



# PREMIUM SILICATE TECHNOLOGY





# HOW SILICATE COATING TECHNOLOGY WORKS

The first step in the production process is the manufacture of 'water glass' or water soluble alkaline silicates. Water glass is made by melting a mixture of pure quartz sand and potassium carbonate (potash). Normal glass contains calcium, magnesium, and aluminium silicates, which are insoluble in water, whereas water glass can be dissolved in hot water. This water glass is then used in the manufacture of Porter's silicate products.

When painted onto render, concrete, bricks, stone or other unpainted masonry surfaces, Porter's Mineral Silicate products penetrate and chemically react with the substrate to 'petrify' - a process known as 'silification'. The cured paint then forms an inorganic structure with a very strong bond to the substrate and can not crack, peel or flake.

## PRODUCTS

**Porter's Mineral Paint**

**Porter's Mineral Silicate Primer**

**Porter's Mineral Silicate Stain**





## CURING

The curing process of silicate or mineral paint is fairly complex, depending on various base reactions with the ingredients of the substrate, or with air.

Chemical curing reactions with wall components include:

1. The reaction with lime (calcium hydroxide),
2. Reaction with quartz sand, and
3. Chemical curing by reaction with CO<sub>2</sub> from the air.

The big advantage of properly applied and cured silicate coatings is the very strong bond to the substrate. The cured paint forms an inorganic structure with enough pores to grant a sufficiently high water vapour permeation. This is essential for historic buildings and in cases where unhindered water vapour exchange through the wall is necessary.

Also relevant is the heat insulation and heat exchange behaviour of the wall system. In order to avoid added humidity in the wall, it is essential that moisture absorbed during rain periods is quickly and totally released during dry periods. Porter's Mineral Silicate products fulfil this function with their very low water absorption and moisture vapour permeability.

# WHY DO ARCHITECTS SPECIFY PORTER'S SILICATE COATINGS OVER CONVENTIONAL PAINTS?

DESCRIPTION	MINERAL PAINT	MINERAL SILICATE STAIN
<b>Appearance</b>	Opaque finish with exceptional coverage.	Translucent finish designed to smooth colour imperfections whilst maintaining the characteristics of the substrate.
<b>Adhesion</b>	Creates a very strong chemical bond with the substrate, not a mechanical bond.	Creates a very strong chemical bond with the substrate, not a mechanical bond.
<b>Finish</b>	Dries to a natural matte finish with an authenticity that cannot be achieved with conventional coatings.	Dries to a natural matte finish.
<b>Colour Fastness</b>	Colour stable for several decades.	Delivers a high resistance to weathering.
<b>Water vapour permeability</b>	Water vapour permeability is high. Allows egress of moisture vapour, therefore keeping buildings dry. Resists mould and airborne pollutant pick up.	Water vapour permeability is high. Allows egress of moisture vapour, therefore keeping buildings dry. Resists mould and airborne pollutant pick up.
<b>Colour matching service</b>	Custom colour development and on-site colour sampling to ensure a tailored colour solution for the project.	On-site testing to define the colour and to select the degree of dilution required.
<b>Project Guarantee</b>	25 year guarantee backed by DuluxGroup.	10 year guarantee backed by DuluxGroup.

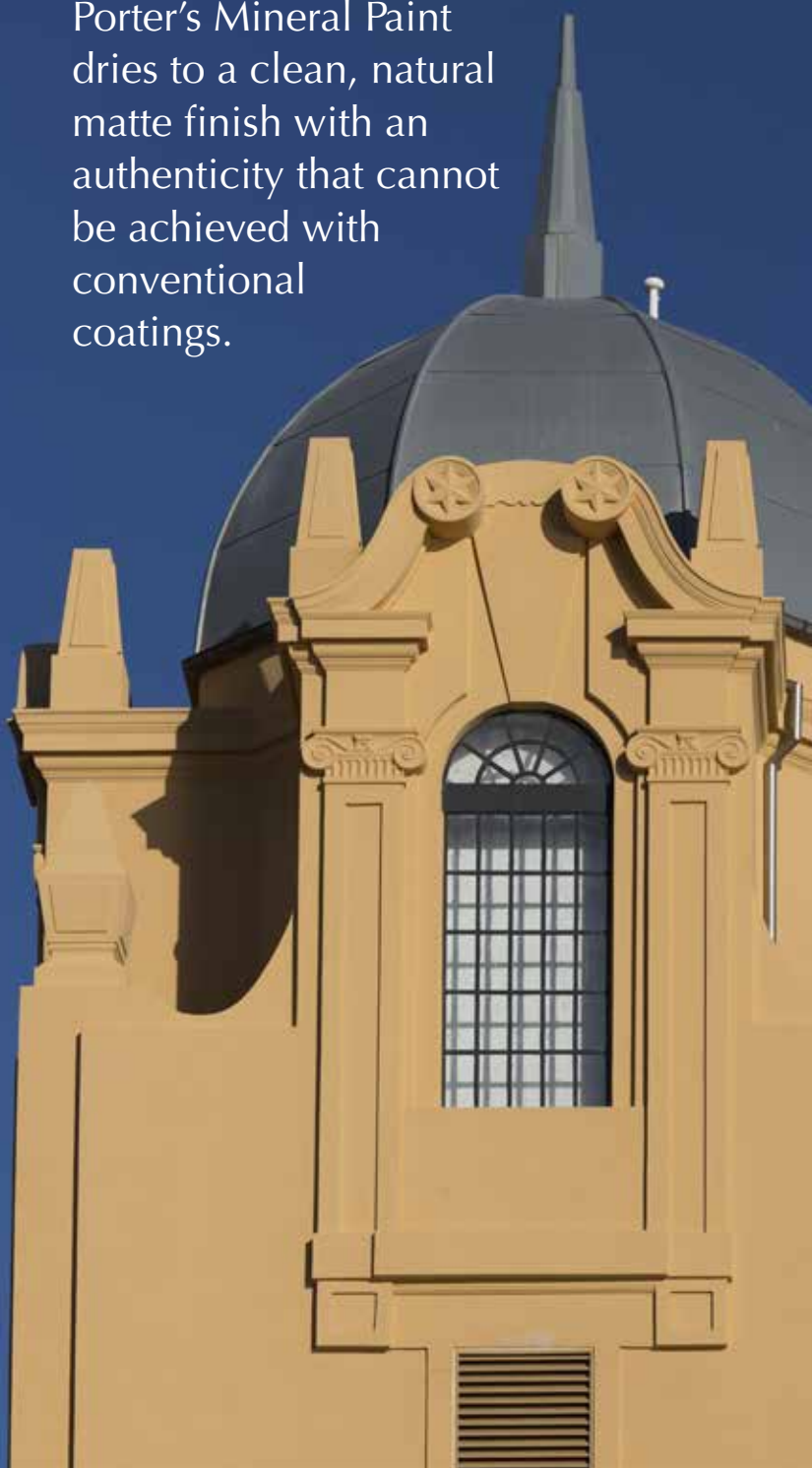


Compared to conventional paints which require recoating after some years, Porter's Mineral Paint's 'silification' process ensures superior durability and is colour stable for several decades.





Porter's Mineral Paint dries to a clean, natural matte finish with an authenticity that cannot be achieved with conventional coatings.



Porter's worked with Lovell Chen architects to recreate the original heritage colour scheme for the Palais Theatre in St Kilda.

## CASE STUDY - Palais Theatre, St Kilda

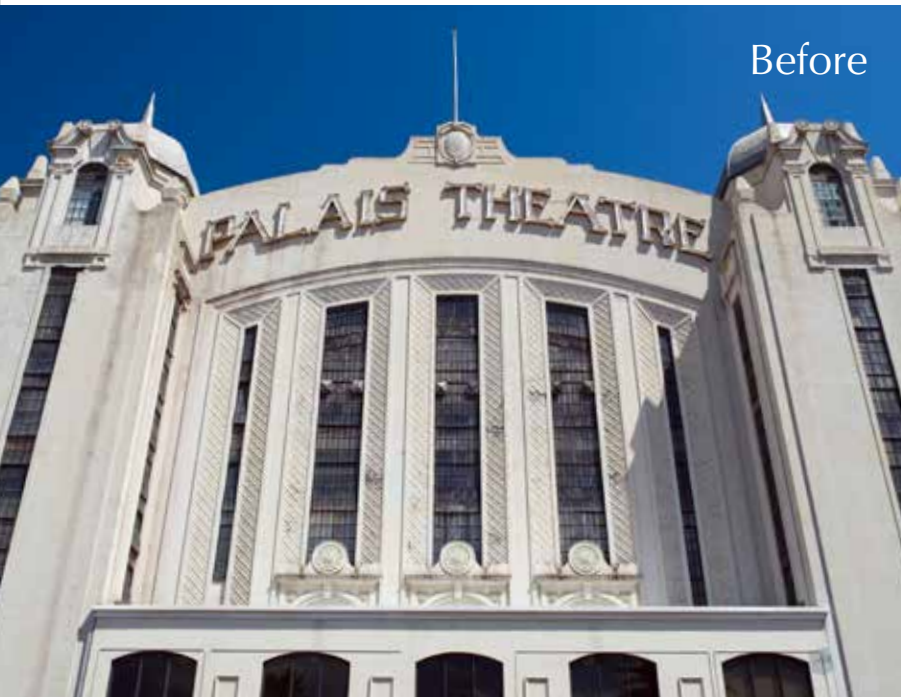
Returning the Palais exterior to its original colour scheme was a condition of the Heritage Victoria permit that was issued to this listed building. The original sandy tone had been achieved by Henry E. White, the architect, using the 'copperas' method – an iron sulphate wash over render. As this finish was not possible to recreate on old render, an alternate coating system was sought.

Porter's Mineral Paint was the solution, as it could be applied to the natural render once the build up of paint film had been removed, had all the characteristics of a long-life coating, and could be colour matched. Lovell Chen architects, historians and Porter's representatives worked together to achieve the perfect representation of the original colour.

After



Before







# PORTER'S MINERAL PAINT

Porter's Mineral Paint is a premium silicate paint providing unparalleled colourfastness and durability.

- **Opaque finish with exceptional coverage.**
- **Creates a very strong chemical bond with the substrate not a mechanical bond.**
- **Dries to a natural matte finish with an authenticity that cannot be achieved with conventional coatings.**

## SUITABLE SUBSTRATES

Mineral Paint can be applied to most porous masonry surfaces:

- Cement render (sand & cement)
- Concrete, including pre-cast
- Renders (sand & cement OR lime, sand & cement)
- Tilt-up and off-from concrete (after removal of mould release agents)
- Blockwork and brickwork
- Bagged brickwork
- Masonry blocks

## SPREAD RATE

Mineral Paint covers approximately 5m<sup>2</sup> per litre, depending upon porosity, surface texture and wastage rates. Mineral Silicate Primer covers approximately 10m<sup>2</sup> per litre, depending upon porosity, surface texture and wastage rates.

## APPLICATION

By brush (4x14cm block brush) or roller (synthetic cover, 25mm nap).





# PORTER'S MINERAL SILICATE STAIN

Porter's Mineral Silicate Stain is a highly durable coloured silicate dispersion stain for the decoration and protection of old and new fair-faced concrete.

- **Translucent finish designed to smooth colour imperfections whilst maintaining the characteristics of the substrate.**
- **Creates a very strong chemical bond with the substrate, not a mechanical bond.**
- **Dries to a natural matte finish.**

## SUITABLE SUBSTRATES

- Cement render
- Concrete, including pre-cast
- Off-form concrete
- Tilt-up concrete panels (after removal of mould release agents)
- Bagged brickwork
- Masonry blocks

## SPREAD RATE

Mineral Silicate Stain covers approximately 8-10m<sup>2</sup> per litre, depending upon porosity, surface texture and wastage rates.

## APPLICATION

By brush, roller (synthetic cover, 10-13mm nap) and fibre applicator.

Available in a standard range of colours, and can be diluted with the Clear base to increase transparency. May be diluted in any ratio depending on the translucency required.



EXTERIOR



BRUSH



ROLLER



30min

TOUCH DRY



6hrs

RECOAT



8-10m<sup>2</sup>  
per litre

COVERAGE



WASH UP

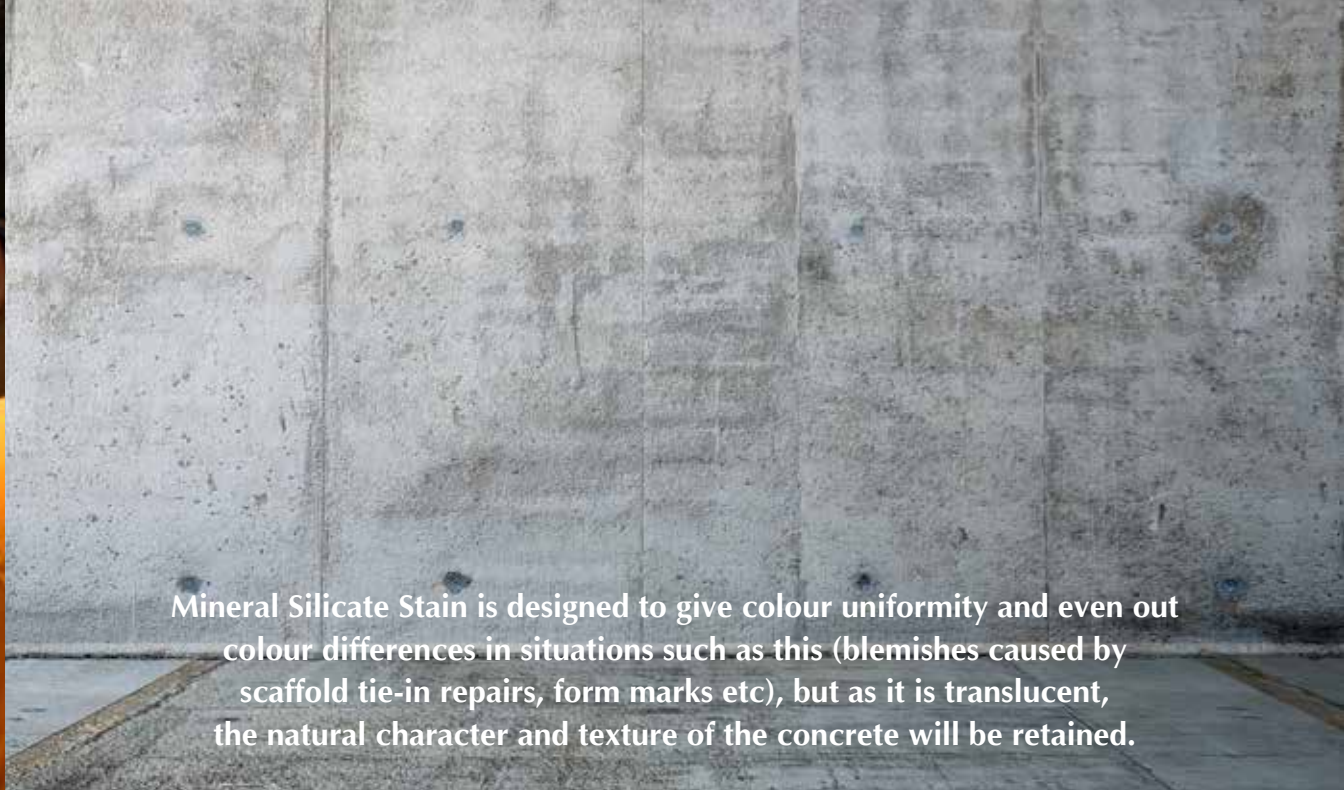


Porter's Representatives are happy to conduct on-site meetings with painters and specifiers to ensure the right product, the correct specification and the perfect colour.

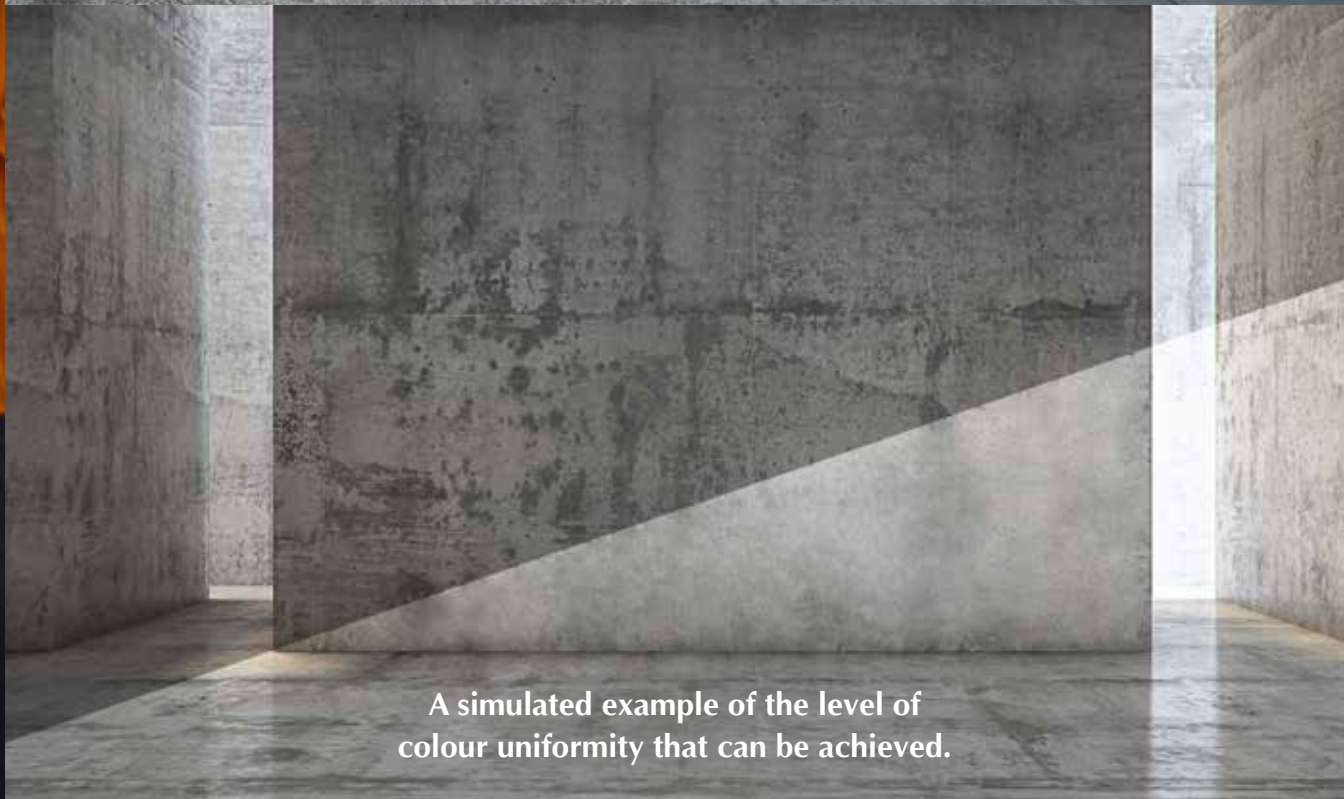




We are leaders  
in creating  
custom colours



Mineral Silicate Stain is designed to give colour uniformity and even out colour differences in situations such as this (blemishes caused by scaffold tie-in repairs, form marks etc), but as it is translucent, the natural character and texture of the concrete will be retained.



A simulated example of the level of  
colour uniformity that can be achieved.

# PRODUCT CODES

PX2D0817-1L	Mineral Paint Custom 1L	PX1D0912-4L	Mineral Silicate Stain Mid Grey 4L
PX2D0817-4L	Mineral Paint Custom 4L	PX1D0912-10L	Mineral Silicate Stain Mid Grey 10L
PX2D0817-10L	Mineral Paint Custom 10L	PX1D0912-15L	Mineral Silicate Stain Mid Grey 15L
PX2D0817-15L	Mineral Paint Custom 15L		
PZ5D0846-1L	Mineral Silicate Primer 1L	PX1D0913-4L	Mineral Silicate Stain Black 4L
PZ5D0846-4L	Mineral Silicate Primer 4L	PX1D0913-10L	Mineral Silicate Stain Black 10L
PZ5D0846-15L	Mineral Silicate Primer 15L	PX1D0913-15L	Mineral Silicate Stain Black 15L
PX1D0910-4L	Mineral Silicate Stain White 4L	PX1D0914-4L	Mineral Silicate Stain Clear 4L
PX1D0910-10L	Mineral Silicate Stain White 10L	PX1D0914-10L	Mineral Silicate Stain Clear 10L
PX1D0910-15L	Mineral Silicate Stain White 15L	PX1D0914-15L	Mineral Silicate Stain Clear 15L
PX1D0911-4L	Mineral Silicate Stain Light Grey 4L	PX1D0915-4L	Mineral Silicate Stain Custom 4L
PX1D0911-10L	Mineral Silicate Stain Light Grey 10L	PX1D0915-10L	Mineral Silicate Stain Custom 10L
PX1D0911-15L	Mineral Silicate Stain Light Grey 15L	PX1D0915-15L	Mineral Silicate Stain Custom 15L



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