

## Silicio<sub>2</sub>-VSM 25

Standard leveling mortar

Art.-No.: 2500



Easy to use leveling mortar.

Hardens tension-relieved with a layer thickness of 2 – 40 mm.

### Technical Data

<b>Strength class</b>	CT-C35-F5 according to DIN EN 13813	<b>Mixing ratio</b>	5.25– 5.5 l water per 25 kg powder
<b>Abrasion resistance according to BCA</b>	AR0,5	<b>Strength</b>	Compressive strength approx. 35 N/mm <sup>2</sup> Flexural strength approx. 5 N/mm <sup>2</sup>
<b>Processing temperature</b>	min. +2 °C, max. +35 °C	<b>Processing time</b>	
<b>Application thickness</b>	2 – 40 mm Up to 50 mm if mixed with 0.5 – 1.0 mm quartz sand	<b>at 20°C</b>	approx. 30 min
<b>Loadability</b>	Curing at 20°C	<b>Consumption</b>	approx. 1.7 kg / m <sup>2</sup> and mm layer thickness
Walkable / Ready for covering	after 4 hours	<b>Density</b>	
Light load	1 Day	Bulk density	approx. 1.3 kg/dm <sup>3</sup>
Fully loadable	4 Days	Fresh mortar density	approx. 2.0 kg/dm <sup>3</sup>

### Characteristics

- Environmentally friendly
- Mineral
- Eco-binder technology
- Very low emission EC 1 PLUS
- Fast curing and tension-relieved
- High flowability
- easy application
- also processible by machine

### Fields of application

- can be used in interior and exterior areas
- for application as basic final coating
- walkable and ready for covering at an early stage
- used to smoothen rough and uneven concrete and screed surfaces
- applicable in layer thicknesses of 2 – 40 mm, partially up to 50 mm

### Substrates

- Concrete
- Cement and Calcium sulfate-based screed, heated and non-heated
- Self-leveling compounds, floor filling compounds
- Dry screed

### Preparation of the subsurface

Prior to coating, ensure that the surface is stable and has sufficient surface tensile strength. The surface should also be ready for coating, dry or matt damp, clean and free from all kinds of debris. Mechanical surface preparation e.g. shot- blasting is recommended. Due to roughening the surface, the adhesion for the subsequent layer can be improved. Deeper ruptures must be filled with Silicio<sub>2</sub>-R 15. The surface should be permanently vibration-free and crack-free. Therefore, new concrete or screed should have a minimum age of 28 days. Already existing cracks must be repaired professionally. Expansion joints must be adopted. The adhesive strength of the substrate must be at least 1.5 N/mm<sup>2</sup>. The substrate has to be dried for 2 hours after priming with Silicio<sub>2</sub>-P 20. By priming the surface, the absorbency of the substrate is adjusted. This avoids rising of air bubbles during the subsequent coating. In order to guarantee this on critical undergrounds, a test area of 1 m<sup>2</sup> should be created. Apply a further layer of primer if necessary. The coating work on the primer has to be finished within 6 hours. Please refer to the technical data sheet of Silicio<sub>2</sub>-P20 for more information.

The edge joint must be prepared with a suitable expansion strip. Thereby attention must be paid to a clean adhesion to avoid material flowing below or behind the expansion strip. Expansion joints must be adopted. After finishing all coating works, all joints have to be filled with a permanently elastic compound. Transitions and closing edges should be protected against over-flow by installing end rails.

For the use of SiliciO<sub>2</sub>-VSM 25 as a final coat and simultaneous work on various substrates with changing absorbencies the surface has to be pre-leveled to maintain a uniform coloring. For this purpose, SiliciO<sub>2</sub>-VSM 25 is applied by a toothed spatula or a screed rake. The layer thickness should be 1 mm. For application of the second layer the pre-leveled underground has to be primed again. The Primer can be applied approximately after 4 hours. Observe waiting times until the next coating.

## Mixing and processing

### Manual processing

Mix the material by using a mixing machine. First, add 5.25 – 5.5 liters of water per 25 kg powder material into the mixing container. Then, pour SiliciO<sub>2</sub>-VSM 25 inside while stirring. For applications with a hand-held mixer the Collomix mixing paddle DLX 152 HF is recommended. By using the respective mixing paddle a proper thread adapter must be used if necessary. For mixing of partial quantities in smaller containers the mixing paddle DLX 90 S for drilling machines is recommended. The material has to be mixed intensely for 2 minutes, left to set for 2 minutes, and then mixed again for 1 more minute. Single mixing batches must be mixed fast and uniform. The material has to be poured out seamlessly within the workability time. With manual processing an aeration time of up to 5 minutes has to be maintained between the end of the mixing time and application of the material. This minimizes rising of air bubbles within the poured material. After mixing, apply SiliciO<sub>2</sub>-VSM 25 onto the primed surface and distribute it with a pin leveler to the intended thickness. Thereby the required layer thickness depends on the surface quality of the substrate which has to be coated. Use a thin spiked roller on the freshly laid mortar for better texture. Consider the spikes to be long enough for the intended layer thickness. Quartz sand (0.5 – 1.0 mm) can be added to the mixture in a 2:1 ratio to fill gaps and achieve layer thicknesses of up to 50 mm. Mix 25 kg of SiliciO<sub>2</sub>-VSM 25 homogeneously with water. Stir in 12.5 kg of quartz sand towards the end of the mixing process. Do not add additional water and apply directly. The coating has to be protected from too quick drying (solar radiation, draft), frost and rain for the 1st 24 hours. Do not cover the finished surface with foils or other materials.

## Processing on larger surfaces

It is recommended to use bigger mixing devices or mixing pumps for larger areas:

- > 50 m<sup>2</sup>: Mega Hippo self-leveling compound mixer by Portamix
- > 300 m<sup>2</sup>: Continuous mixing pump duo-mix 2000 by m-tec or comparable mixing system.

For more information about the listed machines and the respective application please refer to the current installation manual for industrial floors.

## Equipment/tools and cleaning

Hand-held mixer or mixing device, stirrer, trowel, pin leveler, spiked roller and spiked shoes. All equipment should be washed clean and dried before and after application.

## Post-processing and protection of the coating

For the use of SiliciO<sub>2</sub>-VSM 25 as a final coat it is recommended to apply a suitable surface protection system. To achieve a higher abrasion resistance or chemical resistance we recommend a combined application of SiliciO<sub>2</sub>-H 40 and SiliciO<sub>2</sub>-H 45. For a complete sealing we recommend the use of SiliciO<sub>2</sub>-S 53. Please refer to the respective data sheets for more information.

## Covering with subsequent coatings

For the use of SiliciO<sub>2</sub>-VSM 25 as leveling layer for subsequent coatings, the dried mortar must be ready for covering. For laying of ceramic coverings, the surface is ready for covering after 4 hours. For laying of vapor-proof or moisture-sensitive coverings (e.g. Parquet, PVC, etc.) a residual moisture of  $\leq 2.5$  CM-% must be achieved. For thin coatings up to 3 mm the required value can be reached after approx. 48 hours. Depending on the ambient conditions and the used layer thickness the respective waiting time can extend.

## Heated floor constructions

For applications on heated floor constructions the underfloor heating system must be downregulated to approx. 20°C at least 3 days before application. 48 hours after application the flow temperature can be increased stepwise to the desired value (increase of 5°C per day). This information only applies for SiliciO<sub>2</sub>-VSM 25. For the subsequent laying of other coverings on the leveling layer, please refer to the respective manufacturer instructions.

## Packaging and storage

25kg Paper sack

Can be stored for at least 12 months, if stored in the original packaging and in a dry environment (not below 0 °C; 10 to 25 °C recommended). Reseal opened Containers immediately and use within a very short time.

### Safety information

There is no mandatory hazard labeling for Silicio2-VSM 25. Avoid inhaling dust when opening packaging. Protect skin and eyes during the mixing process. Please refer to the Material Safety Data Sheet which can be requested on [www.silicio2.com](http://www.silicio2.com) for further information on safety during transportation, storage, handling and disposal. Follow instructions on the packaging.

### More information

The application has to be protected from drying too quickly (due to drafts or intense heat from the sun) for at least 24 hours. Some minor color differences are inevitable due to different production batches. This should be taken into account while performing work. It is necessary to work on designated sections with the same batch (see label) if a uniform color is desired. Due to different water addition during application or changing working techniques light color shades in the coating surface can occur. Please take note that this coating is a mineral product. Product colors are not fully conformed to the RAL- Map and therefore they should only be seen as estimated classifications.

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 Silicio2 GmbH. Any further details regarding the application of our products have to be confirmed in writing by Silicio2 GmbH. 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 data sheet can be requested on [www.silicio2.com](http://www.silicio2.com).



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**EN 13813**  
**EN 13813 CT-C35-F5-AR0,5**  
 Easy to use leveling mortar. Hardens tension relieved with a layer thickness of 2 - 40 mm.

Fire behavior	A1
Compressive strength	C35
Flexural strength	F5
Release of corrosive substances	CT