

# WATERBORNE SEALER FOR POROUS SUBSTRATES CONCRETE BLOCK SEALER

## TECHNICAL DATA

### 1.0 DESCRIPTION

CONCRETE BLOCK SEALER is a clear high solids, low VOC waterborne sealer, which when used as part of a complete system, is effective in sealing porous masonry such as concrete blocks, and acts by blocking the pores against water ingress while not changing the appearance of the substrate to any significant extent.

CONCRETE BLOCK SEALER has excellent weathering, UV and yellowing resistance.

CONCRETE BLOCK SEALER is easy to apply, has a good open time and exhibits excellent flow and leveling.

CONCRETE BLOCK SEALER when applied as part of the complete system (including AQUELLUX S WB) in accordance with instructions contained in this data sheet, easily exceeds the requirements of CCANZ CP 01:2022 Code of Practice for Weathertight Concrete and Concrete Masonry Construction, section 4.4 Clear Coating System, when tested in accordance with [AS/NZS 4456.16:2003 "Determining Permeability to Water"](#) (tested by Opus International Consultants Limited).

### 2.0 PROPERTIES

2.1. Colour and gloss	Clear, colourless satin finish when cured.
2.2. Specific Gravity	1.16
2.3. Flash Point	Not applicable (waterborne).
2.4. Viscosity	Low
2.5. Toxicity	Non-toxic
2.6. D.G. Classification	None
2.7. Volatile Organic Compounds	60 g / L
2.8. pH	8 – 9
2.9. Volume Solids	40%
2.10. Shelf Life	2 years in unopened containers as supplied.
2.11. Coverage	See Application (section 4.0).
2.12. Water Permeability	Zero penetration (0 mm/minute after 120-minute duration, 200 mm head of water) when used as part of the complete concrete block sealer system (including AQUELLUX S WB).

### 3.0 USES

CONCRETE BLOCK SEALER is recommended for use on all masonry, especially highly porous masonry such as concrete blocks, to seal against the ingress of water. It is especially suited to vertical surfaces and will not sag if applied at the recommended spreading rate. Once cured, it forms a non-absorbent clear coating which resists water and will not blanch when wet (see Precautions, section 5.0).

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## TECHNICAL DATA Continued

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### 3.0 USES (Continued)

CONCRETE BLOCK SEALER may be used on all types of concrete and uncoated timber. It is not designed for use in areas subject to excessive wear and tear. It is not recommended for use on plastics or metals. CONCRETE BLOCK SEALER is not suitable for any below grade application or tanking application.

Where compliance to CCANZ CP 01:2022 is required, the full CONCRETE BLOCK SEALER SYSTEM (CONCRETE BLOCK SEALER and AQUELLUX S WB) must be used. Application of the CONCRETE BLOCK SEALER SYSTEM must be by an approved applicator that is a member of the Master Painter's Association of New Zealand.

### 4.0 APPLICATION

- 4.1. SURFACE PREPARATION: Substrate must be dry, clean and free of dust, dirt, efflorescence, moss, mould, oil, grease and other contaminants. Any visible dirt must be removed as it will still be visible after the CONCRETE BLOCK SEALER has been applied and dried.
- 4.2. **Step 1** – Apply AQUELLUX S WB to concrete blocks: Apply two coats, wet-on-wet, of AQUELLUX S WB by spraying at a rate of 2-3 m<sup>2</sup> / L for each coat (depending on porosity). Saturate the surface until no more is absorbed but not to excess so that it runs off. Allow to dry (minimum 6 hours) before applying CONCRETE BLOCK SEALER. Full instructions for applying AQUELLUX S WB, may be found on the AQUELLUX S WB technical data sheet.
- 4.3. **Step 2** – CONCRETE BLOCK SEALER is supplied ready to apply. It is not recommended to thin down CONCRETE BLOCK SEALER. Mix carefully until uniform, using a mixing stick or paddle and avoiding the entrainment of air. Apply 3 coats as follows:
  - First Coat: at 2-4 m<sup>2</sup> per litre
  - Second Coat: at 6-8 m<sup>2</sup> per litre
  - Third Coat: at 10-12 m<sup>2</sup> per litre

Use ONLY roller (DO NOT use a foam roller as this may cause foaming/air entrapment) or brush and work well into the surface to block all the pores. Ensure sufficient film build is achieved on edges and on the pointing. A minimum dry film build of 180 µm should be achieved on all surfaces. CONCRETE BLOCK SEALER is not suitable for initial application by spraying as it does not work the material into the pores sufficiently, but spraying may be used for touch-up work. Ensure the spreading rate is sufficient for the porosity of the substrate, but do not apply so much as to cause sagging or runoff. Before each coat has dried, it is prudent to examine for runs, as excessive material may come out of the pores or the pointing and run down vertical surfaces. If this occurs, touch up carefully with a brush before it dries. Allow each coat to dry completely before applying the next. The first coats will take longer to dry as they are applied at a higher film build. Ensure the coating has dried to a clear, transparent film before applying the next coat.



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## TECHNICAL DATA Continued

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### 5.0 PRECAUTIONS AND LIMITATIONS

- 5.1 Not suitable for spraying on first application. Use only roller or brush and work well into surface to fill pores. Spraying may only be used for touch-up work.
- 5.2 Do not apply if the relative humidity is above 85% or the temperature is below (or falls below) 7°C during application and drying. The temperature must always be at least 5°C above the dew point.
- 5.3 While CONCRETE BLOCK SEALER has good resistance to sagging, be careful not to exceed the natural spreading rate. Excessive application rates (as evidenced by ponding of material) will result in runs on vertical surfaces. Examine the applied coating for runs before it dries, especially material oozing out of pores or pointing and touch up by brush if necessary.
- 5.4 Although CONCRETE BLOCK SEALER has excellent resistance to water blanching, it is not recommended for use in areas where water may pond or pool for extended periods of time. If blanching does occur it is reversible upon drying (the coating will become clear again), but the coating may become weakened and lose adhesion following prolonged immersion under water.
- 5.5 CONCRETE BLOCK SEALER is not to be used in below grade or tanking applications. It is for above grade applications only.
- 5.6 Not recommended for use in areas subject to a high rate of wear and tear.
- 5.7 Not suitable for application to excessively smooth and non-porous substrates, such as plastics and metals.
- 5.8 Efflorescence: Concrete Block Sealer will not cause or correct/prevent efflorescence.

### 6.0 SUBSTRATE MOISTURE

New masonry/concrete substrates will contain moisture. Existing structures may also contain moisture if they have been subjected to rain or other water contact. Whatever the source, once the concrete/masonry has been poured or manufactured, it needs enough time for the excess moisture within it to evaporate.

As concrete cures, minute water pathways within the concrete (called capillaries) form. In masonry (concrete blocks), added fillers such as pumice create very porous concrete. Depending on the concrete mix design or masonry type, the concrete porosity of the substrate can vary from very dense (precast concrete), middle density (poured *in situ* concrete) or very porous (concrete blocks). Once cured, the excess water in the concrete moves through the capillaries or open water paths to the surface and evaporates. Depending on the prevailing climatic conditions, the situation and location of the concrete (and whether an inside or outside wall has already been painted or sealed), this moisture will move through the path of least resistance and escape.



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The movement of water within the concrete or masonry means that the moisture content varies according to the depth. Generally, the surface of the concrete or masonry is drier, while further inside, the moisture content is higher.

Also note that moisture doesn't just flow out from the concrete or masonry. External sources of water present during curing (or from the likes of rain once a wall is constructed) can potentially increase the moisture content. In this case, the capillaries and pores in the concrete act like a sponge that allow the external water into the substrate.

In addition, when the humidity of the air outside the wall is high, the concrete/masonry can start absorbing moisture instead of releasing it or it can impede the drying process altogether. Other environmental conditions, such as low ambient temperature, a lack of air circulation, frost, etc. can all impact drying time.

### Possible Side Effects of Excessive Moisture Content

Discolouration or mottled appearance or dark/light areas are a common side-effect of excess moisture in a concrete or masonry substrate. These effects may become more noticeable (and take longer to disappear) when the wall is overcoated with Concrete Block Sealer. This is because the moisture flow from within in the wall is dramatically reduced due to the Concrete Block Sealer coating. Dark areas due to moisture will slowly dry out but this may take a long time. Unlike a pigmented paint, substrate changes in appearance cannot be masked by Concrete Block Sealer.

### Preventative Measures

To reduce the likelihood of undesirable changes to the substrate appearance, the following steps should be followed:

- 6.1 Take electronic moisture readings of the wall prior to applying any part of the Concrete Block Sealer system. This will identify those areas of the wall that have an excessively high level of moisture and therefore will most likely show as dark or different in appearance to the majority of the wall.
- 6.2 Apply AQUELLUX S WB externally as soon as practicable. Ideally, AQUELLUX S WB should be applied as soon as the wall has been constructed and in the case of masonry blocks or precast panels, AQUELLUX S WB can be applied at the manufacturing plant. This is to allow the substrate (wall) to dry even during periods of wet weather (depending on how much water is in contact with the treated substrate). Water vapour can flow out through the AQUELLUX S WB treatment, but rain water penetration into the substrate will be minimised.
- 6.3 **DO NOT** apply any Concrete Block Sealer until the wall/building has been completed and capped – shut off all water paths into the concrete from above or through other penetrations which simply add to the excess moisture/water in the wall and lengthens the drying time.



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- 6.4 Wall(s) must be completely dry before proceeding with Concrete Block Sealer coating application. This will depend on prevailing weather conditions and the type of concrete construction; precast panels will dry far more quickly than in-filled concrete blocks. Allow at least 2 weeks drying for precast panels after application of AQUELLUX S WB and allow at least 4 weeks for concrete block wall construction before applying the Concrete Block Sealer coats. Before starting Concrete Block Sealer application, there should be at least 3 days dry weather. If it is not possible to wait for 2 – 4 weeks (as appropriate), then all parties involved with the project must be aware that applying the system early may highlight any areas of elevated moisture levels (usually as dark spots) and these areas may take a long time to reverse. Apply one coat Concrete Block Sealer and allow to completely dry. **DO NOT** apply a second coat until completely dry. **DO NOT** rush application. If rain occurs between coats, then the wall must be allowed to dry completely (dry weather with wind) – see above.
- 6.5 If applying Concrete Block Sealer to an interior surface, application must not occur until the wall is completely dry (no moisture is present/passing through from concrete infill or from the outside).
- 6.6 For walls (the same wall) which are exposed internally and externally, the external wall must be protected first as described above, then the wall allowed to dry completely – at least 4 weeks is recommended before applying Concrete Block Sealer to the inside face. Apply one coat Concrete Block Sealer, then wait at least 7 days (good drying conditions internally) before applying the next coat.
- 6.7 These steps should be considered in association with the applicator's knowledge of the wall construction and moisture readings.

## 7.0 PACKAGING

4 L, 10 L and 20L containers.



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