

Sikafloor®-29 PurCem®

High strength polyurethane coving and detailing mortar

Construction

Description

Sikafloor®-29 PurCem® is a four part, water dispersed, vertical grade, coloured polyurethane modified, cement and aggregate mortar for detailing work and vertical rendering.

It has a finely textured smooth aggregate appearance which offers excellent resistance to abrasion, chemical attack and mechanical damage. Typically installed at 3 - 9 mm thickness

Uses

In combination with the rest of the PurCem® range in concrete substrate areas, to provide vertical, coving and detailing solutions in areas of abrasion and high chemical exposure, such as in:

- Food processing plants, in wet or dry process areas, freezers and coolers, thermal shock areas
- Chemical plants
- Laboratories
- Workshops

On properly prepared and supported steel surfaces, such as in:

- Steel decks
 - Overpasses or platforms
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Advantages

- Excellent chemical resistance. Resists a wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Please refer to the Chemical Resistance Chart or consult your local Technical Dept.
- Designed specifically for trowel applications to vertical surfaces
- Similar coefficient of thermal expansion to concrete, allowing movement with the substrate through normal thermal cycling. It will perform and retain its physical characteristics through a wide temperature range from -40°C up to +120°C
- Bond strength in excess of the tensile strength of concrete. Concrete will fail first
- Non taint, odourless
- VOC free
- High mechanical resistance. Behaves plastically subject to impact. Will deform but will not crack or debond.
- Slip resistance. Natural textured surface provides anti-slip traction.
- High abrasion resistance resulting from its silica aggregate structure
- It is possible to apply onto 7 to 10 day old concrete after adequate preparation and with a tensile bond strength in excess of 1.5 MPa (218 psi)
- Sikafloor®-PurCem® screeds (20) and detailing mortar (29) can withstand moisture vapour transmission values of 12lbs/1000 ft² when tested in accordance with the ASTM F 1869 Anhydrous Calcium Chloride Test Method
- Fast curing will allow foot traffic after twelve hours and full service after two days. Production downtime is cut to an absolute minimum
- Jointless. Extra expansion joints are not necessary; simply maintain and extend existing expansion joints up through the Sikafloor®-PurCem® flooring system
- Easily maintained



Sika®

Product Data

Form

Colour

Standard colours:

Curtain Call
 Beige RAL 1001
 Oxide Red RAL 3009
 Pastel Blue RAL 5024
 Dusty Grey RAL 7037
 Maize Yellow RAL 1006

**Available on request*

*Traffic Grey RAL 7042
 *Sky Blue RAL 5015
 *Grass Green RAL 6010
 *Slate Grey RAL 7015

Note: Following colours are available in 0.4kg pigment size and 5.1kg pack size only

Beige – Oxide Red – Pastel Blue – Grass Green

Packaging

Part A	1.4 kg
Part B	1.5 kg
Pigment	0.2kg
Part C	1.8 kg
Part D	17.3kg
Total	22.2kg

Note: Following colours use 0.4kg pigment for a 5.1kg total pack size only

Beige – Oxide Red – Pastel Blue – Grass Green

Storage

Storage Conditions / Shelf-Life

Part A - 9 months
 Part B - 6 months
 Part C - 6 months
 Pigment - 9 months
 Part D – 5 years

If stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +10°C and +25°C.

Parts A and B: Must be protected from frost.

Parts C and Pigment: Must be protected from humidity.

Technical Data

Chemical Base

Part A: Water borne polyol
 Part B: isocyanate
 Part C: Aggregates, cement and active fillers
 Pigment: Pigment / fillers

Density

Part A: ~ 1.07 kg/l (at +20°C) (EN ISO 2811-1)
 Part B: ~ 1.24 kg/l (at +20°C) & (ASTM C 905)
 Part C and Pigment: ~ 2.7 kg/l (at +20°C)

Part A+B+C+Pigment mixed: ~ 2.14 kg/l ± 0.03 (at +20°C)

Capillary Absorption

Permeability to water: 0.92 g/h/m² (EN 1062-3)
 (3 mm)

Layer Thickness

3 mm min. / 9 mm max.



Mechanical/Physical Properties

Compressive Strength	> 39 MPa after 28 days at +23°C / 50% r.h.	(ASTM C 579)
Flexural Strength	> 8.1 MPa after 28 days at +23°C / 50% r.h.	(ASTM C 580)
Tensile Strength	> 2.5 N/mm ² after 28 days at +23°C / 50% r.h.	(ASTM C 307)
Bond Strength	> 1.75 N/mm ² (failure in concrete) (1.5 N/mm ² is the minimum pull out strength of the recommended concrete substrate)	(EN 1542)
Shore D Hardness	80 – 85	(ASTM D 2240)
Chemical Resistance	Resistant to many chemicals. Please ask for a detailed chemical resistance table.	
Thermal Resistance	The product is designed to withstand thermal shock caused by steam cleaning when thickness is 9 mm or more.	



Application Details

Consumption/Dosage

Primer:
Sikafloor®-160/-161
(Consumption may vary depending on substrate conditions)
Always apply on to tacky primer. Reprime if allowed to cure.

Coving and detailing mortar 3 - 9 mm:
Sikafloor®-29 PurCem® (part A+B+C+D+Pigment) ~ 2.0 kg/m² / mm layer thickness.

This figure is theoretical and does 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/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 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 to achieve CSP 3-9 according to the International Concrete Repair Institute.

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 and surface levelling must be carried out using appropriate products from the Sikafloor®, Sikadur® and Sikagard® range of materials.

High spots can be removed by 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.

Edge terminations

All free edges and working day joints of Sikafloor®-20 / 21 and 29 PurCem®, whether at the perimeter, along gutters or at drains require extra anchorage to distribute mechanical and thermal stresses. This is best achieved by forming or cutting grooves in the concrete. Grooves must have a depth and width of twice the thickness of the Sikafloor®-PurCem®. Refer to the edge details provided in the Method Statement. If necessary, protect all free edges with mechanically attached metal strips. Never featheredge, always turn into an anchor groove.

Expansion joints

Expansion joints must be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessels sealing rings.

Refer to the edge details provided in the Method Statement.

Substrate Temperature

+10°C min. / +30°C max.

Ambient Temperature

+10°C min. / +30°C max.

Application Instructions

Mixing

Part A : B : Pigment : C: D= 1:1:1.07:0.14::1.14:12,2



Mixing Time

Material and ambient temperature will affect the mixing process. If necessary, condition the materials for best use to 15°C – 21°C.

Mix Part A for 30 secs. Add pigment and Part B with stirring. Gradually add Pigments Parts C and D and mix for 2 mins until a moist uniform mix is obtained. During the operation scrape down the sides and bottom of the container with a straight edge trowel at least once to ensure complete mixing. Mix full kits only.

Gradually add Pigment, Part C and D (aggregate) to the mixed resin parts over a period of 15 seconds. DO NOT DUMP

Allow Part C,D and Pigment to blend for further 2 minutes minimum, to ensure complete mixing and a uniform moist mix is obtained. During the operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once (parts A+B+C+D Pigment) to ensure complete mixing.

Mix full units only.

Mixing Tools

Use a low speed electric stirrer (300-400 rpm) for mixing parts A and B. For preparation of the mortar mix use a pan type revolving mixer.

Application Method/Tools

Prior to application, confirm substrate moisture content, r.h. and dew point.

Primer coat

Mix and apply the primer according to its corresponding Technical Data Sheet, using a brush or roller to provide uniform coverage. The primer must be tacky during the application of Sikafloor®-29 PurCem®. Mix and apply only the amount of primer which can be overlaid before it cures. If the primer becomes glossy or loses tackiness, remove any surface contaminants, then recoat with additional material.

Mortar

Apply the mixed Sikafloor®-29 PurCem® onto the ready primed substrate and compact to the appropriate thickness, then finish the detailing profile with a coving trowel or steel float. Apply Sikafloor®-29 PurCem® while the primer is still tacky. If the primer becomes tack free, reapply the primer. A light brushing while the mortar is still workable will close any surface voids. Allow a minimum 10 hour cure period at 20°C. (See Waiting time / Overcoating) For maximum sealing of the cove, application must be performed with one or two coats of Sikafloor®-31 PurCem® to seal the surface and improve aesthetics.

Cleaning of Tools

Clean all tools and application equipment with Thinner C immediately after use. Hardened/cured Sikafloor®-29 PurCem® can only be mechanically removed.

Potlife

Temperature	Time
+10°C	~ 35 - 40 minutes
+20°C	~ 18 - 22 minutes
+30°C	~ 10 - 15 minutes

Waiting Time/Overcoating

Allow primer to become tacky. Reprime if allowed to cure. See "Substrate Humidity" for suitable type. Before any subsequent application on Sikafloor®-29 PurCem® allow:

Waiting Time		
Substrate temperature	Minimum	Maximum
+10°C	20 hours	72 hours
+20°C	10 hours	48 hours
+30°C	5 hours	24 hours
+10°C	20 hours	72 hours

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



Notes on Application/Limitations

Products of the Sikafloor®-29 PurCem® product range are subject to yellowing when exposed to UV radiation. There is no significant loss of other properties when this occurs and it is a purely aesthetic matter. Products can be used outside provided the change in appearance is acceptable by the customer.

A retaining groove must be placed top and bottom of the cove detail to anchor the coving mortar as well as around details such as drains, etc., as indicated in the application details of the Method Statement for Application to prevent curling during curing. Width and depth must be twice the thickness of the mortar.

Do not featheredge.

Do not apply to PCC (polymer modified cement mortars) that may expand due to moisture when sealed with an impervious resin.

Do not apply to water soaked, glistening wet concrete substrates.

Do not apply to porous surfaces where significant moisture vapour transmission (out-gassing) will occur during application.

Sika® Thinner C is flammable. NO NAKED FLAMES.

Always ensure good ventilation when using Sikafloor®-29 PurCem® in a confined space, to prevent excessive ambient humidity.

Freshly applied Sikafloor®-29 PurCem®, must be protected from damp, condensation and direct water contact (rain) for at least 24 hours. For maximum hygienic requirements always seal Sikafloor®-29 PurCem® with Sikafloor®-31 PurCem® (1-2 coats).

Do not apply below 9°C or above 31°C or a maximum relative humidity above 85%.

Do not apply to un-reinforced sand cement screeds, asphaltic or bituminous substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminium, soft wood or urethane composition, elastomeric membrane and fibre reinforced polyester (FRP) composites.

Do not apply the primer to wet or green concrete or polymer modified patches if the moisture content is above 4%.

Do not apply to concrete if the air or substrate temperature is within 3°C of the dew point.

Protect the substrate during application from condensation from pipes or any overhead leaks.

Do not mix Sikafloor® - PurCem® products by hand. Use only mechanical means.

Do not apply to cracked or unsound substrates.

Avoid puddles during primer application.

Colour uniformity can not be completely guaranteed from batch to batch (numbered). Take care when using Sikafloor® - PurCem® products to draw from inventory in batch number sequence. Do not mix batch numbers in a single floor area.

Always allow a minimum of 48 hours after product application prior to placing into service in proximity with food stuffs.



Curing Details

Applied Product ready for use

Substrate temperature	Foot traffic	Light traffic	Full cure
+10°C	~ 24 hours	~ 36 hours	~ 7 days
+20°C	~ 12 hours	~ 22 hours	~ 5 days
+30°C	~ 8 hours	~ 16 hours	~ 3 - 4 days

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

Cleaning / Maintenance

Methods

To maintain the appearance of the floor after application, Sikafloor®-29 PurCem® must have all spillages removed immediately and must be regularly cleaned using rotary brushes, mechanical scrubbers, scrubber dryers, high pressure washers, wash and vacuum techniques, etc., using suitable detergents and waxes.

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

Important Notification

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Australian version of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

