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chemical systems

a Fakolith Group Company

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Stripping, cleaning, consolidation, volumetric reconstruction and painting of mineral and heritage facades with Silicalith silicate mineral paint

Description of the problem

Most of the paints used in exteriors, especially those of organic composition, suffer from the devastating effects of water, sun, wind, etc., in an accelerated manner.

Especially in facades, silicate paints offer a great resistance to weathering, which makes them the most appropriate for their best and prolonged protection.

All silicate or silicate paints are not the same: To identify a high quality silicate dispersion paint, first of all, it must comply with DIN 18.363, 2.4.1 whose organic matter content is less than 5% by weight of the total formulation. Examples are Silicalith and Silicalith FotoActive.



Silicalith and its variant **Silicalith FotoActive**, adhere to the mineral substrate by fusing and becoming part of it through a chemical reaction called silicification or petrification. As a result, both paints do not flake, are highly breathable and permeable to water vapor.

Surfaces painted with Fakolith silicate paints acquire an alkaline pH that provides natural protection against the proliferation of microorganisms. In addition to their natural mineral white color, they can be colored with Mixol oxide pigments, which gives them maximum resistance to UV rays. Their water-repellent character is a distinguishing feature of our company for this type of paints.

They can and must only be applied on mineral bases free of old paints or remains of these, hygroscopic salts, microorganisms, pollution and any other type of impurity that could hinder its proper chemical fusion with the mineral base.

For this reason, and as in the case of treatments with mineral glazes, the substrates should be reviewed and arranged in a similar way. The most appropriate treatments for each particular situation will be determined by the existing pathologies in each case. Usually the restoration should begin by mechanically cleaning or eliminating the degraded parts of old coatings or the mineral base. In some cases it will be necessary to remove inappropriate paints, varnishes or coatings until the mineral base is completely uncovered, and then the surfaces must be properly cleaned to optimize the effectiveness of subsequent treatments. After cleaning, it is usual to mineralize or superficially consolidate the mineral base, at least the parts that require it. Occasionally and due to existing flaws, the necessary areas will be reconstructed volumetrically, with the most appropriate elite mortar in each case. Subsequently, the most suitable primer will be applied, Multilite (liquid silicate) or FK-7 (water repellent and bonding bridge) as appropriate. Finally, 2 coats of silicate paint, **Silicalith** or **Silicalith FotoActive**, in mineral white color or in color formulated with Mixol oxide pigments, will be applied.

Summary of the most common basic solution and procedure

1. CLEANING OF THE BASE:

Depending on the existing pathologies, choose from the following options:

- **Option A** - FAKOLITH FK-111: In case of surfaces severely affected by pollution, especially in lower parts of the building, apply the descaler and cleaner of grease, pollution, industrial dirt, and rinse with water. After which general cleaning with **FK-12** of all mineral bases to be rehabilitated.
- **Option B** - Macs Asur: If there are paints or varnishes to be removed, apply on these areas the universal deep action paint stripper **macs Asur** or **macs Oxystrip**, capable of removing multiple layers in a single application. After rinsing with water, proceed to a general cleaning with **FK-12**, ending the cleaning process.
- **Option C** - FAKOLITH FK-12: In any case, always clean the facade with the **FK-12** moisture damage cleaner, such as mold damage, saltpeter, biofilm, light pollution... on all surfaces to be rehabilitated, whether or not the previous ones have been used. After subsequent rinsing with water and air drying, the base will be cleaned for the following treatment.

2. VOLUMETRIC RECONSTRUCTION:

Our family of elite mortars with multifunction additives effectively solve applications from 8 mm to 20 cm, in a single coat, both in repairs of major flaws, cracks, cornices, degradation of other mortars, masonry breaks, cracks, fissures, as well as for finishing new plaster and screeds.

- **Option A** - ELITE CAL PLUS MORTAR: This is the most widely used plaster mortar in the restoration of facades and heritage. It requires its **Multilite** additive. For vertical applications of very low thickness, up to 2mm, there is the option of **Elite Smoothing Mortar**, also enriched with its **Multilite** additive. The **Elite Smoothing Mortar** can also be applied in combination with the Elite Lime Plus Mortar, in just a few microns, to achieve a very smooth finish.
- **Option B** - ELITE EXTREME MORTAR: The version with greater physical resistance of our elite plastering mortars, it is close in performance to the resistance of concrete, without losing its properties of ease of application and moldability. It is indicated for extreme situations and maximum durability. It requires its Multilite additive. For specific structural repairs, our **elite R3 mortar** is available.

3. CONSOLIDATING PRIMER, BONDING BRIDGE:

As a primer and bonding bridge of the mineral base with the silicate paint, the **multilite** mineral consolidant (liquid silicate) or the special water repellent **FK-7** will be applied, whichever is more convenient. Both regulate and homogenize the correct penetration and adherence of the silicate paint.

- **Option A** - MULTILITE: Application of the consolidant to the multilite silicate in a ratio of 1:1 parts in water. The base will be consolidated and the subsequent absorption of the silicate paint will be uniform. Before applying the first coat of paint, allow 12-24 hours to elapse, depending on the existing environmental conditions.
- **Option B** - FAKOLITH FK-7: Application of the water repellent with consolidating effect **FK-7** in a mixture ratio of 1:14 parts in water. The mineral base, in addition to being consolidated with its regulated absorption values, will also be waterproofed. Before applying the first coat of paint, allow 12-24 hours to elapse, depending on the existing environmental conditions.

4. PROTECTION PAINT AND FINAL FINISHING:

To achieve adequate protection and long term preservation of the mineral bases, with mineral paint, 2 coats of either Silicalith or Silicalith FotoActive paints shall be applied, in the desired oxide colors.

- **Option A** - Silicalith: Special application of **Silicalith** silicate dispersion paint in 2 coats spaced at least 12-24 hours apart, in mineral white or in the desired oxide colors.
- **Option B** - Silicalith FotoActive: Special application of **Silicalith FotoActive** silicate dispersion paint in 2 coats spaced at least 12-24 hours apart, in mineral white or in the desired oxide colors. In addition to the intrinsic properties of silicate paints, **Silicalith FotoActive** characterizes the facade with photocatalytic properties that help

to keep your facade cleaner.

Application process

1.- OPTION A - FK-111

DESCRIPTION AND MAIN USE: FAKOLITH FK-111 is a detergent cleaner for use with grease-based dirt or grime, pollution, biofilms matrix, scorching or industrial grime in general, on surfaces resistant to alkaline solutions. Mainly for use in the food industry, industry in general, construction and civil engineering. Health Register FAKOLITH RGSEAA ES-39.005259/T y ROESP E-0043-E.

RECOMMENDED THINNER: 1 part FK-111 to 4 parts water. Can also be used undiluted if necessary, in more contaminated areas or when speed of action is required.

HOW TO APPLY: Carefully protect all surfaces that are not to be treated from splashing. Apply diluted FK-111 using spray guns, brushes or rollers and immediately activate the product by scrubbing with a brush with stiff plastic bristles, working particularly on the worst affected areas. Allow 15-20 minutes to pass, although always before it has dried, and then wash off and rinse thoroughly using water under pressure. If so required the operation can be repeated. Leave to dry before going ahead with possible additional treatments. For further details consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD: Undiluted FK-111 provides a yield of approx. 8-12 litres/m², although depending on the extent of the contamination this may vary considerably.

1.- OPTION B - macs Asur

DESCRIPTION: macs Asur is a gel paint stripper that blends slowly evaporating esters with special solvents. Asur paint stripper is free of chlorinated hydro-carbons, dichloromethane, aromatic hydrocarbons and paraffin and is not corrosive in contact with skin.

MAIN USE: macs Asur is recommended when stripping several coats of paint at the same time, from both small and large, interior and exterior, solvent-resistant surfaces, and is capable of stripping the vast majority of single-component paint systems, such as latex dispersion or acrylic paints, synthetic rendering, synthetic resin and colourless lacquers, nitrogen-alcohol varnishes, antifouling paints, matt or polished finishes, plasters, fibreglass glues and polyurethane foams, on solvent-resistant bases such as natural stone, wood, metal, reinforced with fibreglass, gel-coat... While Asur also acts on some bi-component systems (not epoxy), if it is not sufficiently powerful or fast-acting for your requirements use macs Oxystrip, which is very effective for the removal of bi-component systems. Can be used across a wide range of sectors, including façades, civil engineering, industry in general, the nautical sector, etc.

HOW TO APPLY: Before applying macs Asur the product must be mechanically stirred until it has taken on a homogeneous consistency. Above all make sure that the product application is saturated. In the case of very thick coats of paint first scrape off any loose layers before the application of ASUR. Apply uniformly, using an airless spray gun, natural pig-bristle brushes or rollers. In order to optimise consumption and accelerate the process, particularly on extensive surfaces, we recommend that after application the surface be covered with a plastic film, pressing gently down with a roller, applying hardly any pressure. In general the product should then be left to act for anything between 1 and 24 or even 48 hours. After 1 hour has elapsed use a scraper to test whether the product has effectively impregnated as far as the base surface, as this is the ideal moment to eliminate it, initially using trowels or scrapers to remove thick coats, and then rinsing with water (preferably hot) under pressure. Always work from the bottom up. In general, subsequent light cleaning using our FK-12 detergent cleaner is recommended. For further details consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD: macs Asur provides a yield of approx. 0.5 to 4 litre/m², although this may vary considerably depending on the number of coats and the product to be stripped. As a guideline you should allow for a minimum

consumption factor of 1 to 1.4, i.e. in order to strip a dry thickness of 100 microns, apply a thickness of at least 100-140 microns of macs Asur, depending on the type and state of the paint that you are stripping.

1.- OPTION C - FK-12

PRODUCT SUMMARY: Concentrated water-based detergent cleaner, free of chlorine and formaldehyde, biodegradable and compatible with moisture. Wide range of applications and sectors, for use both indoors and outdoors, on horizontal and vertical surfaces.

For cleaning moisture damage on surfaces of various materials; saltpetre blooms, lime blooms, surface damage caused by the action of microorganisms such as mould, moss, bacteria and biofilm matrix, as well as medium-grade pollution. Mainly used in industry in general, food industry, health sector, establishments in general, restoration of facades and heritage, civil works.

It presents a notorious descaling power of penetration, leaving the pore of the base, clean, open and receptive for later treatments; consolidators, protectors, waterproofing impregnations, primers, paints and coatings, anti-graffiti protections, etc. Its tensoactive components facilitate the neutralization of the base, after rinsing with water. With Declaration of Conformity.

MODE OF APPLICATION: Application from concentrated to dissolved 1:4 in water as a general rule. Adapt the dissolution according to the needs and conditions of each surface. The higher the concentration, the faster the action, and the higher the capacity to clean the damage. Especially to eliminate lime and microorganisms in wood will be applied without dilution.

Once the dissolution is done, apply preferably from the upper area, with brush, sponge, mop, spray, as appropriate in each case:

- Insist where the reaction is triggered and rub the affected area with brushes.
- Rinse with water before the product and the dissolved dirt dry.
- Allow to dry before proceeding with other treatments.

CONSUMPTION - PERFORMANCE: It is very variable, depending on the solution used, type and absorption of the surface, method of application, type and degree of dirt or affection, so its average performance can vary between 4 m² and 15 m² per litre of concentrate.

2.- OPTION A - MORTERO ELITE Cal Plus Crema

DESCRIPTION: Mortero Élite Cal Plus is a rendering mortar, mixed with lime, category F1 CS IV W2, with EC Marking. In a standard issue cream-colour, with a granulometry of 01, excellent thixotropy that, along with the elite system additives, will always allow for applications of thick coats in cases of volumetric re-composition. Brings excellent workability, plasticity, along with optimised times for subsequent cutting and finishing. Its lime composition increases compatibility with old surfaces, on which its setting, congruity, melding, breathability and durability values are of particular importance.

MAIN USE: Mortero Élite Cal Plus mortar is ideal for restoration work and the creation of rendered elements that will work on both functional and decorative levels, for the restoration of façades and heritage work, new-builds, civil engineering in general, construction, the food industry, the health sector, industry in general, etc. Mainly for use on vertical and horizontal surfaces, as well as surfaces in immersion, including saltwater immersion.

ALWAYS USE WITH ÉLITE ADDITIVES:

- MULTILITE: Silicate additive that provides plasticity, consolidation, open-time workability and an increase in physical/chemical resistance.
- FK-19 Plus: Pure acrylates/polyurethane additive that provides impermeability, plasticity and an increase in

physical/chemical resistance.

HOW TO APPLY: Carefully protect all surfaces that are not to be treated from splashing. The support must be consistent, clean, free of hygroscopic salts, microorganisms, dust, mould-release agents, paint or any other substance that could affect adherence. The base needs to have been duly primed and all possible fissures or cracks in the base, caused by retraction or settling, etc. will need to have been stabilised.

1. Prepare the elite additive mix and add water, in a proportion of 1 litre of additive for every 6 litres of water. Immediately before adding the mortar prime the mineral base using the same solution of elite additive and water that you used for the mix.
2. Mix the mortar with around 5.7 to 6.2 litres of the solution for every 25 kilos of the Élite Cal Plus mortar until you have obtained a homogenous blend, free of lumps, and then go ahead with immediate application, either by hand or by spraying. The indicated range for mix ratios will vary depending on the ambient temperature, absorption of the base and whether or not it is to be applied by hand or using a mortar spraying machine. In each case we recommend using as little as possible of the solution. If cracks or fissures appear after drying this will be because too much liquid has been used. In case of doubts prepare previous samples to determine the ideal ratio.
3. Manual application: Firstly spread a fine coat over the support, pressing down to squeeze any air out and then gradually build up until you obtain the required thickness, up to a recommended maximum of 15-20 cm. For machine applications, spray directly onto the surface until the required thickness has been obtained.
4. After the mortar has been levelled you will have to wait for approx. 1 to 2 hours before you can give it shape, etching, scraping or theming it. The mortar will remain workable for at most 4 to 12 hours following application, although this will vary depending on temperature and humidity conditions.
5. After doing the texturing work leave to dry for 24 hours, in which time the last effects can be added, before going ahead with the finishing work.
6. At singular points, such as structural joints, areas where different materials meet, such as windows, and in general for significant thicknesses when doing volumetric reconstruction and professional theming work, etc, it is recommended that an intermediate mesh be incorporated to reinforce and hold the coat together, increasing both resistance to stresses and shrinkage.
7. When application is complete clean the utensils, the machinery and/or hoses with water immediately after use, before the mortar can go off.

NOTE: This is a thixotropic mortar; if it starts to solidify re-stir it and it will recover fluidity. Under no circumstances add more water. For more information regarding special applications consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD-CONSUMPTION: Approx. 16 Kg/m² of Mortero Élite Cal Plus mortar, plus 0.55 litres of elite additive per centimetre of thickness. Approx. 0.85 litres of elite additive will be consumed for each 25 kg of Mortero Élite Cal Plus.

2.- OPTION B - MORTERO ELITE Extreme

DESCRIPTION: Elite Extreme mortar is a plastering mortar category CS IV and CE marked (more than triples the standard resistance of 6 N/mm², reaching up to 20 N/mm² with proper curing). Standard in white color and granulometries 01 and 0.2, excellent thixotropy that always together with the additives of the elite system, allows the application of large thicknesses for volumetric recomposition, with excellent workability, plasticity and optimized open time for subsequent carving and finishing.

MAIN USE: Elite Extreme mortar is recommended wherever the best possible performance in a CS IV plastering mortar is required. Due to its special composition, it provides high hardness and resistance, for the creation and restoration of horizontal and vertical surfaces, both indoors and outdoors, as well as for immersion. High thixotropic performance, applications from 0.5 cm to 15 cm volume in a single coat. Suitable for the creation of

plaster elements, both functional and decorative, in the restoration of facades and heritage, in new construction, civil works in general, construction, food industry and health sector, industry in general, etc.. mainly in vertical and horizontal surfaces and in immersion even in salt water in special situations such as theming work in general, in aquariums, zoos and the like.

ALWAYS USE WITH ELITE ADDITIVES:

- MULTILITE: silicate additive that provides plasticity, consolidation, open time workability and increases physical/chemical resistances.

- FK-19 Plus: pure acrylate and polyurethane additive, which provides waterproofing, plasticity and increases physical/chemical resistance.

WAY OF APPLICATION: Protect well all surfaces that should not be treated or splashed. The support must be well consolidated and consistent, clean, free of hygroscopic salts, microorganisms, dust, release agents, paint or any other substance that may affect its adhesion. The mineral substrates where it is applied must be properly primed and all possible existing cracks due to shrinkage, settling, etc., must also be stabilized.

1. Prepare the mixture of multilite or FK-19 Plus + water in a proportion of 1 liter of additive for every 5 liters of water. If it is applied over a mineral base, prime it with the same elite + water admixture solution that will be used for its mixing, just before applying the mortar.
2. Knead the mortar from 4.2 to 5.2 liters of solution per 25 kg of elite Extreme mortar, until a homogeneous, lump-free mass is obtained, to proceed with its immediate application, either by hand or sprayed. The indicated range of mixing ratio varies depending on the temperature of the environment, absorption of the base, thicknesses and its use by hand or with a spraying machine. We recommend in each case, to use the smallest possible amount of solution; if after drying it presents cracks it is because too much liquid part has been used, in case of doubt make a previous sample to determine the ideal ratio.
3. For its use by hand: Spread first a very thin coat on the support pressing so that the air comes out, and then build up again until obtaining the required thickness, with a recommended maximum of 15-20 cm.
4. For use with a machine, spray directly until the desired thickness is reached, adjusting the appropriate viscosity just at the beginning of the projection.
5. Once the mortar has been levelled, wait approximately 1-2 hours to be able to give it the required shape or planimetry, trim, scrape, theme, with the maximum period of workability starting from 6-12 hours from its application, variable depending on the thickness applied, the temperature and the ambient humidity.
6. Once the texture works have been carried out, it will be left to dry for 24 hours, time in which the last effects can be carried out, and proceed with the finishes.
7. In special situations or singular points like structural joints, unions between different materials, windows, and in general for great thicknesses in volumetric reconstruction and professional thematization, etc, it is convenient the incorporation in the intermediate part of a reinforcement mesh to reinforce it, increasing the resistance against tensions or dilatations.
8. After the application, clean the tools, machinery and/or hoses with water immediately after use, before the mortar sets.

NOTE: It is a thixotropic mortar, if it loses fluidity, shake it again and it will fluidize. Never add more water. For further details and special applications, consult technical data sheet and/or application guides, and safety data sheet.

CONSUMPTION - AVERAGE YIELD: Approx. 18-20 Kg/m² of elite Extreme mortar + 0.55 l of elite additive per 1 cm of thickness. Approx. 0.85 l of elite additive is consumed per 25 kg of elite Extreme mortar.

With Multilite in hand application:

- For plastering up to 1-1.5cm / thickness: between 4.4l.- 4.6l. of solution / 25kg bag (0.75l.-0.80l./multilite / 25kg bag).
- In applications over 1,5cm: between 4,2l.-4,5l. of solution/bag 25Kg. (0,70-0,75l./multilite/bag 25Kg.)
- Application with spraying machine: between 4,8l.-5l. of solution/bag 25Kg) (0,80-0,75l./multilite/bag 25Kg).

With FK-19 Plus, application by hand:

- For plaster up to 1-1,5cm thickness: between 4,6l.- 4,8l. of solution/bag 25Kg (0,75l.-0,80l./FK-19 P./bag 25Kg).
- In applications over 1,5cm: between 4,4 l. - 4,6 l. /bag 25Kg. (0,70-0,75l./FK-19 Plus/bag 25Kg)
- Application with spraying machine: between 5 l. - 5,2 l. /bag 25Kg) (0,85-0,9l./FK-19 Plus/bag 25Kg)

3.- OPTION A - MULTILITE

DESCRIPTION AND RECOMMENDED USES: Multilite is a modified potassium silicate water-based multifunction concentrate, exclusively for use on mineral surfaces and mortars. It does not alter either transpiration or vapour diffusion and is compatible with humidity/damp. Easy to apply and handle, Multilite provides a considerable binding effect, thanks to its chemical silicification process, by means of which it establishes insoluble chemical bridges with the mineral products that bond Multilite to the mineral surface. Its versatility ensures that Multilite can function as an additive that improves the performance of elite mortars, as a mineral binding primer and, when it has been pigmented using Mixol Oxides, as a mineral glaze. Multilite is used both as a primer, for binding and decoratively for the restoration of façades and heritage work, on new buildings, civil engineering in general, construction, professional thematic work, embossed paving, the food industry, the health sector, industry in general, etc., on vertical or horizontal surfaces and even for immersion in saltwater.

HOW TO APPLY AND AVERAGE YIELD-CONSUMPTION ACCORDING TO FUNCTION:

Carefully protect all surfaces that are not to be treated from splashing, particularly glass, metal and lacquer-finish surfaces... The surface to be covered must be consistent, clean, free of hygroscopic salts, microorganisms, dust, release agents, synthetic paints or any other substance that might affect its adherence. Can be applied at ambient and surface temperatures of 5°C or over.

- Additive for Elite rendering mortars: Multilite allows for the application of thick coats that provide plasticity, binding and open time workability. Add 1 litre of Multilite for every 6 litres of the water to be used in the mixing. Consumption of Multilite is variable, between 0.50 l/m² and 0.60 l/m² for each centimetre of mortar thickness. Consult the data provided in the specifications sheet of the mortar you are going to use.
- Colourless mineral primer - binder: Multilite brings binding power due to the silicification of absorbent mineral surfaces. Multilite, whether undiluted or in a solution of 1:3 with water, can be applied using brushes, rollers or spray guns. The level of dilution and the number of coats will be determined by various factors: porosity, surface absorption, state of degradation, pathologies, etc. As a primer for silicate paints apply an abundant coat in a solution of 1:1 with water. On stone surfaces apply a first coat in a solution of 1:3 with water, plus a second coat in a solution of 1:1 with water. For this use Multilite presents a variable yield, from approx. 3 to 10 m²/l, depending on the type of surface. 24 hours should always be left between coats.
- Binding mineral glaze: Multilite, whether pigmented using Mixol Oxides or the series colours shown on the Fakolith mineral glazes colour chart, is an excellent translucent binding glaze for all types of absorbent mineral surfaces, whether vertical, horizontal or for immersion, in which the pigments are encapsulated in insoluble silicon crystals. In this use Multilite presents a variable yield of approx. 3 to 5 m²/l, depending on the type of surface. For optimum durability the system can be improved by the subsequent application of FK-7 or FK-3 Plus Nano water-repellent protector.

Following application, immediately clean utensils using soapy water. For more information consult the specifications sheet and/or application guidelines and the safety sheet.

3.- OPTION B - FK-7 (CE Marking)

DESCRIPTION: FAKOLITH FK-7 is a concentrated, water-miscible, consolidating water-repellent, micro/nano dispersion, with CE Marking test data, effective against micro-organisms, with penetrating action, colourless and highly breathable. Provides effective protection against environmental influences and the causes and consequences of dampness in absorbent construction materials. The micro/nano dispersion of the FK-7 modified nano silane-siloxanes results in a "dew-drops" water-repellent effect. Once dissolved in potable water the mix is low voc and reacts with the construction element to which it has been applied, producing a water-resistant area, while at the same time allowing for the complete dispersion of water vapour ($SD = 0.02$), presenting excellent resistance to environmental influences and UV rays. Due to its high level of breathability FK-7 will not compromise the correct curing of the base material. Stable with regard to meteorological changes it rejects dirt and grime. Protects against harmful, hygroscopic salt bloom on construction elements and counteracts the appearance of damp patches originating inside walls. Another important function is that it highlights and maintains the natural colours of the surfaces it is applied to. Activates transpiration by drying damp patches and, due to its BioFilmStop technology, FK-7 is also highly resistant to mould and algae. Can be applied to damp surfaces, as it transmits through water. Particularly recommended for concrete structures where, due to its penetrability and protection against damp, it protects by inhibiting corrosion of the internal rebar-reinforcing, in this way prolonging useful life.

BIOFILMSTOP SANITARY TECHNOLOGY: FK-7 is an intelligent water-repellent, treated with BioFilmStop Inhibition Technology, and highly resistant to mould and microorganisms, DIN-UNE EN 15457:2008 ((Aspergillus, Cladosporium, Penicillium, Algae...), as well as bacteria ISO 22196:2011. The products in the BioFilmStop range positively contribute to compliance with (EC) 852/2004, and are manufactured subject to HACCP and GMP (EC) 2023/2006, also notably improving HACCP, food safety and asepsis for the user company. Declaration of Conformity – Health Register FAKOLITH RGSEAA ES-39.005259/T y ROESP E-0043-E.

MAIN USE: FAKOLITH FK-7 is ideal for the waterproofing, conservation, drying and strengthening of almost all porous or absorbent mineral materials, such as natural and artificial stone, concrete, mineral based paints and coatings, absorbent ceramics; and also for wood, interior or exterior and subject to a wide range of climactic conditions, principally on vertical wall surfaces and façades. FK-7 is the ideal water-repellent for restoration processes on surfaces suffering from damp pathologies. Apt for application in drilled rising damp treatments, request additional information. Mainly for use on façades and for rehabilitation, heritage projects, theming, civil engineering, industry in general, the food industry, etc. Limitations: Any type of polished base that lacks capacity for absorption (in these cases use FK-4 Extreme). Extremely alkaline, white or fresh cement bases (in these cases use FK-3 Plus N). Interior or exterior natural stone bases with water lixiviation with surface creep (limited function).

WATER THINNING: Generally speaking concentrated FK-7 should be diluted at a ratio of 1:14. For bases with rising damp, in order to enhance the natural colour of the mineral surface, and also in the case of woods, dilute using potable water, at a ratio of 1:9. Solely mix the quantity that you will be using during the day, given that the mix will only remain stable for around 8-12 hours and should not be used once that time has elapsed.

HOW TO APPLY: Carefully protect all surfaces that are not to be treated from splashing. Following suitable preparation of the surface, apply FK-7 2 or 3 times in a row using brushes, rollers or spray guns, each time on top of the previous coat while it is still wet, and always working from the bottom up. Make sure you clean all utensils immediately after use with water. Only apply the quantity that can be absorbed by the surface to be covered and avoid applications that will leave excess product on the surface. Will resist rain 24 hours after application, although the full water-repellent affect does not occur until several days have passed. Applicable at temperatures of 2-3°C or over. For more information consult the specifications sheet and/or application guidelines, along with the safety sheet.

AVERAGE YIELD: FK-7, when undiluted, provides a yield of approx. 20-60 litres/m², although this may vary considerably depending on type of surface and method of application. Average consumption in solution is approx. 250 ml/m², although this may also vary between 100 and 500 ml/m².

4.- OPTION A - SILICALITH

PROPERTIES: SILICALITH is a silicate emulsion Low Voc paint, with the latest generation of technological water

repellent modifications, mainly for finishing and protection of mineral bases in exteriors and interiors. Formulated with sustainable components that respect the environment and human health, free of formaldehyde, heavy metals, phthalates, alkylphenolethoxylates (APEO free) and ammonia. Its innovative formula based on special dispersions of modified alkaline silicates is reinforced with nano silanes that provide optimized moisture management and long-term durability. It does not crack, flake or swell under the effect of humidity. It does not form a film, and has excellent chemical adhesion on mineral bases since SILICALITH becomes part of the mineral substrate thanks to its silicification petrification process, which also gives it antistatic properties and activates transpiration. Excellent resistance and stability of the colors to U.V. rays, heat and yellowing, thanks to the exclusive use of high quality oxide pigments. Excellent resistance to gas pollution and acid rain. Resistant to weathering. Classification according to DIN EN 13300 and other technical data:

- Class 1 wet scrub resistance on mineral base and Class 2 on non-mineral base (ISO 11998).
- Opacity and coverage Class 1 for a yield of up to 5 m²/l (ISO 6504-3), variable according to texture, colors and absorption values of the base.
- Mineral matt finish G3 - Reflectance grade <5 GU (EN ISO 2813) and fine particle size (EN 21524).
- Water vapor permeability SD ≤0.01 m Kg/m² (Class V1), DIN EN ISO 7783-2.
- High resistance to liquid water, with low permeability according to EN 1062-3, with w=0.09 Kg/m²h^{0.5} (Class W3).
- Neutral odor and Low Voc.
- It has no biocides as its inorganic and alkaline chemical nature gives it a natural antimicrobial activity in the container.
- Estimated Euroclass fire resistance A2-s1d0 according to EN 13501-1.

COLORS: Available in white and rust colors from the NCS Exterior color chart. Pigmentable up to 3% with Mixol oxide colors.

MAIN USE: SILICALITH is generally applied for facades and heritage, in interiors and exteriors, and for professional theming and high decoration, on cement or concrete plaster, natural or artificial porous stone, sand and lime mortars, brick walls, mineral paints, fiber cement boards, gypsum surfaces and/or Pladur® (primed with FK-16). Always respect the correct curing of fresh mortars. Unsuitable surfaces: Plastics, wood, plastic paints, oil paints, enamels and lacquers.

WAY OF APPLICATION: Protect well all surfaces that should not be treated or splashed. Applicable between 5°C and 35°C of ambient and base temperature. Apply Silicalith on clean, dry, cured, properly consolidated bases, free of antiadherent substances, salts and microorganisms. Applicable with brush, roller or airless, always wet on wet in the same coat. In general apply 2 coats of paint.

Silicate paints penetrate the mineral base by silicification, becoming a mineral part of the substrate. This characteristic means that the colors cannot be flat and homogeneous, and their mineral appearance will depend on their penetration into the base, on the form and quantity of paint applied, on the environmental conditions, and on the experience of the application team.

SILICALITH as a silicate dispersion paint, is a water based product, whose viscosity can vary depending on colors, and the temperature of the environment. It can be adjusted by lowering the viscosity of the paint, adding up to a maximum of 5-10% of Multilite, mixing with the paint in an appropriate way until the ideal viscosity is obtained. It is especially recommended if the viscosity is high because of the formulated color, or because of the temperature of the environment of the base itself or because of the texture or absorption values of the base. It is recommended to avoid painting in direct sun exposure and at times with high temperatures, especially in summer in hot countries. For more details consult technical data sheet and/or application guides, and safety data sheet.

PRIMERS:

In bases with different textures it is always advisable to anchor with Silicalith Texture (3-6 m²/l.), to regularize and homogenize the appearance of the surface texture.

In general we recommend as a primer for mineral bases, Multilite colorless undiluted, (3-6 m²/l.). Depending on the absorption of the base and the conditions of the environment will be necessary at least 1 coat for low absorbent surfaces and up to 2 coats on absorbent surfaces and high temperatures of the environment and / or base. Allow 12-24 hours between coats.

As an alternative to the previous case, it is also very common and advisable to use as a base coat a first coat of primer with SILICALITH paint in the chosen color, dissolved 1:1 with Multilite colorless (8-10 m²/l. of solution). Never add water.

In facades with high exposure to pathological or environmental humidity, it is advisable to replace the Multilite primer with any of the breathable water repellents FK-7 or FK-3 Plus (40-50 m²/l. of solution), applied by saturation from bottom to top, and dissolved in water 1:14, allowing to dry 24-48 hours before painting.

For interior plaster bases, prime with FK-16 in 1:3 solution in water (8-10 m²/l. of solution).

AVERAGE YIELD: SILICALITH has an approximate yield of 3-5 m²/l. in 2 coats. Depending on the way of application, texture and absorption of the base and environmental conditions, the consumption can vary sensibly.

4.- OPTION B - SILICALITH FotoActive

PROPERTIES: SILICALITH FotoActive is a silicate emulsion Low Voc photocatalytic paint, with the latest generation of technological water repellent modifications, mainly for finishing and protection of mineral bases in exteriors and interiors. Formulated with sustainable components that respect the environment and human health, free of formaldehyde, heavy metals, phthalates, alkylphenoethoxylates (APEO free) and ammonia. Its innovative formula based on special dispersions of modified alkaline silicates is reinforced with nano silanes that provide optimized moisture management and long-term durability. It does not crack, flake or swell under the effect of humidity. It does not form a film, and has excellent chemical adhesion on mineral bases since SILICALITH becomes part of the mineral substrate thanks to its silicification petrification process, which also gives it antistatic properties and activates transpiration. Excellent resistance and stability of the colors to U.V. rays, heat and yellowing, thanks to the exclusive use of high quality oxide pigments. Excellent resistance to gas pollution and acid rain. Resistant to weathering. Classification according to DIN EN 13300 and other technical data:

- Class 1 wet scrub resistance on mineral base and Class 2 on non-mineral base (ISO 11998).
- Opacity and coverage Class 1 for a yield of up to 5 m²/l (ISO 6504-3), variable according to texture, colors and absorption values of the base.
- Mineral matt finish G3 - Reflectance grade <5 GU (EN ISO 2813) and fine particle size (EN 21524).
- Water vapor permeability SD ≤0.01 m Kg/m² (Class V1), DIN EN ISO 7783-2.
- High resistance to liquid water, with low permeability according to EN 1062-3, with w=0.09 Kg/m²h^{0.5} (Class W3).
- Neutral odor and Low Voc.
- It has no biocides as its inorganic and alkaline chemical nature gives it a natural antimicrobial activity in the container.
- Estimated Euroclass fire resistance A2-s1d0 according to EN 13501-1.

PHOTOACTIVE TECHNOLOGY: SILICALITH FotoActive contains nano-particles of photocatalytic titanium dioxide that, as a result of the action of sunlight, contributes to the destruction of contaminants, such as smells, greases, VOC, micro-organisms, NOx, etc. that may come into contact with the surface, transforming them into CO₂ and water. This process allows for an improvement in the condition of the ambient air and also has a beneficial environmental impact, due to its decontaminating action, while at the same time exercising a self-cleaning effect on the surface.

COLORS: Available in white and rust colors from the NCS Exterior color chart. Pigmentable up to 3% with Mixol oxide colors.

MAIN USE: SILICALITH FotoActive is generally applied for facades and heritage, in interiors and exteriors, and for professional theming and high decoration, on cement or concrete plaster, natural or artificial porous stone, sand and lime mortars, brick walls, mineral paints, fiber cement boards, gypsum surfaces and/or Pladur® (primed with FK-16). Always respect the correct curing of fresh mortars. Unsuitable surfaces: Plastics, wood, plastic paints, oil paints, enamels and lacquers.

WAY OF APPLICATION: Protect well all surfaces that should not be treated or splashed. Applicable between 5°C and 35°C of ambient and base temperature. Apply Silicalith on clean, dry, cured, properly consolidated bases, free of antiadherent substances, salts and microorganisms. Applicable with brush, roller or airless, always wet on wet in

the same coat. In general apply 2 coats of paint.

Silicate paints penetrate the mineral base by silicification, becoming a mineral part of the substrate. This characteristic means that the colors cannot be flat and homogeneous, and their mineral appearance will depend on their penetration into the base, on the form and quantity of paint applied, on the environmental conditions, and on the experience of the application team.

SILICALITH FotoActive as a silicate dispersion paint, is a water based product, whose viscosity can vary depending on colors, and the temperature of the environment. It can be adjusted by lowering the viscosity of the paint, adding up to a maximum of 5-10% of Multilite, mixing with the paint in an appropriate way until the ideal viscosity is obtained. It is especially recommended if the viscosity is high because of the formulated color, or because of the temperature of the environment of the base itself or because of the texture or absorption values of the base. It is recommended to avoid painting in direct sun exposure and at times with high temperatures, especially in summer in hot countries. For more details consult technical data sheet and/or application guides, and safety data sheet.

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For interior plaster bases, prime with FK-16 in 1:3 solution in water (8-10 m²/l. of solution).

AVERAGE YIELD: SILICALITH FotoActive has an approximate yield of 3-5 m²/l. in 2 coats. Depending on the way of application, texture and absorption of the base and environmental conditions, the consumption can vary sensibly.

IMPORTANT NOTE:

This implementation guide is a general recommendation. On particular cases there may be additional recommendations or variations. If you have any doubts or would like a personalised technical prescription, please contact us using the [contact form](#) on this website.

APPLICATION GUIDES LEGAL ADVICE:

FAKOLITH CHEMICAL SYSTEMS, S.L.U. (FCS) applies a quality management system, and manufactures under HACCP for the food industry and health sectors, among others. Fakolith is certified by TÜV Rheinland Cert GmbH for ISO 9001: 2015 standard. FCS is a company of the FAKOLITH group in Spain, dedicated to developing, manufacturing, importing and commercializing paints and special industrial treatments. As our corporate purpose reflects, the legal responsibility for the application of the products is always out of our reach. FCS has a policy of R.C. of products with international coverage, except USA and Canada, of up to three million euros for damages caused by possible manufacturing defects.