

# Fliesenfest S1 turbo

## S1 rapid-set flexible tile adhesive

FF 451



Extra-rapid-set, cementitious flexible tile adhesive, meeting C2 FT S1 requirements to DIN EN 12004, also for fully vitrified stoneware. Suitable for use in conjunction with wall and floor heating and Sopro waterproof membranes. Flexible, sag-resistant and with high crystalline water binding capacity.

- For walls and floors, indoors and outdoors
- C2: tensile adhesion strength  $\geq 1.0 \text{ N/mm}^2$
- F: early tensile adhesion strength  $\geq 0.5 \text{ N/mm}^2$  after 6 hours
- T: thixotropic – high sag resistance due to fibre reinforcement
- S1: deformability  $\geq 2.5 \text{ mm}$
- Working life: approx. 20 minutes
- Walkable and groutable: after approx. 2 hours
- Low-chromate to Regulation (EC) No 1907/2006, Annex XVII
- DGNB: Top quality level 4, Line 8, based on DGNB (German Sustainable Building Council) criterion "ENV1.2 Local Environmental Impact" (2018 version)

Coverage: Approx.  $1.3 \text{ kg/m}^2$  per mm coat thickness.



Packaging		Packages	Pallet weight
Bag	25 kg	40	1000 kg

<b>Use</b>	<p>With earthenware, stoneware and fully vitrified stoneware tiles, mosaic, discoloration-resistant natural stone units, ceramic split tiles and split tile fittings, clinker floor tiles and equivalent materials. For construction of ledges/shelves, lightweight internal walls, aerated concrete block facings to sanitary appliances (e.g. bathtubs) and the like. For full-surface installation of foam, cork, peat, wood-fibre etc. insulation board. For process water tanks, swimming pools, operating theatres, escape routes.</p>	
<b>Properties</b>	<p>Excellent contact adhesion, fresh adhesive sag resistance and high water retentivity, resistant to water and freeze-thaw cycles, high early strength.</p>	
<b>substrate preparation</b>	<p>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. (Self-levelling) calcium sulphate screeds (anhydrite screeds) shall be adequately ground, vacuum-cleaned and primed, and shall exhibit moisture content <math>\leq 0.5\%</math> CM for unheated and <math>\leq 0.3\%</math> 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. Floating cement screeds or unbonded cement screeds on separating layer shall exhibit residual moisture <math>\leq 2.0\%</math> CM. Bonded cement screeds may be tiled as soon as they are walkable. When laying natural stone, risk of discoloration due to moisture penetration must be taken into account. All relevant standards, guidelines and recommendations shall apply; workmanship shall comply with good practice.</p>	
<b>Priming</b>	<p>For high- and variable-suction substrates: Sopro GD 749 primer and Sopro SG 602 primer-sealer                      For non-absorbent substrates: Sopro HPS 673 bonding primer</p> <p>For calcium sulphate screeds: Sopro MGR 637 multi-purpose primer (for all sizes), Sopro GD 749 primer (sizes up to 0.2 m<sup>2</sup>), Sopro SG 602 primer-sealer (sizes up to 1.0 m<sup>2</sup>)</p> <p>For stabilizing friable mineral substrates and as adhesion promoter on smooth substrates: Sopro EPG 1522 epoxy primer</p> <p>For further information, please consult relevant technical data sheets.</p>	
<b>Application</b>	<p>Mix Sopro FF 451 with water to homogeneous consistency. Apply contact layer, pressing down heavily, then apply combed bed with suitable notched trowel (tool angle 45° - 60°). Do not prepare an area of more than approx. 1.5 m<sup>2</sup>. Press tiles firmly into bed, position and align before adhesive skins over. Rake out joints prior to hardening and wash down covering. Do not retemper stiffened mortar by addition of water or fresh material to restore workability. Pretreatment with Sopro MGR 637 multi-purpose primer or Sopro EPG 522 epoxy primer is required when laying large-format tiles with edge length exceeding 60 cm or of size exceeding 0.2 m<sup>2</sup> on calcium sulphate-based substrates.</p>	
<b>Water requirement</b>	<p><b>Per package</b></p> <p>Water requirement</p>	<p><b>25 kg</b></p> <p>6.5 l - 7 l</p>

<b>Application temperature</b>	From +5 °C to +25 °C (substrate, air, material)																			
<b>Coat thickness</b>	Max. 5 mm in compacted adhesive bed																			
<b>Coverage chart</b>	<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/m<sup>2</sup></td> <td>1.3</td> <td>2.0</td> <td>2.6</td> <td>3.3</td> <td>3.9</td> <td>--</td> </tr> </table> <p>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).</p>						Serration (mm)	4	6	8	10	12	20	Coverage kg/m <sup>2</sup>	1.3	2.0	2.6	3.3	3.9	--
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<b>Loadable</b>	After approx. 1 day; in commercial facilities after approx. 2 days, in areas subject to high wet exposure after approx. 3 days, for underwater applications after approx. 10 days, in conjunction with wall and floor heating after approx. 14 days.																			
<b>Maturing time</b>	3 - 5 minutes																			
<b>Open time</b>	Approx. 20 minutes																			
<b>Recommendation for grouting</b>	<p>The following are recommended for grouting ceramic tiles with absorbent tile bodies (earthenware) for stated joint widths:</p> <p>from 1 to 5 mm – Sopro Saphir<sup>®</sup> 5 water-repellent tile grout</p> <p>from 1 to 10 mm – Sopro DF 10 flexible designer tile grout</p> <p>The following are recommended for grouting tiles with low-suction or non-absorbent tile bodies (stoneware and fully vitrified stoneware) for stated joint widths:</p> <p>from 1 to 10 mm – Sopro DF 10 flexible designer tile grout</p> <p>from 2 to 20 mm – Sopro FL plus flexible tile grout</p> <p>The following are recommended for grouting natural and cast stone coverings for stated joint widths:</p> <p>from 1 to 10 mm – Sopro DF 10 flexible designer tile grout</p> <p>from 2 to 20 mm – Sopro FL plus flexible tile grout</p> <p>The following are recommended for grouting coverings subject to high mechanical loads (workshops, commercial facilities) for stated joint widths:</p> <p>from 1 to 10 mm – Sopro TF+ high-strength tile grout</p> <p>from 3 to 30 mm – Sopro TFb high-strength tile grout</p> <p>The following are recommended as chemical-resistant tile grouts for stated joint widths:</p> <p>from 1 to 10 mm – Sopro DFX designer epoxy tile grout</p> <p>from 1.5 to 12 mm – Sopro FEP epoxy tile grout</p>																			
<b>Shelf life</b>	Shelf life approx. 6 months, subject to storage on pallet in dry conditions in original unopened containers.																			

<b>Specified times</b>	Apply for normal temperature range of +23 °C and 50 % relative humidity; higher temperatures shorten and lower temperatures lengthen these times.
<b>Suitable substrates</b>	Min. 3-month-old concrete, aerated concrete; cement and lime/cement render; renders made from masonry cement; plane, flush-jointed masonry (no composite masonry); paperless gypsum, gypsum plasterboard and gypsum fibreboard drywall panels; cement screeds; calcium sulphate screeds; board subfloors. As a basic requirement, all substrates shall, be solid, strong and dimensionally stable. Specifications of DIN 18157 shall be observed.
<b>Tool cleaning</b>	Wash tools with water immediately after use
<b>Tools</b>	Mixing attachment, notched trowel with suitable serration: 3 – 4 mm for tesserae, 4 – 6 mm for wall and floor tiles, 6 – 10 mm for heavy ceramics.
<b>Underwater and permanently underwater area</b>	Suitable
<b>Walkable / groutable</b>	After approx. 3 hours or after setting of adhesive; take measures to spread loads over floor
<b>Wall and floor heating</b>	Suitable
<b>Working life</b>	Approx. 20 minutes
<b>Test certificates</b>	DIN EN 12004: C2 FT S1 PG-AIV-F: System component of the general building authority test certificate (abP) as system test in combination with FDF 525/527, DSF 523, DSF RS 623, TDS 823 and other Sopro components PG-AIV-B: System component of the general building authority test certificate (abP) as a system test in combination with AEB 640 and other Sopro components.
<b>Licence</b>	EMICODE system of GEV (German Association for the Control of Emissions in Products for Flooring Installation, Adhesives and Building Materials): EC1 <sup>PLUS</sup> ("very-low-emission-plus") rating
<b>Safety precautions</b>	<p>Labelling in accordance with Regulation (EC) No 1272/2008 (CLP). GHS07</p> <p><b>Signal word:</b> Attention</p> <p>H319 Causes serious eye irritation. P102 Keep out of reach of children. P103 Read carefully and follow all instructions. P264 Wash hands thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection/ P337+P313 If eye irritation persists: Get medical advice/attention. P501 Dispose of contents/container in accordance with regulations.</p> <p>The product is not considered hazardous according to CLP Regulation 1272/2008/EC. Low-chromate to Regulation (EC) No 1907/2006, Annex XVII GHS07 GHS08 GHS09 GHS10 GHS11 GHS12 GHS13 GHS14 GHS15 GHS16 GHS17 GHS18 GHS19 GHS20 GHS21 GHS22 GHS23 GHS24 GHS25 GHS26 GHS27 GHS28 GHS29 GHS30 GHS31 GHS32 GHS33 GHS34 GHS35 GHS36 GHS37 GHS38 GHS39 GHS40 GHS41 GHS42 GHS43 GHS44 GHS45 GHS46 GHS47 GHS48 GHS49 GHS50 GHS51 GHS52 GHS53 GHS54 GHS55 GHS56 GHS57 GHS58 GHS59 GHS60 GHS61 GHS62 GHS63 GHS64 GHS65 GHS66 GHS67 GHS68 GHS69 GHS70 GHS71 GHS72 GHS73 GHS74 GHS75 GHS76 GHS77 GHS78 GHS79 GHS80 GHS81 GHS82 GHS83 GHS84 GHS85 GHS86 GHS87 GHS88 GHS89 GHS90 GHS91 GHS92 GHS93 GHS94 GHS95 GHS96 GHS97 GHS98 GHS99 GHS100</p>

**CE marking**



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](http://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.

## Disposal

The generation of waste should be avoided or minimized wherever possible. Recover if possible. A waste code (EWC) according to European List of Waste (LoW) cannot be specified, due to dependence on the usage. Contact and send to an authorized waste disposal service.

Methods of disposal:

Disposal of this product, solutions, packaging and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor.

Do not dispose of waste into sewers.

Hazardous waste: Yes

Disposal considerations:

Do not allow to enter drains or watercourses.

Dispose of product according to all federal, state and local applicable regulations.

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

Dispose of containers contaminated by the product in accordance with local or national legal provisions. For further information, contact your local waste authority.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling untreated empty containers.

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Empty containers or liners may retain some product residues. Do not re-use empty containers.

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FOR MORE INFORMATION CONTACT: **Smet Building Products Ltd**

93A Belfast Road | Newry | BT34 1QH | Northern Ireland

T: +44 (0)28 3026 6833 ROI: +353 (0) 1697 8586

E: [info@smetbuildingproducts.com](mailto:info@smetbuildingproducts.com)

[smetbuildingproducts.com](http://smetbuildingproducts.com) or [smet.ie](http://smet.ie)



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