PermaSilan

Cold-elastic, vapour-permeable facade paint for bridging cracks in plaster surfaces

ColorExpress

FILMSCHUTZ GEGEN ALGEN- UND PILZBEFALL

Product Description

Field of Application

The premium facade paint with the decisive advantage: the special combination of SilaCryl® and silicone resin binders produces rain-repellent, water-vapour-permeable facade paints that ensure rapid re-drying after precipitation and dew.

Crack-bridging facade paint with good water vapour permeability for cracks in render surfaces.
In combination with FibroSil, it is also suitable for through cracks in render layers (according to BFS Leaflet No. 19).
Can be used on mineral renders, concrete, intact plasto-elastic coatings, stable old coats and intact external thermal insulation composite systems (ETICS).

Material Properties

- Crack-bridging in classes A1-A3, particularly suitable for cracked plaster surfaces and also for use on intact ETICS
- Cold-elastic properties for tensile and tear strength down to -20 °C
- Maximum colour stability
- Protected against algae and fungal attack
- High-quality matt surface finish

Material Base / Vehicle

Siliconeised pure acrylate on a combination of SilaCryl® and silicone resin binders

Packaging/Package Size

Standard: 12,5 l
ColorExpress: 5 l, 12,5 l

Colours

White.
Other colour shades can be tinted via ColorExpress. Available factory-tinted if 100 litres or more are purchased in one colour shade and order.

The material must be checked for colour accuracy and consistency before application. Complaints about deviations from the delivery target can no longer be accepted after application. Please refer to the VDPM's 'Guidelines for inspection obligations when delivering tinted products as part of the obligation to inspect and give notice of defects (§ 377 HGB)'.

PermaSilan can be tinted with suitable AmphiColor colours at a maximum addition of 20 %. When tinting the product in-house, mix the total quantity required together to avoid colour differences.

On contiguous surfaces, only use material from the same batch or mix material from different batches beforehand.
Intensive colour shades may have a lower covering capacity. It is therefore recommended to prime a comparable, opaque, white-based, pastel colour shade with these colour shades. A second coat may be necessary.

Due to tinting, deviations in the technical data are possible.

Colour shade stability according to BFS leaflet no. 26:
Class: A
Group: 1-3

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Gloss Level

Reflectometer value: Class G_3 (dull) according to DIN EN 1062-1
Measuring angle 85°: Requirement G ≤ 10

Storage

Cool, protected from frost and avoid large temperature fluctuations. Protect from direct sunlight. Keep opened containers well closed.
Process material within 24 months.

Technical Data

■ Maximum particle (grit) size:	Class S_1 (fine) according to DIN EN 1062-1 S < 100 µm according to EN ISO 1524
■ Density:	ρ ~ 1,4 g/cm³
■ Dry film thickness:	Class E_3 according to DIN EN 1062-1 E = 100–200 µm according to ISO 3233
■ Diffusion-equivalent air layer thickness s_dH_2O:	Class V_2 (medium) according to DIN EN 1062-1 s_d ≥ 0.14 - < 1.4 m according to EN ISO 7783-2
■ Water permeability (w-value):	Class W_3 (low) according to DIN EN 1062-1 W ≤ 0.1 kg/(m²h$^{1/2}$) according to DIN EN 1062-3
■ Crack bridging classes:	**Crack bridging coating structure:** 2 x 200 ml PermaSilan, Class: A_2 (> 250 µm) 3 x 200 ml PermaSilan, Class: A_3 (> 500 µm) 1 x 700 g *FibroSil* and 2 x 200 ml PermaSilan, Class: A_3 (> 500 µm)
■ Water vapour permeability (sd-value):	Carbon dioxide permeability: Class C_1 according to DIN EN 1062-1 C > 5 g/(m²·d); s_d > 50 according to DIN EN 1062-6

Supplementary Product

CapaGrund Universal
FibroSil
Cap-elast-System

Note

Specified fixed values represent average values that may vary slightly from delivery to delivery due to the use of natural raw materials.

Suitability according to Technical Information No. 606 Definition of Application Areas

Interior 1	Interior 2	Interior 3	Exterior 1	Exterior 2
–	–	–	+	+

(–) inapplicable / (○) of limited suitability / (+) suitable

Application

Suitable Substrates

The substrate must be firm, load-bearing, dry, clean, and free from all substances that may prevent good adhesion. To achieve coatings with uniform colour, the substrate must be adjusted to be evenly absorbent.
Test the substrate in accordance with leaflets No. 20 and 20.1 of the Bundesausschuss Farbe und Sachwertschutz e.V. (Federal Committee for Paints and Material Protection).
Identify the cause of cracks in substrates and, depending on the type and extent of the cracks, repair them appropriately.
Please refer to Caparol's Technical Information No. 650 ‘Untergründe und deren Vorbehandlung’ (Substrates and their pre-treatment).

Substrate Preparation

The following information is provided by way of example and is not exhaustive. The coating is applied after any necessary substrate preparation. It is recommended to create a test area to determine coating compatibility.

Protective measures
Carefully cover glass, ceramics, clinker brick, natural stone, painted, glazed, anodised and surfaces to be protected. Immediately remove splashes with water.

Cleaning of contaminated substrates with / without load-bearing layers:
Clean contaminated areas, remove less firm layers using a suitable method. Observe legal requirements. When treated with water, allow sufficient drying times.

Possible methods (not exhaustive):
Dry cleaning: sweeping, brushing.
Pressurised water jets: max. temperature 60° C, max. pressure 60 bar.
Wet sandblasting: possible with renders with a compressive strength of at least 2.5 N/mm².
Mechanical cleaning: paint stripping, grinding, scraping, localised removal, etc.

New renders from CS II according to DIN EN 998-1 (compressive strength at least 2.5 N/mm²) or lime-cement renders P II, cement renders (P III) according to DIN 18550:

Base or intermediate coats must be dry before facade paints are applied; the render must be sufficiently hardened.
The waiting time for re-coating depends, among other things, on the weather conditions and the layer thickness.
Dark colours may require special measures (e.g. longer drying times for the finishing render, a primer coat of *CapaGrund Universal*, protective scaffolding tarpaulins, etc.).
Mineral lightwight renders with a compressive strength of up to 2.5 N/mm^2 can be coated with *Sylitol®* or silicone resin materials.

- Reference value for waiting time at 20° C and 65% relative humidity: at least 1 day per mm of layer thickness, but at least 7 days.

New renders based on dispersion, silicone resin and silicate:
Recoat after complete drying, but at the earliest after 2 to 3 days.
Coating of new silicate renders with products of the silicate-based *Sylitol®* range.

Render/concrete with a sinter layer, render repairs:
Clean and remove less-dense layers.
Apply *Histolith® Fluat* and wash.
Repaired render must be well set and dried.

Weathered mineral renders/plasters; concrete:
Clean, remove any layers of material of poor strength.
Slightly absorbent, smooth: apply a priming coat of *CapaGrund Universal*.
Coarsely porous, absorbent, slightly sanding: apply a priming coat of *OptiSilan TiefGrund* or *CapaSol RapidGrund*.
Strongly sanding, chalking: apply a priming coat of *Dupa-Putzfestiger*.

Concrete with requirements according to DIN EN 1504-3:
Please refer to the *Disbon* product programme.

Mould or algae-infested surfaces:
Clean surfaces with fungal or algal attack by wet abrasion observing the statutory regulations. After drying, treat with *Capatox*. Prime absorbent substrate with *FungiGrund*. If necessary, apply a coat of paint with a film protection.

Old dispersion plasters:
Clean, remove less stable layers.
Weakly absorbent, solid, dry, load bearing: see coating build-up.
Moderately absorbent: *CapaGrund Universal* diluted to a max. of 3% with water.
Highly absorbent, sanding: apply a primer coat of *Dupa-Putzfestiger*.

Old, stable, matt dispersion, silicone resin and silicate coatings, plasto-elastic emulsion paint coatings (e.g. old Cap-elast surfaces):
Clean and remove less stable layers.
A primer coat of *Dupa-Putzfestiger* is recommended.

Old coatings that are not stable:
Clean, remove layers that are not firmly bonded.
Weakly absorbent, solid, dry, stable: see coating structure.
Moderately absorbent: *CapaGrund Universal* diluted to max. 3% water.
Highly absorbent: apply undiluted *OptiSilan TiefGrund* as a primer coat.
Chalking or flaking (even when exposed to water, based on BFS No. 20, B.13 ‘Surface strength, chalking): Prime with *Dupa-Putzfestiger*.

Autoclaved lightweight concrete (AAC) with sound existing coating:
Clean intact surfaces. One priming coat of *CapaGrund Universal* is recommended. For non-intact aerated concrete coatings, see the Caparol building protection programme.

Salt efflorescence, rising damp:
Rising damp will cause premature destruction of coatings. When coating surfaces with salt efflorescence and rising damp, no guarantee can be given for the permanent adhesion of the coating or the prevention of salt efflorescence.
Please refer to the Histolith® product range.

Glossy and water-repellent (hydrophobic) surfaces:
Roughen mechanically. Prime with *CapaGrund Universal*.
If water still beads up after mechanical roughening, a primer coat with *Dupa-HaftGrund* is recommended.

Cracked render or concrete surfaces:
Identify the cause of cracks in the substrate and, depending on the type and extent of the cracks, repair them appropriately. Coat with *FibroSil*, *PermaSilan* or the *Cap-elast System*, depending on the crack class. If necessary, apply a base coat layer of a Capatect façade system or the *Cap-elast System*.

Protect **horizontal surfaces** constructively.

Preparation of Material

Stir material thoroughly.

Method of Application

Apply with a brush and roller or by airless spraying.

Airless piston or airless diaphragm devices:
Nozzle sizes: 519, 521, 523 depending on the substrate
Gun filter: 50-60 MA
Pressure: 230 - 240 bar
If necessary, dilute the material with 5% water.

Surface Coating System

To avoid lapping, apply in one go using the wet-on-wet method. To achieve the crack-bridging effect, apply one intermediate and one final coat of PermaSilan.

Plaster surface cracks:
Basecoat: see 'Substrate preparation'
Intermediate and top coat: PermaSilan, undiluted

Through-cracks in plaster:
Basecoat: *FibroSil*
Intermediate and top coat: PermaSilan, undiluted

Consumption

- Approx. 200 ml/m² for one coat on a smooth substrate.

Use more on rough surfaces. Determine the exact consumption by applying a trial coat.

To achieve the best possible protection against algae and fungal attack, it is necessary to apply two coats totalling at least 400 ml/m². The layer thickness should be at least 200 µm on average. Each additional coat with a consumption of at least 200 ml/m² increases the layer thickness by a further approx. 100 µm.

Application Conditions

During The application and in the drying phase, the ambient and substrate temperatures must not be below +5 °C and above +30 °C.

Do not apply in direct sunlight, strong wind, fog or high humidity. In this context, we refer to the leaflet "Verputzen, Wärmedämmen, Spachteln, Beschichten bei hohen und tiefen Temperaturen" (Rendering, Thermal Insulation, Filling, Coating at High and Low Temperatures) from the Bundesverband Ausbau und Fassade (Federal Association for Finishing and Facades).

In unfavourable weather conditions, suitable measures must be taken to protect the treated façade surfaces.

Drying/Drying Time

Base and intermediate coats must be dry before further processing.

The waiting time for reworking depends, among other things, on weather conditions and layer thickness. The information is based on 20 °C and 60% relative humidity and is for guidance only. The drying and hardening of the material takes place through chemical and physical processes and the release of the contained water, i.e. its evaporation. Cool and humid environments delay these processes.

- surface-dry and recoatable after approx. 12 hours
- completely dry and resilient after approx. 3 days

Tool Cleaning

Rinse with water immediately after use in accordance with legal regulations.

Note

Cracks in the building structure can be subject to constant and varying degrees of movement. Permanent and invisible crack bridging using paint-based products cannot be guaranteed.
There is an increased risk of fungal and algae growth on facade surfaces that are exposed to more moisture than usual due to special object conditions or natural weathering. The depot of active ingredients in facade paints that are equipped with special active ingredients against microbiological attack offers long-lasting, temporary protection. A permanent prevention of fungal and algae growth cannot be guaranteed.
For light reflectance values (LRV) below 20, the render in the EWI system must be coated with a solar-reflecting facade paint (*CoolProtect* with total solar reflection value (TSR) ≥ 25) in at least two layers after it has dried thoroughly, depending on the requirements. On solid wall formers, special measures must be taken if the LRV < 30, e.g. an additional reinforced base coat with full-surface fabric inlay on the lightweight base coat and/or a solar-reflecting facade paint. The LRV should be above 30 on intact AAC coatings. Note the limits of feasibility in the respective system.
With dark colour shades, mechanical stress on the surface can lead to light-coloured stripes (writing effect). This is a product-specific property of all matt to silk-matt facade paints and has no influence on the product quality and functionality.
On dense, cool substrates or in the event of weather-related drying delays, auxiliary materials can cause yellowish/transparent, slightly shiny and tacky flow marks (emulsifier runners) on the surface of the coating due to moisture exposure (rain, dew, fog). These auxiliary materials are water-soluble and are automatically removed with sufficient water, e.g. after several heavy rainfall events. The quality of the dried coating is not adversely affected. If, however, a direct re-coating is carried out, the emulsifier/auxiliary materials should be pre-wetted and then, after a short reaction time, completely washed off. An additional priming coat of *CapaGrund Universal* is recommended.
Touch ups to the surface may be more or less visible, even when using the original coating material. According to BFS Leaflet 25, such marks are unavoidable. Whether a touch up is perceived as visually disturbing depends on many factors such as colour shade, gloss level, coat thickness, substrate, lighting, etc.

Advice

Special Risks (Hazard Note) / Safety Advice (Status as at Date of Publication)	May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects. If medical advice is needed, have product container or label at hand. Avoid breathing mist or vapors. Avoid release to the environment. Wear protective gloves. Dispose of contents/ container to an approved waste disposal plant. Contains: 1,2-benzisothiazol-3(2H)-one, octhilinone (ISO), 2-methylisothiazol-3(2H)-one, reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist. According to European Regulation 528/2012 this product is defined as a “treated article” (not a biocidal product) and contains the following biocidal substances: terbutryn (CAS-No. 886-50-0), octhilinone (ISO) (CAS-No. 26530-20-1). fillers, water, additives, film preservatives, Preservative.
Technical Assistance	This publication does not cover all substrates that may occur in practice and their technical treatment. If substrates are to be treated that are not listed in this technical information, it is necessary to consult with us or our field staff. We are happy to provide you with detailed and object-related advice.
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