

# Substrates and their Preparation

for exterior and interior surfaces.

## Product Description

With the multitude of modern building materials with their different properties and the increasingly affecting environmental influences, the selection of the right type of priming material, as a fundamental basis for each application of paint or coating becomes more and more important.

Hence Caparol offers a wide product range of priming materials, matched to the requirements of substrates and the versatile materials, available for smooth or textured façade or interior paint coatings, textured coatings and wood preservative coatings.

In this technical information sheet the most common exterior and interior substrates are presented, each with recommendations for the best priming coats for subsequent coating with emulsion or polymer resin paints or plaster and dispersion spackling compounds.

It is meant to help the professional painter/craftsman and the building contractor to make the right choice in the often confusing abundance of products.

When using the recommended products, please see the corresponding technical informations.

## Application

**Substrates and their preparation – Exterior and Interior** The substrate must be sound, dry, clean and free from all materials that may prevent good adhesion.

*Preparatory work:*

**Exterior surfaces:**

Fill small defects with Caparol Fassaden-Feinspachtel. Larger defects up to a depth of 20 mm can be repaired using Histolith Renovierspachtel. Deep holes, cracks and spallings are best repaired with mortar of the same type. Prime the repaired spots.

Note: On tinted coatings on alkaline substrates of mortar types P Ic, P II and P III as well as on concrete, an additional priming coat with CapaGrund Universal reduces the risk of lime efflorescence.

**Interior surfaces:**

Fill larger defects flush with mortar of the same type. Repair small fractures and defects with Caparol-Akkordspachtel.

Note: When using Caparol-Tiefgrund TB in the interiors, a typical solvent odor can occur. Therefore provide for good ventilation. In sensitive areas use AmphiSilan-Putzfestiger, which has low odor and is free from aromatic compounds.



## New render



### Exterior use:

Coatable after sufficient drying time. In adverse weather conditions the drying process is correspondingly longer. An additional coating with CapaGrund Universal reduces the risk of lime efflorescence, making it possible to coat render/plaster of mortar type P Ic, P II or P III after 7 days. Repaired spots must have sufficiently dried. Uncoated render of mortar group P Ic is generally to be coated with Syllitol- or AmphiSilan-products.

### Priming coat:

Depending on the coating system, apply one priming coat of OptiGrund E.L.F., AmphiSilan-Tiefgrund LF or Syllitol-Konzentrat 111 on porous, absorbing, slightly sanding render. Prime highly sanding, chalking render/plaster with Dupa-grund or AmphiSilan-Putzfestiger.

### Interior use:

Can be coated after sufficient drying time. In adverse weather conditions the drying process is correspondingly longer. Repaired spots must have sufficiently dried.

### Priming coat:

On solid, normally absorbent render no priming coat is required. Prime porous, slightly sanding, absorbent render with OptiGrund E.L.F., CapaSol LF or Syllitol-Konzentrat 111.

## Soiled, sanding or chalking render/plaster



### Exterior use:

Wash off, brush off or high pressure clean the complete surface in compliance with legal regulations.

### Priming coat:

Prime highly porous, absorbent, slightly sanding render/plaster according to the coating system with OptiGrund E.L.F., AmphiSilan-Tiefgrund LF or Syllitol-Konzentrat 111. Prime highly sanding, chalking render/plaster with Dupa-grund or AmphiSilan-Putzfestiger.

### Interior use:

Wash off or brush off stains.

### Priming coat:

On solid, normally absorbent render/plaster no priming is required. Prime highly porous, slightly sanding, absorbent render/plaster with OptiGrund E.L.F., CapaSol LF or Syllitol-Konzentrat 111.

## Concrete



### Exterior use:

Clean by hydraulic blasting (high-pressure water blaster) in compliance with legal regulations or by other suitable methods.

### Priming coat:

Prime slightly absorbent or smooth surfaces with CapaGrund Universal. Prime highly porous, slightly sanding or absorbent surfaces with OptiGrund E.L.F. or CapaSol LF Konzentrat, diluted in a 2 : 1 ratio with tap water. Prime chalking surfaces with Dupa-grund.

### Interior use:

Completely remove all residues of releasing agents with water and a wetting agent. Remove all chalking, sanding substances.

### Priming coat:

No priming required.

## Chalking surfaces



### Exterior use:

Clean by hydraulic blasting (high-pressure water blaster) in compliance with legal regulations or by washing or brushing off.

### Priming coat:

Prime slightly absorbent or smooth surfaces with CapaGrund Universal. Prime surfaces, cleaned by washing or brushing, or highly absorbent surfaces with Dupa-grund.

### Interior use:

Clean chalking surfaces by brushing or washing off.

### Priming coat:

On solid, normally absorbent substrates no priming coat is required. Prime highly porous, slightly sanding surfaces with OptiGrund E.L.F., CapaSol LF or Syllitol-Konzentrat 111.

## Fiber cement boards with and without asbestos fibers



### Exterior use:

If necessary, clean in compliance with legal regulations. See BFS data sheet 14 for coating fiber cement boards. According to the German "Ordinance on Hazardous Substances", uncoated boards containing asbestos fibers must not be coated in any way. For asbestos-containing boards with existing coatings see TRGS 519.

Priming coats on freely installed boards, including rear side and edges. Especially in case of insufficient edge coating, moisture can penetrate and damage the boards and adjacent areas. Is a sufficiently thick coating technically not possible due to structural conditions, the contractor should be informed in written form.

#### *Priming coats on asbestos fiber-free boards:*

Prime surface compacted boards with Dupa-Haftgrund. Prime weathered, sanding, highly absorbent boards with Dupa-grund. Check adhesive strength of boards, industrially treated with pure acrylic primer and apply an intermediate coat of CapaGrund Universal. To avoid lime efflorescence, prime highly alkaline surfaces/edge areas with Disbon 481 EP-Uniprimer.

#### *Priming of already coated, asbestos fiber-containing boards:*

Prime boards with a slightly absorbent paint coat with CapaGrund Universal or AmphiSilan-Grundierfarbe.

Prime boards with non- or slightly absorbent paint coat with Dupa-Haftgrund

Prime boards with mineral coatings (Glasal) with Disbon 481 EP-Uniprimer

In most cases damaged coatings on asbestos-containing fiber boards cannot be repaired. In this case the boards have to be replaced. Therefore the existing coating must be checked for load capacity in advance. In case of sufficient stability, a sample coating is to be done, following the above mentioned cleaning, priming and coating procedures. Allow this sample to dry for at least 7 days, then check for suitability by cross-cut and tape test. Since the existence of asbestos fibers in the fiber cement boards can not always be excluded, a sample coating is always recommended.

### Interior use:

#### *Priming of asbestos fiber-free boards:*

No priming coat is required.

Asbestos containing fiber boards must be coated as described in the section "Exterior use" above. Special care is to be taken that only coating products suitable for interior application are used.

## Fair faced clay brickwork, uncoated



### Exterior use:

Only frost resistant bricks and klinker without foreign inclusions are suitable for coating. The masonry must be free of salts and grouted free of cracks.

### Priming coat:

Prime with Dupa-grund.

### Interior use:

Completely remove salt efflorescence by brushing. Repair damages on joints or bricks with Cap-elast Riß-Spachtel.

### Priming coat:

No priming coat is required.

## Fair faced sand-lime brickwork, uncoated



### Exterior use:

Sand-lime masonry should only be coated with silicate or silicone resin emulsion paints, as mentioned in BFS data sheet No. 2 "Coating and impregnation of sand-lime masonry. We recommend Syllitol- or AmphiSilan-products.

### Priming coat:

Prime with AmphiSilan-Tiefgrund LF or Syllitol-Konzentrat 111.

### Interior use:

Completely remove salt efflorescence by brushing. Repair damages on joints or bricks with Cap-elast Riß-Spachtel.

### Priming coat:

No priming coat is required.

## Sound, adherent coatings of enamel or emulsion paint



### Exterior use:

Roughen glossy coatings either by mechanical or chemical means. Clean soiled, chalking existing paint coatings with a high pressure cleaner (pressure washer) in compliance with the regulations or by other suitable means.

### Priming coat:

Prime with CapaGrund Universal. If high pressure cleaning is impossible, prime with Dupa-grund following.

### Interior use:

Roughen glossy coatings either by mechanical or chemical means. Remove soiling.

### Priming coat:

Prime with Caparol-Haftgrund. On matt, normally absorbent substrates no priming coat is required.

## Sound coatings of synthetic resin or silicon resin render/plaster as well as intact ETICS/EWI Systems



### Exterior use:

Clean existing render/plaster with suitable means in compliance with the regulations. Max. pressure for wet cleaning is 60 bar. Allow the surfaces to dry thoroughly before any further treatment.

### Priming coat:

Prime with CapaGrund Universal. Coat ETICS/EWI exclusively with ThermoSan, Muresko SilaCryl, Sylitol NQG or AmphiSilan.

### Interior use:

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### Priming coat:

No priming coat is required. Prime highly stressed surfaces with Caparol-Haftgrund.

## Unsound coatings of enamel or emulsion paint or synthetic resin render/plaster



### Exterior use:

Remove completely by suitable means, e.g. mechanically or with paint stripper. Then clean the surface with a high pressure cleaner (pressure washer) in compliance with the regulations and allow to dry well.

### Priming coat:

Prime slightly absorbent or smooth surfaces with Capagrund. Prime chalking, sanding, absorbent surfaces with Dupa-grund.

### Interior use:

Remove completely.

### Priming coat:

Prime slightly absorbent, smooth surfaces with Caparol-Haftgrund. Prime highly porous, absorbent, slightly sanding renders/plasters with OptiGrund E.L.F. or CapaSol LF.

## Unsound mineral or silicate based paint coatings



### Exterior use:

Remove the coating completely by grinding, scraping off, wet-blasting or other suitable methods in compliance with the regulations. Allow the substrate to dry well.

### Priming coat:

Prime according to the subsequent coating system with Dupa-grund or AmphiSilan Putzfestiger or Silytol-Konzentrat 111.

### Interior use:

Completely remove by grinding or scratching, then dust-off the surface.

### Priming coat:

Depending on the following coating system, prime with Caparol-Tiefgrund TB, AmphiSilan-Putzfestiger or Silytol-Konzentrat 111.

## Surfaces contaminated with ferric salts, soot, nicotine or showing dry water stains



### Exterior use:

Remove ferric deposits and contamination caused by emissions and soot with suitable means, e.g. wet-blasting. Allow to dry well. Do not use wet cleaning methods, if the substrate contains ferric salt inclusions.

### Priming coat:

Prime with Dupa-grund. Use the solvent based facade paint Duparol for coating.

### Interior use:

Clean with water and cleaning agent.

### Priming coat:

Apply an insulating priming coat of Caparol Aqua-Sperrgrund or Filtergrund grob. Coat highly contaminated surfaces with solvent-based Dupa-inn No. 1 or Aqua-inn No. 1.

## Surfaces contaminated with algae or mildew



### Exterior use:

Remove by suitable means in compliance with the regulations. Prime the surface with Capatopx, highly absorbent substrates with FungiGrund, and allow to dry well.

### Priming coat:

Apply a priming coat in accordance with the type and condition of the substrate. Then coat with the fungicidal and algicidal materials Amphibolin-W, ThermoSan, Muresko SilaCryl, PermaSilan, Duparol-W or Cap-elast Phase 2-W.

### Interior use:

Remove mildew by wet cleaning and in compliance with legal regulations. Prime the surface with Capatopx or, on absorbent substrates, with FungiGrund and allow to dry well.

### Priming coat:

Apply a priming coat in accordance with the type and condition of the substrate. Then coat with the anti-mold paints Fungitex-W, Indeko-W or Malerit-W.



## Uncoated AAC (autoclaved aerated concrete)



### Exterior use:

Coating materials for exterior AAC surfaces must meet high requirements as to adhesive strength, weather resistance, flexibility, water vapour permeability and water absorption. See Technical Information No. 329, No. 330 and No. 333 (Disbon product range for the protection of buildings) for detailed information on suitable materials and their application.

*Priming coat:*

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### Interior use:

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*Priming coat:*

Prime with Capaplex, diluted in a 1 : 3 ratio with water.

## Concrete with defects and visible reinforcement steel rods



### Exterior use:

Repair highly damaged concrete surfaces with spallings and exposed reinforcement with Disbocret products. Please ask for detailed information.

*Priming coat:*

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### Interior use:

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*Priming coat:*

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## Sound, adherent mineral or silicate paints and coatings



### **Exterior use:**

Apply materials of the Sylitol or AmphiSilan product range.

### *Priming coat:*

Prime with AmphiSilan-Tiefgrund LF or Sylitol-Konzentrat 111.

### **Interior use:**

Coat with Sylitol products.

### *Priming coat:*

Prime with Sylitol-Konzentrat 111.

## Cracks in the surface of renders/plasters or concrete



### **Exterior use:**

Renovation of such substrates is highly complex and cannot be described in this document. Please see the Technical Information of the Cap-elast-System for detailed information on the different types of cracks and their treatment with Cap-elast.

### *Priming coat:*

Prime according to substrate condition. See technical information Cap-elast.

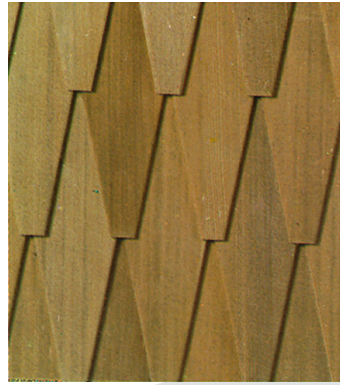
### **Interior use:**

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### *Priming coat:*

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## Wooden surfaces



### Exterior use:

For opaque or translucent coatings on wood use the approved products of the Capalac synthetic enamel system, the Capacryl acrylic enamel system or the Capadur system for wood preservation.

### Priming coat:

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### Interior use:

For opaque or translucent coatings on wood use the approved products of the Capalac synthetic enamel system, the Capacryl acrylic enamel system or the Capadur system for wood preservation.

### Priming coat:

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## Uncoated gypsum plaster and ready-mixed render/plaster of mortar groups PIV and PV



### Interior use:

Grind gypsum plasters with sinter layers, then remove dust.

### Priming:

Prime with Caparol-Haftgrund. Prime grinded surfaces with Caparol-Tiefgrund TB.

## Plasterboards



### **Interior use:**

Grind-off putty burrs. Strengthen soft spots of repairs with Caparol-Tiefgrund TB.

### *Priming coat:*

Prime with Caparol-Haftgrund or CapaSol LF. Prime boards containing water-soluble, discolouring substances with Caparol AquaSperrgrund or Filtergrund grob.

## Gypsum building boards



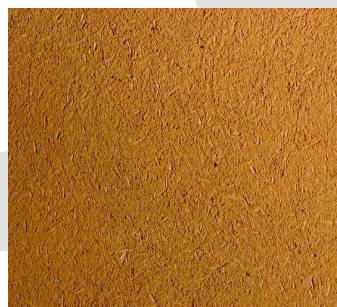
### **Interior use:**

Grind-off putty burrs.

### *Priming coat:*

Prime absorbent boards with OptiGrund E.L.F. or Caparol-Tiefgrund TB. Prime highly compacted, smooth boards with the adhesion promoting Caparol-Haftgrund.

## Loam rendering



### **Interior use:**

Remove contaminations by sweeping or scraping off.

### *Priming coat:*

Prime with Caparol Syllitol-Konzentrat 111, diluted in a 2 : 1 ratio with tap water. Discolouration might occur with the coating and the contractor should be informed before application. In case of discolouration use Aqua-inn N°1.

**Unpainted Wood-Chip, Relief or Embossed Wallpapers**



**Interior use:**

Check for good adhesion. Repair damaged spots.

*Priming coat:*

No priming coat required.

**Distemper paints**



**Interior use:**

Wash-off completely. Allow the surface to dry well.

*Priming coat:*

Prime with Caparol-Tiefgrund TB.

**Decorative foam boards**



**Interior use:**

Check boards for good adhesion. If necessary apply extra adhesive.

*Priming coat:*

No priming coat required. Coat boards contaminated with nicotine with the sealing paint IsoDeck, Aqua-inn N°1 or Dupa-inn.

## Non-adherent wallpapers



### **Interior use:**

Completely remove remnants of adhesive and paper waste. Allow the surface to dry well.

### *Priming coat:*

Prime with Caparol-Tiefgrund TB.

## Advice

Customer Service Centre

Tel.: +49 6154 71-71710

Fax: +49 6154 71-71711

e-mail: kundenservicecenter@caparol.de

International Distribution: Please see [www.caparol.com](http://www.caparol.com)