

Pumafloor ESD

Medium duty static dissipative flow applied epoxy floor topping



Description

Pumafloor ESD is a medium duty flow applied epoxy floor topping with static dissipative properties for use on concrete and polymer modified cementitious screeds. **Pumafloor ESD** is designed with the highest order of durability, impact and abrasion resistance. Its easy to clean, smooth, gloss finish makes the product ideal for environments such as electronics manufacturing, solvent and powder filling and handling, pharmaceutical industry, laboratories, operating theatres etc. Due consideration should also be given to the choice of footwear and truck wheels to ensure that moving persons and vehicles are not insulated from the floor surface.

Appearance

Seamless, smooth, gloss finish. In order to retain the high gloss, regular polishing with a metallised conductive polish will be required. Otherwise the product may scratch due to abrasive particles and dust with use. This is not detrimental to the product's performance.

Features & Benefits

- Electrically conductive
- Flow applied - rapid installation
- Non-dusting
- Seamless
- High abrasion resistance
- Easy to clean

Thickness

Nominal 3 mm

Typical Properties, 28 days at 20 °C

BS 8204-6	Type 5
Adhesion to concrete (BS EN 1504-2) (concrete failure)	> 1.5 MPa
Electrical Resistance to Ground (500 V):	
BS EN 1081 (R ₂)	< 10 ⁸ Ω
BS EN 61340-5-1	< 10 ⁹ Ω
BS 2050	Clause A.4.1

The typical physical properties given above are derived from testing in a controlled laboratory environment. Results derived from testing field-applied samples may vary dependent upon site conditions.

Cure Schedule at 20 °C

Working life of full packs * 25 minutes

* Usable working life of material following mixing and immediate spreading as per the application instructions.

Finished floor *

Cure time to light pedestrian traffic	24 hours
Cure time to heavy duty traffic	48 hours
Full chemical resistance	7 days

* The above cure times are approximate and given as a guide only. These times can vary due to prevailing site conditions.

Pack Size

31 kg

Coverage *

4.75kg/m² minimum 2.5mm

* Coverage figures given are theoretical. Practical coverage rates may vary due to wastage factors and the type, condition, profile and porosity of the substrate.

Colours

Pumafloor ESD is available in Charcoal, Chelsea Blue, Dark Grey, Green, Mid Grey, and Red only. **Pumafloor ESD** is not colour fast and may yellow over time. The rate of change will depend on UV light and heat levels and cannot be predicted. Due to the conductive carbon aggregate content, light colours are not available and the final colour will be darker than the corresponding non-ESD product. There is a possibility of shade differences between mixes if mixing times/conditions vary. This does not compromise the product's performance.

Application Conditions

Ideal ambient and substrate temperature range is 15 - 25 °C. Localised heating or cooling equipment may be required outside this range to achieve ideal temperature conditions. The aggregate can be stored in a cool area (or warm area in the case of low ambient temperature) in order to control product temperature and working life. The substrate and uncured floor must be kept at least 3 °C above the dew point to reduce the risk of condensation or blooming on the surface, from before priming to at least 48 hours after application.

Surface Preparation

Inadequate preparation will lead to loss of adhesion and failure. In flow applied systems there is a tendency for the finish to mirror imperfections in the substrate. Grinding, or light vacuum-contained shot-blasting is therefore preferred over planing for these systems. Percussive scabbling or acid etching is not recommended. The substrate should be finished to a surface regularity when tested according to BS 8204-1 of class SR1 otherwise a scratch coat will be required.

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Refer to the **Resdev Guide to Surface Preparation** for further information. Conductive floors must be laid to a uniform thickness which may require the use of a scratch coat.

Application Instructions

Priming

The substrate should have a relative humidity of <75% otherwise Pumaprime DPM should be used. Initial priming should be carried out using **Pumaprime SF** to isolate the substrate and provide a dust free surface to receive the copper tape. Spread onto the substrate and roll with a short-haired roller to ensure even coverage until the surface is completely wetted out, taking care to avoid pooling. Apply around edges by brush, to allow even spreading and avoid pooling. If, when cured, there are dry patches, a further primer coat is required. Allow to cure for a minimum 12 hours at 20 °C. If the primer has been left to cure for >48 hours then the primer surface should be mechanically abraded and the area re-primed. Failure to do so may result in de-bonding of the surface topping.

Install copper tape and connect earth linkage cables to the primed substrate. Apply **Pumaprime ESD** at a rate of 0.25 kg/m² with a short-haired roller ensuring even coverage and avoiding pooling. When cured, ensure there are no glossy or bare patches. If so, re-prime using **Pumaprime ESD** (see separate datasheet).

Application of Pumaflow ESD

IMPORTANT: Prior to mixing, the temperature of the three components must be between 15 and 25 °C otherwise coverage rate, flow and appearance will be impaired.

Pre-mix the coloured resin component before use. Add the hardener component to the coloured resin component and mix using a low speed electric mixer (300 - 400 rpm) for approximately 30 seconds until blended. Transfer to a larger mixing vessel or rotary drum mixer ensuring that any fibres are scraped from the sides of the resin container or spun off the mixing paddle. Add the aggregate component in stages, mixing for a minimum of 3 minutes and scraping sides of vessel until a uniform coloured, lump-free mix is obtained. Each mix should be mixed in exactly the same way for the same length of time to minimise the risk of shading. Apply the mixture immediately onto pre-primed areas, level to the required thickness using a steel float then de-aerate thoroughly using a spiked roller. **Do not use a notched trowel.**

The cured product should be protected from other trades using Kraft paper or similar breathable material. Polythene should not be used. Protect the installed floor from damp, condensation and water for at least 4 days.

Cleaning

Regular cleaning is essential to enhance and maintain the life expectancy, slip resistance and appearance of the floor. **Pumaflow ESD** can be easily cleaned using industry standard cleaning chemicals and techniques.

Consult your cleaning chemical and equipment supplier for more information.

Health and Safety

Refer to product Safety Data Sheet before use.

EU Directive 2004/42/EC

Complies with category j type SB (< 500 g/l VOC content).

Storage

Store off the ground in un-opened packs in a dry store, under cover between 10°C and 30°C out of direct sunlight. Protect from frost.

Shelf Life

12 months if stored in accordance with the above recommendations.

Additional Requirements

Earth linkage cables should be provided by a qualified electrical engineer. Each floor area should have a minimum of two earth points to allow for redundancy or failure of one. Joints should be bridged with copper tape to ensure electrical continuity. The control of static electricity is a 'whole environment' problem with conductive flooring forming only one part. Care should also be given to the choice of footwear, furniture, tools and fork lift trucks for example.

Limitations

Do not proceed with application if atmospheric relative humidity is, or is anticipated to be, >80% or if the surface temperature is <3 °C above the dew point. Application should not commence when the substrate temperature or the ambient temperature is, or is anticipated to be <5 °C during the application or within the curing period. The design strength of concrete surfaces must be a minimum of 25 MPa compressive strength at 28 days. The manufacture of **Pumaflow ESD** is a batch process and despite close manufacturing tolerances, colour variation may occur between batches. Products from different batches should not be used on the same surface or surfaces close together. If mixed batches are unavoidable, it is best practice to use the different batches only in areas where the colour cannot be directly compared. Touching up should only be attempted using product from the same batch using the same application methods. Product should be reserved specially for this purpose. It is recommended that touching up is carried out up to a break in the floor or surface.

Technical Advice

For further information on this or any other Resdev product, please contact our office.

Note

The information contained in this document, and all further technical advice given is based on our present knowledge and experience. However, it implies no liability or legal responsibility on our part. In particular, no warranty or guarantee of product performance in the legal sense is intended or implied as the conditions of use and the competence of any labour involved in the application are beyond our control. Properties listed are for guidance purposes only. We reserve the right to make any changes according to technological progress or further developments.

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Resin Development

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CE		13	DOP RV0067
EN 13813 SR-B2,0-AR0,5-IR14 Synthetic resin floor screed material for internal uses subject to reaction to fire regulations			
Reaction to fire	E _{fl} ⁽¹⁾	Impact resistance	IR14
Release of corrosive substances	SR	Sound insulation	NPD
Water permeability	NPD	Sound absorption	NPD
Wear resistance	AR0,5	Thermal resistance	NPD
Bond strength	B2,0	Chemical resistance	NPD
		Electrical resistance	ER105

⁽¹⁾ According to Commission Decision 2010/85/EU of 9 February 2010, the product satisfies all the requirements of the performance characteristic 'reaction-to-fire' class E_{fl} without need for further testing.