

WATERBORNE SEALER FOR POROUS SUBSTRATES PROTECTA-COAT

TECHNICAL DATA

1.0 DESCRIPTION

PROTECTA-COAT is a clear high solids, low VOC waterborne sealer for interior and exterior concrete and masonry substrates. PROTECTA-COAT has excellent weathering, UV and yellowing resistance. PROTECTA-COAT is easy to apply, has a good open time and exhibits excellent flow and leveling. It is used to provide a clear, low sheen protective coating to internal substrates and to coat exterior substrates that **do not** require compliance with CCANZ CP 01:2014 Code of Practice for Weathertight Concrete and Concrete Masonry Construction, section 4.4 Clear Coating System.

2.0 PROPERTIES

2.1. Colour and gloss	Clear, colourless satin finish when cured. If a gloss finish is desired, a final coat of PROTECTA-COAT GLOSS should be applied.
2.2. Specific Gravity	1.16 (Gloss version, 1.06)
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	55 g / L (Gloss version, 70 g / L)
2.8. pH	8 – 9
2.9. Volume Solids	40% (Gloss version, 38%)
2.10. Shelf Life	2 years in unopened containers as supplied.
2.11. Coverage	See Application (section 4.0).

3.0 USES

PROTECTA-COAT may be used on all concrete and masonry where a low sheen (satin) clear finish is desired (a gloss version is also available). It is especially suited to vertical surfaces and will not sag if applied at the recommended spreading rate. Suggested applications include:

- Interior concrete masonry block and in-situ walls to help keep clean and maintain the concrete look
- Exterior concrete block and in-situ walls in areas such as patios, barbeque pits, etc.

Once cured, it forms a non-absorbent clear coating which resists water and will not blanch when wet (see Precautions, section 5.0).

PROTECTA-COAT is recommended for application to interior walls and exterior walls not requiring compliance with CCANZ CP 01:2014 Code of Practice for Weathertight Concrete and Concrete Masonry Construction, section 4.4 Clear Coating System.

For any waterproofing application requiring code of compliance, the CONCRETE BLOCK SEALER SYSTEM must be used (refer CONCRETE BLOCK SEALER SYSTEM data sheets).

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3.0 USES (continued)

PROTECTA-COAT may be used on all types of vertical or sloping concrete, masonry 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. PROTECTA-COAT is NOT suitable for any below grade application or tanking application or in areas where water may pond or pool.

4.0 PRECAUTIONS AND LIMITATIONS

- 4.1 Not suitable for spraying on first application. Use only roller and brush, working well into surface to fill pores. Spraying may only be used for touch-up work. At all times, avoid excessively vigorous brushing, especially at right angles to the pointing, which may result in air entrapment and foam. Ensure no grossly excessive film build is applied in one coat, as it may not dry absolutely clear, especially if air is entrapped or drying conditions are not favourable.
- 4.2 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.
- 4.3 While PROTECTA-COAT 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.
- 4.4 Although PROTECTA-COAT 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.
- 4.5 PROTECTA-COAT is not suitable for application to any wall/structure requiring building code compliance for weathertight concrete and masonry. In these situations, the CONCRETE BLOCK SEALER SYSTEM must be used and applied by an approved MASTER PAINTERS ASSOCIATION of NZ applicator.
- 4.6 PROTECTA-COAT is not to be used in below grade or tanking applications. It is for above grade applications only.
- 4.7 Not recommended for use in areas subject to a high rate of wear and tear.
- 4.8 Not suitable for application to excessively smooth and non-porous substrates, such as plastics and metals.
- 4.9 Efflorescence: PROTECTA-COAT will not cause or correct/prevent efflorescence.
- 4.10 PROTECTA-COAT dries to a low gloss satin finish. If a gloss finish is desired, PROTECTA-COAT GLOSS should be applied as a final coat.



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TECHNICAL DATA Continued

5.0 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.

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 PROTECTA-COAT. This is because the moisture flow from within in the wall is dramatically reduced due to the PROTECTA-COAT 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 PROTECTA-COAT.



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TECHNICAL DATA Continued

5.0 SUBSTRATE MOISTURE (Continued)

Preventative Measures

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

- 5.1 Take electronic moisture readings of the wall prior to applying any part of the PROTECTA-COAT 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.
- 5.2 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 escape through the AQUELLUX S WB treatment, but rain water penetration into the substrate will be minimised.

DO NOT apply any PROTECTA-COAT 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.

- 5.3 Wall(s) must be completely dry before proceeding with PROTECTA-COAT 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 PROTECTA-COAT coats. Before starting PROTECTA-COAT 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 PROTECTA-COAT 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.
- 5.4 If applying PROTECTA-COAT 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).
- 5.5 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 PROTECTA-COAT to the inside face. Apply one coat PROTECTA-COAT, then wait at least 7 days (good drying conditions internally) before applying the next coat.
- 5.6 These steps should be considered in association with the applicator's knowledge of the wall construction and moisture readings.



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TECHNICAL DATA Continued

6.0 APPLICATION

- 6.1 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 PROTECTA-COAT has been applied and dried.
- 6.2 PROTECTA-COAT is supplied ready to apply. It is not recommended to thin down PROTECTA-COAT. Mix carefully until uniform, using a mixing stick or paddle and avoiding the entrainment of air. Refer to the table following to determine the number of coats required:

Application	Number of coats
Internal wall	1 to 3 depending on porosity of the substrate. More coats will be required on porous masonry compared to dense precast concrete.
External wall not requiring waterproofing (such as a patio or barbeque area wall independent of a habitable structure)	1 to 3 depending on porosity of the substrate. More coats will be required on porous masonry compared to dense precast concrete.
External face of wall which is part of a habitable structure requiring waterproofing but <u>does not</u> require building code compliance	3 coats. The substrate must first be primed with AQUELLUX S WB at 3m ² per litre. Refer to the AQUELLUX S WB data sheet for more details.

IMPORTANT:

1. It is essential to test an application of PROTECTA-COAT to the substrate prior to proceeding with full coverage. Apply the desired (or required) number of coats as per the instructions on the label and this data sheet, allow to dry and then determine whether to proceed with full application.
 2. PROTECTA-COAT is not suitable for application to any wall/structure requiring building code compliance for weathertight concrete and masonry. In these situations, the CONCRETE BLOCK SEALER SYSTEM must be used and applied by an approved MASTER PAINTERS ASSOCIATION of NZ applicator.
 3. In the table above, if a gloss finish is desired, the final coat should be PROTECTA-COAT GLOSS.
- 6.3 Apply the correct number of coats as follows:
- First Coat: at 2 – 4 m² per litre depending on porosity of substrate
 - If required: Second Coat at 6 – 8 m² per litre
 - If required: Third Coat at 10 – 12 m² per litre

Note that these spreading rates are only a guide and are very dependent on the porosity of the substrate.



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TECHNICAL DATA Continued

6.0 APPLICATION (Continued)

- 6.4 Use ONLY roller (DO NOT use a foam roller as this may cause foaming/air entrapment) and brush working well into the surface to block all the pores. Ensure sufficient film build is achieved on edges and on the pointing. Work well into the pointing, especially where it is highly recessed, using a thin brush and brushing parallel to the pointing. Do not use a vigorous brushing motion which will cause entrapment of air and foaming.
- 6.5 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 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.
- 6.6 Where water proofing is required, a minimum dry film build of 180 µm should be achieved on all surfaces, paying special attention to edges. PROTECTA-COAT 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.
- 6.7 Clean up tools and equipment with water before skinning has commenced.

7.0 PACKAGING

4, 10 & 20 L containers.



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