

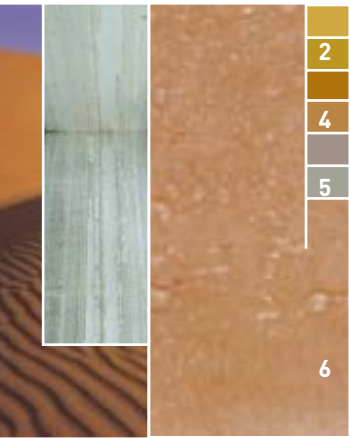


Si-Rex03
Silicone Resin Exterior Paint



...a lifetime of colour





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THE STATE OF THE ART IN FACADE COATINGS

Si-Rex03 by **Klaas Coatings** is a state of the art wall and facade coating specifically designed for use on concrete and masonry substrates.

It uses an advanced silicone resin binder system to deliver a sophisticated mineral matt finish with outstanding performance benefits.

Si-Rex03 is unique because it not only protects the substrate with excellent water repellency but allows the substrate to breathe almost without hindrance. This unique property eliminates the potential for peeling and flaking from entrapped moisture. It's strong water repellency also provides a self cleaning effect and excellent resistance to microbial attack. These innovative features make the surface look cleaner for longer.

The silicone resin binder is not just about water-repellency, it's tough, Quartz-like structure acts as "reinforcing" giving **Si-Rex03** excellent weather resistance. **Si-Rex03** will resist chalking and outlast conventional paint systems. Longer repaint intervals mean less cost.

While durability and protection are key benefits of **Si-Rex03**, it is the look and finish that people notice. The mineral matt surface eliminates all gloss and side sheen. This allows colours to appear clean and true whilst hiding the surface irregularities which are unavoidable in mineral substrates.

By only using the most durable and fade resistant inorganic oxide pigments, **Klaas Coatings** has produced an earthy colour range that perfectly suits concrete and masonry surfaces. This combination of earthy colours and matt finish avoids the "plastic-coated look" of conventional paint systems. **Si-Rex03** provides a softer, established and natural look that conveys a sense of quality.

THE ULTIMATE IN WEATHER PROTECTION

Excellent Water Repellency

- Protects the Substrate by Keeping it Dry
- Self Cleaning Effect
- Prevents Microbial Attack

High Vapour Permeability

- Open Structure Allows Entrapped Moisture to Escape
- Maintains a Moisture & Gas "Equilibrium"
- No Effect on Thermal Conductivity and Insulation



Keeps Liquid Water Out - Allows Vapour to Escape

Cementitious and mineral building materials such as concrete, bricks, renders and plasters are hygroscopic, that is they absorb water and need to be protected to avoid damage. **Si-Rex03** has the unique ability to strongly repel liquid water and yet allow moisture within the substrate to escape as vapour. (This is similar to Gore-tex® in principle). This ability to breathe is attributed to the unique open structure that allows vapour to escape, while the surface and pores of **Si-Rex03** are lined with strongly hydrophobic (water repellent) compounds. It is this innovative combination that keeps the substrate dry and protected from harsh weather.

Closed Film versus Open Structure

Regular emulsion paints form a closed film which prevent water getting in but have a very limited ability to allow the water out. This can make the substrate "sweat" and are therefore susceptible to delamination, cracking peel and bubbling.

Self Cleaning Effect

The high degree of water repellency prevents atmospheric soiling. Every time it rains, the water literally washes the dirt off. This keeps the structure looking cleaner for longer.

Resists Mould & Algae

Mould and algae prefer damp and organic rich areas to grow. By keeping the surface drier for longer, and being mostly inorganic **Si-Rex03** prevents the growth of these micro-organisms from taking hold and soiling the surface. This is especially so in warm, tropical environments.

Performance Properties



- Water Resistance
- Breathing
- UV Resistance
- Chalking Resistance
- Fading Resistance
- Mould Resistance
- Self Cleaning
- Repaint Interval

	Limewash/ Cement paint	Silicate	Emulsion / Acrylic	Si-Rex03
Water Resistance	poor	poor	good	excellent
Breathing	good	excellent	poor	excellent
UV Resistance	poor	excellent	OK	excellent
Chalking Resistance	poor	excellent	OK	excellent
Fading Resistance	poor	excellent	poor	excellent
Mould Resistance	poor	good	OK	good
Self Cleaning	poor	good	poor	excellent
Repaint Interval	1-3 yrs	15-30 yrs	3-10 yrs	15-30 yrs

vapour can escape

water repellent

self cleaning

Si-Rex03



Institute Building, Sydney

SUPERIOR TECHNOLOGY AND DURABILITY

Quartz-like Structure

- Very High Weather and UV resistance
- Resistance to Dilute Alkalis and Acids
- High Resistance to Fire and Heat
- Tough and Abrasion Resistant

Superior Life Cycle Costing

- Inorganic Pigments
- Resists Fading and Chalking

Silicone vs Organic Compounds

Silicon Dioxide or Quartz (SiO_2) is one of the most inert and durable substances found on earth. It's relative abundance is proof of it's stability and resistance against the weather and environment. It is completely unaffected by UV, Acid, Alkali, heat, cold and free radical attack.

Silicone Resins produce a very stable and durable quartz-like structure. Silicone compounds are modified by a hydrophobic group that provides the excellent water repellent characteristics. It is however the inorganic Silicon - Oxygen backbone that binds and reinforces the paint and gives it's open structure and especially resilient characteristics.

Conventional binders such as acrylic and organic tinters are derived from petrochemicals and are composed of long carbon chains. These chains are formed by a process called "free radical polymerisation". Just as free radicals "zip up" these compounds they can also unzip them as well causing the binder to degrade resulting in chalking and colours to fade. The most common source of free radicals is exposure to Ultra Violet light.

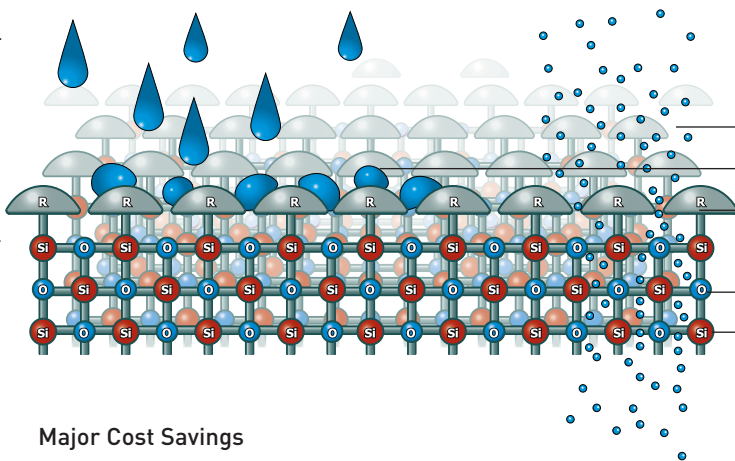
Fade Resistant Inorganic Pigment

Nature tells us the most colour stable pigments on earth are inorganic oxides. **Klaas Coatings** only uses these inorganic pigments to ensure that **Si-Rex03** has excellent fade resistance. This will keep colours looking fresher for longer and dramatically lengthen the repaint interval.

Supreme Durability

The combination of the ultra durable Silicone Resin binders and Inorganic pigments means **Si-Rex03** will outlast almost all other exterior coating systems. This supreme durability allows for significantly longer re-coat intervals. Conventional latex and acrylics degrade and fade with UV exposure and need continuous maintenance. Re-coating intervals can be as little as 2-3 year for low quality systems and a maximum of 10 years with highest quality products. Silicone resins will last between 15 to 30 years.

Chemical Composition



Major Cost Savings

Buildings, Houses and Infrastructure are long term assets. Costs associated with construction products and installation/application should not only reflect the up-front capital expenditure but the maintenance and replacement interval. **Si-Rex03** can cost half as much as conventional systems over the life of the coating. The labour component of application typically constitutes 70-80% of the cost of painting and can be even higher when access is difficult such as tall buildings. The benefits of protection and improvement in the re-coat interval provides huge saving to owners of the structure.

A BEAUTIFUL FINISH

Mineral Matt Finish

- Diffuses Light to Hide Substrate Irregularities
- In Harmony with Mineral Substrates
- Colours Appear Clean and True

Earthy Colours

- Inorganic Pigments
- Resists Fading even under Severe UV Exposure

Hiding Surface Irregularities

The Mineral Matt finish of **Si-Rex03** has a microscopically rough surface that scatters and diffuses the light. By scattering light **Si-Rex03** hides surface irregularities that are common on concrete, rendered, plastered and skim coated substrates. This means the surfaces appear more regular and true with a better quality of finish. Paints with gloss or sheen tend to look like plastic rather than the softer natural appearance of a Mineral Matt Surface. Coatings with gloss or sheen reflects light directly back to the observer highlighting all the lumps and bumps.



Excellent Depth of Colour

Colours appear with more depth and strength in **Si-Rex03**. Objects appear a certain colour because they absorb the all the light wavelengths except the colour the observer sees, which are reflected back. The matt finish scatters that reflected light and thereby eliminates the direct reflection of other surrounding objects and colours. By reducing this interference it makes **Si-Rex03** colours appear clean and true.

The combination of hiding irregularities, softer looking finish, excellent depth and strength of colour makes surfaces painted in **Si-Rex03** look "timeless" and "established" and of high quality.

Fade Resistant Inorganic Pigments

The inorganic oxide pigments not only provide excellent resistance to fading also provide a natural and earthy colour palette.

The Klaas Coatings

ASF colour guide has 190 neutral and earthy tones that never go out of fashion.

- Vapour can escape
- Stops liquid water
- Repellent group
- Oxygen
- Silicon

Appearance	Limewash / Cement paint	Silicate	Emulsion / Acrylic	Si-Rex03
Finish	Matt	Matt	Low sheen-Gloss	Matt
Substrate Hiding	OK	Excellent	Poor	Excellent
Character	Mottled	Even-Mottled	Uniform	Uniform
Colours	Earthy	Earthy	Unlimited	Earthy

RELIABLE - CONVENIENT - RESPONSIBLE

User Friendly

- Easy to Paint
- Computer Controlled Tinting and Colour Matching
- High Opacity - Excellent Dry Hiding
- Can be Applied to Hot, Cool, Dry or Moist Substrates without Stresses Forming on Drying.
- Use Roller, Brush or Spray

Water Based

- Easy Clean Up
- Environmentally Friendly
- Low VOC's (Volatile Organic Compounds)

Easy Application

Si-Rex03 has been formulated to be as user and applicator friendly as possible. **Si-Rex03** can be applied by conventional brush and roller or spray. It has both excellent touch-up and cutting-in properties which makes painting easy. **Si-Rex03** has excellent opacity and will cover the substrate in 2 coats.



Colour Matching & Consistency

Klaas Coatings is committed to quality and service. The company prides itself on the high degree of quality control with highly developed colour matching software and computer controlled automatic colourant dispensing. This is vital especially in large projects where consistency between batches is essential.

Less Weather Delays

Si-Rex03 can be applied in marginal conditions. No stresses form on drying if the substrate is hot or cool, moist or dry which avoids hold-up and delays due to weather on site. The fact **Si-Rex03** breathes means it can be applied in humid conditions without keeping moisture trapped in the substrate.

Committed to the Environment

Klaas Coatings is committed to the Environment. **Si-Rex03** is a water based system and is easily cleaned up with water. The formulation is classed as Low VOC which reduces pressure on the Ozone layer. By using Silicone Resins which is 80% inorganic and inorganic pigments it means most of **Si-Rex03**'s constituent are derived from nature and refined. Only a small percentage of the total composition is derived from petrochemical sources.





Application Properties



	Limewash/Cement paint	Silicate	Emulsion/Acrylic	Si-Rex03
Brush	yes	yes	yes	yes
Roller	no	yes (difficult)	yes	yes
Spray	no	yes	yes	yes
Wet Edge	short	short	long	moderate
Cutting In	easy	difficult	easy	easy
Touch-up	poor	poor	good	good
Clean-up	water	water	water	water

*For datasheets and application specifications, please contact **Klaas Coatings** or your local distributor



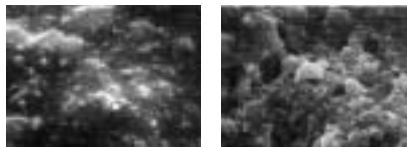


PROVEN PERFORMANCE

Coatings incorporating Silicone Resins have been available in Europe for 25 years and have proven themselves in the field time and time again. Silicone Resin Emulsion Paints are now the fastest growing exterior paint system in Western Europe. **Klaas Coatings** has specifically formulated **Si-Rex03** to cope with the harsh UV and weather conditions of Australia and Asia. These are some of the toughest environments in world for exterior coatings.

Closed film versus Open Structure.

When **Si-Rex03** is put under the Scanning Electron Microscope the difference to a conventional emulsion paint film is obvious. Note that the Acrylic film is closed. Closed films acts like a barrier for water going in and out. **Si-Rex03** on the other hand is open. This allows moisture to escape as vapour, however the repellent nature of the surface does not allow water to get in.



Emulsion Paint

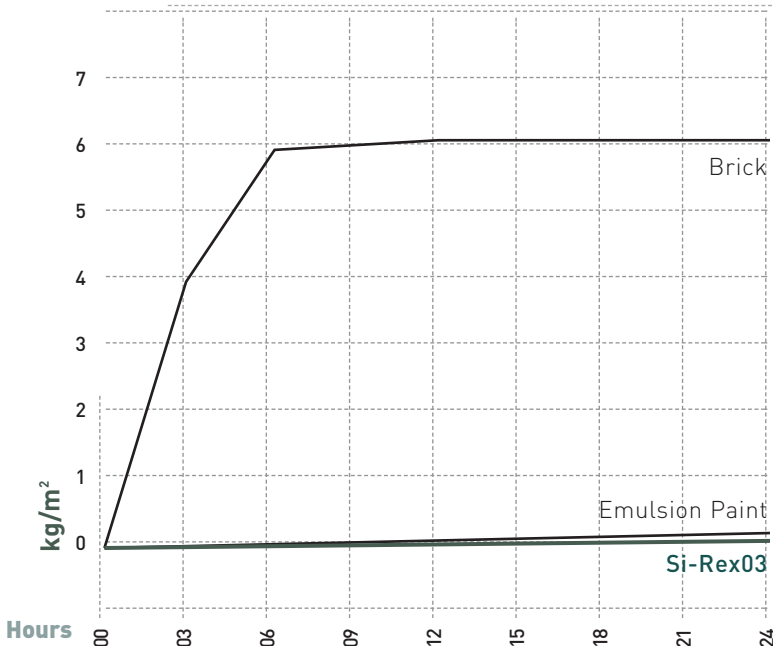
Si-Rex03

Water Permeability	Low	Low
Water Vapour Diffusion	Low	High

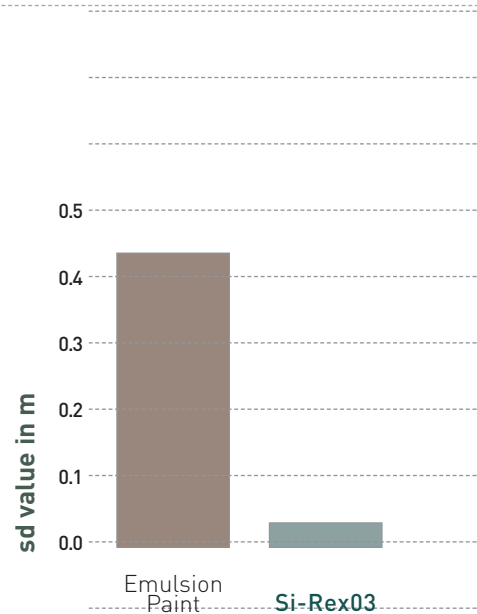


Saigon South Project; Vietnam

Water Absorption



Resistance to Water Vapour Permeability



Typical Performance Figures

Liquid Water Transmission	0.16 W24-value in kg/m ² h ^{0.5}
Water Vapour Permeability	0.04 wet cup, sd-value
Adhesion on Sand/limestone	2.33 N/mm ²
Wet Scrub Resistance	800 @ 4days & > 10,000 @ 200hrs QUV-B
Accelerate Weathering 500hrs QUV-B	No Chalking & Excellent Water Repellency

Product Usage Chart

	Limewash / Cement Paint	Silicate Paint	Emulsion / Acrylic	Si-Rex03
In-situ Concrete	no	yes	yes	yes
Precast Concrete	no	yes	yes	yes
Cement Render/Plaster	yes	yes	yes	yes
Skim Coat	yes	yes	yes	yes
Brickwork	yes	yes	yes	yes
Blockwork	yes	yes	yes	yes
Fibre Cement Sheet	no	yes	yes	yes
Stone	yes	yes	no	yes
Wood	no	no	yes	no
Metals	no	no	yes	no
Glass	no	no	yes	no
Plastic	no	no	yes	no
Previous Painted	no	no	yes	yes





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***Klaas Coatings** was formerly know as Radcote Pty Limited.

Si-Rex03 has been developed and is produced in Australia.

Klaas Coatings warrants that its products shall be free from material defects. Should any material found to be defective, the liability of **Klaas Coatings** shall be limited to replacement of material and in no case shall be liable for incidental or consequential damage.