

## PRODUCT INFORMATION

### EARTHSHIELD

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Manufacturer's Code: RPES

Updated: 01/01/2024

**Product Name:** EARTHSHIELD

**Description:** EARTHSHIELD is a solvent-based silane/siloxane impregnant for earth buildings. The product is designed to penetrate into the capillaries of earth surfaces providing the substrate with water repellent and dust-sealing effect. The treatment reduces the absorption of water or efflorescence or other water-borne staining materials which are responsible for the bulk of the deterioration in earth building materials. Impregnation with EARTHSHIELD also prevents surface abrasion of the earth structures. The treatment will not significantly change the appearance of the earth buildings and the vapour permeability. However, a slight darkening of the surface may occur for some earth structures.

**Recommended Uses:** EARTHSHIELD is recommended as a water repellent sealer for mud brick buildings or other earth structures. It is also suitable for other porous masonry substrates including natural stones, concrete masonry, bricks, and tiles & grout. Some of the important features of EARTHSHIELD include:

- Penetrates into substrate surface.
- Permanently bonds to the substrate with no peel or blister.
- UV, alkali stable and durable formulation.
- Reduces water penetration, efflorescence and water-borne staining.
- Provides dust-sealing effect and prevents surface abrasion.
- Does not significantly change the surface appearance and vapour permeability.
- Easy application and cost effective.

As earth building materials vary significantly, a test **MUST** be carried out prior to application to find out the suitability of this product for the purpose.

**Use Instructions:**

Application

Please read the product information for the correct application and safe handling. Do not apply if rain or extreme weather conditions are expected. The surface to be treated should be dry, firm and free from grime, oil and any previous coatings/sealers. If necessary, the surface should be washed with a suitable detergent in water and allowed to dry. All cracks should be filled with proper grouting materials and allowed to cure before application. A test prior to application is strongly recommended to determine of the number of coats required and suitable consumption rate.

EARTHSHIELD can be applied using brush, roller or spray. However, the product is preferably applied by saturation flooding using a hand pressure spray or airless spray equipment to avoid direct contact of the brush or the roller with the earth building surfaces. (**Recommendation:** use brush for around window area to avoid unnecessary spillage and overlapping; and use spray for larger areas for a more complete coverage). Enough materials should be applied onto the surface. For the vertical surface, the product should be applied as a liquid thin film stream which runs down the surface approximately 30-40cm. A second application should follow immediately after the first coat is absorbed by the surface. This is termed a "wet-in-wet" application. The object is to saturate the surface to allow a better penetration.

For horizontal surfaces, the product should be applied by flooding the surface for about 10 minutes to ensure the penetration of product into the surface. If the sealer is quickly absorbed by the substrate after the first application, a second coat may be required immediately. Any remaining liquid on the surface which has not been absorbed by the surface for 10 minutes should be removed to avoid any excessive accumulation of the sealer in surface areas which may cause an uneven finish.

The number of applications depends on the permeability of the substrate. Generally, for very dense surfaces one application may be enough but for permeable substrates, two or more coats "wet-in-wet" may be required.

Do not splash or spray the product onto any area you do not wish to treat. If splashing occurs the product should be removed with a cloth damped in a solvent such as mineral turpentine immediately.

#### Consumption rate

The consumption of EARTHSHIELD varies significantly depending on the permeability of the substrate. It may be of the order of 1-10 m<sup>2</sup> per litre per coat or could be out of this range significantly.

#### After application

The initial surface water repellency will develop after the surface is dry. Full curing may take 24 hours or up to 7 days. Avoid heavy traffic or any staining for at least 24 hours. The equipment can be washed in a solvent such as mineral turpentine.

#### Pilot testing and quality control

Due to the variation of building materials, it is strongly recommended that a pilot test on a small area on site should be conducted prior to application to find out the suitability of this product for the purpose.

<b>Typical Data:</b>	Appearance:	Colourless liquid with hydrocarbon solvent odour
	Solids content:	<50% by weight
	Specific Gravity:	0.84g/ml at 20 °C
	pH value:	Not allocated
	Solubility in water:	Insoluble in water
	VOC content:	>50%
	Flash point:	>31°C

**Important Note:** EARTHSHIELD penetrates into the capillaries and renders the surface water repellent while still leaving most of the capillaries open to allow water vapour to pass through. It reduces water absorption by capillary action. However, it has a limited resistance to water penetration particularly under prolonged contact or hydrostatic pressure. Therefore, in some cases where the substrate is very permeable or there is extreme wind driven rain, resistance to water penetration or water-borne staining may not be adequate. The surface abrasion resistance of the substrate treated with EARTHSHIELD is also limited. Harsh cleaning, extreme weathering, heavy traffic and strong solvent may have a detrimental effect resulting in significantly reducing the surface abrasion resistant effect of this sealer.

**Handling & Storage:** EARTHSHIELD is a hazardous and flammable material. Refer to the material safety data sheet for safe handling and application. Follow good industrial hygiene procedures when using this product. Vapour inhalation and skin or eye contact should be avoided by wearing proper protection. Wear an air-purifying respirator if there is a risk of exposure to high vapour concentrations. Wash hands after handling. The product should be stored in closed containers in a cool dry place away from any fire and ignition sources. The product has a shelf life of 12 months in a sealed original container under 25°C.

**Use under sufficient ventilation away from any fire or ignition sources!**

**Keep out of reach of children!**

**Packaging:** EARTHSHIELD is available in 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 are 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.