

Pentens®

GREEN CAR PARK SYSTEM



COMMERCIAL COATINGS CATEGORY
INDOBUILTECH AWARD 2023

PENTENS Holdings Sdn Bhd is Asia leading manufacturer for environmentally friendly advanced performance coating system. We supply wide range of coating system to cater various requirements with a comprehensive one stop service for specification to installation.

PENTENS FloorShield Car Park System is special designed to act as layer of protective or decorative coating system will be able to deliver a contemporary car park environment.

PENTENS Floorshield is a solvent free car park flooring coating system, waterproof wearing surface for internal and external car park. It is ideally use for new or refurbishment multi-storey car park.



Our Mission :

- Environmentally Friendly
- Clean, Aesthetics and Flexibility
- Comfortable and Eternally Quality



environmentally friendly product



WHY CHOOSE PENTENS FLOORSHIELD CAR PARK SYSTEM?

- ✔ Low VOC content
- ✔ Improve comfort and aesthetics of car park environment.
- ✔ Reduce noise
- ✔ Solvent free
- ✔ Skid and abrasion resistance
- ✔ Resistance to cracking
- ✔ A long-term warranty against defects
- ✔ Cost effective and competitive
- ✔ Enhance safety
- ✔ Structural protection



PENTENS ID FLOORSHIELD

Internal Car Park Floor Systems

PENTENS ID FloorShield Flooring is a high quality flexible polyurethane car park flooring coating system. This particular system provides slip resistant, chemical resistant and abrasion resistant on floor finish. This product is specially designed by using high quality solvent free PU resins and curing agent, with graded aggregates resist to chemical attack and abrasion. Selected special grade aggregates provide a textured finish to facilitate skid resistance that can be adjusted to suit your service requirement.

Uses

- Parking lots
- Interior vehicle flooring
- Pedestrian walkway

Advantages

- Low VOC content
- Environmentally friendly
- Available in wide range of colors
- Reduce noise
- Abrasion resistance
- Dust free car park environment
- Solvent free
- Slip resistance
- Resistant to cracking
- Excellent bond strength
- Chemical resistance



**Standard FloorShield System
ID SFS System**

FloorShield SF Primer
 FloorShield Oxide 30/60's mesh
 FloorShield TC Polyurethane Coating
 Ideal for parking lots, walkway,
 light traffic

**Medium FloorShield System
ID MFS System**

FloorShield SF Primer
 FloorShield Oxide 20/40's mesh
 FloorShield TC Polyurethane Coating
 Ideal for vehicle driveway

**Extra Heavy FloorShield System
ID EHFS System**

FloorShield SF Primer
 FloorShield Oxide 16/30's mesh
 FloorShield TC Polyurethane Coating
 Ideal for car park ramp

Model Specification

All work done is strictly in accordance to manufacturer's instruction. PENTENS provides various range of car park flooring system.

Note:

Alternative specifications are available for steep ramps and ramps with severe camber.



TECHNICAL INFORMATION

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

Volatile Organic Compounds (g/L) ISO88890-2	3.78	Chemical Resistance (10% HCOOH, 60°C, 24hrs)	No changes on the surface of the sample
Total Aromatic Organic Solvent (%)	N.D.	Slip Resistance	TRRL Pendulum Slip Test Dry 92 Wet 46
Fire Resistance Part 3:	BS476 Designated EXT.FF.AA	Abrasion Resistance (per kg load using CS-17 Wheels)	Taber Abrader: 0,1 mg loss after 1000 cycles of abrasion
Adhesive Strength (kgf/cm ²)	640	Tensile Strength (kgf/cm ²)	250
Hardness (Shore D)	68	Crack Bridging	No cracking
Water Permeability	Nil-Karston Test (impermeable)		



PENTENS ED FLOORSHIELD

External Car Park Floor Systems

PENTENS ED FloorShield Flooring is a solvent free polyurethane car park coating which transforms exposed deck car park environments. The systems provides slip resistant, hard wearing chemical and abrasion resistant floor finish. It's also providing a good crack bridging, waterproofing wearing surface for expose car park deck.

Uses

- External parking bay
- Multi-storey car parks top deck
- External walk way
- Refurbishment of existing car park



Advantages

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



**Standard FloorShield System
ED SFS System**

Pentens E-500
 FloorShield SF Primer
 FloorShield Oxide 30/60's mesh
 FloorShield UV Polyurethane Coating
 Ideal for parking lots, walkway,
 light traffic

**Medium FloorShield System
ED MFS System**

Pentens E-500
 FloorShield SF Primer
 FloorShield Oxide 20/40's mesh
 FloorShield UV Polyurethane Coating
 Ideal for vehicle driveway

**Extra Heavy FloorShield System
ED EHFS System**

Pentens E-500
 FloorShield SF Primer
 FloorShield Oxide 16/30's mesh
 FloorShield UV Polyurethane Coating
 Ideal for car park ramp

Model Specification

Product : PENTENS ED FloorShield
 Systems preparatory work and
 application should be accordance
 to manufacturer's instructions.

Actual coverage depends on specification,
 consult Pentens for advice.

Note:

Alternative specifications are available for
 steep ramps and ramps with severe camber.

TECHNICAL INFORMATION

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

Volatile Organic Compounds (g/L) ISO88890-2	3.78	Chemical Resistance (10% HCOOH, 60°C, 24hrs)	No changes on the surface of the sample
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Adhesive Strength (kgf/cm ²)	640	Tensile Strength (kgf/cm ²)	250
Hardness (Shore D)	68	Crack Bridging	No cracking
Water Permeability	Nil-Karston Test (impermeable)		



PENTENS MOISTURE BARRIER

Epodur (For Moisture Content $\leq 5\%$)

PENTENS T-303 is a two-component, normal setting, damp-proofing coating incorporates 2 polymer components. Apply directly to concrete, mortar or stone as sealing and leveling mortar (0.5 - 0.3mm). It is also a moisture barrier providing an ideal substrate for subsequent epoxy coating.



Uses

As sealing and leveling mortar, a pore sealer and as a damp course on concrete, mortar or stone surface like:

- Floor slabs and wall
- Concrete gutter
- Bathroom
- Basement
- Seawall

Advantages

- Easy application
- Excellent adhesion
- Optimal pore sealer
- Good chemical resistance
- Increase frost and salt resistance
- Resist carbon dioxide penetration
- Waterproof, water vapor permeable
- For internal and external use
- Non- toxic
- Slightly flexible
- Chemical resistant
- Optional 100% UV stable sealer
- Can be applied over new concrete (after 3 days of curing)

TECHNICAL & PHYSICAL DATA

Colour (mixed)	Grey
VOC (ISO 11890-2)	No detected
Formaldehyde	No detected
Mixed density	2.0kg per liter
Bond Strength on concrete (sandblasted)	15kg/cm ²
Elongation	30%
Index of resistance	
To diffusion of water vapor	($\mu\text{H}_2\text{O}$) : 850
To diffusion of carbon dioxide	(μCO_2) : 34000

Water absorption	0.03kg/m ² x h0.5
Coefficient A	
Permeability	
Positive water pressure	15 bar
Negative water pressure	3 bar
Heavy metals (EPA3052 & EPA6010B)	
- Cadmium (Cd)	No Detected
- Lead (Pb)	No Detected
- Total Chromium	No Detected
- Mercury (Hg)	No Detected
Flash Point (ASTM3828-07A)	>61.0°C

Epoxy Type (For Moisture Content > 5%)

PENTENS E-502 is a three-component mortar consisting of modified epoxy resin mixed with pigments (A-Comp.), polyaggregate (C-Comp.). PENTENS E-502 is designed specifically for industrial use.

Uses

PENTENS E-502 is suitable for leveling and repairing standard to highly absorbent concrete and cement screed surface prior to the application of epoxy.

PENTENS E-502 is particularly suited for the preparation of epoxy mortar.

- High mechanical wear
- Traffic zones
- Floor slabs
- Loading / Unloading quays
- Suspended floors
- Storage and logistic areas
- Car park

Advantages

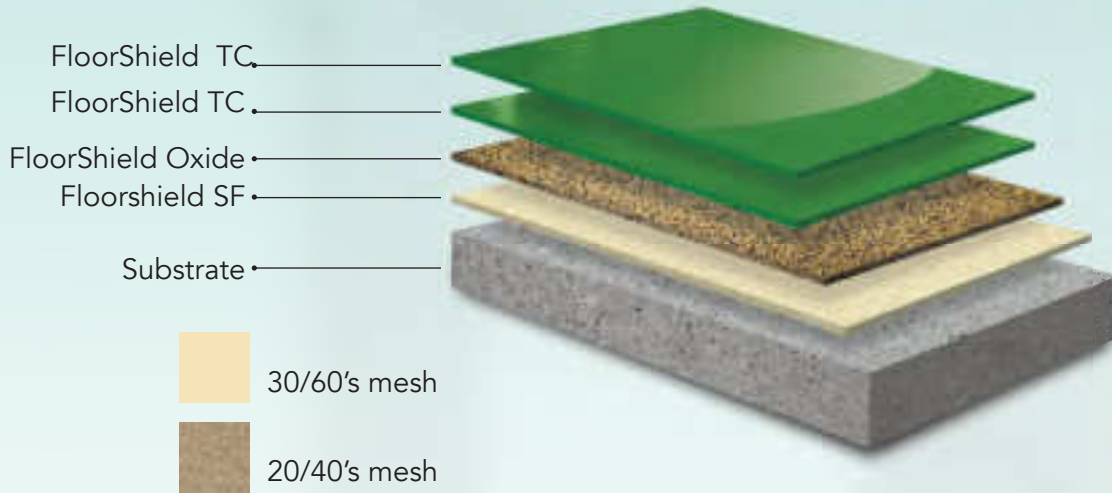
- Solvent free
- Excellent wear and impact resistant properties
- Impervious to liquids and excellent
- Resistant to chemicals
- Varying degree of anti-skid finish available
- Low viscosity
- Good penetration
- High mechanical
- Environmentally friendly

TECHNICAL & PHYSICAL DATA

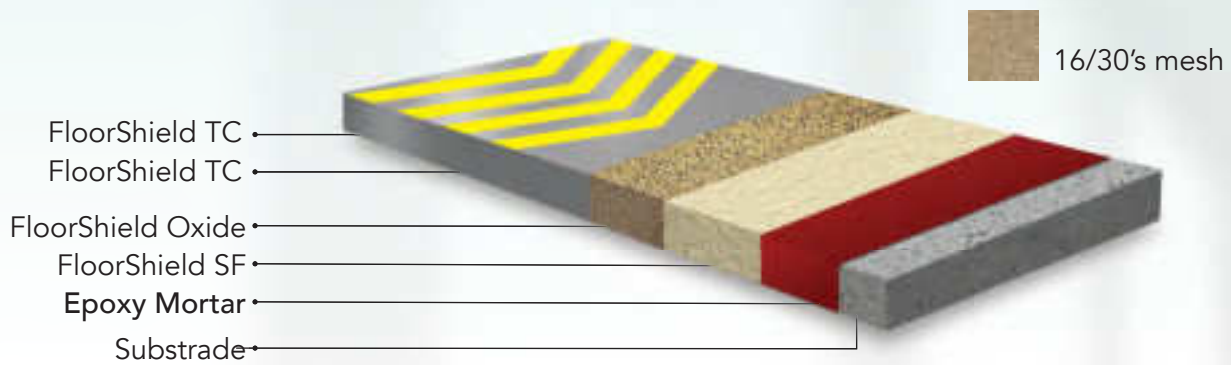
Foam	Liquid
Colour	Transparent
Density (CNS 6986, CNS 6988)	1.08kg / per liter
Flexural Strength (N/mm ²) (ASTM C580)	50
Tensile Strength (N/mm ²) (ASTM C307)	30
Elongation at break (%) (ASTM D638)	9
Compressive Strength (ASTM C579:93)	>90N/mm ²
Abrasion Resistant CS-17 (ASTM D4060)	Less than 30mg weight loss after 1000 cycles of abrasion
Tensile Adhesion (pull-out-strength) (ASTM D4541)	3.5N/mm ² Failure in concrete
Pot life (30C)	2 hours
Consumption	4 - 5kg/m ²
Packaging E-502A E-502B	20kg /pail 10kg /pail

CAR PARK SYSTEM DETAILS

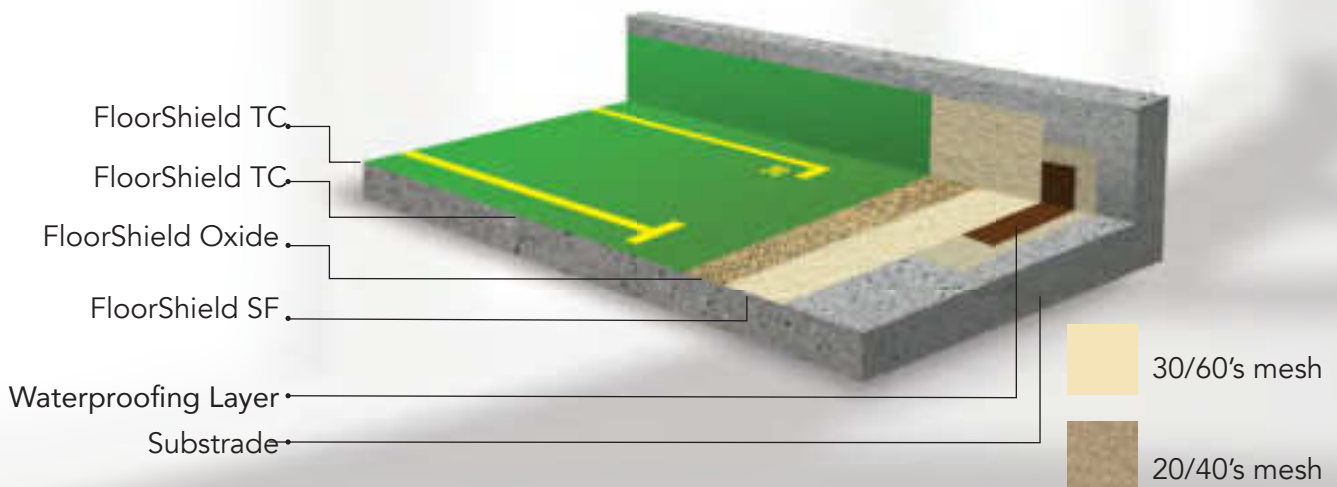
ID FloorShield



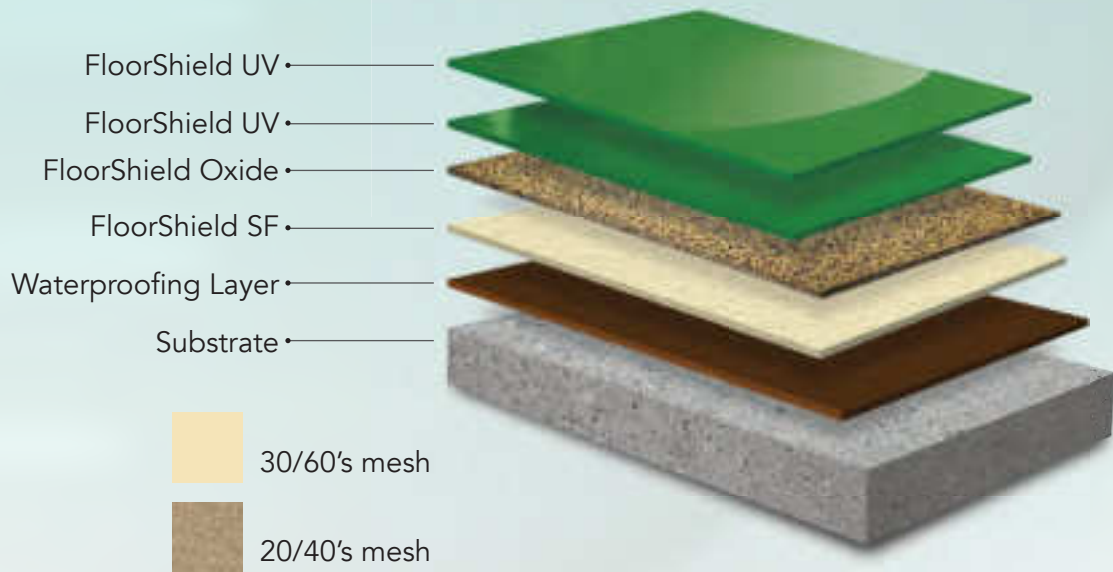
Ramp



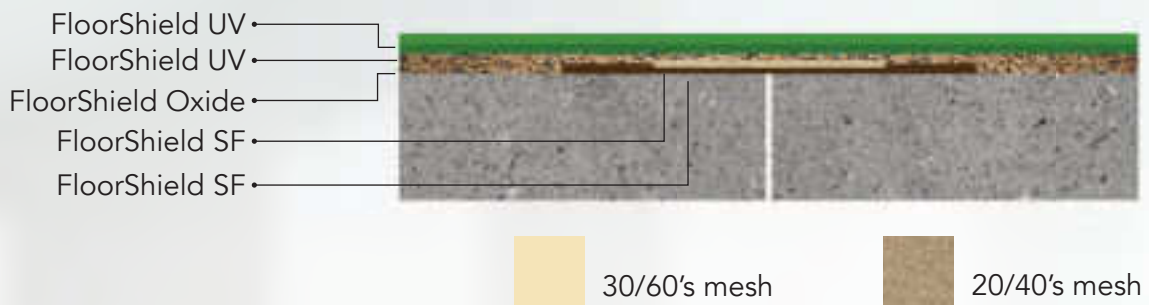
Skirting



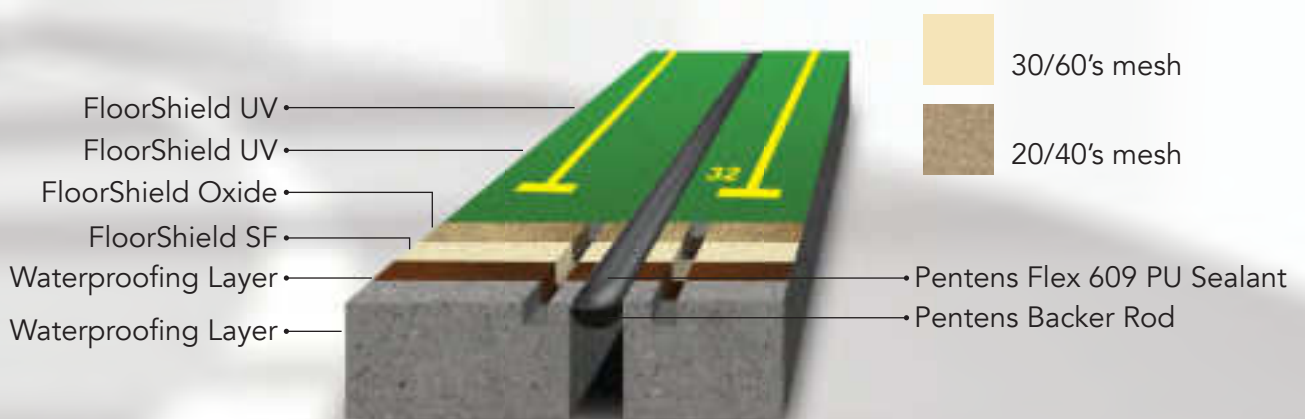
ED Floorshield



Construction Joint



Expansion Joint



PROJECT REFERENCES



Menara Bank Rakyat, Kuala Lumpur

Main-Con:
Kasugi Prima Sdn Bhd

Architect:
Gsd Architect Sdn Bhd

Material:
Floorshield ID System



Menara Top Glove, Setia Alam

Owner:
Top Glove Properties Sdn Bhd

Architect:
Arkitek KDI Sdn Bhd

Material:
Floorshield ID System



Gembira Residence, Kuchai Lama

Main Con:
Ehsan Bina Sdn Bhd

Architect:
Patrick Low Architect

Material:
Floorshield ID System



Shaftsbury, Cyberjaya

Main Con:
Pembinaan Ikkhasas-Merak Sdn Bhd

Architect:
LA Architect Sdn Bhd

Material:
Floorshield ID System

PROJECT REFERENCES



C.K.S. International Airport, Taiwan

Material:
Floorshield ID System



Hospital Tuanku Ja'afar, Seremban

Owner :
Kementerian Kesihatan Malaysia

Main Con:
Pls Plantation Berhad

Material:
Floorshield ID System



MIEC, Langkawi

Main Con:
Kasyaf Sdn Bhd

Architect:
Hasa Arkitek Sdn Bhd

Material:
Floorshield ID System



SDMC, Ara Damansara

Material:
Floorshield ID System

PROJECT REFERENCES



Shangri-La Hotel, Kuala Lumpur

Material:
Floorshield ID System



Menara Landmark, Johor Bahru

Material:
Floorshield ID System



Material:
Floorshield ID System



Material:
Floorshield ID System

PROJECT REFERENCES



Bus Terminal PWTC, Kuala Lumpur

Material:
Floorshield ID System



Nirvana Memorial Park, Semenyih

Owner:
Nirvana Memorial Park

Main Con:
Nirvana Memorial Park

Material:
Floorshield ID System



KLCC (Lot C), Kuala Lumpur

Owner:
KLCC Property Holding Berhad

Material:
Floorshield ID System



JKR HQ, Kuala Lumpur

Material:
Floorshield ID System

PROJECT REFERENCES



Menara Astra Sudirman, Jakarta

Material : Floorshield-ID System



MPP Building Office Sudirman, Jakarta

Material : Floorshield-ID System



Mandolika International Circuit, Lombok

Material : Medium Floorshield System



Vivere, Gading Serpong

Material : Floorshield-ED System

PROJECT REFERENCES



The Park Mall, Semarang

Material : Floorshield-ED System



BICC Ibis Pullman Hotel, Bandung

Material : Floorshield-ID System



Pakuwon Group Tower, Surabaya

Material : Floorshield-ED System



Nagoya Hill Hotel, Batam

Material : Floorshield-ED System

PROJECT REFERENCES



Telkom Sigma Tower, BSD

Material : Floorshield-ID System



Dealer Ferrari Menteng, Jakarta

Material : Floorshield-ED System



Material : Floorshield Carpark System



Material : Floorshield-ID System

PROJECT REFERENCES



Dinas Lingkungan Hidup, Bandung

Material : Floorshield-ID System



Sekolah Kristen Ipeka BSD, Serpong

Material : Floorshield-ID System



Material : Floorshield-ID System



Material : Floorshield-ID System

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