

Product characteristic data:

Content: 5 ... 50 g/L Ca(OH)₂
Density: is dependent on the used solvent
Colour: white, opal

Working Instructions:

CaLoSiL[®] is applied in a flow coating procedure, by dipping, spraying or injection. It is important that the complete weathered zone of the stone down to the sound core is saturated with CaLoSiL[®], otherwise incomplete consolidation cannot be excluded. Fast evaporation of the solvent should be avoided. If necessary, the treatment can be repeated after between 8 and 10 days. The amount of CaLoSiL[®] needed is dependent on the porosity of the material and the depth of weathering. Typical rates are at around 100 mL/m², however, extremely higher amounts are possible too.

Additional information are given in our Technical data Sheets.

Packaging:

CaLoSiL[®] is available in different units, concentrations and suspended in different solvents.

Storage:

Storable for at least three months in closed original containers. Keep away from moisture and air.



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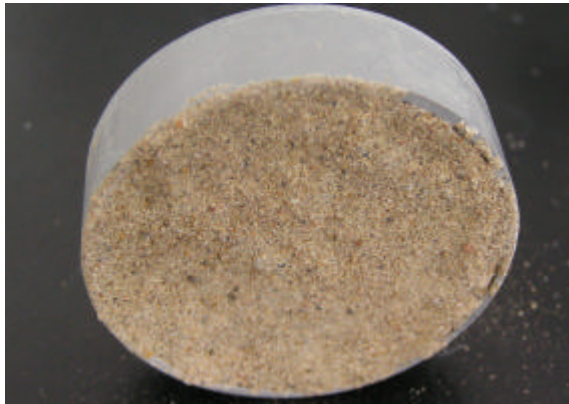


CaLoSiL[®]

Colloidal calcium hydroxide in
combination with silicic acid
esters



IBZ – Freiberg
Germany



Sand consolidated by combined treatment with CaLoSiL[®] and silicic acid ester

Silicic acid esters have been used worldwide for stone, plaster and masonry restoration for many years. They are instable in the presence of water. A hydrolysis reaction is induced producing silicic acid. Stone consolidation is achieved by polymerisation of silicic acid into amorphous silica gel which connects weathered, loose grains.

Atmospheric humidity acts as water supplier. The reactivity of silicic acid esters is determined by the added catalyst. Typical reaction times are in the range between two and four weeks. In the absence of suitable catalysts, no or only limited hydrolysis of silicic acid esters take place.

An accelerated consolidation process as well as additional formation of amorphous calcium silicates results if silicic acid esters are used together

with CaLoSiL[®]. We recommend a first treatment with CaLoSiL followed by saturation of the material with conventional silicic acid ester. The formed calcium hydroxide acts a catalyst resulting in accelerated hydrolysis of the silicic acid ester.

The combination of CaLoSiL[®] with silicic acid esters allows the consolidation of materials, which can not be treated with silicic acid esters, normally. For examples, consolidation of stones containing carbonates can be realized favourably by combining a treatment with CaLoSiL[®] followed by an application of tetra ethoxy silane. Another possibility is using homogeneous mixtures of CaLoSiL[®] and tetra ethoxy silane. These can be adjusted to pre-defined reaction times. Also in this case, careful adaptation of the product and the treatment process to the properties of the stone is important.



Treatment of highly porous sandstone with CaLoSiL[®]



Test field treated with silicic acid ester after application of CaLoSiL[®] in a first step.

We supply special silicic acid esters with compositions aligned to CaLoSiL[®].

Before using in large scale we recommend to treat a small test field in order to find out the most favourable application method. Conditions effecting consolidation by CaLoSiL[®] are:

- Mineralogical composition, stone/plaster humidity, salt content, depth of weathering,
- Absorbency, porosity, hygroscopic water absorption.

In some cases pre-treatment with Ethanol can be useful.

CaLoSiL[®] is flammable and combustible. Keep away from oxidizers, heat, sparks and flames. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. CaLoSiL[®] reacts strongly alkaline. Use protective gloves and safety goggles. Follow the instructions given in our Material Safety Sheets.