Construction

Sika® Level 100

Cementitious self levelling, fast hardening, underlayment for use 2 - 10mm, and 10 - 30mm with added aggregate

Product Description	Sika® Level -100 is a one part, polymer modified, pumpable self levelling fast hardening cementitous underlayment for the levelling and smoothing of interior floors prior to the application of the final floor finish.
Uses	Sika® Level -100 can be applied manually or by pump to level floors at a thickness between 2 - 10 mm, prior to subsequent finishing with ceramic or stone tiles, linoleum, PVC sheet, wood flooring or carpets etc. ■ Levelling of both large and small surfaces ■ Typical uses are in commercial, residential and domestic properties etc. ■ Levelling of irregularities up to 30 mm deep can be done by the addition of 30% by weight of aggregate 0 - 4 mm ■ Providing a suitable substrate for ceramic, stone or vitrified clay tiles, carpets and wood flooring. Sika® Level -100 is compatible with the Sika adhesives used to lay these types of floor finishes.
Characteristics / Advantages	■ Fast application because of the good flow and cohesion of the fresh product ■ Easy to place by pump or manual application ■ Capable of levelling surfaces from 1 up to 10 mm. (10 –30 mm with added aggregate) ■ Reduced shrinkage. Good bond and compaction ■ Fast hardening and good drying ■ Good surface hardness

Tests

Approval / Standards	All values indicated are internal test results according to EN 13892-2 and EN 13892-8. Conforms to the requirements of EN 13813 CT – C30 - F5.

Product Data

Form

Appearance / Colours	Powder Standard grey
Packaging	25 kg bags

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	Polymer modified Portland cement
Density	1.65 kg/l ± 0.02 (bulk powder) 2.05 kg/l ± 0.02 (fresh mortar)
Layer Thickness	2 mm min. / 10 mm max. 10 mm min. / 30 mm max. with about 30% by weight addition of 0 - 4 mm sand. (7.5 kg per 25 kg bag).

Mechanical / Physical Properties

Compressive Strength	> 15 N/mm^2 (after 24 hours / +20°C) > 30 N/mm^2 (after 28 days / +20°C)	(EN 13892-2) (EN 13892-2)
Flexural Strength	> 5.0 N/mm^2 (after 28 days / +20°C)	(EN 13892-2)
Bond Strength	> 1.5 N/mm^2 (after 28 days / +20°C)	(EN 13892-8)

System Information

System Structure

Priming:

- No primer, just dampening with water and removing the excess until a Saturated Surface Dry (SDD) condition is achieved.

or

- One part acrylic primer Sika® Level-01 Primer. Please refer to the relevant PDS for recommended applications and details.

Levelling:

- Place to the required thickness 2- 10 mm.
- For thicknesses between 10 - 30 mm, add 30% by weight of sand 0 - 4 mm, which is approximately 7.5 kg of sand for each 25 kg bag.

Sika® Level -100 is particularly suitable for the subsequent application of floor coverings using products from the Sikabond® elastic bonding range or tiling mortars from the SikaCeram® range.

Application Details

Consumption / Dosage	~ 1.5 ± 0.1 kg/m^2/mm This figure is theoretical and does not include for any additional material required 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 (min. 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2. The surface must be clean, dry and free of all contaminants e.g. dirt, oils, grease, coatings and surface treatments etc. If in doubt apply a test area first.

Substrate Preparation / Priming	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 blow holes and voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids must be carried out using appropriate products from the SikaTop®, Sika® MonoTop®, Sikafloor®, SikaDur® and Sikagard® range of materials. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum. A suitable one part acrylic primer such as Sika® -Level-01 Primer can also be used to ensure sealing of the substrate, preventing the appearance of bubbles on the underlayment surface and improving the bond to the substrate. Please refer to the relevant PDS. Alternative: If the substrate is strong and has a sufficiently rough texture, Sika® Level-100 can be applied directly onto the substrate. Avoid bubbles by dampening the substrate until a SSD (Saturated Substrate Dry) condition is achieved. If the SSD option is chosen, the mechanically prepared concrete must then be thoroughly dampened during the 24 hours prior to the screed application by keeping at least 4 – 5 mm of water on the surface and letting it soak into the substrate. Remove the excess water prior to laying the screed. Any pores which may appear on the screed would mean that the substrate was not sufficiently saturated. Poor or weak substrates must be primed with Sikafloor®-156 or Sikafloor® -161 fully broadcast with quartz sand 0.4 – 0.7 mm.

Application Conditions / Limitations

Substrate Temperature	+5°C min. / +35°C max.
Ambient Temperature	+5°C min. / +35°C max.
Substrate Moisture Content	The substrate can be in a SSD condition, but there must be no rising moisture prior to dampening according to ASTM D 4263 (Polyethylene-sheet test). For further information please refer to the Product Data Sheet of the priming system used.
Relative Air Humidity	~ 80% max.
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, blooming or cement laitance on the floor finish.

Application Instructions

Mixing	When mixing manually add the dry powder (25 kg) into a container with the clean water. The water required is 24% ± 1% or between 5.75 and 6.25 l per 25 kg bag of material.
Mixing Time	Mix thoroughly for a minimum of 3 minutes.
Mixing Tools	Use a low speed electric stirrer (~ 300 - 400 rpm).
Application Method / Tools	Pump: Use a conventional floor screed dual stage mixer and pump, and control the water dosage to achieve the required flow, measuring the final average flow diameter on a flat, clean, dry flow table.

Cylinder according to EN 12706:2000		ASTM C 230-90 / EN 1015-3	
Internal diameter: Height: 50	30 mm mm	Top internal diam: Bottom internal diam.: Height:	70 mm 100 mm 60 mm
Flow = (6.0 l per 25 kg)	130 mm ± 5 mm	Flow = (6.0 l per 25 kg)	340 mm ± 10 mm

After placing onto the surface, apply by trowel or pin screed rake to the required thickness. Roll thoroughly with a spiked roller in two directions to remove any entrapped air.

Manual:
Pour the mixed material onto the SDD or primed surface and apply by trowel or pin screed rake to the required thickness. Roll thoroughly with a spiked roller in two directions to remove any entrapped air.

Cleaning of Tools

Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be removed mechanically.

Potlife

Conditions	Time
+20°C / 50% r.h.	20 - 30 minutes

The temperature will affect the pot life.
Application at temperatures above +20°C will reduce the pot life and the working time. Temperatures below +20ºC will increase the pot life and extend the working time.

Waiting Time / Overcoating

Suitable for overcoating after 4 days in 5 mm thickness where 3% (Tramex) substrate moisture content is required, and 3 days for a 4% (Tramex) requirement.

Times are approximate at +23ºC and 50% r.h. and will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity.

When overcoating Sika® Level -100 always ensure the moisture content has achieved the required value for the coating product, as the waiting time will vary with application thickness, temperature and ambient humidity.
(Refer to the top coat product data sheet)

Notes on Application / Limitations

Very absorbent substrates must be saturated with water or primed to prevent loss of the mixing water into the substrate, which can cause problems such as shrinkage, the appearance of surface pores, or weak and dusty surfaces etc.

Do not mix with other cements or cement based screeds.

No loading for at least 2 hours.

Freshly applied Sika® Level -100 must be protected from damp, condensation and water for at least 24 hours.

Do not exceed the recommended water dosage. Do not add more water when the product is setting.

Do not exceed the recommended thicknesses, 30 mm. with, or 10 mm without, sand addition.

Do not use for direct wheel traffic, external or industrial applications.

Temperatures below +20°C extend the drying times.

Sika® Level -100 does not provide an aesthetic finish. Product must always be overcoated.

Do not use Sika® Level -100 in areas where it can be exposed to moisture, such as below ground floors without an effective damp proof membrane, or externally in any area.

Not suitable for slopes or inclines > 1.0%.

Protect from direct sunlight, hot or strong winds and extremes of temperature to avoid cracking or crazing.

When overcoating with SikaCeram® or Sikabond® adhesives (or others), additional mechanical surface preparation may be required to remove any cement laitance which may have formed during application.

For adhesives other than SikaCeram® or Sikabond® we recommend a test-application prior to use.

The thickness of the levelling mortar has to be at least 3mm when using water-based adhesives under impermeable or vapour tight floor finishes.

At thicknesses greater than 3 mm or with floating screeds an edge strip must be placed to separate the screed from the walls and other construction elements.

Curing Details

Applied Product ready for use

At +20°C and 50% r.h.

Foot traffic	~ 2 hours
Lightly serviceable	~ 24 hours
Fully serviceable	~ 7 days

Note: Times are approximate and will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity.

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.

It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

Construction

Note	The following chapter is only mandatory for European countries.

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, Tables ZA. 1.1 or 1.5 and Z.A. 3.3 and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

CE	⇐ *)
Sika Services AG Factory Number: 1022 Factory Number: 1053	
06 [1]	
EN 13813 CT – C30 - F5	
Cementitious screed material for indoors in buildings (systems as per Product Data Sheet)	
Reaction to fire:	$A2_{(fl)}$
Release of corrosive substances (Cementitious Screed):	CT
Water permeability:	NPD[2]
Water vapour permeability:	NPD
Compressive strength:	C 30
Flexural strength:	F 5
Abrasion: NPD	
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] No performance determined.

***) Please fill in your relevant producer address**

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