

Product Data Sheet
Edition 16/09/2011
Identification no:
01 08 01 03 010 0 0000017
Sikafloor®-405



ETAG-005-6 09 3203 ETA 08/0251

Sikafloor®-405

1-part PUR highly elastic coating

Product Description

Sikafloor®-405 is a one part, pigmented, highly elastic, solvent containing, UV resistant, moisture triggered curing polyurethane resin coating.

Uses

- Slip resistant, UV resistant, waterproof, crack-bridging coating for concrete, cementitious screed substrates and tiles.
- For light to medium mechanical exposure
- For balconies, terraces, footbridges, stairways, galleries etc.

Characteristics / Advantages

- Moisture triggered
- Highly elastic
- Crack-bridging
- Waterproof
- Water vapour permeable
- UV resistant, non-yellowing
- Weather resistant
- Abrasion resistant with normal use
- Slip resistant
- Fast cure
- Excellent adhesion

Tests

Approval / Standards

European Technical Approval No ETA 08/0251, Decothane Balcons.
BUtgb (ATG): no. 06/2660 (Belgium)
Norisko CDC SEL Balcons (France)

Product Data

Form

Appearance / Colours

Coloured liquid
RAL 1015, RAL 7015, RAL 7032, RAL 7035, RAL 7042

Packaging

5 litres (6.5 kg) , 15 litres (19.5 kg)

Construction



Storage

Storage Conditions / Shelf Life	6 months from date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between 0°C and +25°C. Higher temperatures reduce the shelf life.
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Technical Data

Chemical Base	Elastomeric aliphatic polyurethane
Density	~ 1.30 kg/l (EN ISO 2811-1) Density value at +23°C.
Solid Content	~ 70.9% (by volume) / ~ 78.9% (by weight) (EN ISO 3251)
Flash Point	42°C (EN ISO 3679)

Mechanical / Physical Properties

Tensile Strength	Unreinforced film:	9 - 12 N/mm ² (EN ISO 527-1/EN ISO 527-3)
	Reemat Premium:	17.7 N/mm ² (As part of the Sika Balcony Premium System)
Elongation at Break	Unreinforced film:	± 400% (EN ISO 527-1/EN ISO 527-3)
	Reemat Premium:	30% (As part of the Sika Balcony Premium System)
Water Vapour Permeable	μH ₂ O = 2500; S _D (1400 μm) = 3.5 m (EN 1931)	

Resistance

Chemical Resistance	Resistant to many chemicals. Please ask for a detailed chemical resistance table.
Fire Resistance	B _{ROOF} (t1) (DD ENV 1187 part 1)
	Class E (EN 13501-1)

System Information

System Structure

Sika® Balcony Premium System

Primer: 1 x Sika® Bonding Primer

Waterproofing:

First coat: 1 x Sikafloor®-405

Membran: Sika® Reemat Premium

Second coat: 1 x Sikafloor®-405

The waterproofing system build up must always be overcoated with the following finishing system chosen according to the mechanical resistance and the aesthetical aspect

Finish: Quartz

Primer: Sikafloor®-406

Wear course: Screed made of Sikafloor®-406 and Sikafloor®-Quartz Sand KG 7, e.g Graffito (0.6 – 1.2 mm) applied fresh in fresh

Top Coat: 1 x Sikafloor®-416

Finish: Solid

Wear course: 1 x Sikafloor®-405 fully broadcasted with Sikafloor®-Quartz Sand KG 8*, e.g Grey (0.3-0.8 mm)

Seal Coat: 1 x Sikafloor®-415

Finish: Deco +

Wear course: 1 x Sikafloor®-405 broadcasted in excess with Sikafloor-Colour Chips Mix, e.g. Gobi

Top Coat: 1 x Sikafloor®-416

Finish: Deco

Wear course: 1 x Sikafloor®-405 broadcasted slightly with coloured flakes

Top Coat: 1 x Sikafloor®-416 + Sikafloor® Anti Slip Agent

Finish: Uni

Top Coat: 1 x Sikafloor®-416 + Sikafloor® Anti Slip Agent

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sika® Bonding Primer	max.0.15 l/m ² (~0.15kg/m ²)

Waterproofing

First coat	Sikafloor®-405	min. 1.1 l/m ² (~1.43kg/m ²)
Membran	Sika® Reemat Premium	Has to embed fully in the wet first coat.
Second coat:	Sikafloor®-405	min. 0.5 l/m ² (~0.65kg/m ²)

Finish: Quartz

Primer	Sikafloor®-406	max. 0.1 l/m ² (~0.1kg/m ²)
Wear course	0.75 l Sikafloor®-406 and 5 kg Sikafloor®-Quartz Sand KG 7, e.g Graffito (0.6 – 1.2 mm) applied fresh in fresh.	~ 5.75 kg/m ² ; 3 mm thickness
Top Coat:	1 x Sikafloor®-416	~ 0.2 l/m ² (~0.21kg/m ²)

Finish :Solid

Wear course	Sikafloor®-405 Fully broadcasted with Sikafloor®-Quartz Sand KG 8*, e.g Grey (0.3-0.8 mm)	min.0.3l/m ² (~0.4kg/m ²) ~ 3 - 4 kg/m ² (in excess)
Seal Coat	Sikafloor®-415	min.0.4 l/m ² (~0.44kg/m ²)

Finish: Deco +

Wear course	Sikafloor®-405 Broadcasted with Sikafloor-Colour Chips Mix, e.g. Gobi	min.0.3 l/m ² (~0.4kg/m ²) ~1 kg/m ² (in excess)
Top Coat:	1 x Sikafloor®-416	~ 0.3 l/m ² (~0.31kg/m ²)

Finish: Deco

Wear course	Sikafloor®-405 slightly broadcasted with Sikafloor-Colour Chips Mix, e.g. Namib	min. 0.3l/m ² (~0.4kg/m ²) min.0.05 kg/m ²
Top Coat:	1 x Sikafloor®-416 + 4% Sikafloor® Anti Slip Agent	max.0.1l/m ² (~0.1kg/m ²)

Finish: Uni

Top Coat:	1 x Sikafloor®-416 + 4% Sikafloor® Anti Slip Agent	max 0.1l/m ² (~0.1kg/m ²)
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These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc. The excess of quartz sand or paint flakes has to be removed before applying the seal or top coat.

*The colour of the used quartz sand has to correspond to the colour of the Sealer coat

Overworking with tiles is also possible.

For priming metal parts on a balcony please use SikaCor EG-Phosphat or SikaCor EG-Phosphat Rapid.

Substrate Quality

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum pull off strength of 1.5 N/mm².

The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

Old coating and tiles have to be solid, adherent and free of layers detrimental to adhesion. Existing layer has to be cleaned and mechanically roughened. A test area has to be applied.

Substrate Preparation	<p>Concrete substrates must be prepared mechanically using abrasive blast cleaning or grinding equipment to remove cement laitance and achieve an open textured surface.</p> <p>Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.</p> <p>Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor[®], SikaDur[®] and SikaGard[®] range of materials.</p> <p>The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.</p> <p>High spots must be removed by e.g. grinding.</p> <p>Solid and good adherent tiles must be grinded and then levelled with a scratch coat of Sikafloor[®]-156 / -161 before applying the chosen Sika Balcony System.</p> <p>All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.</p>
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Application Conditions / Limitations

Substrate Temperature	<p>+2°C min. / +30°C max.</p> <p>Frozen substrates must defrost for 24 hours.</p>
Ambient Temperature	+2°C min. / +30°C max.
Substrate Moisture Content	<p>Visible damp free (maximum 18% wood moisture equivalent).</p> <p>< 6% pbw moisture content Test method: Sika[®]-Tramex meter, < 4% CM - measurement or Oven-dry-method.</p> <p>No rising moisture according to ASTM (Polyethylene sheet).</p>
Relative Air Humidity	<p>80% r.h. max.</p> <p>35% min. (below +20°C: 45% min.)</p>
Dew Point	<p>Beware of condensation!</p> <p>The substrate and uncured floor must be at least 3°C above dew point to reduce the risk of condensation or blooming on the floor finish.</p>

Application Instructions

Mixing Time	Prior slightly stir Sikafloor [®] -405 mechanically before using.
Mixing Tools	Sikafloor [®] -405 must be mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.
Application Method / Tools	<p>Prior to application, confirm substrate moisture content, r.h. and dew point.</p> <p><i>Primer:</i> Apply Sika[®] Bonding Primer by brush or short pile roller.</p> <p><i>Coating:</i> Apply first coat Sikafloor[®]-405 (preferably RAL 7015, minimum 1.1 l/m²) by long pile paint roller. A brush is only for little applications, local details and reinforcement suitable.</p> <p>Embed Sika[®] Reemat Premium glass fibre mat in this wet coat.</p> <p>Apply second coat Sikafloor[®]-405, minimum 0.5 l/m² finishing coat, after the first coat is dry.</p> <p>Minimum dry film thickness Sikafloor[®]-405, with Sika Reemat Premium : 1400 µm;</p> <p>For an additional partial reinforcement under Sika Reemat Premium please use Sika Flexitape Heavy Duty.</p> <p>Sika Flexitape Heavy Duty. on cracks/joints subject to movements of > 15 % (expansion joints) and to bridge smaller seams between different substrates. Expansion joints require special advice with a release adhesive tape. Sika Flexitape HD is an open polyamide woven fabric with a unique weave pattern. The special weave gives an elevated multi-directional elongation. Sika Flexitape HD is available in 7.5 cm width.</p>

Cleaning of Tools Clean all tools and application equipment with Thinner C immediately after use. Hardened and/or cured material can only be removed mechanically.

Potlife The material in opened containers should be applied immediately. With open containers surface film formation will happen within approx. 24 hours.
High temperatures and high air humidity will accelerate curing significantly.

Waiting Time / Overcoating Before applying Sikafloor®-405 on Sika®-Bonding Primer allow:

Substrate temperature	Minimum	Maximum
+10°C	~ 4 hours	7 days
+20°C	~ 2.5 - 3.5 hours	7 days
+30°C	~ 1 hour	7 days

Coatings should only be applied when the primer has cured, and ideally within 24 hours after application. Leave to dry the Sika®-Bonding Primer min. 24 hours at temperatures above 10°C.

Application should take place within 7 days, further delays will require repriming with Sika®-Bonding Primer assuming that all dirt has been removed and contamination is avoided.

Before applying Sikafloor®-405 on Sikafloor®-405 allow

Substrate temperature	Minimum	Maximum
+5°C	24 hours	7 days
+20°C	18 hours	7 days
+30°C	12 hours	7 days

Application should take place within 7 days, further delays will require repriming with Sika® Reactivation Primer, assuming that all dirt has been removed and contamination is avoided.

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Notes on Application / Limitations Prior to overcoating with Sikafloor®-405, the priming coats must have cured tack-free.

Do not use for interior applications.

Always apply during falling temperatures. If applied during rising temperatures "pin holing" may occur from rising air.

If this is not possible and the substrate seems to be outgasing the use of Sika® Concrete Primer is necessary. In this case the Sika® Concrete Primer replaces the Sika® Bonding Primer. Please refer to the Product Data Sheet of Sika® Concrete Primer.

Tools

Recommended Supplier of Tools:

PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260, www.polyplan.com.

The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.

For exact colour matching, ensure the Sikafloor®-405 in each area is applied from the same control batch numbers.

If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO₂ and H₂O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.

Curing Details

Applied Product ready for use

Temperature (r.h. 50%)	surface dry	through dry	hard by
+20°C	6 hours	10 hours	18 hours
+2°C	12 hours	20 hours	30 hours

Note: Times are approximate and will be affected by changing ambient conditions and the layer thickness.

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.

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.


Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

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.

CE Labelling

	
Sika Services AG Tüffenwies 16 CH-8048 Zurich Switzerland 3203	
Decothane Balcons Liquid applied roof waterproofing system on the basis of polyurethane for use on roofs, terraces and balconies ¹⁾	
Last two digits of the year in which the marking was affixed	09
European Technical approval No.	ETA 08/0251
Guideline for European Technical approval	ETAG-005-6
Minimum layer thickness of the waterproofing layer	1.4 mm
Thickness achieved with	Sika® Reemat Premium
Level of use categories according to ETAG 005 with relation to:	
External fire performance	Class B _{ROOF(t1)}
Reaction to fire EN 13501-1	class F
Working life:	W3
Climatic zones:	M
All finish layers in combination with all substrates:	P4
Lowest surface temperature	TL3
Highest surface temperature	TH3
Roof slope:	S1 to S4
Statement of dangerous substances	None contained
Slipperiness	NPD
Water vapour permeability (μ)	2500
Resistance to wind load	≥ 50kPa

¹⁾ The waterproofing layer is tested and should be covered by one of the following finishes.

Finish: Quartz (min thickness ~3000 μm)

Finish: Deco + (min thickness ~275 μm)

Finish: Deco (min thickness ~275 μm)

Other finishes: tiles, timber boards and pavers on bearing pads.

EU Regulation 2004/42

VOC - Decopaint Directive

According to the EU-Directive 2004/42/CE, the maximum allowed content of VOC (Product category IIA / i type **sb**) is 500 g/l (Limit 2010) for the ready to use product.

The maximum content of **Sikafloor®-405** is < 500 g/l VOC for the ready to use product.



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Certificate No. EMS 4308



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