

SURFACE PREPARATION AND MATERIAL APPLICATION

KEIM MINERAL PAINTS

PRE-TREATMENT

KEIM Mineral Paints are different to conventional film forming paints. Mineral paints are made with potassium silicate and chemically bond to the substrate rather than simply forming a film on the surface. They are water based, rather than solvent based, therefore safe to use and odourless. All tools and brushes can be simply cleaned in water. KEIM Mineral Paints do not require any specialist PPE (Personal Protective Equipment) or application equipment.

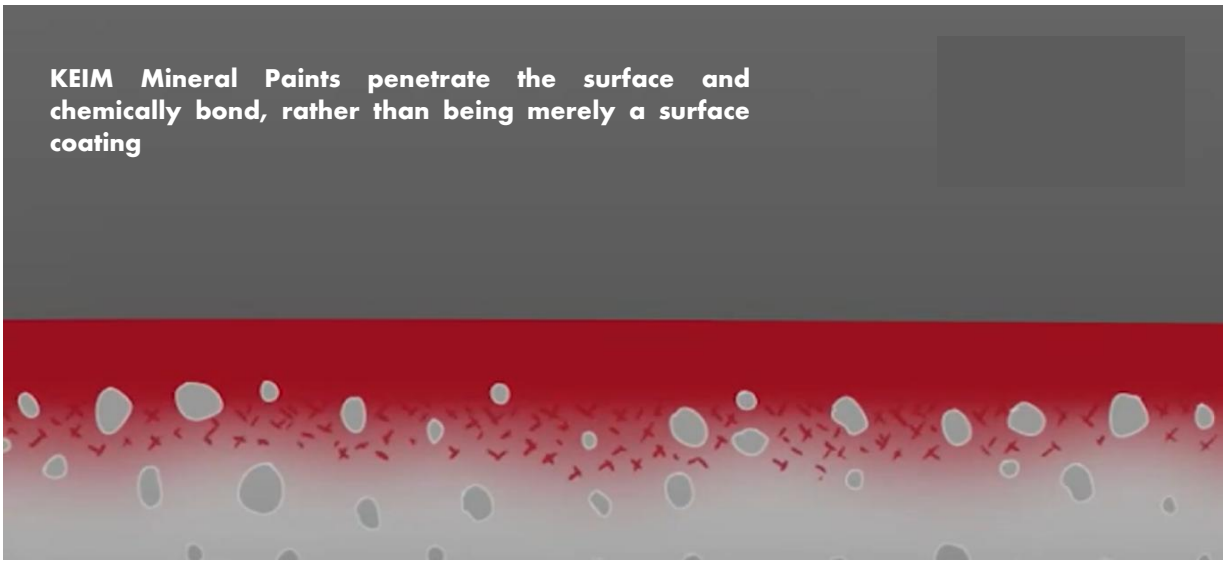
Surfaces should always be properly prepared prior to decoration, or redecoration.

Effective surface preparation and application will significantly extend the longevity and protection of the painted system.

This booklet covers:

- Surface preparation for unpainted surfaces
- Surface preparation for previously painted surfaces
- Surface preparation for cracks and crazing
- General preparation guidelines
- Material storage
- General application guidelines
- Material mixing
- Paint application

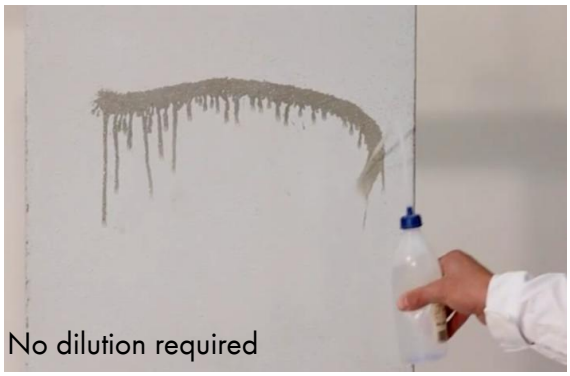
For KEIM materials suitable for the appropriate preparation please see our brochure '**PRE-TREATMENT**'.

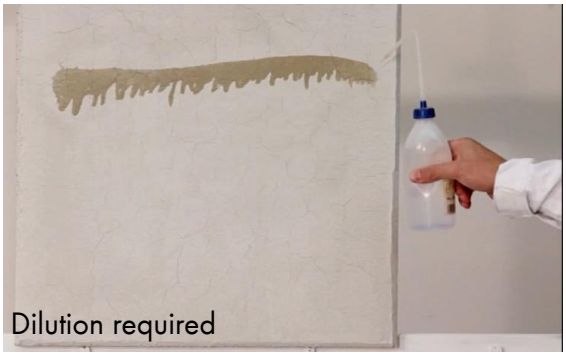


SURFACE PREPARATION – UNPAINTED SURFACES

SURFACE POROSITY -

It is important to establish how porous the substrate is to ascertain whether a first coat of Dilution/Fixativ may be required to equalise absorption. It is possible to test the absorbance with a spray water bottle, long runners, as in the first picture, indicate low absorbency, whereas short thick runners, like the second picture, show high absorbency and would require an initial Dilution/Fixativ coat. If the surfaces are too absorbent then the applied paint might be too quickly absorbed, preventing the proper chemical reaction from being able to take place resulting in reduced product performance or an uneven colour finish.


No dilution required


Dilution required



CHALKING/DUSTING SURFACES –

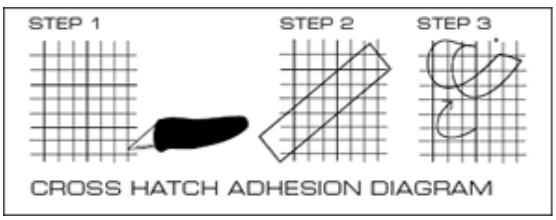
Dusting or chalking surfaces leave a residue on the hand when rubbed across the surface and these would also require a Dilution/Fixativ coat. If there is a dust or chalk residue on the surfaces then the paint will bond to the particles rather than the underlying substrate which may affect the product performance.

A first coat of Dilution/Fixativ should always be applied by brush or spray and worked well into the surface.

SURFACE PREPARATION – PREVIOUSLY PAINTED SURFACES







Previously painted surfaces can be decorated using KEIM Mineral Paints, however they must be prepared properly to ensure good adhesion and a long life redecoration.

All loose, flaking and unstable paint materials must be identified and then thoroughly removed using stiff brushes and broad bladed scrapers to get back to a sound edge; these edges should then be feathered in. Ensure that any paint materials left remaining and the underlying substrate are sound and adhering well.

Any gloss or shiny surfaces should be thoroughly flatted down using sand or emery paper to create a good key.

If underlying paint coatings are not sound then these may flake or peel, resulting in the newly applied coatings also being removed.

To conduct an adhesion test on previously painted surfaces cut small lines through the existing paint with a sharp blade, press cellulose/adhesive tape firmly across the cuts and then firmly pull off the tape. If the paint comes off, it is unsound and should be removed. Repeat at random in a number of areas to test the surface.

SURFACE PREPARATION – CRACKS & CRAZING

Any cracks, or where there is a need to equalise the surface, should be filled using a mineral based filler.

It is important to use a filler which is mineral based, rather than acrylic or gypsum, as this ensures that the repair has similar porosity to the surrounding mineral substrate and therefore the paint is equally absorbed and performs the same over the entire surface. Mineral based fillers dry slowly which ensures that they retain some flexibility, where as some 'quick dry' acrylic materials dry out extremely fast but then become brittle and are likely to crack again in the future.





Previously painted surfaces or surfaces which have fine hairline cracks or textural variations may require the application of either :

KEIM GROB OR KEIM CONTACT PLUS/GROB - These products have coarse grains which fill and level the surface giving a more even finish for the application of the desired system.

Further details for these products are in the application and mixing section.

All new and repaired surfaces should be allowed to dry out for a minimum period of 15 days prior to the application of KEIM Mineral Paints.

GENERAL SURFACE PREPARATION

It is important to treat any surfaces affected by mould, fungal or lichen growth and to kill algae spores prior to redecoration. If not properly treated then growth could reoccur under the paint coating.

KEIM Mineral Paints should be applied onto wind dry surfaces where the moisture content of the surface (to a depth of approximately 5mm) should be no greater than 18% by volume. A moisture meter (example below) may be used to give a qualitative reading – if the reading is in the green zone decoration may proceed.

If there is too much moisture in the surface this prevents the paint being able to penetrate into the substrate and effectively form a chemical bond, resulting in possible flaking of the paint. Once the paint has been properly applied and allowed to chemically bond, moisture vapour within the substrate will be able to pass through the coating without causing damage.



All surfaces must be thoroughly washed down with clean cold water to remove all surface dirt and dust before decoration. Once all surfaces are clean, sound, wind dry, dust free and free from all surface contaminants, decoration using KEIM Mineral Paints may proceed.

For details of all KEIM Mineral Paints pretreatment products and advice on how to deal with conditions such as staining or effloresecent salts please see our Pretreatment brochure.



MATERIAL STORAGE

KEIM Mineral Paints are supplied in either metal or plastic containers. All materials should be checked once received to ensure that the containers are intact, then stored appropriately until required.







Materials should be stored in a cool dry area and protected from frost. If the materials freeze then this is likely to damage the chemical composition of the paint and affect its performance.

The shelf life of most KEIM Mineral Paints is approximately 12 months, if kept cool, but frost free in tightly closed containers.

GENERAL APPLICATION GUIDELINES

Before mixing and applying any paint materials ensure that:

- Surfaces are properly prepared
- Recommended temperature and weather conditions are observed

Important Note - Materials must not be applied at temperatures below 5ºC nor those in excess of 30ºC, nor if it is raining, or if there is an immediate likelihood of rain

MATERIAL MIXING

Some KEIM Mineral Paints products require the addition of a Dilution/Fixativ. This allows the binder to penetrate more effectively into the substrate. Not all products require this and usually top coats are applied undiluted. The guide below is a rough reference guide but more detailed information and dilution percentages can be found in the relevant product technical data sheets;

The guide also indicates which products need a different first coat if the surfaces are previously painted.

	Smooth Surfaces	**Rough Surfaces**	**Previously Painted**
KEIM Granital	Minimum 2 coat system, dilution required in 1st coat	Minimum 2 coat system, dilution required in both coats	1st coat should be KEIM Granital Grob (with dilution)
KEIM Soldalit/ KEIM Soldalit-ME	Minimum 2 coat system, dilution not required in either coat	Minimum 2 coat system, dilution recommended in both coats	Not necessary but KEIM Soldalit Grob available for texture (without dilution)
KEIM Concretal W	Minimum 2 coat system, dilution required in 1st coat	Minimum 2 coat system, dilution required in both coats	1st coat should be KEIM Concretal Grob (with dilution)
KEIM Concretal C	Minimum 2 coat system, dilution not recommended in either coat	Minimum 2 coat system, dilution not recommended in either coat	Grob not required/available
KEIM Ecosil-ME	Minimum 2 coat system, dilution not recommended in either coat	Minimum 2 coat system, dilution not recommended in either coat	1st coat should be KEIM Ecosil Grund (without dilution)
KEIM Optil	Minimum 2 coat system, dilution not required in either coat	Minimum 2 coat system, dilution not required in either coat	Not necessary but KEIM Optil Grob available for texture (without dilution)

MATERIAL MIXING

When adding Dilution/Fixativ do not exceed the recommended amounts. Always ensure that materials are accurately measured and mixed well, preferably using a mechanical mixer. We recommend to thoroughly mix paint materials even if Dilution is not added prior to application.



The percentage of dilution recommended is an 'added by weight' amount rather than a ratio, as a rule of thumb 20% dilution for 5 kg of paint equals 1 lt Dilution/Fixativ and 20% dilution for 25 kg paint equals 5 lt Dilution/Fixativ.

Important Note - KEIM Mineral Paints should not be diluted using water.



Once materials have been mixed we recommend trying to use the mixture within the same working day, however if they have to be left, ensure that they are well covered and thoroughly re-mixed before applying.



PAINT APPLICATION

APPLICATION OF DILUTION / FIXATIV

Where a first coat of Dilution/Fixativ is required onto unpainted surfaces due to chalking or high porosity, it should be applied by brush and worked well into the surface. Application by airless spray is also possible. Once applied surfaces should be left for a minimum period of 12 hours before any further materials are applied.



APPLICATION OF KEIM GROB / KEIM CONTACT PLUS

Materials must be thoroughly mixed before using, adding the dilution where required. For best results and deeper crack filling we recommend applying by brush, most effectively in a cross ways direction. Application by roller is also possible. Once applied surfaces should be left for a minimum period of 12 hours before any further materials are applied.

APPLICATION OF PAINT MATERIALS

Materials should be thoroughly mixed and applied by either brush, roller or professional airless spray. A minimum period of 12 hours should be allowed between coats.





PAINT APPLICATION

IMPORTANT APPLICATION INSTRUCTIONS –

- Decoration should always be taken back to a natural breakline and a wet-edge be maintained at all times. It is not good practice to 'cut in' and work wet materials into dry.
- Ensure that materials are not applied in temperatures below 5°C nor those in excess of 30°C, nor if it is raining, or if there is an immediate likelihood of rain.
- Surfaces not being decorated should be suitably protected and any splashes or spillages should be removed immediately using water. Particular note needs to be taken of this in respect of KEIM onto glass or shiny surfaces, as it has a slight etching effect if allowed to dry hard
- Mineral paints need to properly chemically bond to the substrate and therefore it is important to observe the 12 hours, even if the paint appears 'dry' after only a few hours. Different application techniques will deliver different paint finishes and slight different consumptions rates and we can supply test samples for customers to ascertain the desired finish and calculate material consumption.





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