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

- Silicate technology
- High chemical resistance in the range of pH 0–14
- Salt water resistant
- Environmentally friendly
- Mineral
- VOC- and APEO-free
- Waterproof up to 1.5 bar
- Extremely high adhesion on substrate
- High surface hardness and abrasion resistance
- Sulfate resistant according to DIN 4030
- Suitable for drinking water according to KTW criteria
- Suitable for bathing pool water according to KSW criteria
- Fulfils the requirements for discharge capability according to BGR 132
- Easy application even on wet substrates

DESCRIPTION

Eco Sil 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 and agricultural installations.

RESISTANCE

Salt water	after 7 days
Chemicals	after 7 days

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Technical information

STRENGTH

Compressive strength	≥ 35 N/mm²
Flexural strength	approx. 4.5 N/mm²

DENSITY

Bulk density	approx. 1.3 kg/dm³
Fresh mortar density	approx. 2.0 kg/dm³

MIXING RATIO

Water per 5 kg powder	0.75–0.85 L
Slurry consistency	0.85 L
Creamy consistency	0.75–0.8 L

APPLICATION

Single layer thickness	2 mm
Total application thickness	max. 4 mm, 2 layers
Consumption per mm	approx. 2 kg/m²
Processing time at 20 ºC	approx. 35 min
Processing temperature	min. +10 °C, max. +35 °C
Relative humidity	max. 80%

PACKAGING AND STORAGE

Packaging	3 × 5 kg bags in a bucket
Storage	9 months
Storage temperature	not below 0 °C · 10–25 °C

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

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

PREPARATION OF SUBSTRATE

All wall or floor substrates must be matt moist, sound, capable of load-bearing and free from loose or soft materials and 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 lightly absorbent surfaces such as concrete, bricks and heavy concrete no pretreatment is necessary. On highly absorbent surfaces such as render, calcareous sandstone and hollow brick masonry, carry out a test on a small, pre-moistened test area before applying to the structure.

Note: in case of pressing water or acute leakages, the substrate 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 the preparation of coves; 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 complete waterproofing and protection against damaging chemicals.

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Mixing and application

MIXING AND APPLICATION

Pour 0.75–0.85 L 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 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, nor with any liquid component other than water.

Eco Sil is applied in at least two layers of about 2 mm each. The maximum thickness of the whole coating is 4 mm; in specific cases (very uneven substrates) it can be increased up to 6 mm, with a third layer of Eco Sil applied if necessary.

It is recommended to apply all layers one after another, with the previous layer sufficiently cured; do not pre-wet the surface between layers. For optimal adhesion and complete filling of the substrate, the first layer is mixed as a slurry and worked in with a brush. Each layer must have a minimum thickness of 2 mm at all points. The second coating is applied by trowel. Refer to the mixing ratio table for each procedure.

If the layers cannot be applied directly one after the other, the previous layer must be fully cured before the next coat — depending on ambient conditions, after 24 hours at the earliest. The subsequent layer is applied without pre-wetting.

Note: open Eco Sil bags must be closed airtight or processed within 6 hours.

Post-processing and coating protection

If smoothing of the surface is necessary after the end of the processing time, carry it out without additional water.

Protect the coating from too-quick drying (solar radiation, draft), frost and rain for 2 days; a complete enclosure of the site may be necessary. Do not cover the finished surface with foils or other materials. To avoid dew formation, the ambient temperature must be 3 °C above the dew point. If Eco Sil is applied in closed vessels without air circulation, additional ventilation or drying is necessary to prevent condensation; loadability times can then increase by 1–2 days.

For early loading (water and acid load) of new surfaces, apply a protective layer of Eco Topcoat 2K Mat after one day, in two steps at approx. 50 g/m². The treated surfaces are loadable after one day. Refer to the technical data sheet of Eco Topcoat 2K Mat for further information.

TOOLS AND CLEANING

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

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Notes, safety and declaration of performance

NOTES

In case of pressing water, use Eco Sil 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 substrates and environment, a uniform colouring cannot be guaranteed; test the appearance at a separate location if required. This product is therefore 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; seal joints with flexible or permanently elastic sealing materials. Waterproofing should face the water (positive loading). The use of Eco Sil is permitted up to an acid concentration of 5%.

SAFETY, ECOLOGY AND ELIMINATION

Eco Sil reacts alkaline with moisture/water. Avoid inhaling dust when opening packaging. Protect skin and eyes during mixing. 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 Material Safety Data Sheet (MSDS).

DECLARATION OF PERFORMANCE

CE

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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
Carbonation 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.