

Sopro FF 450

Flexible tile adhesive

FF 450



Cementitious flexible tile adhesive, meeting C2 TE S1 requirements to DIN EN 12004, offering high coverage and excellent workability, for wall and floor installation of ceramic tiles; also for underwater applications, e.g. in swimming pools and process water containers. Suitable for use in conjunction with wall and floor heating, waterproof membranes and for fully vitrified stoneware.

- For walls and floors, indoors and outdoors
- C2: tensile adhesion strength $\geq 1.0 \text{ N/mm}^2$
- T: thixotropic - high sag resistance due to fibre reinforcement
- E: extended open time ≥ 30 minutes
- S1: deformability $\geq 2.5 \text{ mm}$
- Low-chromate to Regulation (EC) No 1907/2006, Annex XVII
- EMICODE system of GEV (German Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials): EC1^{PLUS} ("very-low-emission-plus") rating
- DGNB (German Sustainable Building Council): Top quality level 4, Line 8, based on DGNB (German Sustainable Building Council) criterion "ENV1.2 Local Environmental Impact" (2018 version)
- For healthy living: Recommended by Sentinel Haus Institut

Coverage: Approx. 1.1 kg/m² per mm coat thickness



Packaging		Packages	Pallet weight
Big bag	1000 kg	1	1000 kg
Big bag	500 kg	1	500 kg
Bag	25 kg	40	1000 kg
Bag	5 kg	200	1000 kg

Use	Suitable for earthenware, stoneware and fully vitrified stoneware tiles, clinker floor tiles, mosaic, discoloration-resistant natural stone units, cast stone units. In residential, commercial and industrial facilities, catering kitchens, bathrooms, damp and wet spaces, swimming pools, process water containers, on facades, balconies and patios.
Properties	Excellent contact adhesion, high sag resistance and high water retentivity, resistant to water and freeze-thaw cycles, very smooth workability, particularly high coverage, extended open time.
Suitable substrates	Min. 3-month-old concrete, lightweight concrete, cement screeds, calcium sulphate (anhydrite and self-levelling anhydrite) screeds, mastic asphalt screeds (indoors), board subfloors, heated floor constructions (cement and calcium sulphate screeds), strong existing ceramic, natural stone, terrazzo or cast stone coverings, paperless gypsum panels, gypsum plasterboard and gypsum fibreboard, flush-jointed masonry (no composite masonry), renders made from masonry cement, cement render, lime/cement render, gypsum plaster and rigid foam board. As a basic requirement, all substrates shall be solid, strong and dimensionally stable. Specifications of DIN 18157 shall be observed. Waterproof membranes using Sopro FDF flexible sealing compound, Sopro DSF 523 one-component flexible sealing slurry, Sopro DSF 623 flexible RS sealing slurry, Sopro DSF 423 two-component flexible sealing slurry, Sopro TDS 823 two-component turbo sealing slurry and Sopro AEB 640/Sopro AEB plus 639 waterproofing and separating membrane.
Substrate preparation	Substrate shall be clean, solid, strong, dimensionally stable and free from any adhesion-impairing substances. Fill any existing cracks in screed with structurally bonding Sopro SH 649 shaken resin. Level out any gross irregularities using Sopro RAM 3 454 renovation and levelling mortar or Sopro RS 462 repair filler; for floors, use Sopro FS 15 550 floor-levelling compound, Sopro VS 582 self-levelling filler or Sopro FS 5 549 floor-levelling compound. Cement screeds shall be 28 days old and dry. Screeds incorporating Sopro Rapidur [®] B1 rapid-set screed binder are ready to receive tiles after only 12 hours, Sopro Rapidur [®] B3 after 1 - 2 days, and Sopro Rapidur [®] B5 after 3 days. Calcium sulphate (anhydrite and self-levelling anhydrite) screeds shall be adequately ground, vacuum-cleaned and primed, and shall exhibit moisture content ≤ 0.5% CM for unheated and ≤ 0.3% CM for heated constructions. Gypsum plasterwork shall be dry, single-coat and shall not be felt-floated or smoothed. Cement and calcium sulphate screeds incorporating heating elements shall be heated up to ensure adequate drying out prior to flooring installation. Here, cement screeds shall exhibit residual moisture ≤ 2.0% CM. All relevant standards, guidelines and recommendations shall apply; workmanship shall comply with good practice.
Priming	Sopro GD 749 primer: Concrete, cement screeds, calcium sulphate (anhydrite) screeds, board subfloors, paperless gypsum wall panels, gypsum plasterboard/joints and filler, gypsum fibreboard, gypsum plaster, high- or variable-suction (interior) aerated concrete, cement and lime/cement render, renders made from masonry cement, flush-jointed masonry. Sopro SG 602 primer-sealer: Cement render, lime/cement render, gypsum plaster, homogeneous, flush-jointed masonry (no composite masonry), concrete, aerated concrete, paperless gypsum panels, gypsum plasterboard and gypsum fibreboard, cement screeds, calcium sulphate screeds. Suitable for ceramic tiles, natural stone and separated timber substrates. For large-format tiles (of size > 0.36 m ²), use of rapid-set, rapid-drying bedding adhesives is recommended in conjunction with Sopro SG 602. Sopro HPS 673 bonding primer: Smooth and closed-pore substrates, e.g. existing tile, terrazzo, natural and cast stone coverings, metal substrates (indoors), timber substrates, oriented strand board (OSB), adhesive residue from PVC flooring or carpeting. Sopro MGR 637 multi-purpose primer/Sopro EPG 522 epoxy primer: Calcium sulphate (anhydrite) screeds. For details relating to tile

sizes to be laid on calcium sulphate screeds, please consult technical data sheets for relevant primers.

Application	Place water in clean container, add Sopro FF 450 and mix thoroughly to workable, lump-free consistency. After 3 – 5 minutes maturing time, remix thoroughly. Apply contact layer with finishing trowel, then apply combed bed with suitable notched trowel (tool angle 45° – 60°). Apply only as much adhesive as can be covered by tiles during open time (30 minutes). Press tiles firmly into adhesive bed, position and align. Rake out joints prior to hardening and wash down covering.																			
Water requirement	Per package	25 kg	5 kg	500 kg	1000 kg															
	Water requirement	10 l - 11 l	2 l - 2.2 l	200 l - 220 l	400 l - 440 l															
Application temperature	Application temperature between +5 °C and max. +30 °C; use of a rapid-set Sopro thin-bed adhesive is recommended for external areas during cold season																			
Coat thickness	Max. 5 mm in compacted adhesive bed																			
Coverage chart	<table border="1"> <tr> <td>Serration (mm)</td> <td>4</td> <td>6</td> <td>8</td> <td>10</td> <td>12</td> <td>20</td> </tr> <tr> <td>Coverage kg/m²</td> <td>1.1</td> <td>1.7</td> <td>2.2</td> <td>2.8</td> <td>3.3</td> <td>--</td> </tr> </table>						Serration (mm)	4	6	8	10	12	20	Coverage kg/m ²	1.1	1.7	2.2	2.8	3.3	--
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	All stated consumption/coverage rates depend on angle of application with notched trowel and on substrate type and levelness.																			
	20 mm serration corresponds to M1 serration to TKB (German Technical Committee for Construction Adhesives) guidance paper (U-shaped serration).																			
Loadable	After approx. 3 days; in commercial facilities after approx. 14 days, in areas subject to high wet exposure after approx. 7 days, for underwater applications after approx. 21 days, in conjunction with wall and floor heating after approx. 14 days																			
Maturing time	3-5 minutes																			
Open time	Approx. 30 minutes																			
Shelf life	Approx. 12 months, subject to storage on pallet in dry conditions in original unopened containers																			
Specified times	Apply for normal temperature range of +23 °C and 50 % relative humidity; higher temperatures shorten and lower temperatures lengthen these times.																			
Tool cleaning	Wash tools with water immediately after use																			
Tools	Mixing attachment, notched trowel with suitable serration (tooth size up to 12 mm).																			
Underwater and permanently underwater area	Suitable																			
Walkable / groutable	After approx. 12 hours or after setting of adhesive; take measures to spread loads over floor																			
Wall and floor heating	Suitable																			
Working life	Approx. 4 hours; stiffened mortar shall not be retempered by addition of water or fresh mortar to restore workability																			
Test certificates	DIN EN 12004: C2 TE S1 PG-AIV-F (Criteria for Award of National Test Certificates for Liquid-Applied Waterproof Membranes Used in Conjunction with Tile Coverings): National test certificate (abP) for composite waterproofing systems with membrane and tile finish, for structural waterproofing in conjunction with DSF 523, DSF 423, TDS 823, FDF 525/527, PU-FD 570/571, PU-FD 1570/1571 and other Sopro components PG-AIV-B (Criteria for Award of National Test Certificates for Waterproof Sheet																			

Membranes Used in Conjunction with Tile Coverings): National test certificate (abP) for composite waterproofing systems with membrane and tile finish, for structural waterproofing in conjunction with AEB 640 and other Sopro components DIN EN 14891: FF 450 in conjunction with DSF 423, DSF 523, TDS 823 and GD 749 meets requirements, including those for tensile adhesion strength after storage in chlorinated water DIN EN 13501-1: Reaction to fire class: A1/A1fl.

Licence

EMICODE system of GEV (German Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials): EC1^{PLUS} ("very-low-emission-plus") rating

Safety precautions

Labelling in accordance with Regulation (EC) No 1272/2008 (CLP) GHS05 GHS07

Signal word: Danger

Contains Portland cement, Cr (VI) < 2 ppm. Exhibits strong alkaline reaction upon contact with moisture/water; protection required for skin and eyes. All standard precautions for the handling of construction materials/chemicals shall be taken. H315 Causes skin irritation. H318 Causes serious eye damage. H335 May irritate the respiratory system

P102 Keep out of reach of children. P261 Avoid breathing dust. P280 Wear protective gloves/protective clothing/eye protection/face protection/ P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 Call a POISON CENTER if you feel unwell. P501 Dispose of contents/container in accordance with regulations.

GISCODE ZP1

Low-chromate to Regulation (EC) No 1907/2006, Annex XVII

CE marking



Disposal

Disposal considerations. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Product:

Do not dispose of waste into sewers.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Send to an authorized waste disposal service.

Contaminated packaging:

Empty remaining content.

Dispose of as unused product.

Do not re-use empty containers.

Please observe the current version of the product information, the currently valid declaration of performance under the EU Construction Products Regulation, and the latest version of the relevant safety data sheet to EC Regulation No 1907/2006, also available from the Internet at www.sopro.com! This document serves as a product description and sets out general details, based on empirical and test data, that take no account of specific cases of application. No liability may be construed and no claims shall be accepted in respect of these details. Should you require assistance, please contact our Technical Counselling Service.

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