

# Pumadur HF ESD

Heavy duty static dissipative polyurethane floor screed



## Description

**Pumadur HF ESD** is a heavy duty, trowel applied polyurethane floor screed with static dissipative properties for use on concrete and polymer modified cementitious screeds. **Pumadur HF ESD** is designed with the highest order of durability, impact, abrasion and chemical resistance. Its lightly textured finish and static dissipative properties make the product ideal for both wet and dry processing environments wherever the control of unwanted static electricity is required. **Pumadur HF ESD** is designed to meet the performance requirements of BS 2050 (A.4.1).

## Appearance

Seamless, matt surface with a light slip resistant texture. **Pumadur HF ESD** contains a white aggregate which imparts a slip resistant profile to the finished floor. When first installed, the floor has a uniform coloured surface. However, with general use, the white aggregate will begin to show through giving a decorative, mottled appearance.

## Advantages

- Electrically conductive.
- High chemical resistance.
- Non-tainting.
- Seamless.
- High abrasion resistance.
- Slip resistant.

## Thickness

6 mm

## Chemical Resistance

**Pumadur HF ESD** is resistant to a wide range of commonly used chemicals in the food, dairy and pharmaceutical industries such as concentrated citric acid (fruits), spirit vinegar (50% acetic acid), lactic acid (food & dairy products) and common alcohols (methanol & ethanol). **Pumadur HF ESD** is also resistant to a wide range of inorganic acids, fuels, hydraulic oils, mineral oils and solvents. Good housekeeping practices should be employed. Please consult our Technical Department for further advice.

Some staining or discolouration may occur with some chemicals, depending on dwell time, temperature, type of chemical and degree of housekeeping employed. This does not affect the product's service integrity or durability.

## Temperature Resistance

**Pumadur HF ESD** is resistant to spillages and discharges up to 70°C when applied at 6 mm thickness. Where thermal shock is an issue, a properly prepared good quality substrate is essential.

## Typical Properties, 28 days at 20 °C

BS 8204-6	Type 8
Adhesive strength to concrete (BS EN 1504-2):	> 1.5 MPa
Slip resistance (Pendulum Test Value BS 7976-2):	> 60 dry / > 40 wet
Electrical Resistance to Ground (500 V):	< 10 <sup>8</sup> Ω
BS EN 1081 (R <sub>2</sub> )	Clause A.4.1
BS 2050	

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. The slip resistance figures given above are affected by application techniques and prevailing site conditions. Slip resistance can reduce over time due to poor maintenance, general wear or surface contaminants. Good housekeeping practices should be observed. Electrical properties may vary dependant on the applied thickness.

## Cure Schedule at 20 °C

Working life of full packs \* 15 minutes

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

## Finished floor \*

Cure time to light pedestrian traffic	12 hours
Cure time to light wheeled 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

30.3 kg

## Coverage\*

12 kg/m<sup>2</sup> at 6 mm

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

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## Colours

**Pumadur HF ESD** is available in Charcoal, Chelsea Blue, Dark Grey, Green, Mid Grey, Midnight Blue and Red only. **Pumadur HF ESD** is not colour fast and may yellow over time. The rate of change will depend on the levels of UV light and heat 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 or chemical resistance characteristics.

## 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. Grinding, light vacuum-contained shot-blasting or planing is recommended. Percussive scabbling or acid etching are not recommended. Anchorage grooves should be cut to a width and depth of twice the thickness of the floor finish at the edges, bay joints, up-stands, drains, doorways and at regular points across the floor, and all debris removed. 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. Take particular care to prime but not fill the anchor grooves. 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 the edges of and into anchorage grooves 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 pin-holing of the surface topping.

Install copper tape grid and connect earth linkage cables to the primed substrate. Apply **Pumaprime ESD** at a rate of 0.25 kg/m<sup>2</sup> 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). Where required by specification, conductivity checks should be undertaken at this point.

## Application of Pumadur HF ESD

Prior to mixing, the temperature of the three components must be between 15 and 25 °C. 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 1 - 2 minutes until homogeneous. Decant the mixture into a rotary drum mixer and add the aggregate component in stages, mixing for a minimum of 3 minutes until a uniform coloured, lump-free mix is obtained. Apply to the primed areas to the required thickness using a steel float. Ensure that anchor grooves are fully wetted out and filled with material. Each mix should be mixed in exactly the same way for the same length of time to minimise the risk of shading.

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. **Pumadur HF 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.

## 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 \*

Resin and hardener components	12 months
Aggregate component	6 months

\* If stored in accordance with the above recommendations.

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### 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 component. Care should also be given to the choice of footwear, furniture and fork lift trucks for example.

The presence of surface films can result in a loss of conductivity. It is therefore important that the surface is maintained in a clean condition with suitable cleaning materials.

### Limitations

Do not proceed with application if atmospheric relative humidity is, or is anticipated to be, >90% 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 **Pumadur HF 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, materials should be used in batch order. 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. It should be noted that any repair may affect the functionality of the surface.

### Technical Advice

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

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		13	DOP RV0060
EN 13813 SR-B2,0-AR0,5-IR20 Synthetic resin floor screed material for internal uses subject to reaction to fire regulations			
Reaction to fire	E <sub>n</sub> <sup>(1)</sup>	Impact resistance	IR20
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

<sup>(1)</sup> 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<sub>n</sub> without need for further testing.

The information given in this datasheet is derived from laboratory testing and site experience and is based on the company's current state of knowledge. It is provided to assist the customer in the selection of product, no legal responsibility or liability is implied or accepted by the company and this datasheet does not constitute a warranty or guarantee of performance. This product is manufactured from materials designed to achieve the required level of performance as safely as possible. Reactive components require appropriate transportation and storage on site, and proper handling with suitable safety equipment, this information is given in the product safety data sheets which must be read before use. Any specification or advice given by the company, its representatives or agents, is based on the information supplied by the purchaser. The company cannot be held accountable for errors or omissions as a result of that information being incorrect or incomplete. Some materials are derived from natural sources, and manufactured on a batch basis, consequently some variation may occur. Site conditions, site control and any labour used in the application process, are outside of the control of the company, and may also contribute to variation in performance, finish and colour.

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