

# PENTENS ED-FLOORSHIELD

## Product Data Sheet

### External Car Park Flooring System

#### Description

PENTENS ED FLOORSHIELD system is a solvent-free polyurethane car park coating which transforms the exposed car park deck environment. The system provides slip-resistant, hard-wearing, chemical and abrasion-resistant floor finish. It also provides a good crack bridging, waterproof wearing surface for exposed car park decks.

#### Uses

- External parking bays
- Multi-storey car park top decks
- External walk ways
- Refurbishment of existing car parks

#### Advantages

- Flexible waterproof membrane.
- Trafficable.
- Reduces noise.
- Abrasion-resistant.
- Solvent-free (low VOC content).
- Fire-resistant.
- Slip-resistant.
- Resistant to cracking.
- Excellent bond strength.
- Chemical-resistant.
- Optional 100% UV-stable sealer.
- Fast-track installation.
- Can be used over existing asphalt substrates.

#### System Specifications

##### i). Standard FLOORSHIELD System-FLOORSHIELD ID SFS

Ideal for parking lots, walkways, light traffic areas

- Waterproofing layer: PENTENS E-500 FLEX
- FLOORSHIELD SF
- FLOORSHIELD Oxide (30/60's mesh)
- FLOORSHIELD UV or UV matte

##### ii). Medium FLOORSHIELD System-FLOORSHIELD ID MFS

Ideal for vehicular driveways

- Waterproofing layer: PENTENS E-500 FLEX
- FLOORSHIELD SF
- FLOORSHIELD Oxide (20/40's mesh)
- FLOORSHIELD UV or UV matte

##### iii). Extra Heavy FLOORSHIELD System-FLOORSHIELD ID EHFS

Ideal for car park ramps and extra heavy traffic zones

- Waterproofing layer: PENTENS E-500 FLEX
- FLOORSHIELD SF
- FLOORSHIELD Oxide (16/30's mesh)
- FLOORSHIELD UV or UV matte

#### Technical & Physical Data

The figures that follow are typical properties achieved in laboratory tests at 20°C and 50% Relative Humidity.

Flexural Strength (N/mm <sup>2</sup> ), (ASTM C580)	50
Water Vapor Transmission	0.12g/24hrs/m <sup>2</sup> mmhg@ 32°C and 50% RH
Fire Resistance Part 3 (BS476)	Designated EXT.FF.AA
Temperature Resistance	Not over 70°C, hardens at any temperature
Hardness (Shore D)	68
Water Permeability	Nil-Karston test (impermeable)
Chemical Resistance (10% HCOOH, 60°C, 24hrs)	No changes on the surface of the sample
Slip Resistance	TRRL Pendulum Slip Test Dry 92 Wet 46
Abrasion Resistance (per kg load using H-22 wheels)	Taber Abrader: 30mg loss after 1000 cycles of abrasion
Tensile / Elongation N/mm <sup>2</sup> / % (BS2782)	1 day 5.2 / 50.5 7 days 7.13 / 40.6 28 days 7.15 / 30.7
Crack Bridging	No cracking

#### System Performance Guide

Fire Safety	4
Slip Resistance	4
Heavy Traffic	4
Impermeability	5
Cleanability	5
Wear Resistance	4
Chemical Resistance	4

5-Excellent, 4-Very Good, 3-Good, 2-Fair, 1-Poor

#### Range of PENTENS FLOORSHIELD Oxide mesh

30/60's	20/40's	16/30's
Fine	Medium	Rough

**Instruction for Use**

**Surface preparation**

All surfaces to be treated must be structurally sound and all previous coatings, adhesives, efflorescence or laitance should be removed by chipping, abrasive blast cleaning, high pressure water washing, mechanical scrubbing or other suitable means. All surfaces must be clean, free from dirt, grease, oil or other surface contaminants.

**Application**

**Waterproofing layer:**

Mix PENTENS E-008 A/B homogeneously prior to application using an electrical or pneumatic power stirrer at approximately 300 – 400 rpm. Apply the mixed primer at 0.2kg/m<sup>2</sup> with a brush onto the substrate to ensure good wetting of the substrate and sealing of the pores.

PENTENS E-500 FLEX consists of a base and a hardener component supplied in prebatched packs. Before application, the base and the hardener components are carefully re-stirred by means of a slowly rotating electric drill with paddle. To complete the mixing, the resin is poured from one can to another and mixed again. Application of PENTENS E-500 FLEX is normally by using steel trowel floats, rubber squeegees or rolling. Apply one coat at 0.5kg/m<sup>2</sup> on top of the primed surface.

**FloorShield System:**

Mix the two components of PENTENS FLOORSHIELD SF using an electrical mixer at a maximum speed of 400 rpm. Firstly, re-stir resin Component A to eliminate any separation and then the hardener Component B is added into Component A. Mix for at least 2 minutes. The mixed primer is then poured onto the prepared substrates and spread using a steel trowel or rubber spreader. Once the primer has been spread, roll using a short pile roller. This ensure more even coverage. Material consumption is 0.2kg/m<sup>2</sup>.

Apply a layer of PENTENS FLOORSHIELD Oxide resin to the primer surface using a short pile roller. Dry FloorShield Oxide is then evenly scattered on the wet base coat so that the surface is fully blinded. This should give the surface a rough sandy appearance and takes 600-1000 g/m<sup>2</sup> of quartz. After about 12-15 hours, excess Oxide is removed by brushing and vacuum cleaning.

PENTENS FLOORSHIELD UV is a pigmented, solvent-free two-component polyurethane resin. The exact mixing ratio of resin to hardener must be adhered to. The two components of PENTENS FLOORSHIELD UV are mixed using a forced action pan mixer. Firstly, re-stir the resin Component A to eliminate any separation and then the hardener Component B is added into Component A. Mix for at least 2 minutes. Once the mix is homogenous, apply two coats onto the Oxide layer using roller. The material consumption should be 0.3-0.8kg/m<sup>2</sup>/2 coats. Allow 6 to 8 hours of curing time between each coat.

At 20°C, the working life about 20 minutes. Care must be taken to ensure that the material does not begin to harden while it is being worked, thus leaving unsightly joint lines. PENTENS FLOORSHIELD UV should be applied by batch. This will minimise the incident of colour shading which can result from the tiniest difference in colour. Actual coverage depends on specification. To ensure a fit for your project, please refer to PENTENS Technical Advisors.

**Curing Period**

	10°C	20°C	30°C
<b>Light Traffic</b>	30 hrs	16 hrs	10 hrs
<b>Full Traffic</b>	36 hrs	24 hrs	16 hrs
<b>Full Chemical Care</b>	12 days	7 days	5 days

**Cleaning and Maintenance**

Clean regularly using a single or double headed rotary scrubber dryer in conjunction with a mildly alkaline detergent.

**Important Note**

Keep away from fire sources. Do not smoke. Sufficient ventilation is recommended, otherwise wear respiratory equipment. Gloves and goggles must be worn to protect hands and eyes. In case of contact with eyes, rinse with plenty of water and consult a physician. Hand and tools must be cleaned with solvent or cleanser before polymerization.



**UFON NANO-CHEMICAL LTD.**  
 8F, No.2, Lane 348, Sec 2, Chung-Shang Road,  
 Chung Ho City, Taipei Hsien, Taiwan, R.O.C.  
 Tel: +886 2 2240 0220 Fax: +886 2 2242 6536  
 URL: www.pentens.com  
 E-mail: pentens@ms35.hinet.net

**DONG JI (M) SDN. BHD.**  
 No.4, Jalan BP 4/1, Bandar Bukit Puchong,  
 47120 Puchong, Selangor, Malaysia.  
 Tel: +603 8066 8287 Fax: +603 8066 9287  
 URL: www.pentens.com.my  
 E-mail: dji@pentens.com.my