

WetEx™ Pearl

Water-Based Silane/Siloxane Hydrophobic Impregnating Agent

Product Type: Water-thinnable, solventless silane/siloxane emulsion

Primary Function: Hydrophobic impregnation and water-repellent priming of absorbent mineral substrates

Application: Professional / Commercial

Appearance: Milky to translucent aqueous emulsion

Dilution: Up to 1:1 with clean water, depending on substrate absorption

1. Product Description

WetEx™ Pearl is a **water-thinnable, solventless silane/siloxane emulsion** designed for the hydrophobic treatment and priming of porous mineral building materials.

The product contains a stabilised combination of **silane and siloxane components** dispersed in an aqueous system. Following application, the emulsion penetrates the capillary structure of the mineral substrate. The active components undergo hydrolysis and subsequent reaction within the substrate, forming a hydrophobic silicone-based network.

This treatment significantly reduces the substrate's tendency to absorb **liquid water**, while maintaining the majority of the substrate's natural vapour permeability.

WetEx™ Pearl is particularly suited to porous mineral substrates where a **deep-penetrating, non-film-forming water-repellent treatment** is required.

2. Key Performance Characteristics

WetEx™ Pearl provides:

- **Deep penetration** into suitable porous mineral substrates
- Rapid development of hydrophobicity
- Strong **water-beading / pearl effect**
- Reduction of capillary water absorption
- Non-film-forming impregnation
- Minimal restriction of water-vapour transmission
- Tack-free surface after drying
- Good compatibility with subsequent mineral and compatible coating systems
- Excellent suitability as a water-repellent primer
- Water-based, solventless formulation

- Low odour during application
- Good storage stability
- Suitable for dilution with clean water
- Suitable for both new construction and restoration applications

3. How WetEx™ Pearl Works

WetEx™ Pearl is designed to penetrate into the open capillary structure of an absorbent mineral substrate.

After application:

1. Penetration

The aqueous emulsion is absorbed into the pores and capillaries of the substrate.

2. Emulsion breakdown

Contact with the mineral substrate initiates destabilisation and hydrolysis of the reactive silane/siloxane components.

3. Reaction

The reactive components undergo hydrolysis and condensation reactions.

4. Hydrophobic modification

A hydrophobic silicone-based structure is formed within the pore system.

5. Water repellency

Liquid water is prevented from readily entering the treated capillaries, producing the characteristic **beading effect**.

Importantly, WetEx™ Pearl is intended to **modify the internal surface of the pore structure rather than fill or seal the pores**. This allows the treated substrate to retain substantially more of its natural vapour diffusion capability than a conventional surface film or waterproof coating.

4. Typical Applications

Hydrophobic Impregnation

WetEx™ Pearl can be used for water-repellent treatment of:

- Brickwork
- Clay bricks
- Sand-lime brick

- Cementitious render
- Mineral plaster
- Concrete
- Aerated concrete
- Lightweight aggregate products
- Mineral fibre-based building materials
- Selected natural stone
- Masonry and porous mineral construction products

New & Existing Buildings

Suitable for:

- New masonry
- Existing masonry
- Building façades
- Restoration projects
- Masonry refurbishment
- Rendered façades
- Architectural concrete
- Precast mineral products

Primer / Pre-Treatment

WetEx™ Pearl can also be used as a hydrophobic pre-treatment prior to compatible:

- Emulsion paints
- Mineral coatings
- Silicone-resin coatings
- Silicone-resin renders
- Selected acrylic coatings
- Other compatible façade coating systems

Compatibility testing is recommended before applying subsequent coatings.

5. Suitable Substrates

WetEx™ Pearl is particularly effective on **absorbent mineral substrates**, including:

Substrate	Suitability
Clay brick	Excellent

Substrate	Suitability
Porous brick	Excellent
Cement render	Excellent
Mineral plaster	Excellent
Sand-lime brick	Excellent
Aerated concrete	Excellent
Lightweight aggregate	Excellent
Concrete	Good-Excellent*
Mineral fibre products	Good
Porous sandstone	Good-Excellent
Dense natural stone	Limited
Limestone	Generally not recommended
Marble	Generally not recommended
Glazed / sealed surfaces	Not suitable
Non-absorbent substrates	Not suitable

*Performance depends strongly on surface porosity, moisture content and substrate composition.

6. Dilution

WetEx™ Pearl concentrate may be diluted with **clean potable-quality water**.

The appropriate dilution depends on substrate porosity, absorption and the desired treatment intensity.

Recommended starting range

Up to 1:1 dilution

1 part WetEx™ Pearl concentrate + 1 part clean water

This produces a **50% concentrate / 50% water mixture by volume.**

For highly absorbent substrates, a lower dilution may be appropriate. For less absorbent substrates, a more diluted solution may be sufficient.

Important

The correct dilution should be established by **trial application**. (Start with the “neat” application first)

A small test area should be treated before commencing full-scale application.

The substrate should demonstrate sufficient absorption to allow the product to penetrate rather than remain as a surface film.

7. Application Method

WetEx™ Pearl can be applied by:

- Low-pressure spray
- Backpack sprayer
- Roller
- Brush
- Other suitable professional application equipment

For facade impregnation, **low-pressure spray application** is generally preferred because it provides more uniform distribution and allows the applicator to maintain a wet surface during treatment.

Wet-on-Wet Application

Two applications are recommended.

First coat:

Apply uniformly until the substrate is saturated but without excessive run-off.

Second coat:

Apply while the first application remains sufficiently wet to allow wet-on-wet penetration.

The second application should be applied approximately 90° to the direction of the first application where practical. This cross-application helps improve coverage and reduce untreated areas.

8. Application Procedure

Step 1 – Surface Preparation

The substrate must be:

- Clean
- Sound
- Absorbent
- Free from oils, grease and contaminants
- Free from loose particles
- Free from previous water-repellent treatments where these prevent penetration

Remove biological contamination, dirt, dust, mould and unstable coatings before treatment.

Step 2 – Moisture

The substrate should preferably be dry or only slightly damp.

Do not apply to saturated substrates or during active rainfall.

Step 3 – Test Area

Always perform a test area before full application.

Check:

- Penetration
- Absorption
- Appearance
- Beading
- Compatibility with existing coatings
- Subsequent coating adhesion

Step 4 – Application

Apply WetEx™ Pearl uniformly.

Avoid excessive pooling and uncontrolled run-off.

Step 5 – Second Application

Apply the second coat **wet-on-wet**.

Step 6 – Drying

Allow the treated surface to dry undisturbed for 1-2 days.

Protect freshly treated surfaces from rain until the treatment has sufficiently reacted and dried (min. 48 hours)

9. Water Repellency

The characteristic performance of WetEx™ Pearl is the development of a strong **surface water-beading effect**.

Following successful treatment, water contacting the substrate should form discrete droplets rather than rapidly spreading across and penetrating into the mineral surface.

The beading effect is influenced by:

- Substrate porosity
- Substrate mineralogy
- Product dilution
- Application rate
- Number of applications
- Surface preparation
- Substrate moisture
- Weather conditions

Beading is an indication of surface hydrophobicity but should not, by itself, be considered a quantitative measurement of waterproofing performance.

10. Vapour Permeability

WetEx™ Pearl is a **penetrating hydrophobic treatment rather than a conventional film-forming waterproof coating**.

By reducing the affinity of the internal pore surfaces for liquid water, WetEx™ Pearl reduces capillary water uptake while allowing the substrate to retain a high degree of its existing vapour permeability.

This makes the product particularly suitable for mineral facades where moisture management and drying capability are important.

11. Rain Resistance

Freshly treated surfaces should be protected from rainfall during the initial reaction and drying period. (48 hours)

Do not apply immediately before rain.

If rain begins during application, stop work and protect treated areas where practical.

The required rain-free period should be established through product validation and site conditions before publishing a specific number of hours in the final TDS.

12. Storage of Diluted Product

One advantage of WetEx™ Pearl is its ability to remain stable after dilution when properly stored.

However, diluted material may develop visible **emulsion droplets or separation during storage.**

This does not necessarily indicate product failure.

Before use:

Always homogenise the concentrate and thoroughly remix diluted material.

Use:

- Low-speed mechanical agitation, or
- Manual shaking for smaller containers.

Avoid high-speed mixing that could introduce excessive air or destabilise the emulsion.

For commercial applications, freshly prepared dilution is preferable where practical.

13. Appearance After Application

WetEx™ Pearl normally dries without forming a visible film.

On some dark or highly absorbent substrates, a **temporary or slightly whitish appearance** may occur following application.

A test area should therefore always be completed on dark masonry, coloured substrates or sensitive architectural finishes before full-scale application.

14. Limitations

WetEx™ Pearl is **not designed to bridge cracks or repair structural defects**.

It should not be used as a replacement for:

- Crack repair
- Structural waterproofing
- Joint sealing
- Rising-damp remediation
- Pressure waterproofing
- Membrane systems
- Failed substrate repairs

Existing cracks, open joints, defective flashings, leaking roofs and structural defects must be repaired separately.

WetEx™ Pearl should also not be applied to surfaces where adequate penetration cannot occur.

15. Important Technical Distinction

I would strongly recommend positioning WetEx™ Pearl as a **hydrophobic impregnation system**, rather than calling it a waterproofing membrane.

The distinction is:

WetEx™ Pearl

Penetrates → modifies pore surfaces → reduces capillary water absorption → maintains vapour permeability.

Whereas a conventional waterproofing coating:

Forms a continuous film → blocks liquid water → may substantially restrict vapour movement.

16. TDS Performance Statement

WetEx™ Pearl is a water-based, solventless silane/siloxane emulsion designed for the hydrophobic impregnation of porous mineral substrates. Following penetration and reaction within the capillary structure, the active components form a hydrophobic silicone-based network that significantly reduces capillary water absorption while maintaining the substrate's inherent vapour diffusion characteristics. The treatment produces rapid and durable water repellency with a pronounced water-beading effect, without forming a conventional surface film.

For safety: Wear protective gear such as gloves and glasses when handling WetEx™ Pearl. When spraying, avoid windy conditions and keep out of the reach of children.

Safety Directions

Keep out of reach of children. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water. If swallowed, drink plenty of water and seek medical attention immediately.

WetEx™ Pearl is non-flammable and non-toxic.

WetEx™ Pearl coverage: 5-20m² per litre (depending on substrate)

WetEx™ Pearl concentrate has a shelf-life of up to 1 year when stored in a cool, dry, well-ventilated location, away from direct sunlight. Keep container(s) tightly sealed.



WetEx™ Pearl is available in 20-litre cubes and in IBC volumes of concentrate.

Keep out of reach of children. Avoid contact with eyes; use PPT/Goggles/gloves. In case of contact with the eyes, rinse immediately with plenty of water. If swallowed, drink plenty of water and seek medical attention immediately; further refer to the MSDS. Discontinue if skin irritations develop, and seek medical advice. Flux Design Australia Pty Ltd warrants that the products manufactured or supplied by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to Flux Design Australia Pty Ltd shall be limited to the replacement of the material proven to be defective. Flux Design Australia Pty Ltd MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. User shall determine the suitability of the product for its intended use and assume all risks and liability in connection therewith. 725