather
Take the following measures in cold weather:
1. Store bags in a warm environment.
2. Use warm mixing water to assist with achieving strength gain and maintaining physical properties.

IMPORTANT:
Risk of cracking and impaired physical properties in hot weather
Take the following measures in hot weather:
1. Store bags in a cool environment.
2. Use cold mixing water to assist with controlling the exothermic reaction to reduce cracking and to maintain physical properties.

PRE-SOAKING
1. Thoroughly saturate the prepared concrete substrate with clean water for a recommended 12 hours before application of the grout.
2. Do not allow the substrate to dry within this time.
3. Remove all water from within the formwork, cavities or pockets.

The final surface must achieve a dark matt appearance (saturated surface dry) without glistening.
PLACING: MANUAL APPLICATION
Preconditions
After mixing, allow material to remain in the mixing container for 2 to 3 minutes to release entrained air bubbles.
- **IMPORTANT:** Avoid trapping air. Pour the mixed grout into the header box or hopper ensuring continuous grout flow during the complete grouting operation.

PLACING: PUMP APPLICATION
Use grout pumps for large volume placement.
- Conduct equipment trials to confirm the product can be pumped satisfactorily before full project application.

SURFACE FINISHING
1. **IMPORTANT:** Do not add water to the surface and do not overwork the surface during finishing. Finish exposed grout surfaces to the required surface texture as soon as the grout has started to stiffen.
2. Remove the formwork when the grout has initially hardened.
3. Trim the grout whilst still 'green'. Minimise shoulders to avoid cracking.

CURING TREATMENT

Protect exposed grout surfaces after finishing from premature drying and cracking using an appropriate curing method such as curing compounds, moist geotextile membranes, hessian or polythene sheeting.
In cold weather, apply insulated blankets to maintain a constant temperature to prevent surface damage from freezing and frost.

CLEANING OF TOOLS

Clean all tools and application equipment with water 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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