

KEIM MINERAL PAINTS

CONCRETE SURFACES AND PAINT SYSTEMS



KEIM MINERAL PAINTS

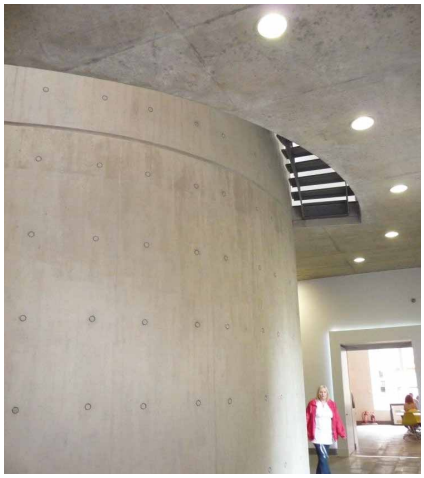
KEIM Mineral Paints were developed over 140 years ago and are used globally to provide extremely long lasting, protective and durable coatings with a reputation for being the best paints in the world.

KEIM paints penetrate and chemically bond with the mineral substrate onto which they are applied, becoming an integral part of the surface, whereas oil based paints merely form a skin on the surface. KEIM Mineral Paints are natural, water-borne liquid silicate paints which produce an extremely durable, colourfast, sustainable protective finish with high vapour permeability, which work in harmony with the environment.

KEIM Mineral Paints was established in the UK in 1987.

Offering a wide range of KEIM products including pre-treatments, external and internal paints, renders, concrete repair systems, and mineral restoration materials, KEIM Mineral Paints are the UK's acknowledged experts in mineral paints, renders and repair systems. KEIM Mineral Paints provide a technical and support service encompassing project specifications, application and colour advice to a diversity of projects, from historic to modern, restoration to new build, private and public. To date, KEIM Mineral Paints have been applied on over 15 million square metres of surfaces within the UK.

KEIM – Unparalleled performance and durability.





WHAT ARE KEIM MINERAL PAINTS ?

Environmentally Friendly -

KEIM Mineral Paints are water borne, odourless, non-toxic and manufactured with natural ingredients using a low energy manufacturing process. KEIM Mineral Paints contain neither solvents nor any petro-chemical derivatives, are inherently non-combustible and do not give off any toxic gases. Over their entire life cycle from raw material extraction to production, processing and ultimate disposal, mineral paints have an excellent environmental profile.



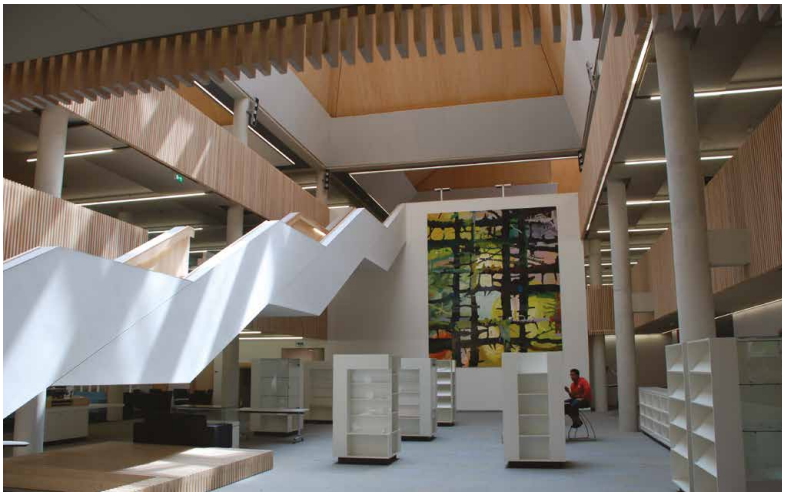
Durable -

Mineral paint systems are based upon penetration (silicification) of the binder into the substrate. A strong, permanent bond is created between the paint and the underlying substrate (e.g. render, natural stone, concrete). This potassium silicate binder is highly resistant to weathering, ensuring an extremely long-life protective finish, reducing the frequency of re-decoration cycles. KEIM Mineral Paints do not flake and the binder does not disintegrate under the effect of UV light. They are resistant to acid rain and industrial pollution.



Cleanliness -

KEIM Mineral Paints have no residual electrostatic charge, unlike oil based paints, and therefore do not attract dust. Over time they remain cleaner than oil based paints. The silicate structure is highly stable and able to resist acid and alkali attack, while the inherent alkaline nature of KEIM Mineral Paints means they are resistant to the growth of fungi and algae spores.





Colour stability -

KEIM Mineral Paints contain exclusively high-quality, lightfast, mineral pigments and binders which exhibit the greatest UV resistance of all paint systems, and are highly weather-resistant. All KEIM colours are unaffected by weathering and UV radiation, ensuring no colour fade with the passage of time. Having a bright matt appearance, the crystal structure of KEIM Mineral Paints gives a high level of light reflectance compared to oil based film forming paints of a similar colour.



Incombustible -

KEIM Mineral Paints are inherently non combustible, do not support the spread of flame and give off no noxious emissions due to their inorganic composition. Mineral paints are therefore ideal for use in safety critical public areas such as underground stations and tunnels, airports, schools and flats.

Breathable -

The micro-crystalline nature of the KEIM coating system creates finite spaces between adjacent crystals, which are large enough to allow the free passage of vapour, but small enough to prevent the ingress of driven rain. This imparts the KEIM Mineral Paint system with high water vapour permeability. This high breathability enables moisture vapour contained in building structures to be quickly released unhindered into the environment, avoiding moisture build up between coating and substrate, and preventing damage to the surface and building structure resulting from trapped moisture.



CONCRETE SURFACES

Concrete is an extremely popular building material and is used throughout the UK for its structural strength and cost effectiveness.

KEIM's concrete mineral paints provide beautiful flat matt mineral finishes, as well as being extremely durable, and offer a high degree of protection to concrete. Unlike conventional paints, KEIM Mineral Paints become an integral part of the substrate, rather than merely a surface coating, which gives the best possible longevity and protection.



CONCRETE PRODUCT OPTIONS:



CONCRETE REPAIR



KEIM CONCRETAL W



KEIM CONCRETAL C

In the current design and construction climate, architectural exposed concrete features have become increasingly popular requirements for clients and specifiers, creating a need to supply concrete columns, soffits and other surfaces to a specific standard, finish and colour. The use of exposed concrete allows the thermal mass of the concrete to help control heating and cooling of the building, incorporating efficiency and sustainability in design.

Due to the inherent nature of concrete and the practical limitations of construction, variations in texture, colour and appearance often occur, despite effective specification, planning and execution.

KEIM Mineral Paints manufacture a unique product, KEIM Concretal Lasur, which is the ideal solution for unifying uneven or variable concrete finishes and can be used to ensure that the required finish can be achieved to the client's or specifier's standard.

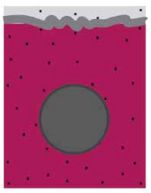


KEIM CONCRETAL LASUR



KEIM CONCRETAL-BLACK

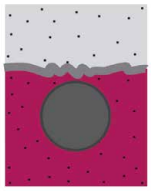
LEVELS OF REINFORCED CONCRETE PROTECTION



GOOD CONCRETE WITH LOW CARBONATION

REQUIRES WEATHERING PROTECTION
Mineral paints consolidate the surface and offer long term protection from weathering. Protection can be futher enhanced by application of a water repellent primer.

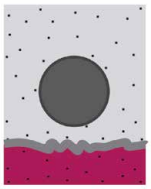
PRODUCTS
KEIM Concretal W
KEIM Concretal Lasur
KEIM Silan Primer / KEIM Silan 100 where additional water-repellency required



CARBONATION ZONE IS VERY CLOSE TO THE REINFORCEMENT

REQUIRES CO_2 PROTECTION
The concrete needs to be protected to prevent CO_2 penetration. All cracks and blowholes must be completely filled prior to coating.

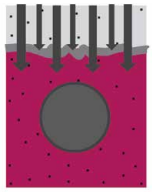
PRODUCTS
KEIM Concrete repair system
KEIM Concretal C
KEIM Silan 100 for additional water-repellency



REINFORCEMENT ALREADY IN CARBONATED AREA

REQUIRES WATER PROTECTION
Surfaces require a highly water repellent coating to prevent the ingress of water and high water vapour permeability from inside to out to ensure concrete remains dry, protecting the steel reinforcement.

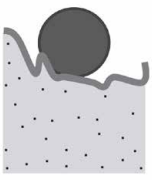
PRODUCTS
KEIM Concretal W
KEIM Concretal C
KEIM Silan 100
KEIM Concretal Lasur & KEIM Silan 100



PROTECTION FROM CHLORIDE SALTS

REQUIRES CHLORIDE PROTECTION
Chloride salts are transported into concrete by water. The concrete needs protection from chloride contaminated water, ensuring that the concrete remains dry, preventing chlorides already present within the concrete becoming active. Good water vapour permeability ensures concrete remains dry.

PRODUCTS
KEIM Concretal W
KEIM Concretal C
KEIM Silan 100



SPALLED CONCRETE AND EXPOSED REINFORCEMENT

REQUIRES CONCRETE REPAIR AND ADDITIONAL COVERING
Surfaces should be repaired and re-instated with KEIM concrete repair materials, then decorated with a paint system offering weathering protection.

PRODUCTS
KEIM Concrete repair system
KEIM Concretal W
KEIM Concretal Lasur
KEIM Silan Primer / KEIM Silan 100 for additional water-repellency

KEY



Carbonated concrete
Non-carbonated concrete



Carbonation end
Steel reinforcement

KEIM CONCRETE REPAIR

The KEIM Concrete Repair range offers a complete selection of materials for cleaning, reinstatement and covering/repair of concrete substrates. Products can be used individually or as a complete system as required.

KEIM Concrete Cleaner -

Acidic cleaning concentrate used to remove contamination and release agents from concrete surfaces.

KEIM Concretal MKH -

Single component, polymer modified cement corrosion protection and bonding bridge material. Active corrosion protection for steel reinforcement and protection against chlorides in the context of concrete repair.

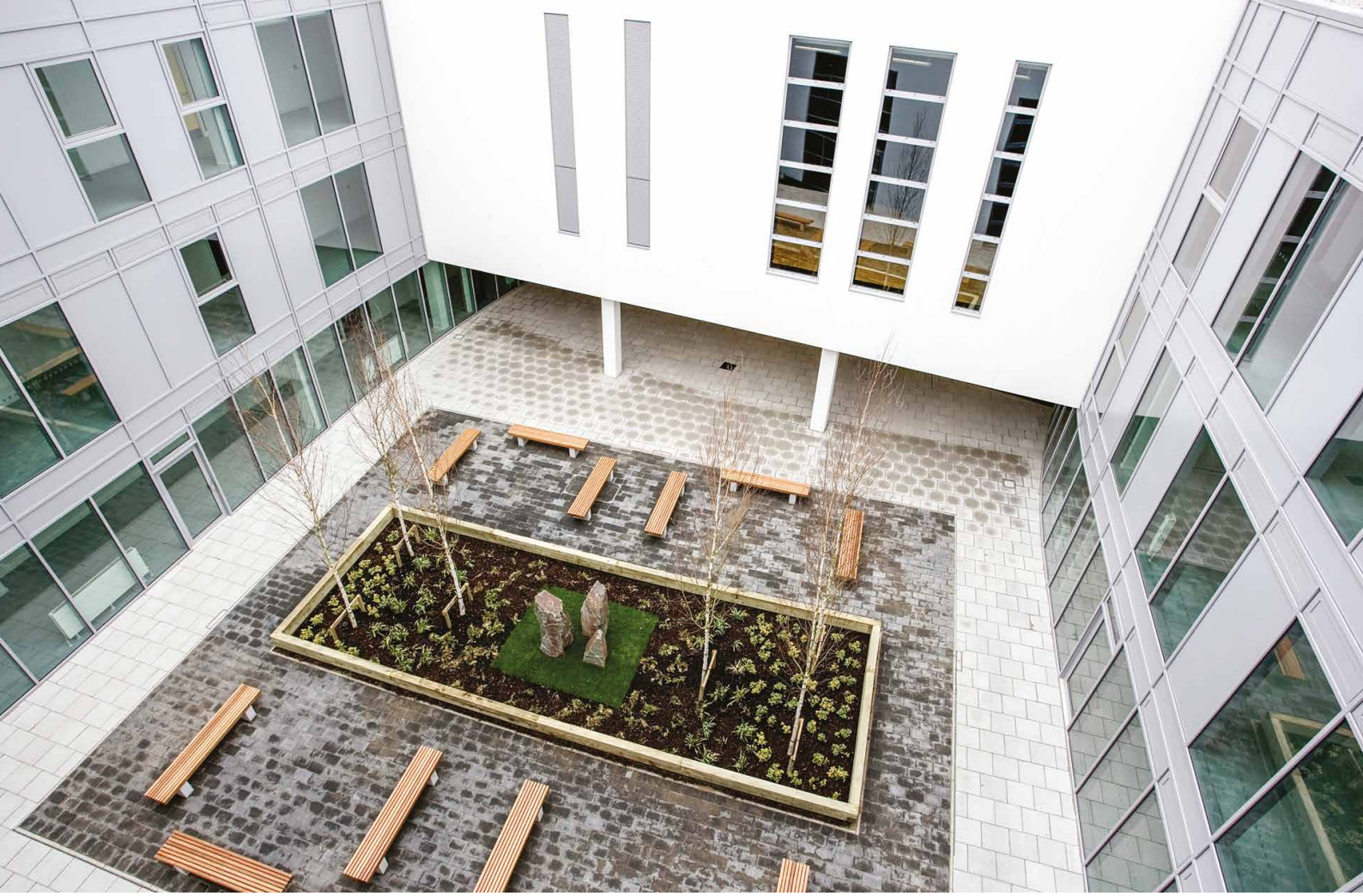
KEIM Concrete Repair Mortar -

Cementitious, polymer modified repair mortar designed for repair work to concrete surfaces. Hardens without shrinkage or cracking and provides carbonation resistance. Should be applied in thicknesses from 0.5-50mm.

KEIM Fine Finishing Mortar -

Cementitious repair mortar with a fine grain size to enable smooth finishes and detail repairs to be achieved. Should be applied in thicknesses from 1-5 mm.





KEIM CONCRETAL®-W

WEATHERING PROTECTION

KEIM Concretal W is a water repellent sol-silicate paint formulated for protection of concrete surfaces against weathering and water.

KEIM Concretal W has all of the benefits of a classic mineral paint, producing a lightfast mineral matt surface finish, exhibiting minimal soiling due to its antistatic properties.

Manufactured from waterglass and natural earth oxides, KEIM Concretal W is inherently compatible with concrete substrates and forms a strong permanent bond between the paint and concrete.

KEIM CONCRETAL®-W TECHNICAL INFORMATION

1 Field of application

For all in-situ and precast concrete elements and structures, blockwork, lightweight concrete, asbestos cement and cementitious building boards.

2 Product properties

- Water vapour permeable
- Non film forming and micro-porous
- Extremely durable
- Colourfast
- Resistant to mould and fungal growth
- Free from solvents and biocides
- Non flammable - A2-s1, d0
- Optimised for concrete surfaces
- Cradle to Cradle Certified®

Colour shades
White and in accordance with the KEIM Exclusiv and Avantgarde colour swatches.

KEIM Concretal W s_d: ≤ 0.01 m

VOC Content: 0-2g/l VOC

3 Application instructions

Substrate preparation
Highly absorbent or friable substrates should be treated with KEIM Concretal Dilution. A base coat of KEIM Concretal Grob (textured finish) is required for previously painted substrates and surfaces which have repaired or filled areas.

Application
Onto unpainted surfaces KEIM Concretal W should be applied as a two coat system, the first coat to be diluted with up to 10% by weight KEIM Concretal Dilution and applied by brush or roller, with a minimum period of 12 hours between coats

For previously painted surfaces KEIM Concretal Grob should be used as a first coat (diluted 10% with KEIM Concretal Dilution as detailed above).

Consumption
Approx. 0.4kg/m² KEIM Concretal W and 0.04lt/m² KEIM Concretal Dilution for a smooth surface.
Consumption rates are offered for guideline purposes only and are quoted for smooth concrete surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred to for specific rates.

Cleaning of tools
Clean immediately after use with water.

4 Packaging

5kg & 25kg containers (colours)
5kg & 18kg containers (white)

CERTIFIED
cradle to cradle
SILVER

KEIM CONCRETAL®-C

CO_2, WATER & CHLORIDE PROTECTION

KEIM Concretal C is a waterproof sol-silicate based paint formulated specifically to give protection to concrete against carbonation and chlorides.

Carbonation is a major factor in concrete decay, caused by CO_2 from the atmosphere reducing the alkalinity of concrete, which in turn allows the reinforcing steel to become susceptible to attack by water and oxygen, resulting in corrosion of the steel and spalling of the concrete.

KEIM Concretal C protects concrete from penetration of CO_2 from the air, protects from corrosion and frost damage due to its elevated water repellence and from external chloride corrosion due to the absence of water movement.

KEIM Concretal C protects against all causes of decay in concrete, including carbonation, weathering, water absorption and chloride corrosion.



KEIM CONCRETAL®-C TECHNICAL INFORMATION

1 Field of application

For use on most concrete surfaces and mineral substrates. Offers water repellence, high carbonation protection, vapour permeability and lightfast colour pigmentation.

Complies with DIN standard DIN EN 1504-2 sections 1.3, 2.2 and 8.2.

2 Product properties

- Water vapour permeable
- Extremely durable
- Colour fast
- Carbonation protection
- Solvent free
- Highly obliterative

Colour shades
White and in accordance the KEIM Exclusiv Palette with specials available.

Resistance to carbonation: s_d (CO_2) = 200 m

Resistance to vapour diffusion: s_d (H_2O) = 0.1m

Water absorption coefficient: W = $20x10^{-3}$ kg/m^2 h $^{0.5}$

VOC Content: 0-8g/l VOC

3 Application instructions

Application
KEIM Concretal C should be applied as a two coat system applied by brush or roller, working well into all surfaces, with a minimum period of 12 hours between coats.

Consumption
Approx. 0.3kg/m^2 KEIM Concretal C for a smooth surface.

Consumption rates are offered for guideline purposes only and are quoted for smooth concrete surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred to for specific rates.

Cleaning of tools
Clean immediately after use with water.

4 Packaging

5kg & 20kg containers



KEIM CONCRETAL®-LASUR

Concrete substrates can exhibit wide variations in both colour and shading resulting from factors such as different rates of hydration, different types of shuttering, varying rates of pour and inconsistency of materials. Add to this the need to undertake localised repairs, the resultant visual appearance can vary considerably from both the original concept and/or approved sample elements.

The use of KEIM Concretal Lasur enables specifiers and contractors to overcome these potential problems and to achieve concrete surfaces with a consistent quality appearance.

KEIM Concretal Lasur is a low pigmentation colour wash which acts as a stain that penetrates and bonds to the surface of concrete, equalising colour variations whilst maintaining the structure and appearance of concrete.

KEIM Concretal Lasur equalises unacceptable variations in colour and finish of concrete, hides unsightly repairs, reduces surface dusting and increases light reflectivity. KEIM Concretal Lasur is available in a wide range of colours and degrees of opacity, and is tailored to individual requirements.

KEIM CONCRETAL®-LASUR TECHNICAL INFORMATION

1 Field of application

In-situ and precast concrete walls, soffit elements and structures, blockwork, lightweight concrete, asbestos cement and cementitious building boards.

2 Product properties

- Water vapour permeable
- Non film forming and micro-porous
- Unifies colour
- Non flammable
- Free from solvents and plasticisers
- Resistant to mould and fungal growth
- Cradle to Cradle Certified®

Colour shades
White and in accordance the KEIM Exclusiv Palette with specials available.

KEIM Concretal Lasur s_d: ≤ 0.01m

VOC Content: 0-1g/l VOC

3 Application instructions

Substrate preparation
All loose, flaking and unstable material must be identified and then thoroughly removed (not suitable for previously painted surfaces), all surfaces must be thoroughly washed down with clean cold water to remove all surface dirt and dust. When all surfaces are clean, sound, wind dry, dust free and free from all surface contaminants, decoration using KEIM Concretal Lasur may proceed.

Application
KEIM Concretal Lasur should be applied by brush and laid off with a lambswool roller, it is important that a wet edge is kept at all times and that contractors work to a natural break line.

A typical specification would be a two coat KEIM Concretal Lasur system, the first coat to be KEIM Concretal Dilution (clear priming coat), applied by brush and worked well into all surfaces. After a minimum period of 12 hours a final coat of KEIM Concretal Lasur in the chosen colour may be applied, diluted to the required level with KEIM Concretal Dilution.

Site trials should be conducted to determine the number of coats and the amount of KEIM Concretal Dilution required to obtain the desired opacity.

Consumption
For a two-coat system, using a 3:1 dilution ratio for the second coat, approximately 0.025lt/m^2 for KEIM Concretal Lasur and 0.175lt/m^2 for KEIM Concretal Dilution.

Consumption rates are offered for guideline purposes only and are quoted for smooth surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred to for specific rates.

CERTIFIED
cradle to cradle
SILVER

KEIM CONCRETAL®-BLACK

KEIM Concretal Black is a sol-silicate based paint formulated to protect from weathering and has an opaque intensive black finish.

KEIM Concretal Black is available in five black shades for different colour effects.



Company building at Crolles by Paul&Seguin Architectes, Grenoble
Photo: © Paul&Seguin Architectes

KEIM CONCRETAL®-BLACK TECHNICAL INFORMATION

1 Field of application

For all internal and external mineral surfaces. Suitable for application onto unpainted and previously painted surfaces.

2 Product properties

- Multipurpose application
- UV and acid resistant, anti-static
- High weathering resistance
- Alkaline
- Non-flammable - A2-s1, d0
- Lightfast
- Mineral matt
- Water vapour permeable, microporous
- Non film forming
- Highly water repellent
- No solvents and plasticisers added
- Resists algal and fungal growth
- Intensive black in five different black shades
- Cradle to Cradle Certified®

Colour shades
Intensive black in five shades
- Purity
- Pearl
- Aurora
- Forest
- Eclipse

KEIM Concretal Black s_d: ≤ 0.01 m

VOC Content: 0-3g/l VOC

3 Application instructions

Substrate preparation
Highly absorbent or friable substrates should be treated with KEIM Concretal Dilution.

Application
KEIM Concretal Black should be applied as a two coat system with a minimum period of 12 hours between coats. KEIM Concretal Black can be applied by brush, roller or airless sprayer.

Base coat:
Dilute KEIM Concretal Black with maximum 10% KEIM Concretal Dilution.

Top coat:
Apply KEIM Concretal Black undiluted.

Keep diluted KEIM Concretal Black well stirred before and during work. Neither water nor any other materials must be added.

Consumption
For a two-coat KEIM Concretal Black finish per m^2: approx. 0.4kg KEIM Concretal Black and up to 0.02lt KEIM Concretal Dilution.

Consumption rates are offered for guideline purposes only and are quoted for smooth surfaces. Actual rates are the responsibility of the applicator. Project specifications should be referred for specific rates.

Cleaning of tools
Clean immediately after use with water.

4 Packaging
5kg & 18kg containers

CERTIFIED
cradle to cradle
SILVER

INTESIVE BLACK IN FIVE SHADES

PURITY

Pure black is pitch dark, dramatic, with a graphic effect that is hard to resist.
KEIM Concretal Black Purity – the power of pure black.



PEARL

Elegant black with a deep blue shade. Inspired by dark pearls from the depths of the ocean.
KEIM Concretal Black Pearl – precious like a South Sea pearl.



AURORA

A black night glows with harmonic red of the rising sun.
KEIM Concretal Black Aurora – like the warm mood of a splendid sunrise.



FOREST

Deep black with a touch of mystic green. Inspired by the fir trees of the mystical Black Forest.
KEIM Concretal Black Forest – the mysterious black.



ECLIPSE

Pure black accentuated by a light yellow tone.
KEIM Concretal Black Eclipse – unique like the natural spectacle of a solar eclipse.



FOR ARCHITECTURE
IN MONOCHROME

PURITY

PEARL

FOREST

ECLIPSE

AURORA

PRE-TREATMENT

Prior to decorating concrete surfaces, ensuring effective pre-treatment will significantly extend the longevity of the painted system. This is particularly important when redecorating previously painted surfaces.

- All loose, flaking and unstable material must be identified and thoroughly removed. Unstable paint coatings should be identified and removed (KEIM Dispersion Remover Paint Stripper).
- Contamination and release agents should be removed using KEIM Concrete Cleaner.
- Any mould and fungal growth must be thoroughly removed using wire brushes to remove all growths and then treated with KEIM Algicid.
- Where required, surfaces should be repaired using KEIM concrete repair materials.
- Any newly repaired areas must be allowed to dry out for a minimum period of 15 days prior to the application of KEIM Mineral Paints.
- KEIM Mineral Paints should be applied onto wind dry surfaces where the moisture content on or near the surface (to a depth of 5mm approximately) should be no greater than 18% by volume.
- Where consolidation of surfaces and additional water repellency is required KEIM Silan 100 or KEIM Silan Primer is recommended.
- All surfaces must be thoroughly washed down with clean cold water to remove all surface dirt and dust.

When all surfaces are clean, sound, wind dry, dust free and free from all surface contaminants, decoration using KEIM Mineral Paints may proceed.

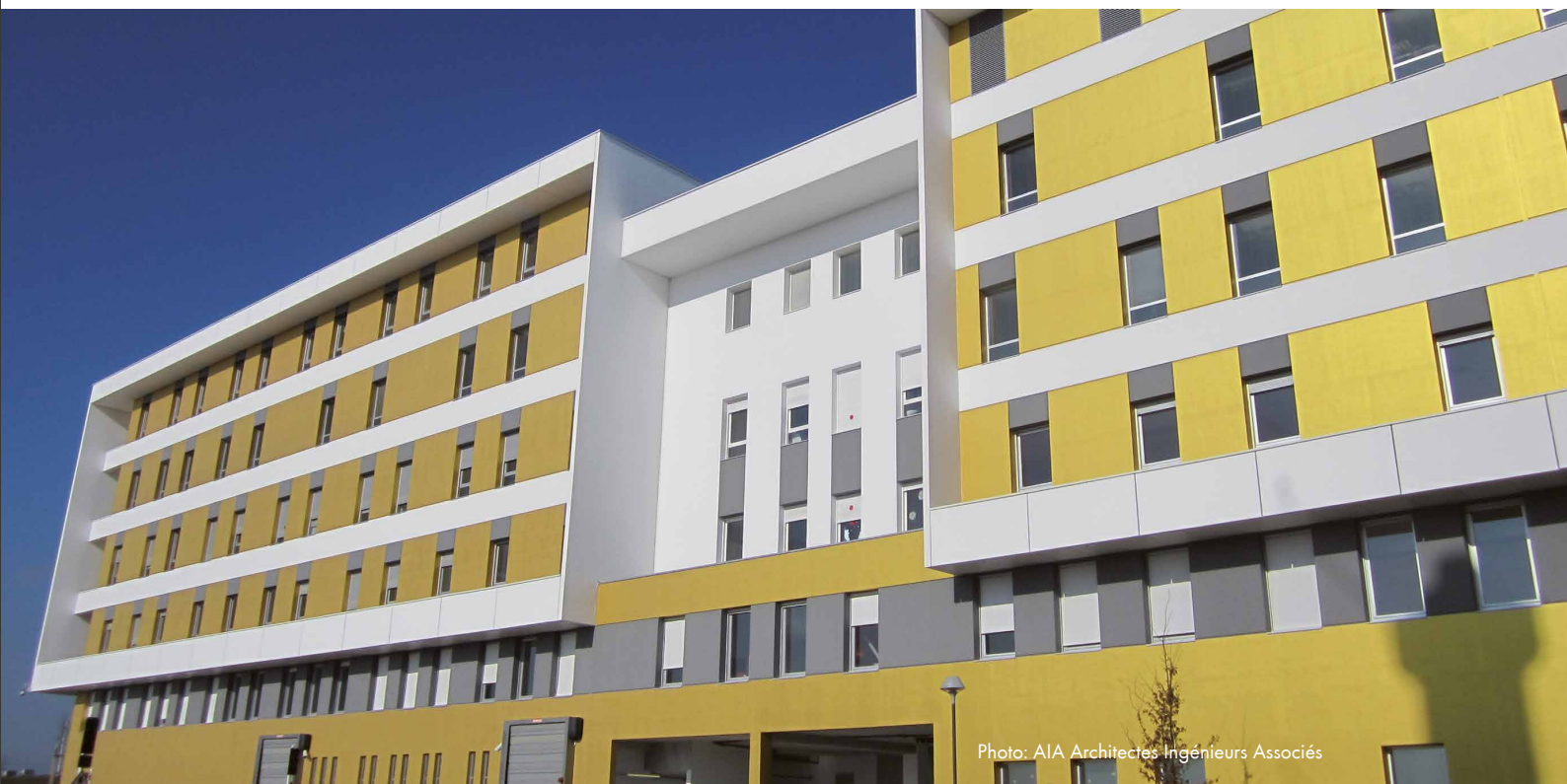


Photo: AIA Architectes Ingénieurs Associés

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