

# BEECK Shielding Paint

## Silicate primer to prevent against electromagnetic radiation and electro smog indoors

### 1. Product features

Electrically conductive primer coating for large-area shielding of low- and high-frequency electromagnetic waves, such as mobile communications C/D/E networks, 5G, DECT, TETRA, radar, Wi-Fi, Bluetooth, microwaves etc. BEECK Shielding Paint has a shielding attenuation of approx. 99.8%; see expert report in accordance with ASTM D-4935-10 / IEEE 299-06. In contrast to commercially available shielding barrier primers based on synthetic resin dispersions, BEECK Shielding Paint is a sol-silicate interior paint in accordance with VOB/C DIN 18363 2.4.1 with silicifiable potassium water glass. Apply twice with a roller or brush, then have the surfaces earthed by a qualified electrician. BEECK Shielding Paint is suitable for all common interior substrates, both in renovation and refurbishment of old buildings and in new buildings. Recoat with satin-matt, room climate-friendly BEECK interior silicate paints such as BEECK Maxil *pro* or BEECK Sensil SAN.

#### 1.1. Composition

- Pure mineral potassium water glass and silica sol
- Graphite/carbon black as a conductive carbon matrix
- Organic content < 5% (VOB/C DIN 18363 2.4.1.)
- Solvent-free, low in emissions and VOCs
- No added preservatives or biocides

#### 1.2. Technical features

##### 1.2.1. Overview

- Indoor use
- Highly effective shielding against electromagnetic radiation according to test certificate
- Water vapour permeable and ideal from the perspective of construction physics
- Non-flammable, robust, durable, corrosion-resistant and highly adhesive
- Natural alkalinity works to prevent bacteria and mould

##### 1.2.2. Important construction physics parameters\*

Parameters	Value	Conformity
Density 20°C:	1.2 kg / L	
pH value 20°C:	11	
Dynamic viscosity 20°C:	2,800 mPas	
s <sub>d</sub> Value (H <sub>2</sub> O):	0.05 m	
Shielding attenuation:	99.8% (average 450 MHz - 40 GHz)	ASTM D-4935-10 / IEEE 299-06
Opacity / contrast ratio:	Class 1	DIN EN 13300
Wet abrasion resistance:	Class 2	DIN EN 13300
Grain:	fine	DIN EN 13300
Flammability rating:	A2 non-flammable	DIN EN 13501-1, DIN 4102
VOC content (max.):	0 g / L	EU Decopaint Directive Category A / a

##### 1.2.3. Colour shade

- Graphite grey. Recoat with BEECK interior silicate paints in white or tinted.

### 2. Processing

#### 2.1. Requirements for the substrate

- General note: Shielding coatings should always be applied to the entire surface of ceilings and walls, either in the entire building or in individual rooms (e.g. bedrooms, lounges and quiet rooms, medical and therapeutic facilities). Since the investment in shielding including earthing is high, the coating should be applied directly to solid wall materials, e.g. interior plaster. Shielding coatings on wall fleece and wallpaper, on the other hand, are temporary and can therefore be removed without residue, together with the coating base, if necessary, e.g. in rented accommodation. If wallpaper or old paint is already present, ensure that the coating adheres well over the entire surface.
- The substrate must be clean, dry, solid and load-bearing and free from efflorescent, penetrating and separating substances.
- Carefully repair any blistering and defects so that the type and structure are the same. Carefully repair cracked, unstable surfaces with plastering techniques, also to ensure permanent, full-surface shielding. Cover permanently elastic joints with a suitable bonding agent.
- Strengthen and saturate highly absorbent and brittle substrates with BEECK SOL Fixative.

#### 2.2. Brief information on the standard structure

- Apply two to three coats of BEECK shielding paint.
- The wall surfaces must then be earthed by a qualified electrician.



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- Recoat with satin-matt, room climate-friendly interior silicate paints such as BEECK Maxil *pro* or BEECK Sensil SAN. On critical substrates, test the paint structure in advance under object conditions.

## 2.3. Substrate and pretreatment

- **Lime plaster (PI/CSII), lime-cement plaster (PII), cement plaster (PIII), gypsum plaster, lime-gypsum plaster, gypsum stucco:**  
Check plaster for drying and strength. Remove or grind off sinter skin on solid lime plaster with BEECK Etching fluid. Do not etch thin-layer plasters or composite systems. Prime highly absorbent lime plaster with BEECK SOL Fixative. Pour BEECK SOL Fixative on surface-sanding but load-bearing lime plasters several times.
- **Plasterboard:**  
Ensure professional installation as well as the required surface quality and flatness tolerances under the given object and grazing light conditions.
- **Sand-lime brick, brick, concrete, calcium silicate, fibre cement:**  
Clean thoroughly, check for absorbency, moisture damage and efflorescence (e.g. salt stains). Repair brittle stones and joints. Thoroughly clean concrete with BEECK Formwork Oil Remover in accordance with factory instructions and rinse with clean water. Check the wettability of the cleaned surface by spraying water onto it. Prime highly absorbent or brittle surfaces with BEECK SOL Fixative.
- **Clay:**  
Critical due to lack of strength, sample thoroughly first. Allow to dry to household humidity, then sweep off any sanding oversize grain. Prime with BEECK Shielding Paint diluted with approx. 20% water.
- **Fabric, textured wallpaper, woodchip wallpaper, wood, wood-based materials (OSB, MDF etc.):**  
Only for alkali-resistant, water-wettable fabrics and papers, not for metal foils, plastics or vinyl wallpapers. Ensure full-surface, homogeneous and overlap-free bonding. Sample wood/wooden materials due to the risk of discolouration; cover wooden walls with wall fleece if necessary.
- **Old paintwork:**  
Brush off mineral coatings and, if chalky, reinforce with BEECK SOL Fixative. Wash off distemper completely. Clean firmly adhering, matt, stable old dispersion-based paints. Remove glossy synthetic resin coatings (e.g. latex paints) or at least sand them to a matt finish. If necessary, prime with BEECK Gypsum Primer (fine/coarse) or cover with wall fleece; sample.
- **Unsuitable substrates** are low-strength, efflorescent, organic and saponifiable, non-alkali-resistant substrates, e.g. plastics.
- **Poor substrates** require a differentiated approach. Be careful with discolouration on plasterboard, for example; sample and isolate beforehand. Treat surfaces exposed to salt and moisture with restoration plaster.

## 2.4. Processing instructions

### 2.4.1. General information

Check the suitability of the substrate in accordance with the VOB (see 2.1. and 2.3.). Take into account the absorbency, strength and structure of the respective substrate. Sampling demanding and critical areas. Ensure qualified processing.

- Carefully cover surfaces not to be treated – especially glass, ceramics, window sills, expansion joints, paintwork, anodised aluminium and floors – and protect them from splashes.
- Keep a distance of 2 cm from electrical equipment (sockets) when painting; tape them off. Disconnect rooms from the power supply until earthed: risk of electric shock.
- Before use, stir BEECK Shielding Paint thoroughly with an electric stirrer.
- If necessary, dilute for optimal application by adding water.
- Minimum processing temperature: +8°C. Drying time: at least 12 hours per coat.

### 2.4.2. Processing

With roller, brush or airless spray. Apply to closed surfaces without overlapping and evenly in a crisscross pattern.

- **Application with roller or brush:**
  - Brushes and rollers with an even coating pattern are suitable. Avoid rolled edges, overlaps and drying out. Apply a generous amount of BEECK Shielding Paint with a roller and spread it quickly wet-on-wet to achieve an even layer thickness and a fine rolled texture without edges or seams. Work in a pair on larger areas. Trim edges seamlessly wet-on-wet along with the surface.  
*Primer/intermediate coat:* on absorbent substrate with max. 5% water.  
*Final coat:* after 12 hours *at the earliest*, undiluted or with max. 5% water added.
- **Spraying (airless):**
  - Nozzle: 0.79 mm / 0.031"; spray pressure: 150 – 180 bar; spray angle: 50°. Strain before use. Apply evenly and in a thin layer, smoothing with a brush or roller if necessary.

## 2.5. Earthing

In accordance with DIN/VDE regulations, surfaces treated with shielding paints must be earthed by a qualified electrician. The required earthing sets (earthing strap and plate, assembly parts and instructions) are available from specialist retailers. When carrying out renovation work, be careful not to damage the earthing.



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### 3. Consumption and container sizes

Depending on the substrate, consumption is approximately 0.25 – 0.40 L of BEECK Shielding Paint per m<sup>2</sup> in total for two to three coats. Determine object-specific consumption values using a sample area on the object.

*Container sizes:* 1 L, 5 L, 12.5 L

### 4. Cleaning

Clean equipment, tools and contaminated clothing thoroughly with water immediately after use.

### 5. Storage

If stored in a cool, frost-free place, will keep for at least 12 months.

### 6. Hazard warnings, safety advice and disposal

Observe EC safety data sheet. Safety data sheet available on request. Keep out of reach of children. Do not get in eyes, on skin, or on clothing. Wear protective goggles/face protection. The product is alkaline. Do not inhale vapours, spray mist or dust. Carefully cover the area around the painted surfaces and wash off any splashes immediately with water. Disposal in accordance with legal regulations. Waste code for product residues: 080112

### 7. Declaration

We aim to advise you with this technical information, based on our knowledge and practical experience. All information is non-binding. This does not release the user from the obligation to check the suitability of the product and the processing method themselves, depending on the substrate. Technical changes in the course of product development remain reserved. Third-party additives for tinting, thinning etc. are not permitted. Check colour shades before processing. When a new edition is published, this leaflet will automatically lose its validity. The information in the current version of the EU safety data sheets is binding for classification in accordance with the Hazardous Substances Ordinance, disposal etc.