Pumashield SF

High build epoxy floor coating

Resin Development

Description

Pumashield SF is a two-component 100% solids epoxy floor coating offering excellent abrasion and chemical resistance. **Pumashield SF** provides a tough, hard wearing coating for medium duty traffic giving high film build and wear resistance.

Appearance

Gloss finish in a range of standard colours (see the Pumaflor Colour Chart).

Pumashield SF is not 100% colour fast and may yellow over time. The rate of change will depend on UV light and heat levels and cannot be predicted. This will be more pronounced with lighter colours and does not compromise the product's performance or chemical resistance characteristics.

Typical Uses

For medium duty areas requiring an easy to clean, tough and durable coating with excellent chemical resistance such as warehouses, factories, workshops, showrooms, packing and storage areas. Can also be used as a seal coat for broadcast systems such as intermediate car park decks. **Pumashield SF** is suitable for regular foot traffic, light duty fork lift truck traffic and occasional hard plastic-wheeled trolleys.

Features & Benefits

- Protects concrete from oil and chemical spillages
- High build with excellent wear resistance
- 100% solids
- Easy application - no need for solvent/thinners
- Gloss, easy to clean finish
- Non-dusting
- Slip-resistant options available
- Nonyl phenol free - reduced hazard

Thickness

Approximately 350 microns from two coats.

Typical Properties, 28 days at 20 ºC

BS 8204-6	Type 3	
Adhesion to concrete (BS EN 12504-2) (concrete failure)	> 1.5	MPa

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.

Suitable Substrates

Concrete and polymer modified cementitious screeds.

Cure Schedule at 20 ºC

Working life of full packs *	25 minutes

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

Over coating time	16 - 36 hours
Cure time to pedestrian traffic	24 hours
Cure time to light wheeled traffic	4 days
Full chemical resistance	7 days

The floor should be protected from contact with water for at least 7 days.

These cure times are approximate and given as a guide only. These times can vary due to prevailing site conditions. At lower temperatures curing times will be extended. At higher temperatures the working life will be reduced. If the over coating interval of 36 hours is extended, the first coat should be lightly abraded to ensure inter-coat adhesion.

Coverage Guide

0.25 kg/m^2 per coat.

Coverage will vary depending on the texture and porosity of the substrate, film thickness and application technique. Two coats are normally sufficient but on very porous substrates, an initial coat of **Pumaprime SF** should be applied.

Application Conditions

Substrate and ambient temperature should be in the range of 10 °C to 25 °C. Localised heating or cooling equipment may be required outside this range to achieve ideal temperature conditions. For heating, use only electric powered systems. Fossil fuel powered heaters emit undesirable amounts of water vapour and CO_2. The maximum air relative humidity is 80%. To reduce the risk of "blooming" caused by condensation, the climate above the uncured floor should be maintained at least 3 °C above the dew point for at least 48 hours after application.

Substrate Quality

Concrete substrates must have a minimum compressive strength of 25 N/mm^2 and a minimum pull-off strength of 1.5 N/mm^2 and be dry (≤ 4% by weight), clean and free of surface laitance and contaminants such as dirt, dust, loose material, oil, grease, poorly bonded coatings and surface treatments. Concrete must include a functional damp-proof membrane and be free of rising moisture.

Substrate Preparation

Inadequate preparation will lead to loss of adhesion and failure. In coatings, there is a tendency for the finish to mirror imperfections in the substrate. Grinding, or light vacuum-contained shot-blasting is therefore preferred

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over planning for these systems. Weak concrete must be removed and voids filled with a suitable repair material. High spots must be removed e.g. by grinding. Excessively porous concrete should be primed using **Pumaprime SF**. If in doubt, apply a test area first.

Mixing
Materials should be stored at 15ºC to 25ºC for a minimum of 8 hours prior to use. Mechanically 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 - 500 rpm) for at least 3 minutes until homogeneous. Use a spatula to scrape the sides and bottom of the mixing vessel several times during mixing, as unmixed material will result in uncured patches in the final finish. Pouring the mixed material into a second mixing container and mixing again will greatly reduce the possibility of soft spots. Do not add solvent/thinners to the product.

Pot Life
Mixed material must be used immediately. When mixed, a chemical chain reaction takes place which creates heat and further reduces pot life. High ambient temperatures will also reduce pot life.

Application
Best results are obtained in warm conditions (minimum 15 °C). Apply with a short pile roller working well into the surface taking care not to exceed the coverage rate. Edges and difficult to reach areas may be applied thinly by brush. The second coat should be applied at right angles to the first.

An anti-slip finish may be achieved by fully sprinkling the first coat with kiln dried silica sand at 3 - 4 kg/m^2. Allow the first coat to fully cure (24 hours at 15°C or longer in colder temperatures) then remove all excess sand with a stiff broom and vacuum. Apply a second coat to encapsulate the grains, using a squeegee followed by back-rolling with a short pile roller. Coverage rate will depend on surface profile and aggregate selected but will be significantly greater than for the first coat. As a guide:

Sand Grading	Maximum Area	Achievable PTV (BS 7976-2)	
mm	m^2/kg	Dry	Wet
0.3 - 0.6	2.5	≥40	≥40
0.7 - 1.2	1.5	≥55	≥55

Note: These coverage figures are approximate as silica sand grading can vary widely as can site conditions. If in doubt, order extra material to account for wastage or install a test area to assess coverage prior to starting work. The pendulum test values given above are derived from testing in a controlled laboratory environment and are given for guidance only. Results derived from testing field-applied samples may vary dependent upon site conditions and application technique. Slip resistance can reduce over time due to poor maintenance, general wear or surface contaminants. Good housekeeping practices should be observed.

Tool Cleaning
Tools and equipment should be cleaned whilst the resin is still wet using **Pumasolve**.

General Maintenance
Pumashield SF can be easily cleaned using industry standard cleaning chemicals and techniques designed for epoxy resin flooring. Test cleaning agents prior to use in a small area. Do not steam clean or subject to temperatures in excess of 50 °C. Spillages must be removed immediately.

Precautions
Remove food products from the area during application and curing. As with all high gloss paint finishes, scratching of the surface may occur with use due to surface contamination and abrasion. In common with all smooth floor finishes, **Pumashield SF** may become slippery under certain conditions. In areas of chemical spillage, please consult our Technical Department for specific advice.

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

Health and Safety
Before using this product, please ensure that you have received and read the product Safety Data Sheet. Refer to hazard labelling on the product. Wear gloves and avoid contact with skin and eyes.

EU Directive 2004/42/EC
Complies with category j type SB (< 500 g/l). The VOC content of **Pumashield SF** is approx. 140 g/l (calculated).

Storage
Materials should be stored in their original, unopened containers in a dry weatherproof building maintained at 10 °C to 30 °C on pallets and away from walls. Consignments should be used in order of batch number. Protect from frost.

Shelf Life *
12 months if stored in accordance with the above recommendations.

Limitations
Do not proceed with application if atmospheric relative humidity is, or is anticipated to be >75% or if the surface temperature is <3 ºC above the dew point. Application should not commence when the substrate temperature or the ambient temperature is, or is anticipated to be <10ºC during the application or within the curing period. The manufacture of **Pumashield SF** is a batch process and despite close manufacturing tolerances, minor variations in shade may occur between batches. Products from different batches should not be used on the same surface or surfaces close together. /Ctd

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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 is not recommended and should only be attempted using product from the same batch using the same application methods. Colour and finish variation may still occur. 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.

CE Marking

Resdev Limited, Pumaflor House, Ainleys Industrial Estate Elland, West Yorkshire, HX5 9JP, England		
CE	15	DOP RV0089
EN 13813 SR-B2,0-AR0,5-IR4 Synthetic resin screed material for use internally in buildings		

Reaction to fire	E_{fl} (1)	Impact resistance	IR4
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

(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.

Additional Information

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 and coverage rates shown are for guidance purposes only. The user of the product must determine the product's suitability for the intended purpose. We reserve the right to make any changes according to technological progress or further developments.