



SAINT-GOBAIN

**abe<sup>®</sup> silocoat**

**ELASTOMERIC CEMENTITIOUS  
WATERPROOFING COATING**

#### DESCRIPTION

**abe<sup>®</sup> silocoat** is a two-component polymer modified cementitious coating, supplied in a pre-packaged form. The product has been designed to be easily mixed on-site using a slow speed drill and paddle, and then applied to the substrate using a brush, roller or airless spray application. **abe<sup>®</sup> silocoat** cures to form an elastomeric impermeable membrane.

#### USES

**abe<sup>®</sup> silocoat** is an elastomeric cementitious coating, used for:

- Protection and repair of silos
- Waterproofing of new and old silos, internal and external

#### ADVANTAGES

- Approved for use in contact with potable water.
- Withstands high positive and negative hydrostatic pressures.
- Ingress of CO<sub>2</sub> is equivalent to 5-6 metres of concrete applied at 3 mm thick.
- Effective barrier to sulphates and chlorides and low pH
- Excellent crack accommodation after immersion.
- Long working life.
- Bonds to green or damp concrete
- Easy application by brush, roller or spray.
- Anti-corrosion and anti-chloride elastomeric cementitious coating, waterproofing and protective barrier

#### SURFACE PREPARATION

All surfaces which are to receive the coating must be free from oil, grease, wax, dirt or any other form of foreign matter that might affect adhesion. Typically, concrete may require grit blasting.

Spalled surfaces or those containing large blow-holes and other such defects should be repaired using **abe<sup>®</sup> silocoat** or an **a.b.e.<sup>®</sup>** approved repair mortar. Care must be taken when choosing the repair mortar to ensure that it has all necessary approvals for contact with potable water.

If the surface contains small blowholes, typically less than 1 mm wide, the coating can be applied directly onto the substrate without the need for a treatment.

Cracks which are less than 0,3 mm in width can be overcoated as long as the crack is not likely to open up to greater than 0,3 mm (this is greater than the maximum permissible crack widths recommended in BS 8007: 1987, the British Standard Code of Practice for the design of concrete structures for retaining aqueous liquids) .

Cracks which are greater than 0,3 mm in width should be chased-out to 4 mm in width and approximately 15 mm in depth. This should be filled with **silocoat** (applied using less liquid provides a thicker consistency) . When the material in the crack has hardened, the coating should be applied over the crack.

#### PROPERTIES OF MIXED MATERIAL

##### Silocoat meets EN 1504-2 requirements for surface protection systems

Pot life at	
10°C	2 hours
20°C	1 hour
30°C	30 minutes
Colour	Sandstone grey
Nominal coverage	2 kg / m <sup>2</sup> / 1 mm thick (minimum 2 coats required)
Minimum application temperature	5 °C
Maximum application temperature	40 °C
Resistance to	In excess of 10 bar positive water pressure (100 m) 4 bar negative pressure (40 m)
Curing time of equivalent to	7 days @ 7°C (3 days at 20°C and above)
Water Vapour Permeability (EN ISO 7783-1/2)	Free film: Sd = 1.7 m — Class I Coated concrete: Sd = 2.5 m — Class I
Liquid Water Permeability (EN 1062-3)	Water absorption: 0.3140 kg/m <sup>2</sup> w-value: 0.0641 kg/m <sup>2</sup> ·h <sup>0.5</sup> — Pass <0.1
Adhesion Strength (EN 1542)	Pull off adhesion: 2.66 MPa, failure mode 100% B — Pass
Carbon Dioxide Permeability (EN 1062-6)	CO <sub>2</sub> diffusion resistance (Sd): 208 m — Pass >50 m
Abrasion Resistance (ASTM D4060)	Weight loss: 142-147 mg — Pass <3000 mg
Crack Bridging (EN 1062-7)	Crack bridging class: A2 — up to 0.3 mm without failure
Chloride Ion Penetrability (ASTM C1202)	Very Low permeability

#### BONDING/PRIMING

Self priming.

## MIXING

The liquid component should be poured into a plastic or metal drum having a volume of at least 20 litres. This should be placed onto a plastic sheet to avoid contamination. The powder component is gradually added to the liquid whilst mixing with a Paddle Mixer or other approved spiral paddle attachment on a variable speed drill. Mixing is continued, constantly moving the paddle around the drum, until a lump-free slurry is obtained. This should take a minimum of 3 minutes and a maximum of 5 minutes.

**Note:** The preferred drill speed is between 280 and 640 r/min.

### Mixing warning

**abe<sup>®</sup> silocoat** may exhibit satisfactory handling characteristics even though inadequately mixed. This will result in a significantly lower level of performance or possible failure. It is therefore essential that mixing instructions are strictly adhered to with particular emphasis on the time of the mixing operation.

## COVERAGE

Typical coverage rate: 8 m<sup>2</sup>/15 kg for 1 mm wet film thickness. The coverage figure given is theoretical due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced. A minimum coverage of 2 kg/m<sup>2</sup>/mm applied in not less than two coats is recommended.

## APPLICATION

### Pre-wetting of substrate

Thoroughly dampen the substrate surface with water using a brush, roller or spray bottle. High porosity substrates will require more dampening than dense substrates. Do not apply the coating when the substrate is wet, but allow the water to soak in until the substrate is just visibly damp before proceeding. Any excess water should be removed using a sponge. Any running water should be stopped with a suitably approved plugging mortar such as **durarep 60**. Contact the local **a.b.e.<sup>®</sup>** office for further advice on suitable materials.

### General

The first coat should be applied at a wet film thickness of 1mm (coverage per coat is 1,8 kg/m<sup>2</sup>). To ensure the correct thickness is achieved, measure out an area (for example 200 m<sup>2</sup>), then calculate how much material will be needed to cover this area. Monitor the coating thickness during application at regular intervals using a wet film gauge. Care must be taken to attempt to fill all imperfections such as blowholes during application. If not they can be filled while the coating is still fluid by using a dry sponge. If the coating has dried before these imperfections are found they can be filled using fresh material. Allow first coat to cure for a minimum of 4 hours at 20°C/50% RH and longer at lower temperatures or higher humidities. The exact drying time will depend on surface temperature, relative humidity and air movement. High temperatures and/or low humidity will reduce the drying time. This can vary from 1-16 hours. The maximum ambient temperature for application is 40°C.

The first coat should be left to dry until firm and unmarkable to the touch. There is no maximum time between coats, however the surface may need cleaning with water prior to application of the second coat. No curing membrane is necessary, however, the freshly applied coating should be protected from rain. No curing membrane is necessary.

### Brush application

The most suitable type of brush is a soft-bristled wallpaper paste brush (120 to 220mm wide). Where larger areas are to be applied it is advisable to use a brush with a handle. Load the brush up well and spread the material to the required thickness. If the brush begins to drag during application, do not add water to the material but dampen the surface again. Finish in one direction for a neat appearance. For floor application, a soft-bristled broom is recommended.

Pour the material onto the substrate and then spread to the required thickness.

### Roller Application

Application by roller has the benefit of speed over brush application, particularly on smooth substrates. A good quality medium hair roller is recommended. The roller should be well loaded for ease of application. A heavy roller pattern will be left, therefore it is important to use a finishing tool to produce a smooth coating with a uniform 1 mm wet film thickness.

### Finishing Tools

A finishing tool may be required to produce a smooth finish or to repair film defects. Examples of suitable tools include a steel plastering trowel, a caulking tool and a hand sponge. All of these must be used immediately after coating application, otherwise the coating may drag or tear. When using a hard sponge it should be dry or very slightly damp.

A wet sponge should not be used as this will cause polymer to come to the surface of the coating which causes an unsightly white streaky effect.

**Note:** should a reinforcing membrane be used in conjunction with the **abe<sup>®</sup> silocoat** ensure that it is ecofelt as it is alkali resistant.

### Sealed joints

Sealant joints should be filled with a suitable joint sealant before application of **abe<sup>®</sup> silocoat**. If potable water contact is expected, the sealant should be approved.

Contact your local **a.b.e.<sup>®</sup>** office for recommendations.

## CLEANING

Immediately after application is completed, clean all tools and equipment with clean water. Hardened material can be removed by mechanical means. Waste material should be allowed to harden overnight then disposed of as nonhazardous waste.

## PROTECTION ON COMPLETION

Allow a minimum cure time of equivalent to 7 days at 7°C (3 days at 20°C and above). This is to ensure the full physical properties are developed.

## LIMITATIONS

**abe<sup>®</sup> silocoat** should not be used when the temperature is below 5°C. The product should not be exposed to rainfall or moving water during application or within 4 hours at 20°C. The maximum ambient temperature for application is 40°C. **abe<sup>®</sup> silocoat** should not be used on external surfaces where an aesthetic appearance is critical because differences in environmental conditions during cure may cause colour differences in the final surface. If any doubts arise concerning temperature or substrate conditions, consult the local **a.b.e.<sup>®</sup>** office.

## TEMPERATURE AND RELATIVE HUMIDITY

See "Properties of mixed material".

## MODEL SPECIFICATION

The waterproofing coating is **abe<sup>®</sup> silocoat**, an elastomeric cementitious coating approved under the UK Water Bylaws Scheme (WRC listed).

Two component polymer modified cementitious anti-carbonation and chloride ion barrier coating and waterproofing coating. The barrier coating shall be **abe<sup>®</sup> silocoat**, a two component, polymer modified, cementitious compound applied in accordance with the manufacturers recommendations, **a.b.e.<sup>®</sup>**. The coating shall provide a waterproof, anticarbonation and chloride ion barrier. The compound shall have a resistance in excess of 10 bar positive water pressure and 4 bar negative pressure.

## PACKAGING

**abe<sup>®</sup> silocoat** is supplied in 15kg carton: 11 kg grey powder in polyethylene bag + 4 kg liquid polymer in plastic container.

## HANDLING & STORAGE

This product has a shelf life of 6 months if kept in a dry cool place in the original packaging. In more extreme conditions this period might be shortened. The liquid component must not be allowed to freeze.

## HEALTH & SAFETY

**abe<sup>®</sup> silocoat** powder is irritating to eyes, respiratory system and skin. Avoid inhalation of dust and wear suitable respiratory protective equipment. **abe<sup>®</sup> silocoat** liquid is classified as dangerous.

**abe<sup>®</sup> silocoat** when mixed becomes highly alkaline. Wear suitable protective clothing, gloves and eye protection.

For both components and mixed material, avoid contact with skin and eyes. In case of contact with eyes or skin rinse immediately with plenty of water and seek medical advice.

## IMPORTANT NOTE

This data sheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.<sup>®</sup>** endeavours to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot – because **a.b.e.<sup>®</sup>** has no direct or continuous control over where and how **a.b.e.<sup>®</sup>** products are applied – accept any liability either directly or indirectly arising from the use of **a.b.e.<sup>®</sup>** products, whether or not in accordance with any advice, specification, recommendation, or information given by the company.

## FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical data sheets should be consulted to determine total requirements.

**a.b.e.<sup>®</sup>** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

DATE UPDATED: 31/03/2026

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