

ECO SIL

Silicate waterproofing

1.5 bar*	pH 0–14	≥ 35 N/mm²	2–4 mm*
WATERPROOF AT 4 MM	CHEMICAL RESISTANCE	COMPRESSIVE STRENGTH	LAYER THICKNESS

* Waterproofing performance is achieved at the full 4 mm thickness, applied as two layers of 2 mm each — not in a single coat.

PROPERTIES AND BENEFITS

- | | |
|--|--|
| <ul style="list-style-type: none"> – Silicate-technology | <ul style="list-style-type: none"> – Extreme high adhesion on substrate |
| <ul style="list-style-type: none"> – High chemical resistance at the range of pH 0 – 14 | <ul style="list-style-type: none"> – High surface hardness and abrasion resistance |
| <ul style="list-style-type: none"> – Salt water resistant | <ul style="list-style-type: none"> – Sulfate resistant according to DIN 4030 |
| <ul style="list-style-type: none"> – Environmentally friendly | <ul style="list-style-type: none"> – Suitable for drinking water according to KTW-criteria |
| <ul style="list-style-type: none"> – Mineral | <ul style="list-style-type: none"> – Suitable for bathing pool water according to KSW-criteria |
| <ul style="list-style-type: none"> – VOC- and APEO-free | <ul style="list-style-type: none"> – Fulfils the requirements for discharge capability according to BGR 132 |
| <ul style="list-style-type: none"> – Waterproof up to 1.5 bar | <ul style="list-style-type: none"> – Easy application even on wet substrates |

DESCRIPTION

ECOSIL is an innovative waterproofing with high chemical resistance for canal and industrial construction, it is waterproof up to 1.5 bar at a layer thickness of 4 mm.

LOADABILITY

Walkable	1 day
Water load	2 days
Fully loadable	3 days
Chemical load	7 days

Curing at 20 °C. Applied in closed vessels without air circulation the times can increase by 1 – 2 days.

RANGE OF USAGE

For indoor and outdoor use.

As waterproofing for building constructions against ground moisture and seeping or pressing water.

Surface protection against aggressive chemicals in acid-proof installations, pipelines and waste water pipes, laboratories, sewage plants, breweries, agricultural installations.

RESISTANCE

Salt water	after 7 days
Chemicals	after 7 days

ECO SIL

Technical information

STRENGTH

Compressive strength $\geq 35 \text{ N/mm}^2$ Flexural strength approx. 4.5 N/mm^2

DENSITY

Bulk density approx. 1.3 kg/dm^3 Fresh mortar density approx. 2.0 kg/dm^3

MIXING RATIO

Water per 5 kg powder $0.75 - 0.85 \text{ L}$ Slurry consistency 0.85 L Creamy consistency $0.75 - 0.8 \text{ L}$

APPLICATION

Single layer thickness 2 mm Total application thickness max. 4 mm , 2 layersConsumption per mm approx. 2 kg/m^2 Processing time at 20°C approx. 35 min Processing temperature min. $+10^\circ\text{C}$, max. $+35^\circ\text{C}$ Relative humidity max. 80%

PACKAGING AND STORAGE

Packaging $3 \times 5 \text{ kg bags in a bucket}$ Storage 9 months Storage temperature not below 0°C · $10 - 25^\circ\text{C}$

In original packaging, in a dry and controlled temperature environment. Reseal opened containers immediately and use within a very short time.

The information above is given based on our experiences. Adjustment may be required in case of object specific fluctuations.

PREPARATION OF SUBSTRATE

For the preparation of the substrate, all wall or floor substrates must be matt moist, sound, capable of load-bearing and free from loose or soft materials & substances. ECO SIL can only be applied on structures which stay free from cracks. Suitable substrates are concrete, masonry work and Class P III render. On light absorbent surfaces like concrete, bricks and heavy concrete no pretreatment process is necessary. On highly absorbent surfaces like rendering, calcareous sandstone and hollow brick masonry you have to do a test on a little test area before apply to the structure. You have to moisten the substrate of the test area before the test.

Note: In case of pressing water or acute leakages, the underground has to be pre-waterproofed before application of ECO SIL.

ROUNDING OF EDGE AREAS

For rounding of wall-floor or wall-wall transitions use ECO ALL IN ONE for preparation of coves. Please refer to the technical data sheet of ECO ALL IN ONE for more information. All cove areas must be fully covered with two layers of ECO SIL for a complete waterproofing and protection against damaging chemicals.

ECO SIL

Mixing and application

MIXING AND APPLICATION

Pour 0.75 – 0.85 liters of water into a clean container followed by 5 kg ECO SIL. Use an electric drill with attached stirrer to mix until lump-free, about 1 minute. After a setting time of 3 minutes mix up again to a smooth consistency. Mix only as much material as can be applied within 35 minutes. ECO SIL must not be mixed with cement-based products. Do not mix ECO SIL with any other liquid component except water.

ECO SIL is applied in at least two layers. The single layer thickness for each layer is about 2 mm. The maximum thickness of the whole coating is 4 mm. In specific cases (very uneven substrates) it is possible to increase the maximum thickness up to 6 mm. A third layer of ECO SIL has to be applied if necessary.

It is recommended to apply both or rather all layers one after another. Therefore, the first or previous layer must be cured sufficiently. In this case do not pre-wet the surface between applications of respective single layers. For optimal adhesion and for complete filling of the substrate to be coated the first layer is applied by fulling with a brush. Therefore, the material is mixed as a slurry. Each layer must have the minimum thickness of 2 mm across all points. The second coating is applied by trowel. Please refer to the table above for the required mixing ratio for each procedure.

If the application of the respective layers is not possible directly one after the other, the first or previous layer must be fully cured before application of the second or third coat. Depending on the ambient conditions, this can be guaranteed after 24 hours at the earliest. The subsequent layer is applied without pre-wetting.

Note: Open ECO SIL bags must be closed airtight or must be processed within 6 hours.

Post-processing and coating protection

If smoothing of the surface is necessary after the end of the processing time, this step should be carried out without additional water.

The coating has to be protected from too quick drying (solar radiation, draft), frost and rain for 2 days. Therefore, a complete enclosure of the building site may be necessary. Do not cover the finished surface with foils or other materials. To avoid dew formation on the mortar surface, the ambient temperature must be 3 °C above the respective dew point. If ECO SIL is applied in closed vessels without any air circulation, an additional ventilation or drying system is necessary. Otherwise, there would be a danger of moisture condensation. In this case the load ability times of the mortar could increase by 1 – 2 days.

For early loading (water and acid load) of new surfaces apply a protective layer of ECO TOPCOAT MAT after one day. The ready-to-use mixture is applied in two steps. The consumption is approx. 50 g/m². The treated surfaces are loadable after one day. For further information about the application of ECO TOPCOAT MAT please refer to the corresponding technical data sheet.

TOOLS AND CLEANING

Mixing device, stirrer, trowel, brush. All equipment should be washed clean and dried before and after application.

ECO SIL

Notes, safety and declaration of performance

NOTES

In case of pressing water use ECOSIL only on concrete surfaces. When internal waterproofing of a building is required (negative stress) the structure must be able to withstand the water pressure. Because of the different properties of the substrates and the environment we cannot guarantee a uniform coloring. The appearance should be tested at a separate location if required. Therefore, this product is not suitable for decorative purposes.

Do not mix with cement-based products. Do not use on frozen substrates or during rain or strong solar radiation. Use structural provisions such as expansion joints to avoid cracks in the coating. Sealing of joints has to be done with flexible or permanently elastic sealing materials. Waterproofing should be aligned to face the water (positive loading). The use of ECOSIL is permitted up to an acid concentration of 5%.

DECLARATION OF PERFORMANCE**SAFETY, ECOLOGY AND ELIMINATION**

ECOSIL reacts alkaline with moisture/water. Avoid inhaling dust when opening packaging. Protect skin and eyes during the mixing process. Please refer to the Material Safety Data Sheet (MSDS) for further information on safety during transportation, storage, handling and disposal. Follow instructions on the packaging.

AVAILABLE ON REQUEST

Signed Declaration of Performance and the Material Safety Data Sheet for ECOSIL are available on request.

CE

18

ETS Europe BVBA
Herentalsebaan 406 D1
BE - 2160 Wommelgem

NO. ECO SIL · EN 1504-3:2005

EN 1504-3: ZA.1a

Concrete protection and repair product for statically non-relevant restoration. Silicate waterproofing with high chemical resistance. Waterproof up to 1.5 bar at a layer thickness of 4 mm.

Compressive strength	Class R2
Chloride ion content	≤ 0.05 %
Adhesion	≥ 0.8 MPa
Impaired expansion	≥ 0.8 MPa
Carbonization resistance	NPD
Elastic modulus	NPD
Fire behaviour	A1

The content of this technical data sheet corresponds to the latest development and our applications experience. All information is based on ideal conditions and therefore does not apply for every application purpose. Due to different materials, substrates and different actual site conditions no warranty is given for the customer's application. In particular, we assume no liability based on this information or any verbal statements. The only exception is when we can be blamed for the case of intent or gross negligence. In that case the customer has to prove that he has transmitted all required information completely and in a timely manner for a proper and promising evaluation by ETS Europe. Any further details regarding the application of our products have to be confirmed in writing by ETS Europe. The customer must test the product's suitability for the intended application and purpose. We reserve the right to change the product specifications due to the ongoing development. Apart from that our general terms and conditions are valid. This data sheet supersedes all earlier technical data on this product. The technical datasheet can be requested on www.ets-europe.be.