

## **EMULSION PCW50 PRODUCT INFORMATION**

### **EMULSION PCW50**

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**Manufacturer's Code:** RPPCW50

Updated: 15/06/2015

**Product Name:** EMULSION PCW50

**Description:** EMULSION PCW50 is an environmentally friendly water-based oil and water repellent used as a stain resistant penetrating sealer for treating masonry substrates. The treatment does not change the surface appearance or vapour permeability of the substrate. The sealer provides excellent stain resistance against the majority of stains including food, wine, tannin, and oil. EMULSION PCW50 contains no organic solvent and is a good alternative to solvent-based stain resistant sealer.

Some of the important features of this product include:

- Good resistance to oil and water-based stains
- Reduce water absorption and algae/mould growth
- Penetrates and permanently bonds to the masonry
- UV and alkali stable and wearing resistance
- Non-film forming and no change to appearance
- Water-based technology with no VOC

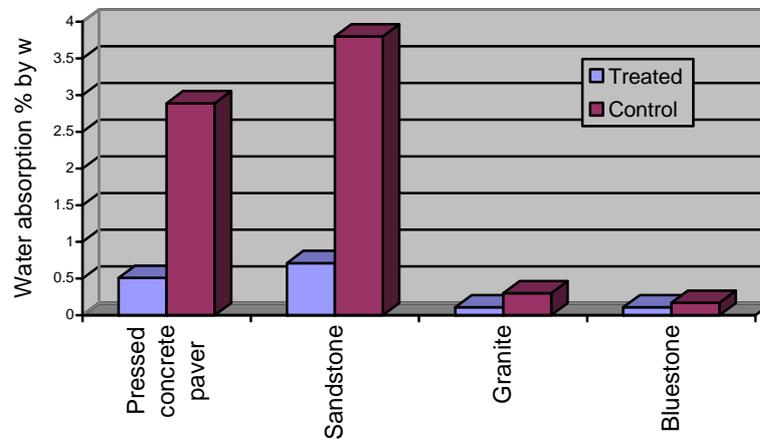
**Recommended Uses:** EMULSION PCW50 is suitable for all masonry materials including natural stone, concrete block, paver/driveways, brick, terracotta, tile and grout. Due to being water-based product, EMULSION PCW50 has limited penetration ability in dense substrate so the product may be most suitable for treating permeable masonry substrate. However, EMULSION PCW50 can still provide reasonable water repellent and stain resistant performance to dense substrate. For dense material, Tech-Dry solvent-based stain resistant sealer may be selected as a better alternative.

EMULSION PCW50 should be diluted with water before use. The recommended dilution ratio is **1 part EMULSION PCW50 to 9 parts water**. However, the best dilution ratio may be determined by testing. Deionised water is preferred for the dilution. Other clean water may be used for the dilution but a test must be conducted to ensure compatibility and stability of the emulsion. The EMULSION PCW50 (either concentrate or the dilution) should be mixed well before dilution!

**Test & Performance:** Masonry substrates including pressed concrete pavers, sandstone, granite and bluestone were selected for performance test. Food dye, red wine, and olive oil were used as the staining materials for staining test.

**Water Absorption:**

The capillary water absorption according to DIN 52617 was shown in Figure 1. The result indicates that, compared to the untreated substrates, the capillary water absorption of all treated substrates was significantly reduced.



**Figure 1: Capillary Water Absorption**

**Penetration Depth:**

The penetration depths of all the above treated substrates are listed in Table 1. Being a water-based formulation, which generally has limited penetration ability, EMULSION PCW50 achieved reasonable penetration depths to all the above masonry substrates, except for very dense bluestone.

**Table 1: Penetration Depth**

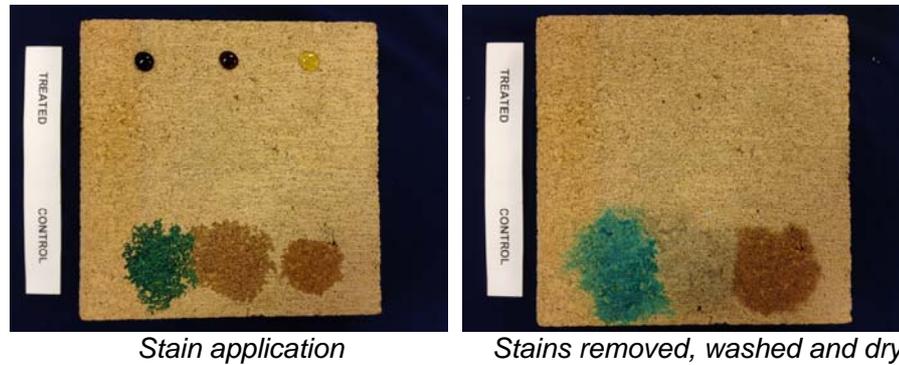
|                               | <b>Penetration Depth</b> |
|-------------------------------|--------------------------|
| <b>Pressed Concrete Paver</b> | 10-20 mm                 |
| <b>Sandstone</b>              | 1.5 mm                   |
| <b>Granite</b>                | 2 mm                     |
| <b>Bluestone</b>              | <1 mm                    |

**Stain Resistance:**

Staining materials (food dye, red wine, and olive oil) were equally placed as a droplet onto the surfaces of both treated and control surfaces in the following order: food dye (left), red wine (centre) and olive oil (right). After approximately 10 minutes, the stains were removed and the surfaces were washed with a dishwashing detergent and nylon brush under running tap water. The substrates were then allowed to dry before the surfaces were visually examined for staining. The results are shown in the photos below. The photos on the left were taken after the staining materials were placed onto the surfaces. The top part was the treated surface while the bottom was the control. The photos on the right were taken after the stains were removed, washed and dry.

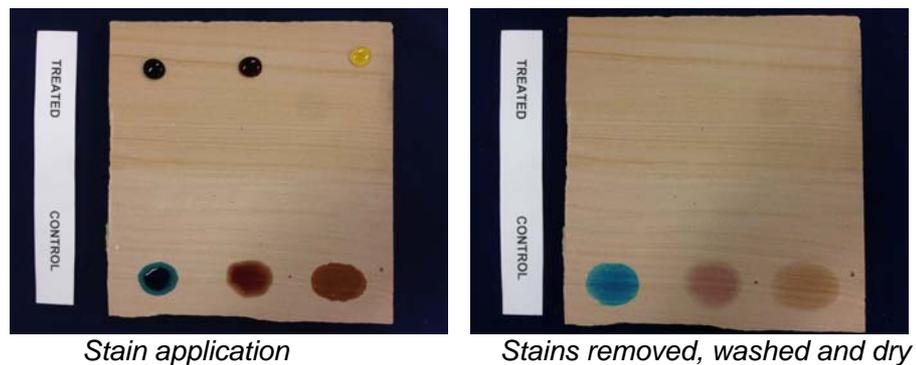
### 1. Pressed Concrete Paver:

Being a very permeable substrate, the stains were immediately absorbed by the untreated pressed concrete after being placed onto the surface. In contrast, the stains remained as beading droplets on the treated surface. After the stains were removed and washed and dried, the untreated surface was significantly stained while the treated part showed almost no stains. The result indicates that EMULSION PCW50 provided significant stain resistance to the treated pressed concrete compared to that of the control surface.



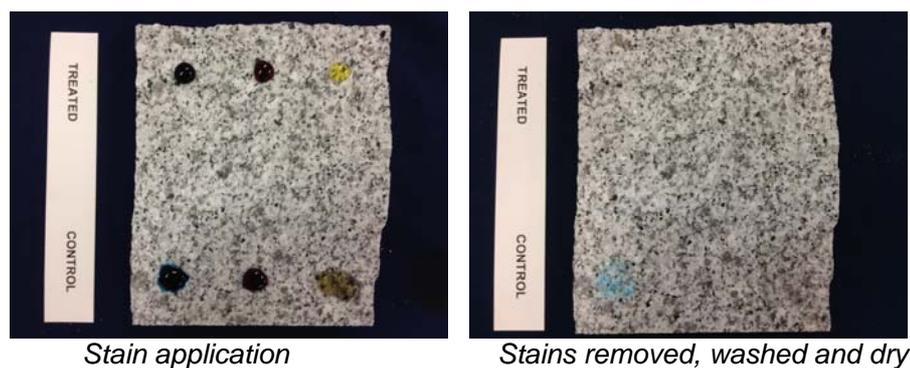
### 2. Sandstone:

Sandstone is a permeable natural stone and the results were similar to that of the pressed concrete paver. The test shows that EMULSION PCW50 provided good stain resistance to the treated sandstone.



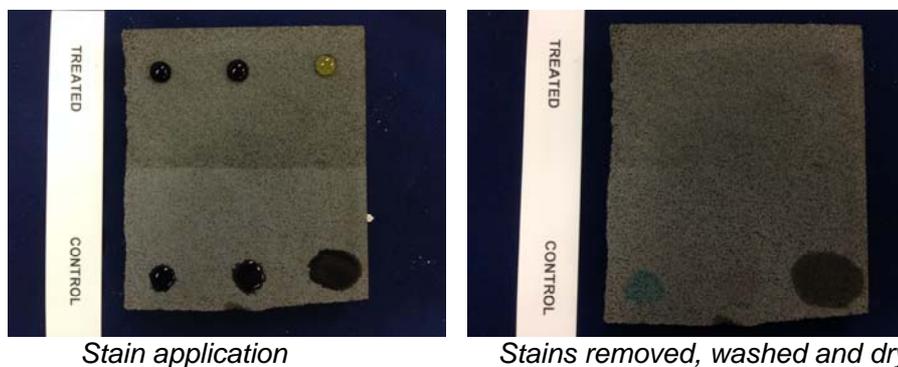
### 3. Granite:

Granite is a dense natural stone with low water absorption. Although there is no immediate absorption of the staining materials to the untreated surface, the surface was significantly stained after the test. In contrast, the treated part showed almost no stains. This indicates that EMULSION PCW50 provided significant stain resistance to the treated granite.



#### 4. Bluestone:

Bluestone is an extremely dense substrate with very limited water absorption but was still affected by staining materials used in this test. The staining test below shows that the difference in staining between the treated and the control is significant. This confirmed that EMULSION PCW50 provided a good stain resistance to the bluestone substrate.



*Stain application*

*Stains removed, washed and dry*

#### Use Instructions:

Read the product information before application. Do not apply if extreme weather conditions are expected. The surface to be treated should be dry, firm and free from grime, oil and any previous coatings/sealers. All cracks should be filled and allowed to cure before application. As masonry materials vary, a test **MUST** be carried out prior to application to find out the suitability of this product for the purpose. **Stir or shake the product before use!**

EMULSION PCW50 can be applied by brush, roller or low-pressure hand spray. The initial treated surface should have a mirror-like wet film appearance. When the 1<sup>st</sup> coat is absorbed by the surface, the 2<sup>nd</sup> coat should be immediately applied. This is called wet-on-wet application to ensure enough material is applied and absorbed into the surface to achieve adequate penetration. Any remaining sealer on the surface for after 10 minutes should be removed to avoid excessive accumulation of the sealer, which may not be absorbed by the surface and may cause an uneven finish.

The number of applications depends on the permeability of the substrate. Two coats are enough for general substrate but more wet-on-wet coatings may be required for very permeable substrates.

The consumption of EMULSION PCW50 (after dilution) varies significantly in an order of 2-20 m<sup>2</sup> per litre per coat depending on substrates. However, the precise consumption should be revealed by performing a pilot test.

The initial surface oil/water repellent effect may develop after the surface is dry. Full curing may take up to 7 days. Avoid heavy traffic on the surface for at least 24 hours. Wash the equipment in water after use.

#### Typical Data:

|                      |                            |
|----------------------|----------------------------|
| Appearance:          | White emulsion             |
| Specific Gravity:    | approx. 0.97 g/ml at 20 °C |
| pH value:            | approx. 7-9                |
| Solubility in water: | miscible in water          |
| VOC content:         | nil                        |

#### Important Note:

EMULSION PCW50 penetrates into the capillaries and renders the surface oil/water repellent while still leaving the capillaries open to allow vapour to breath. Prolonged contact of stains with the surface can still cause staining due to the open capillaries, therefore, it is strongly recommended that stains be

removed from the contaminated surface at the earliest opportunity to avoid possible permanent staining. The sealer will not prevent surface etching or wearing. EMULSION PCW50 will make the maintenance and cleaning of a treated surface easier. General cleaning is applied for removing stains. Harsh cleaning should be avoided.

**Handling & Storage:** EMULSION PCW50 is a water-based non-hazardous product. However, as with all chemical products, good industrial hygiene procedures should be followed when using this product. The product should be stored in closed containers in a cool dry place away from any fire sources. The product has a shelf life of 6 months in a sealed container stored in a cool dry place away from fire or ignition sources at a temperature below 25°C. Ensure good ventilation and keep away from fire or ignition sources when using this product!

KEEP OUT OF REACH OF CHILDREN!

**Packaging:** EMULSION PCW50 is available in 1, 5, 20 and 200 litre metal drums.

**Disclaimer:**

The information given in this data sheet is based on many years of experience and is correct to the best of our knowledge. As the storage, handling and application of this material is beyond our control; we can only be responsible for the quality of our product at the time of dispatch. We reserve the right to alter certain product parameters within the spectrum of properties in order to keep abreast of technical advances. It is the responsibility of the end user to determine the suitability of this material for any particular application.