

Technical Data Sheet

Rajasil SP4

(Renovation Render)

Rajasil SP4: New **HyTer** technology for highest quality standards in all properties and applications. Dry factory-mixed mortar, R, CS II, W 2, T 2, in accordance with DIN EN 998-1 (P II water-repellent according to former DIN V 18 550); WTA certified renovation render for moisture- and salt-contaminated substrates; with sulphate-resistant binder; fiber-reinforced. High yield, large pore volume, optimal application properties, quick-setting, high crack resistance, very good bonding properties, and quick development of hydrophobic properties result in high reliability of application. High degree of whiteness makes paint coating unnecessary in many cases.

Areas of Application: For interior surfaces (e. g. basements) and exterior surfaces above grade
Single-layer application (even in cases of high contamination with building-degrading salts); in special cases, two-layer application is recommended (see Application section). The responsibility for any usage outside these areas of application lies solely with the user.

Composition: Sulphate-resistant binder; lightweight mineral aggregates; carefully composed aggregates; admixtures for water-repelling properties, pore formation and optimal workability. Due to the use of the new HyTer technology, the hydrophobising effect sets in at a very early stage, resulting in high product reliability. Alkali-resistant fibers increase crack resistance; maximum grain size: approx. 1.5mm; color: white (high degree of whiteness)

Technical Data: The requirements according to the WTA leaflet 2-9-04/D are met by Rajasil SP4 (restoration plaster SP4).

Mortar group	CS II according to DIN 998-1 PII according to the former DIN V 18550
Air void content of the fresh mortar	> 25 % by volume
Cured mortar gross density	< 1.0 kg/dm ³
Water vapour diffusion resistance factor μ	< 12
Compressive strength f_{cd}	1.5 - 5.0 N/mm ²
Porosity of the cured mortar	> 50 % by volume
Thermal conductivity λ according to DIN EN 1795 table 12	0.25 / 0.27 W/mK
Capillary water absorption W_{24}	> 0.3 kg/m ³
Depth of water penetration	< 3 mm
Salt resistance	Passed
Building material class DIN 4102	Building material class A1

Coverage: approx. 7.5 kg of dry mortar/m² per cm of render thickness

Preparation of the Substrate: Remove existing plaster up to at least 80 cm beyond the humidity limit and/or blooming zone. Scrape out old and crumbling joint mortar down to a depth of 2 cm, clean the brickwork thoroughly and remove any dust. Dispose of chipped plaster immediately. No rough cast is required in case of normally absorbing brickwork (e.g. bricks, specific kinds of natural stone). In case of moisture penetration levels of the plaster base higher than 40 %, this requires drying measures before plastering and/or a reinforcement plaster layer after the application of the restoration plaster.

Application and Substrate Temperature: + 5 °C minimum; lower temperatures during the curing phase can have a sustained negative effect on product properties.

With high environmental temperatures (and/or strong wind), additional measures are necessary to prevent premature loss of mixing water.

Preparation of the Product:

Manual application:
Mix the content of a bag with approx. 8.5 litres of tap water in a clean mortar mixing container using a power stirrer without producing any clots. In manual processing, a sufficient mixing time (approx. 3 minutes) and maturing period must be ensured.

Machine application:
All conventional mixing pumps can be used. Depending on the machine type, the use of a secondary mixer may be necessary. This depends of whether the above-mentioned fresh mortar properties as per WTA Recommendation 2-9-04/D are obtained.

Application: Rajasil SP4 (restoration plaster SP4) is normally applied as a single layer onto the substrate directly. The recommended processing technique should be in single-layer processing, by applying approx. 10 mm of plaster, leaving it mature briefly, then continuing the plaster application until the intended plaster thickness is reached.

In single-layer processing, Rajasil SP4 (restoration plaster SP4) is applied at least 2 cm thick, the maximum plaster thickness per layer should not exceed the 2.5 cm and the minimum plaster thickness per layer should not go below 10 mm.

Application:	<p>In case of extremely high nitrate and chloride contamination, high moisture penetration of the brickwork (> 70 %), high plaster thickness and other unfavourable conditions, Rajasil SP4 (restoration plaster SP4) must be applied in several layers. The first layer (minimum plaster thickness 10 mm) must be roughened well, e.g. with a notched trowel or with a brush. The preliminary setting time in multi-layer processing must be 1 day per mm of plaster thickness. The second layer (plaster thickness 10 - 15 mm) can be applied on the first layer which has dried on the surface. The surface is felted or structured differently during the initial curing process. As they might be prone to faster dehydration, the transition areas of the restoration plaster/existing plaster must be worked on first to avoid cracks and visible bumps.</p> <p>In case of irregularities which would make a total restoration plaster thickness of over 40 mm necessary, the use of Rajasil EGM (levelling mortar) is required, see Technical Data Sheet Rajasil EGM (levelling mortar). We also recommend embedding a plaster reinforcement made of Rajasil AAG (rough reinforcement lattice fabric) into the restoration plaster layer in the top third of the plaster layer. Instead of the fabric layer, rough reinforcement plaster such as Rajasil FAS (façade filler material) or Rajasil KFP (fine lime plaster) with a fabric layer could be necessary in critical conditions and in case of an increased risk of cracks.</p> <p>Implement a minimum application thickness depending on the salt content:</p> <ul style="list-style-type: none"> ▪ Minimum application thickness in case of chloride, sulphate and low to medium nitrate salinisation 20 mm ▪ Minimum application thickness in case of high nitrate salinisation or high moisture penetration, two layers, 15 mm per layer
After Treatment:	<p>Protect newly applied render adequately from premature dehydration (sun, wind, high temperatures), rain and frost. With dry, warm weather conditions, after treatment is necessary to prevent premature loss of water.</p> <p>With extremely high air humidity, e. g. in basements without sufficient ventilation, provide adequate drying conditions (e. g. condensation dryer). However, do not heat up interior spaces too quickly after render application in order to prevent tension cracks.</p> <p>Curing time prior to application of additional coatings on the renovation render system: 1 day per mm of render thickness</p>
Coating:	<p>Requirements to be met by coating layers: diffusion equivalent air layer thickness $s_d < 0.2$ m (of each separate layer)</p> <p><i>for paint coats:</i> $w < 0.2$ kg/(m²h^{0.5}) on exterior surfaces <i>for finishing coats:</i> water-repellent (former DIN V 18 550) $w < 0.5$ kg/(m²h^{0.5}) on exterior surfaces</p> <p>Trowel-applied smooth coatings, using e. g. the traditional marmorino technique or a smooth lime finish, are unsuitable even if mineral-based, as this application method results in a compacting of the surface.</p> <p>Suitable paint coats: Rajasil SHF, Rajasil SIF, Rajasil SIF INTERIOR for interior application</p> <p>Suitable finishing coats: Rajasil SPG, Rajasil SSL, Rajasil EP WD, Rajasil KFP, Rajasil RP, HECK SIP</p>
Notes:	<p>Due to the usage of mineral raw materials, follow-up deliveries may vary in color. For continuous surfaces use only material from the same production batch, especially when no surface coating is performed. Variations in color and surface texture over the course of time due to weather or environmental factors, e.g. atmospheric particles, are not covered by warranty. Technical functionality remains unaffected. Under adverse conditions, the possibility of the formation of micro-organisms, such as algae, cannot be ruled out; this does not constitute a reason for complaint.</p> <p>Seal renovation render at areas in contact with the ground using e. g. Rajasil DS FLEX.</p>
Safety Instructions:	<p>Rajasil SP4 contains lime and cement and thus reacts alkaline when fresh. Avoid contact with eyes and skin. Protect eyes and skin. If product gets on skin, wash off immediately. If product gets in eyes, rinse thoroughly with water immediately and seek medical attention. Wear suitable protective gloves. If product is swallowed, seek medical attention immediately.</p> <p>Keep product out of the reach of children.</p> <p>For further information, see Safety Data Sheet.</p>
Storage:	<p>Store in a dry place; shelf-life in original container: approx. 3 months. Longer storage or inadequate storage conditions can have negative effects on setting properties.</p>
Quality Control:	<p>Constant monitoring of production through laboratory analyses. The Rajasil SP4 system with its components Rajasil SPB Rajasil EGM SP3 Rajasil SP4 is certified by WTA: All requirements as laid down in WTA Recommendation 2-9-04/D, also those pertaining to internal and external controls, are met. The products are allowed to carry the WTA service mark. Patent pending.</p>



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