



BEECK Calcidan

Calcidan is an easy to use, modified Soaked Marble Lime Paint/Wash based on our historic formulation for exterior and interior use. Calcidan is extremely water vapor permeable, resistant to mold and UV stable. This sustainable product is handcrafted with century old methods using the highest quality raw materials and pure mineral pigmentation. Used for restoration and renovation on masonry, concrete, bricks, all types of stucco, lime cement plaster, and other lime compatible mineral surfaces on historic as well as new structures. Calcidan is a great fit for the building physics characteristics of historic structures due to its high breathability, period correct formulation, and other physical properties.

1. Product Properties

Marble lime paint, slaked for many years, with good hiding power for interior and exterior lime-compatible substrates. Calcidan can also be used as a traditional limewash on absorbent surfaces, fully adjustable to optimize the appearance to your desire. Suitable for historic restoration and historic church painting on lime plaster and on firm existing limewash coats. Where required by the building conservation authorities, Calcidan fits the requirements to be used on historical façades. Calcidan fulfils the accelerated weathering and chalking typical for lime. It is also considered reversible in the interests of conservation on listed buildings. Calcidan does not "smother" historical air-lime plaster. It does not hinder vapor transmission even after repeated renovations/applications due to its unrestricted open-pore property. BEECK Calcidan is formulated for easy use, it produces efficient limewash coats with optimum hiding power and the best possible weather resistance. The chemical carbonation process produces a low-tension limewash coat with mold resistant effect due to its natural alkalinity. Provides preservation to historical building materials with the typical aesthetic properties of limewash.

1.1. Composition

- Wood-burned, redispersed slaked marble lime of the highest chemical purity with at least three years' soaking period and optimum fine crystalline grain distribution
- White pigmentation and low organic content (ca. 3 %), to improve application and to stimulate carbonation

1.2. Technical properties

1.2.1. Overview

- Use on interior or exterior surfaces; it complies with listed building conservation specifications and can be used on historical surfaces
- Typical lime bronzing through natural chalking
- Ready mixed product, Easy to use
- Highly opaque and efficient to use
- For lime-compatible substrates
- Wood-burned and slaked for many years
- Historic formulation provides material compatibility as well as the look and feel suitable for listed buildings
- Mineral Matte finish with bright, transparent lime luster
- Capillary-active and moisture regulating
- Maximum carbon dioxide permeability
- Nonflammable
- The product's natural alkalinity helps to prevent bacteria and mold
- Can be coated over an unlimited number of times, as it is low-tension and non-film-forming
- Mineral surface is free from electrostatic charging

1.2.2. Important building physics characteristics

Parameter	Value	Conformity
Density 20°C:	1.25 kg / L	
pH value 20°C:	11	
Dynamic viscosity 20°C:	approx. 100 mPas	
W ₂₄ value:	> 1.00 kg/(m ² h ^{1/2})	
Vapor permeability:	approx. 70-90 Perms	
s _d value (H ₂ O):	< 0.03 m	
Gloss level at 85°:	dull matte	EN ISO 2813
Flammability class:	A2 nonflammable	EN 13501-1, DIN 4102
VOC content (max.):	2 g / L	ChemVOCFarbV Cat. A / a



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1.2.3. Color

- Lime White
- Can be tinted on site with BEECK Full Tone Lime Concentrate or with BEECK lime-compatible powder pigments (max. 20 %).
- Due to the character of lime, the variation in substrates and site conditions, a mottled appearance is possible; therefore, always try out on a test area of original substrate on site, to determine outcome and refine application techniques. This mottled appearance is often desired and is most evident when tinted product is applied.

2. Use

2.1. Substrate requirements

- Use only on porous, absorbent and water-wettable mineral lime-compatible substrates.
- Low absorbent surfaces may not be acceptable for Calcidan. Contact BEECK for specific recommendations.
- In the case of historical buildings, consult the site engineers and the building conservation authority. Treat substrates carefully; carry out preliminary restoration investigations and documentation as required.
- The substrate must be clean, dry, firm, stable and free from efflorescent and other substances that could restrict or compromise bonding.
- Test new render/stucco or plaster for proper drying and strength.
- Carefully repair chipped or damaged surfaces, cracks and missing mortar with the same type of material and the same texture.
- Clean, treat and rinse all algae and fungi-stained surfaces with Beeck Mineral Paints D/2 Biological Solution or a fungicidal treatment.
- Before applying Calcidan, prewet absorbent substrates and allow to dry on until matte-damp (dry to the touch but visibly damp).
- Ensure uniform substrates and careful application on critical high visible surfaces, especially on surfaces that are exposed to glancing light.
- Most interior surfaces which have been previously painted with something other than lime and substrates containing gypsum require a specific approach, see section 2.3.

2.2. Brief information on the standard system

- On new fresh Lime plaster apply first coat with fresco method, applying additional coats after the plaster has dried.
- Determine your desired appearance by completing mockups on test areas
- At least three or more thin coats are common for lime-based finishes, additional coats enhance durability
- Adjust BEECK Calcidan to optimum consistency for the substrate and desired appearance by adding up to 50% water for opaque applications and up to 100% water for decorative applications.
- High humidity stimulates carbonation and is necessary for a more durable, wipe-resistant finished result.

2.3. Substrate and preparatory treatment

- **All surfaces should be clean, dry and sound, free from sanding, dusting, spalling, oils and tars, etc. Treat and clean all algae and fungi-stained surfaces with Beeck Mineral Paints D/2 Biological Solution or a fungicidal treatment.** Stabilize sanding and dusting surfaces with BEECK Fixative, thinned 1:5 with water (1 part Fixative to 5 parts water), multiple applications may be necessary, allow to dry 24 hours between applications and before starting application of Calcidan
- **(Air)lime plaster or render/stucco, lime-cement plaster or render/stucco, renovation plaster or render/stucco, readily water-wettable cements/stuccos:**
If necessary, grind/sand off or etch sinter skin from the surface. A sinter skin is a hard dense typically shiny non-absorbent layer that can develop in the surface when finishing plasters, stuccos and renders. Fresco primer coat with Calcidan on new plaster or render; apply subsequent coats after surface of plaster or render has dried. Prewet old plaster or render and leave to dry on until matte damp (dry to the touch but visibly damp) before starting application. Acrylic stucco and EFIS are not a good surface for lime paint/wash, you may want to consider BEECK Renosil for these surfaces.
- **Firm existing lime coats/finishes:**
Clean and brush down entire surface. Stabilize chalking old coatings with BEECK Fixative, thinned 1:2 with water (1 part Fixative to 2 parts water), allow to dry 24 hours before starting application of Calcidan. Wash off all distempers, temperas, and other paints with weak or no binders present in the paints. Note: Follow all listed building conservation specifications that relate to your project!
- **Brick and Natural stone:**
Test for absorbency, moisture damage and efflorescence (salt edges!). Clean and repair all crumbling or missing mortar joints allowing for cure times before starting. Prewet surface and leave to dry on until matte damp (dry to the touch but visibly damp) before starting application of Calcidan. Try on a test area to confirm compatibility. Low absorbing surfaces may require a specific approach, contact BEECK for recommendations.



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- **Clay or loam:** Clay or loam must be through-dry, firm and stable. Repair cracks and damages beforehand using the same plaster or render, brush off any sanding grains. Prewet and allow to dry until matte damp (dry to the touch but visibly damp) before starting application of Calcidan. Apply several extremely thin layered coats of thinned BEECK Calcidan, with at least 24 hours drying time between each application. Always try out on a test area on site first to determine product suitability and application methods! To increase durability on exterior clay or loam, e.g. on half-timbered gables, consider applying a thin layer of lime render/plaster/stucco before painting.
- **Interior only, primed or painted surfaces:** Interior surfaces that have been previously primed or painted, including drywall, may require a unique approach for surface prep and application. Contact your BEECK representative regarding possible application and surface prep for your specific condition.
- **Unsuitable substrates:** are unprimed gypsum-based substrates, for example: gypsum plaster, stucco and gypsum board. Equally, film-forming coats, for example, oil, latex and synthetic resin coatings and substrates such as plastics and wood-based materials.
- **Defective substrates** require a differentiated approach. Caution should be used when working on efflorescent and saponifiable substrates. Apply a renovation plaster or render on damp, salt contaminated surfaces, basement walls and base areas, as well as areas with hygroscopic or rising damp for best results. Contact your BEECK representative regarding recommended application and surface prep for your specific condition.

2.4. Application instructions

2.4.1. General information

The historic formulation and hand-crafted quality make the properties of BEECK Calcidan an ideal lime finish for use in listed building conservation, church painting and renovation of old buildings. BEECK Calcidan can also be used in stables and vaulted basements. Experience in lime paint techniques and lime-compatible substrates is important for creating a quality coating result. Proving the proper product compatibility and application technique on a test area of original substrate is also indispensable. Please always note the following: Color fluctuations, chalking and sintering can occur, depending on the substrate, room climate and use. These effects are typical for lime and explicitly do not constitute a product defect.

When used on exterior façades, lime coats weather relatively quickly compared with BEECK mineral silicate finishes. Lime finishes weather by erosion from the surface this results in chalking and is related to the quantity of water running over the surface. This weathering is often the aesthetic appearance that fuels the attraction to lime finishes on newer structures. For historic and listed structures this offers a temporary and reversible finish of a historically established lime paint tradition. Due to the natural character of lime finishes we do not provide any warranty for durability, chalking and weathering resistance for lime-bound finishes.

Check substrate suitability and prep as required (see 2.1 and 2.3). Pay particular attention to the absorbency, strength and texture of the respective substrate. Perform onsite trials on a test area to determine compatibility and application techniques.

- Carefully cover surfaces which are not to be treated – especially glass, ceramics, windowsills, expansion joints, lacquer and anodic coatings – and protect them from splashes.
- Provide personal protective equipment.
- Protect the skin and eyes. Wear safety glasses or goggles/face protection. Refer to safety instructions!
- Before and during use, stir BEECK Calcidan thoroughly with powered mixing paddle <1000 rpm, being careful not to introduce air into the product and sieve occasionally if needed to remove dried chunks that may have fallen from the sides of the pail into the product. Lime will naturally settle to the bottom of the container and form a paste which must be reincorporated into the liquid.
- Do not use in wet conditions, if there is a risk of frost, on hot surfaces or in the blazing sun. Protect from freezing for 36-48 hours. Hot surfaces can dry the lime too quickly and prevent proper curing.
- Prewet absorbent substrates and allow to dry on until matte-damp (dry to the touch but visibly damp).
- Minimum application temperature: 46°F (+8°C)
- High humidity stimulates carbonation.
- Drying time: at least 24 – 36 hours per coat, only paint over wipe-resistant coatings.
- Protect fresh coats from rain and the heat from direct sun light, if necessary, hang up scaffolding sheeting in front of the surface on which you are working.

2.4.2. Application

With soft, prewetted BEECK Mineral Paint Brushes. Apply according to recognized rules of good lime techniques with extremely thin coat, uniformly and seamlessly corner to corner by using cross coating (X pattern) brush strokes. It is important to keep product stirred before and during application. Mixing every 10-30 min is common.

Continue application information on next page.



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- **For a solid opaque application:** Prewet absorbent substrates and allow to dry until matte damp (dry to the touch but visibly damp), the lime should never be sucked onto the substrate. Prewetting allows for a uniform thin application and longer working times. Thin BEECK Calcidan before use with up to 50% water depending on the substrate absorbency and texture.
- **For a decorative or glazing application:** Prewet absorbent substrate, the Calcidan should never be sucked onto the substrate. Prewetting allows for a uniform thin application and longer working times. Thin BEECK Calcidan before use with 10% - 100% water depending on the level of opacity and appearance desired. You should always preform onsite tests to determine application methods and appearance before starting.
- **Coats:**
 1. *Primer coat:* Where possible prime new fresh lime plaster with BEECK Calcidan using a fresco method
 2. *Normal absorbent surfaces do not require priming.* Prewet absorbent substrates and allow to dry until matte-damp (dry to the touch but visibly damp) before applying the first coat
 3. *Low absorbent surfaces:* These surfaces may not be acceptable for BEECK Calcidan. Contact BEECK for specific recommendations.
 4. Optional slurry additive can be used in the first or intermediate coats for opaque applications only. Lime slurry is made by adding 1.33 lbs (606 grams) of BEECK Quartz Filler P to 1 gal BEECK Calcidan: thin with approx. 20 % (24 oz/gallon) clean water.
 5. *Intermediate and topcoats:* allow 24 – 36 hours minimum drying between coats. Only apply the next coat if the previous coat has carbonated and is wipe resistant. Apply topcoats without slurry additive. In general, 2 – 3 coats depending on the substrate, application method and desired finish appearance; determine by trial application on a test area. Three or more coats are recommended for exterior surfaces to provide a more durable result.
- **If your substrate was not listed or if you have questions, contact your BEECK representative for recommended application and surface prep.**

3. Application Rate and Container Sizes

The application rate, i.e. the quantity required is approx. 225-325 sf/gal per coat of ready mixed material. Depending on the thinning ratio and substrate it is possible to get up to 650 sf/gal per coat. It is recommended to complete a test area on site to determine substrate-related application rate differences and the number of coats required.

Container sizes: 1qt / 1 gal / 3 gal

4. Cleaning

Thoroughly clean equipment, tools and soiled clothing with water immediately after use.

5. Storage

Store in cool and frost-free environment, BEECK Calcidan can be kept for at least 12 months. Cover the contents of partially used containers with water and sieve before using.

6. Hazard notes, safety instructions and disposal

Comply with the Safety Data Sheet. Safety data sheet is available at www.BeeckMineralPaints.com.

Hazardous components: Titanium dioxide, Calcium hydroxide

Signal word: Warning



Pictograms: GHS 08

Hazard statements: Prop 65 warning - Suspected of causing cancer.

Precautionary statements: Keep out of reach of children. Causes skin irritation. Causes eye damage. Wear protective gloves/protective clothing/eye protection/face protection. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Store in a locked or secure area.

California Proposition 65 warning: This product contains Titanium dioxide that is suspected of causing cancer.

Right-to-know: This product contains, Limestone, Calcium Hydroxide, Titanium dioxide

Disposal: Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment. Waste disposal number: 080111

7. Declaration

This technical information is offered as advice based on our knowledge and experience. All information is provided without guarantee. It does not release the user from their responsibility to check the product suitability and application for the specific substrate on which the product is to be used. All information is subject to change without notice as part of our ongoing product development. Non-system additives for tinting, thinning, etc. are not permitted. Check the colors before use. This information sheet automatically becomes invalid when a new edition is issued. The information in the current version of the Safety Data Sheets is your guide for classification according to the Hazards identifications, disposal considerations, etc.