Construction

Sikafloor®-400 N Elastic

1-part PUR highly elastic coating

Product Description	Sikafloor®-400 N Elastic is a one part, highly elastic, solvent containing, UV resistant, coloured, moisture curing polyurethane resin coating.
Uses	■ Smooth or slip resistant, UV resistant, waterproof, crack-bridging coating for concrete and cementitious screed substrates ■ For light to medium mechanical exposure ■ For balconies, terraces, footbridges, stairways etc. ■ As the top coat in the Sika Ground Water Protection System (I N) for Bund Containment Areas
Characteristics / Advantages	■ Highly elastic ■ Crack-bridging ■ Waterproof ■ UV resistant, non-yellowing ■ Weather resistant ■ Abrasion resistant with normal use ■ Slip resistant surfaces are possible

Tests

Approval / Standards	Approval for “Ground Water Protection System”, Z-59.12-4, DIBt, Germany, Jun. 2003.

Product Data

Form

Appearance / Colours	Coloured liquid Almost unlimited choice of colour shades.
Packaging	6 kg, 18 kg units

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 +5 °C and +30 °C.

Technical Data

Chemical Base	PUR	
Density	~ 1.6 kg/l Density value at +23 °C.	(DIN EN ISO 2811-1)
Solid Content	~ 77% (by volume) / ~ 88% (by weight)	

Mechanical / Physical Properties

Elongation at Break	At +23 °C: ~ 320% (7days /+23 °C) At -20 °C: ~ 70% (7days / +23 °C)	(DIN 53504)
Abrasion Resistance	30 mg (CS 10/1000/1000) (8 days / +23 °C)	(DIN 53 109 (Taber Abrader Test))

Resistance

Chemical Resistance

Resistant to many chemicals. Please ask for a detailed chemical resistance table.

Attention: Wine, coffee, some leaves and flower petals etc. may cause surface discolouration but this will have no effect on the product performance and durability. Please use Sikafloor-410 for improved cleanability and resistance to contamination.

Thermal Resistance

Exposure*	Dry heat
Permanent	+50 °C
Short-term max. 7 d	+80 °C
Short-term max. 8 h	+100 °C

*No simultaneous chemical and mechanical exposure.

System Information

System Structure

System for light wear (layer thickness: 0.3 - 0.5 mm):
Primer: 1 x Sikafloor®-400 N Elastic diluted with 10 wt.-% Sika Thinner C
Seal Coat: 1 x Sikafloor®-400 N Elastic

System for medium wear (layer thickness: 0.7 - 1.2 mm):
Primer: 1 x Sikafloor®-156
Coating: 1 x Sikafloor®-400 N Elastic

System for medium wear + Surface Design (layer thickness: 0.9 - 1.4 mm):
Primer: 1 x Sikafloor®-156
Coating: 1 x Sikafloor®-400 N Elastic lightly broadcast with coloured chips
Matt seal coat: 1 x Sikafloor®-410

System for high wear (layer thickness: 1.5 - 2.0 mm):
Primer: 1 x Sikafloor®-156 broadcast to excess with quartz sand 0.3 - 0.8 mm
Seal coat: 1 x Sikafloor®-400 N Elastic

System for high wear + Surface Design (layer thickness: 1.5 - 2.0 mm):
Primer: 1 x Sikafloor®-156
Coating: 1 x Sikafloor®-400 N Elastic, broadcast to excess with coloured quartz sand 0.3 - 0.8 mm;
Matt seal coat: 1-2 x Sikafloor®-410

Coving / Skirtings (> 4% slope):
Coating: Sikafloor®-400 N Elastic + 1.5 - 2 wt.-% Extender T

Top coat of the Sika® Ground Water Protection System (similar to certified system I N)(layer thickness: ~1.0 mm):
Primer: 1 x Sikafloor®-156
Coating: 1 x Sikafloor®-400 N Elastic

Note: The system configurations as described must be fully complied with and may not be changed. Please also refer to notes under “Chemical Resistance”.

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sikafloor®-400 N Elastic + 10 wt.-% Thinner C	0.4 - 0.6 kg/m²
Seal coat for light wear Seal coat:	Sikafloor®-400 N Elastic	0.4 - 0.8 kg/m²
System for medium wear Coating:	Sikafloor®-400 N Elastic	0.9 - 1.5 kg/m²
System for medium wear + Surface design Coating: Matt seal coat:	Sikafloor®-400 N Elastic + colour chips Sikafloor®-410	0.9 - 1.5 kg/m² 0.03 - 0.07 kg/m² ~ 0.15 kg/m²
System for high wear Primer: Seal coat:	Sikafloor®-156 Broadcast with quart sand 0.3 - 0.8 mm Sikafloor®-400 N Elastic	0.4 - 0.6 kg/m² 4 - 6 kg/m² 0.9 - 1.5 kg/m²
System for high wear + Surface design Primer: Coating: Matt seal coat:	Sikafloor®-156 Sikafloor®-400 N Elastic, broadcast with coloured quart sand 0.3 - 0.8 mm Sikafloor®-410	0.3 - 0.5 kg/m² 0.9 - 1.5 kg/m² 0.4 - 0.6 kg/m² ~ 0.25 kg/m²
System for Ground Water Protection Coating:	Sikafloor®-400 N Elastic	0.9 - 1.5 kg/m²
UV-protection on Sikalastic-membranes (no roofs) Seal coat:	Sikafloor®-400 N Elastic	0.4 - 0.8 kg/m²
Coving / Skirtings (> 4% slope)	Sikafloor®-400 N Elastic + 1.5 - 2.0 wt.-% Extender T	1.0 - 1.2 kg/m²

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

Substrate Quality

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2.

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

If in doubt apply a test area first.

Substrate Preparation	Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface. Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed. 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. The concrete or screed substrate has to be primed or levelled in order to achieve an even surface. High spots must be removed by e.g. grinding. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.

Application Conditions / Limitations

Substrate Temperature	+10°C min. / +30°C max.
Ambient Temperature	+10°C min. / +30°C max.
Substrate Moisture Content	≤ 4% pbw moisture content. Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method. No rising moisture according to ASTM (Polyethylene-sheet).
Relative Air Humidity	80% r.h. max. 35% min. (below +20°C: 45% min.)
Dew Point	Beware of condensation! 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.

Application Instructions

Mixing Time	Prior to use stir Sikafloor®-400 N Elastic mechanically for 3 minutes. If required the Thinner C or Extender T should be added into the Sikafloor®-400 N Elastic until a uniform mix has been achieved. Over mixing must be avoided to minimise air entrainment.
Mixing Tools	Sikafloor®-400 N Elastic must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.
Application Method / Tools	Prior to application, confirm substrate moisture content, r.h. and dew point. If > 4% pbw moisture content, Sikafloor® EpoCem® may be applied as a T.M.B. (temporary moisture barrier) system. *Primer:* Ensure that a continuous, pore free coat covers the substrate. If necessary, apply two priming coats. Apply Sikafloor®-156 or Sikafloor®-400 N Elastic with 10 wt.-% Thinner C by brush, roller or squeegee. *Coating:* Sikafloor®-400 N Elastic is poured and spread evenly with a trowel.
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 1-2 hours. High temperatures and high air humidity will accelerate curing significantly.

Waiting Time / Overcoating

Before applying Sikafloor®-400 N Elastic on Sikafloor®-156 allow:

Substrate temperature	Minimum	Maximum
+10 °C	36 hours	6 days
+20 °C	24 hours	4 days
+30 °C	12 hours	2 days

Before applying Sikafloor®-400 N Elastic on Sikafloor®-400 N Elastic allow:

Substrate temperature	Minimum	Maximum
+10 °C	36 hours	After thorough cleaning [1]) Sikafloor®-400 N Elastic can be overworked with itself at any time
+20 °C	24 hours	
+30 °C	16 hours	

[1]) Assuming that all dirt has been removed and contamination is avoided.

Before applying Sikafloor®-400 N Elastic on Sikalastic®-821 or -821 LV allow:

Substrate temperature	Minimum	Maximum
+10 °C	90 minutes	1 month [2])
+20 °C	60 minutes	
+30 °C	30 minutes	
+45 °C	20 minutes	

[2]) If the max. waiting time is exceed then Sikalastic-810 + 15% Thinner C must be applied as a bonding bridge.

Before applying Sikafloor®-410 on Sikafloor®-400 N Elastic allow:

Substrate temperature	Minimum	Maximum
+10 °C	36 hours	5 days
+20 °C	24 hours	3 days
+30 °C	16 hours	2 days

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

Notes on Application / Limitations

Do not apply Sikafloor®-400 N Elastic on substrates with rising moisture.

Freshly applied Sikafloor®-400 N Elastic must be protected from damp, condensation and water for at least 24 hours.

Avoid puddles on the surface with the primer.

Prior to overcoating with Sikafloor®-400 N Elastic, 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.

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

For exact colour matching, ensure the Sikafloor®-400 N Elastic in each area is applied from the same control batch numbers.

Under certain conditions, underfloor heating or high ambient temperatures combined with high point loading, may lead to imprints in the resin.

If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO_2 and H_2O 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%)	Rain resistant	Foot traffic	Full cure
+10 °C	~ 15 hours	~ 1 - 2 days*	~ 7 - 14 days*
+20 °C	~ 5 hours	~ 6 - 24 hours*	~ 5 - 9 days*
+30 °C	~ 3 hours	~ 4 - 18 hours*	~ 3 - 5 days*

*Strongly influenced by layer thickness

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

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.

Construction

CE Labelling

The harmonized European Standard EN 13 813 „Screed material and floor screeds - Screed materials - Properties and requirements“ specifies requirements for screed materials for use in floor construction internally.

Structural screeds or coatings, i.e. those that contribute to the load bearing capacity of the structure, are excluded from this standard.

Resin floor systems as well as cementitious screeds fall under this specification. They have to be CE-labelled as per Annex ZA. 3, Table ZA.1.5 and 3.3 and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

CE	
Sika Limited Watchmead Welwyn Garden City Hertfordshire AL7 1BQ United Kingdom	
04 1)	
EN 13813 SR-B1,5-AR1-IR 4	
Resin screed/coating for indoors in buildings (systems as per Product Data Sheet)	
Reaction to fire:	Efl 2)
Release of corrosive substances (**S**ynthetic **R**esin Screed):	SR
Water permeability:	NPD 3)
Abrasion **R**esistance:	AR1 4)
Bond strength:	B 1,5
Impact **R**esistance:	IR 4
Sound insulation:	NPD
Sound absorption:	NPD
Thermal resistance:	NPD
Chemical resistance:	NPD

[1] Last two digits of the year in which the marking was affixed.

[2] In Germany, DIN 4102 still applies. Passed class B2.

[3] No performance determined.

[4] Not broadcast with sand.

EU Regulation 2004/42

VOC - Decopaint Directive

According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / **i** type **sb**) is 600 / 500 g/l (Limits 2007 / 2010) for the ready to use product.

The maximum content of **Sikafloor®-400 N Elastic** is < 500 g/l VOC for the ready to use product.

Sika Limited
Watchmead
Welwyn Garden City
Hertfordshire
AL7 1BQ
United Kingdom

Phone +44 1707 394444
Telefax +44 1707 329129
www.sika.co.uk, email: sales@uk.sika.com

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