

TECHNICAL SHEET 11.03.01-eng
DECORATIVE RENDER FINISHES

SILICATE SMOOTH RENDER 1.0, 1.5, 2.0 and 2.5

1. Description, Application

SILICATE SMOOTH RENDERS 1.0, 1.5, 2.0 and 2.5 are thin-coat pasty render finishes based on potash water glass with a typical equally grained surface. They are intended for decorative protection of façade and interior wall surfaces. They adhere well to all fine-coarse construction surfaces: mineral base-coats of External Wall Insulation (EWI) systems, conventional fine lime, lime-cement and cement renders, smoothed concrete surfaces, and similar.

In addition to **high hardness**, they are also characterised by **non-combustibility** and **high water vapour permeability**. **High resistance to the effects of smoke, ultraviolet rays and other atmospheric factors** guarantees their **resistance in any climate conditions**. However, they are not recommended for protection of façade surfaces of tall buildings with short projecting or even without eaves, exposed to heavy rainfall. Surfaces rendered with these finishes have an assured **long-term resistance to contamination with wall algae and mould**. Therefore, **it is not necessary to add any biocidal substances prior to application**.

2. Packaging and Colour Shades

25 kg plastic containers:

- White – shade 1001
- Shades marked by a star (*) (162) from the PAINTS AND RENDERS colour chart whose code's last figure is 2, 3, 4 and 5 (on JUMIX tinting stations at points of sale!) – only renders with granulation 1.5, 2.0 and 2.5
- Delivery in shades designed on special request of the customer is possible under certain condition

3. Technical Data

| | SILICATE SMOOTH RENDER 1.0 | SILICATE SMOOTH RENDER 1.5 | SILICATE SMOOTH RENDER 2.0 | SILICATE SMOOTH RENDER 2.5 |
|---|---|---|--|--|
| Density (kg/dm ³) | ~1.97 | ~1.97 | ~1.97 | ~1.97 |
| Drying time – touch dry T = +20 °C, relative air humidity = 65 % (hours) | ~6 | ~6 | ~6 | ~6 |
| Water-vapour permeability EN ISO 7783-2 | μ coefficient t (-) | <50 | <50 | <50 |
| | S_d value (m) | <0.05 (for d = 1.0 mm) class I (high water-vapour permeability) | <0.08 (for d = 1.5 mm) class I ((high water-vapour permeability) | <0.10 (for d = 2.0 mm) class I ((high water-vapour permeability) |
| Water absorption w_{24} EN 1062-3 (kg/m ² h ^{0,5}) | <0.10 class III (low water absorption) | <0.10 class III (low water absorption) | <0.10 class III (low water absorption) | <0.10 class III (low water absorption) |



| | | | | |
|--|-------|-------|-------|-------|
| Adhesion to standard lime-cement render (1: 1: 6) EN 24624 (MPa) | >0.30 | >0.30 | >0.30 | >0.30 |
|--|-------|-------|-------|-------|

Main ingredients: potash water glass and styrene-acrylate binder, coarse and fine calcite and alumo-silicate fillers, cellulose and xanthan gum thickening agent, titanium dioxide, water

4. Surface Preparation

The surface should be slightly rough (ideal is the roughness of a conventionally smoothed fine render of 1.0 mm granulation), solid (compressive strength of at least 1.5 MPa – CS II by EN 998-1), dry and clean, without weakly bound particles, dust, easy water-soluble salts, oil stains and other filth. Any smaller uneven parts – protrusions and indentations – hinder the smoothing of the applied render finish; therefore it is important to attend to the preparation of the surface.

Prior to the application of a decorative render finish, the newly applied base-coats have to dry at least 7 to 10 days for each cm of its thickness. Decorative render finishes are applied to new concrete surfaces only a month after concreting (stated drying times of the surface are valid in normal conditions: T = +20 °C, relative air humidity = 65 %). Coatings, slurries and other decorative coats have to be removed from old solid plasters/renders. After the surface had been cleaned, it should be thoroughly dusted by washing and, if necessary, mended and levelled. Washing the surface with a high-pressure water blaster (hot water or steam) is especially recommended in the case of fibre-cement boards and all concrete surfaces since it removes panel oil from new surfaces and soot, moss, lichen, remains of old coatings and similar from old ones.

The surface should be painted with UNIGRUND or with a mixture of JUBOSILCOLOR SILICATE, SILICATEPRIMER and water (JUBOSILCOLOR SILICATE : SILICATEPRIMER : water = 1 : 1 :1); UNIGRUND or JUBOSILCOLOR SILICATE should be selected in the shade as close as possible to the colour of render finish. Primers are applied with a painting or masonry brush, while a mix of SILICATEPRIMER, JUBOSILCOLOR SILICATE and water can also be applied by spraying. The application of a render finish should start in normal conditions (T = +20 °C, relative air humidity = 65 %) 12 hours after the application of primer.

Approximate consumption of primer (depending on the surface absorption and roughness, one coat application):
UNIGRUND 120 – 200 g/m²

Or

SILICATEPRIMER ~60 ml/m² + JUBOSILCOLOR SILICATE ~60 ml/m²

5. Preparation of Render Finish for Application

Prior to application, stir the render finish with an electric mixer, and, if necessary (only exceptionally), dilute it with SILICATEPRIMER (maximum 1 dl per container). The colour shade must be checked; then, equalize the render finish in order to remove even the slightest or imperceptible differences in colour shade between individual buckets. Stir the content of four buckets well in a large container of appropriate size. When a quarter of the so prepared compound is used, the content of the next bucket is poured into the container and mixed properly with the rest of the render finish, etc. Equalisation of white renders, which belong to the same production batch or to the same production date and which have not been diluted, is not necessary.

Reworking the render finish during application (adding tinting agents, diluting, and similar) is not allowed.

6. Render Finish Application

The render finish is applied manually - using a stainless steel smoothing trowel – or by spraying – in the thickness slightly above the diameter of the thickest sand grain. When the render finish is applied by spraying, follow the instructions of the producer of the mechanical equipment. Immediately after the application, smooth the surface with a solid plastic finishing trowel. Perform smoothing with circular strokes to evenly furrow the application. During smoothing, move the grains in the applied render finish coat as little as possible, while pushing of material bulges in front of the trowel is not allowed. Reasons for their occurrence are mostly a too thick render layer or an uneven or a not well enough prepared substrate. At the end – a few minutes after trowelling - push the protruding lumps into the surface by



smoothing the surface slightly using a clean stainless steel smoothing trowel.

Perform the application as fast as possible, without any interruptions from one corner of the wall to the other. When applying the render finish onto wall surfaces higher than one floor, it must be applied simultaneously to all floors: in such cases, always begin the application at the top floor, while performing a phase-delayed "step shift" in lower floors. Larger wall surfaces should be divided into smaller sections by using adequately wide decorative grooves, mortar trims, and other decorations, frames or in any other way. In this manner we avoid potential problems caused by continuous application of the render finish as well as non-aesthetic appearance due to a potentially uneven surface. Joints between planes in inner or outer corners can be made easier by preparing a few cm wide, finely smoothed stripes, which also give a pleasant decorative appearance to processed surfaces. Decorative smoothed stripes, grooves, mortar trims, frames, and similar are usually made prior to the application of the decorative render finish. They are protected by suitable wall paints, while paying attention not to apply coatings encroaching onto surfaces prepared for the application of the render finish.

The application of a decorative render finish is possible only in suitable weather or microclimate conditions: the temperature of the air and the wall surface should not be below +8 °C (for white renders) or +12 °C (for coloured renders) and not higher than +30°C, while the relative air humidity should be below 80 %. Protect façade surfaces from sun, wind and rainfall with protective scaffold nettings; however, do not conduct any work in rain, fog or strong wind (≥ 30 km/h) despite such protection.

In normal conditions ($T = +20^{\circ}\text{C}$, relative air humidity = 65 %), resistance of freshly processed surfaces to damage caused by precipitation (washing away of the application) is achieved in 24 hours at the latest.

| | |
|-------------------------------------|-------------------------|
| Approximate or average consumption: | |
| SILICATE SMOOTH RENDER 1.0 | ~ 2.4 kg/m ² |
| SILICATE SMOOTH RENDER 1.5 | ~ 3.0 kg/m ² |
| SILICATE SMOOTH RENDER 2.0 | ~ 3.5 kg/m ² |
| SILICATE SMOOTH RENDER 2.5 | ~ 5.5 kg/m ² |

7. Safety at Work, Waste Management, Tool Cleaning

Please, consider that the product contains potash water glass, which irritates eyes and skin. Therefore, use adequate personal protection means at work. The use of protective glasses or safety mask is necessary when applying the decorative render finish by spraying. Apart from general instructions and regulations for construction and painting works and instructions stated in the safety sheet, please consider also the following warnings:

R52/53 - Harmful to aquatic organisms: may cause long-term adverse effects in the aquatic environment.

S2 - Keep out of the reach of children.

S 26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28 - After contact with skin, wash immediately with plenty of water.

S 29 - Do not empty into drains.

S 46 - If swallowed, seek medical advice immediately and show this container or label.

S 61 - Avoid release to the environment. Refer to special instructions - safety data sheet.

Keep unused render finish in a well sealed packaging for potential repairs. Deposit hardened remains and wastes onto the dumping grounds of construction waste (waste classification number: 17 09 04) or municipal waste (waste classification number: 08 01 12).

Cleaned packaging can be recycled.

Thoroughly clean the tools with water immediately after use.

ATTENTION! Prior to applying silicate render finishes and silicate coats, protect well window and door frames, window sills as well as window glass and other exposed surfaces as stains can not be removed.



8. Maintenance and Restoration of Painted Surfaces

Façade surfaces processed with SILICATE SMOOTH RENDER 1.0, 1.5, 2.0 or 2.5 do not require any special maintenance. The non-adhering dust and other non-adhering filth can be swept, hoovered or washed away with a water blaster. Adhering dust and more obstinate stains can be removed by light rubbing with a soft brush soaked into a solution of usual universal household preparations and washed away by clean water.

However, where filth and stains cannot be removed applying the methods described above, renovation painting is recommended. In such cases, apply two coats of the micro-reinforced façade paint REVITALCOLOR SILICATE, micro-reinforced façade paint REVITALCOLOR AG or micro-reinforced façade paint REVITALCOLOR SILICONE onto a prior coat of an appropriate primer.

9. Storage, Transportation Conditions and Durability

Storage and transportation at temperatures between +5°C and +25°C, protected from direct sunlight, MUST NOT FREEZE!

Shelf life when stored in originally sealed and undamaged packaging: at least 12 months.

10. Quality Control

The product's quality characteristics are determined with the internal manufacturing specifications as well as with the Slovenian, European and other standards. We constantly monitor the declared or set quality level in our own labs, at the ZAG Construction Institute in Ljubljana and occasionally also at other independent institutions at home and abroad. The quality level is also ensured by the ISO 9001 system for total quality management and control, which has been implemented at JUB for many years. During the manufacturing process, we strictly comply with the Slovenian and European standards for protection of the environment and for ensuring security and health at work, which is confirmed by the ISO 14001 and OHSAS 18001 certificates.

The adequacy of SILICATE SMOOTH RENDERS 1.5, 2.0 and 2.5 as finishing coatings in the JUB's EWI systems has been approved with the European Technical Approval (ETA). In accordance with the ETAG 004/2000 guidelines, the testing was performed at the ZAG Construction Institute in Ljubljana and at the Österreichisches Institut für Bautechnik in Vienna.

11. Other Information

The technical instructions in this brochure are given based on our experiences and are given as a guideline for achieving optimal results. We cannot take any responsibility for the damage, caused by incorrect selection of a product, incorrect use or unprofessional work.

The colour shade may differ from the print in the colour chart or from the approved sample. However, the total colour difference ΔE_{2000} for shades from the JUB's PAINTS AND RENDERS colour chart – it is determined in accordance with the ISO 7724/1-3 and with a mathematical model CIE DE2000 – does not exceed 2.5. In order to check the colour shade, a dry application of render finish on a test surface is compared to a standard of the concerned shade, which is stored in the TRC JUB d.o.o. A colour shade of a render finish made on the basis of other samplers and colour charts is the best possible approach for JUB's product bases and tinting agents. Therefore, in such cases the total colour difference from the desired shade may be even higher than the value guaranteed above. A difference in colour shade, which is the result of unsuitable working conditions, of a product preparation technique, which differs from the one in this technical sheet, of failure to follow the equalisation rules, of the application of the product onto an unsuitably prepared, overly or not enough absorbing surface, more or less coarse surface, on a wet or not dried enough surface, cannot be subject of complaint.

If applied within External Wall Insulation systems, render finishes shall have brightness (Y) over 25. Darker render finishes and render finishes of intensive colour shades are less stable under heavy conditions of use, somewhat less resistant to being washed out by precipitation and tend to chalk more. Complaints about changes, which might thus occur on exposed façade surfaces, especially in the form of faster bleaching, will not be accepted. Therefore, one should consult JUB's experts for each case individually regarding conditions for the application of such renders and the maintenance of processed surfaces. The list of such susceptible colour shades is available at stores where JUMIX tinting stations are located as well as in our sales and technical information departments.

This technical sheet supplements and replaces all preceding editions. We reserve the right to change and supplement data in the future.



Denomination and date of publishing: **TRC-171/10-gru-tor**, 31 January 2010

JUB kemična industrija d.o.o.,
Dol pri Ljubljani 28, 1262 Dol pri Ljubljani, SLOVENIA
Phone: (01) 588 41 00 Main Reception Desk,
(01) 588 42 17 Sales Department,
(01) 588 42 18 or 080/15 56 Technical Support
Fax: (01) 588 42 50 Sales department
e-mail: jub.info@jub.si
Web page: www.jub.eu

