Pentens®

Green Waterproofing, Leader in Asia

# INDUSTRIAL FLOORING SOLUTIONS

## Pentens® Industrial Flooring Products

- Product Introduction & Technical Specification
- Waterproofing System
- Company Profile & Project Reference


MGBC

SIRIM ECO-LABEL

GreenLabel SINGAPORE

Green Building Material · Healthy · Ecological · Recycling · High-performance

Pentens eco-building material

# GO GREEN

**DJI International** (the Group), established in 1989, is one of the leading manufacturers and distributes specialist in building material for all industry which include raised floor system, water-based resin, water resistant floor, low pressure cracks, silicon-rubber waterproofing paint, soft resin mortal for waterproofing and high strength epoxy flooring.

The key vision of the Group is through dynamic and innovative management while teamwork to improve quality of products and services in order to commit excellences. On top of that, our team of architects and engineers are constantly searching for new innovative ideas and processes. Therefore, the group is assured of superior quality, versatility, durable and reliable products.

The Group believes that trust is the most important key in business activities and recognizes improvement in the quality of products and services will gain more consumers' and customers'. Besides that, the Group also aims for a better living society and a wholesome environment.

In parallel with the industrial growth in ASIA, the Group has diversified into designing and manufacturing of various kinds of industrial building materials. These manufacturing activities have significantly contributed to the role of import substitutions. With the achievement of ISO 9002, recognition in its manufactured products, the Group is presently exporting its manufactured products to 6 countries in Asia Pacific and 4 countries in Middle East.

DJI International is currently establishing distribution centers in other ASEAN countries according to their cost competitiveness and resources, e.g. **PT. UFON NANO CHEMICAL**. (since year 2014).

The Group has also increased its research and development activities in all facets of product design and process innovation, gearing it to move towards the production of greater value-added products as well as improving current production techniques and process based in Taiwan.

Through its globalization plan, the Group seeks to continuously provide quality products and engineering services to all level of industries in **Indonesia**. Simultaneously, the Group also looks forward to position **Taiwan** industrial products to be recognized in the international market.

## OUR MISSION

- Environmentally Friendly
- Clean, Aesthetic, Flexibility
- Comfortable and Eternal Quality

## WHY CHOOSING PENTENS INDUSTRIAL FLOORING SOLUTIONS ..

- Low VOC.
- Durable, Zero Defects.
- Over 20 years Relevant Specialist in Industrial Flooring Experience.
- Provide Total Solution base on different requirements.
- Excellent Quality, Service and Competitive Price

A MEMBER OF DJI INTERNATIONAL GROUP

# CONTENTS:





# E-10F

## Fast Setting Water-Based Epoxy Bonding Agent

**Pentens® E-10F** is a fast setting reactive two-component system, consisting of modified phenol type epoxy resin (A-Comp.) and water-emulsified epoxy resin hardener (B-Comp.). This system could actually be formulated using water as a carrier and still produce film with outstanding appearance.

**Pentens® E-10F** is safe to use in sensitive locations is environmentally friendly with extremely low VOCs (Volatile Organic Compounds).

### USES

- As a primer of water-based waterproofing / flooring works
- As a binder / sealer for fiber glass mat in tank lining works
- New and old concrete bonding agent
- Multi-purpose adhesive

### ADVANTAGES:

- Environmentally friendly
- Can be applied to damp surfaces
- Can be safety applied to freshly laid gardened (green) concrete
- Negligible odor and toxicity
- Has excellent adhesion to most substrates including brick, masonry, concrete, compressed fiberboard, stone and timber

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Appearance (mixed) | Milky emulsion |
| Specific gravity (mixed) | Approx. 1.01 @ 25$^0$C |
| Solids content (%) | > 80 |
| Viscosity (Brookfield), (cP) | 3000 (approx.) |
| Pot life | 20-30 minutes @ 25$^0$C |
| Application of adhesive/coverings | 24 hours @ 25$^0$C and 50% RH |
| Full Cure | 5-7 days @ 250C and 50% RH |
| Storage | Store in a dry cool place |
| Shelf life | 1 year when unopened and undamaged |
| Packaging | E-10A: 10kg pail<br>E-10B: 10kg pail |

### IMPORTANT NOTES

1. Ensure adequate ventilation. Natural cross flow ventilation should be adequate.
2. When use as a primer, never add more than 5% of water to dilute Pentens® E-10F

### 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.
- Holes, non-structural cracks or other surfaces deformities should be repaired.
- Very dry and highly porous surfaces should be sprayed with a fine mist of water prior to application of the Pentens® E-10F.

MIXING

- Each component should be individually mixed to form homogeneous components prior to mixing.
- Only mix as much as may be used within the pot life of the product and avoid excessive aeration during mixing.
- Discard any material which has exceeded the pot life or working time of the product.

PLACING

- Spread the material using a roller, brush or spray method to at the approximate rate of 0.3kg/m$^2$ achieve a smooth coverage and finish.
- Wait 2 to 4 hours to cure then apply topping.

### RELATED PRODUCTS:

**Pentens® E-008** (15 + 5 kg/set)
- Sovent Free Epoxy Primer / Bonding Agent

**Pentens® E-500** (15 + 5 kg/set)
- Sovent Free, Low Viscosity Epoxy Resin

TAIWAN GREEN LABEL PRODUCT
CER. NO: GBM0100001

# E-500

## Solvent Free, Low Viscosity Epoxy Resin

**Pentens® E-500** is resistant to high mechanical loads thanks to its strong surface and wear and tear resistance. This makes it an economical solution for mechanically loaded areas.

### USES

- Binding resin for self-leveling epoxy resin
- Production of light to heavy duty screed systems
- Suitable for Low Pressure Epoxy Injection System.
- Bonding coat for epoxy repair system with carbon fiber sheet- Wet & dry processing areas.
- Other industrial floors.

### ADVANTAGES:

- Very good adhesion on mineral substrates, can be highly filled with mineral aggregates.
- Self-leveling even when filled with up to 3 parts Pentens® AG-9 filler.
- Produces high strength mortars with high resistances to rolling and abrasive loadings, filled with up to 10 parts Pentens® AG-3 filler.
- High chemical resistance.
- Primer on mineral based substrates prior to application of solvent-free coatings and screeds.

### INSTRUCTION FOR USE

#### SURFACE PREPARATION

The substrate must be sound, dry, clean and free from all lose particles, dust, cement laitance, oil and other contaminants.

#### MIXING

Pentens® E-500 consists of a base and a hardener component supplied in prebatched packs. Before application, the base and the hardener components are carefully mixed by means of a slow rotating electric drill with paddle. To complete the mixing, the resin is poured from one can to another and mixed again. Mineral aggregates are mixed with the binding resin by means of a forced action mixer. To ensure the correct mixing ration and for ecological reasons packs should be emptied thoroughly.

#### APPLICATION

Application of Pentens® as a primer is normally by means of rubber squeegees or rolling. The fresh primer cannot be over coated within the next 24 hours.

Self-leveling screeds made from Pentens® E-500/AG-3 mixtures are applied by means of steel trowels floats or rubber squeegees on top of the primed surface. To obtain higher anti-skid scratch coats or self-leveling screeds they have to be strewn immediately with oven-dried quartz sand.

Pentens® E-500 can be supplied as Pentens® E-30 for use at low temperatures (+5° C) respectively for quicker hardening.

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Density (mixture) | approx. 1.10g/cm3 |
| Viscosity | approx. 500-600mPas |
| Mixing ratio | 3:1 |
| Pot life | 1 hour |
| Resistance to foot traffic | after 24 hours |
| Full mechanical and chemical resistance | after 7 days |
| Hardness (Shore D) | > 81 |
| Compressive strength | > 85 N/mm2 |
| Flexural strength | > 325 N/mm2 |
| Tensile strength | > 50 N/mm2 |
| Elongation at break | 2% |
| Minimum application conditions | 8~30° C substrate temperature, < 85% rel. humidity, 3K above dew point |
| Storage (not mixed) | Can be stored in original sealed packs under cool and dry conditions for at least 12 months. |
| Disposal | in order to maintain workability. In interest of our environment please empty packs completely |
| Packaging | E-500A: 15kg/pail<br>E-500B: 5kg/pail |

# E-501

## Solvent Free Epoxy Resin for Motar Floor

**Pentens® E-501** is a two-component epoxy resin and hardener mix with graded aggregate to achieve desired thickness. Pentens® E-501 is designed specifically for heavy load and industrial use.

### USES

**Pentens® E-501** is suitable for leveling and repairing standard to highly absorbent concrete and cement screed surface prior to the application of epoxy.

- High mechanical wear
- Traffic Zones
- Floor slabs
- Loading quays
- Suspended floors
- Logistic areas
- Car park
- Factory floor
- Institutional areas
- Wet and dry processing areas
- Warehouse

### ADVANTAGES:

- Solvent free.
- Easy application.
- High strength.
- Seamless finish
- Low viscosity.
- Good penetration.
- High mechanical.
- Short waiting times.
- Excellent wear and impact resistant properties
- Impervious to liquids and excellent resistant to chemicals
- Varying degree or anti-skid finish available
- Superb adhesive strength.
- Environmental friendly.

### INSTRUCTION FOR USE

#### SURFACE PREPARATION

All the surfaces must be clean, free from grease, oil, laitance, and remove all the dirt and contaminants, which might affect adhesion. The impurity outside the structure body should be cleaned thoroughly.

The substrate should be level, preferably slightly rough and dry (maximum 6% moisture content or at least 28 days old).

#### MIXING

A and B Component of Pentens® E-501 Epoxy Primer to be diluted and mixed until a homogeneous substance has been reached. Apply with brush and / roller. Allow primer to dry 12 hours or until tack free.

#### APPLICATION

A and B Component Epoxy Silica Mortar to be mixed by using an electrical or pneumatic power stirrer with approximately 300 – 400 rpm until a homogeneous substance has been reached, then add graded aggregate slowly under continuous mixing. Mechanical mixer should be used.

Distributes the mortar screed over the floor onto the wet primer, trowel the mortar screed to the required thickness. The material should be tamped with a wooden float to ensure complete compaction and finally finished to a closed even texture using steel trowel. Screed rods are useful to maintain a minimum compacted thickness.

It can be used to form perimeter edge coving up to height of 225mm.

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Form | Liquid |
| Color | A: Semitranslucent B: Light brown |
| Density | 1.08kg / Per liter |
| Flexural Strength (N/mm$^2$) | 50 (ASTM C 580) |
| Tensile Strength (N/mm$^2$) | 30 (ASTM C307) |
| Elongation at break (%) | 9 (ASTM D638) |
| Compressive Strength | >90N/mm$^2$(ASTM C 579 : 93) |
| Abrasion Resistant CS-17 (ASTM D 4060) | Less than 30 mg weight loss after 1000 cycles of abrasion. |
| Tensile Adhesion (Pull-out-Strength) | 3.5 N/mm$^2$ (ASTM D 4541) Failure in concrete |
| Pot life (30°C) | 30 mins |
| Shelf Life | 1 year when unopened and undamaged |
| Storage Condition | Store in a dry cool place |
| Packaging | E-501A: 18kg pail<br>E-501B: 9kg pail |

### CHEMICAL RESISTANCE

| | |
|---|---|
| Citric Acid 10% | Excellent |
| Tartaric Acid 10% | Excellent |
| Acetic Acid 5% | Good |
| Fuel / Petrol | Excellent |
| Sugar Solution | Excellent |
| Hydrochloric Acid 25% | Excellent |
| Lactic Acid 10% | Very Good |
| Phosphoric Acid 50% | Very Good |
| Sodium Hydroxide 50% | Excellent |

### COVERAGE RATE:

Screed Mortar : approximately 1.5kg/m$^2$ ready mixed mortar per mm layer thickness

Screed Mortar mix ratio:

E-501A : E-501B : AG3= 2 : 1 : 6~30

Epoxy putty mix ratio:

E-501A : E-501B : Aerosil 200= 2 : 1 : 0.15~0.2

(For more details, please refer to our Technical Department.)

### CURING

- Foot traffic after 12 hours
- Full mechanical and chemical resistant is achieved after 7 days

# E-501S

## High Performance Sovent Free Epoxy Putty Filler

**Pentens® E-501S**, a high strength, excellent adhesion, ready-to-use, solvent-free, two-part epoxy putty filler. Formulated to a smooth creamy consistency, it mixes easily and can be used for sealing vertical, horizontal, and overhead cracks or voids on the surface of concrete before applying various types of finishing and coatings. Ideal for bonding injection ports of Low Pressure Epoxy Crack Injection System to concrete, steel and timber as it does not shrink or sag and can be easily sanded to a smooth surface.

**Pentens® E-501S** is safe to use in sensitive locations and it is environmentally friendly with extremely low VOCs (Volatile Organic Compounds).

### USES

Not only used as the putty filler but also suitable for using in areas include:

- As a sealer coat of water-based and/or solvent-based waterproofing / flooring works
- As a binder / sealer for fiber glass mat in tank lining works
- Fill cracks and holes in concrete and masonry structures
- Concrete patching mortar

### ADVANTAGES:

- Environmentally friendly
- Excellent wear and impact resistant properties
- Impervious to liquids and excellent resistant to chemicals
- Can be applied to slightly damp surfaces
- Can be safety applied to freshly laid gardened (green) concrete
- Non-flammable, negligible odor and toxicity
- Has excellent adhesion to most substrates including brick, masonry, concrete, compressed

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Appearance (mixed) | Thick creamy non-sagging putty |
| Gloss | Low Sheen |
| Plot life | 45~60 minutes@25℃ |
| Initial cure | 12 hour |
| Mix ratio | 2 to 1 by weight |
| Solid content | 100% |
| Specific gravity (mixed) | Aprrox 1.08 @25℃ and 50% RH |
| Storage | Store in a dry cool place |
| Shelf life | One year when unopened and undamaged |
| Packaging | E-501SA : 18kg<br>E-501SB : 9kg |

**CHEMICAL RESISTANT** (20℃, 60days)

| | |
|---|---|
| Hydrochloric acid-10% | No deterioration |
| Saturated sodium chloride sodium | No deterioration |
| Acetic acid-20% | No deterioration |
| Sodium hydroxide-30% | No deterioration |
| Ethyl alcohol/water =60/40 | No deterioration |
| Household detergent | No deterioration |
| Styrene | No deterioration |
| Saturated cement solution | No deterioration |
| Hcooh-10% | No deterioration |

### INSTRUCTION FOR USE

**SURFACE PREPARATION**

The substrate must be clean, dry, free of dust and any trace of formwork release oil. For optimum adhesion to concrete, apply a coat of Pentens® epoxy primer before applying Pentens® E-501S.

**MIXING**

Thoroughly mix the two components in the ratio of 2:1 by weight, using a mechanical forced action mixer with a high s hear stirrer until a homogeneous paste is obtained. Only mix as much as may be used within the pot life of the product and avoid excessive aeration during mixing. Discard any material which has exceeded the pot life or working time of the product.

**APPLICATION**

Apply with putty knife or metal trowel.
Allow to cure for a minimum of 12 hours at 25$^0$C/50%R.H. before applying top coatings or other surface treatments.

# E-501LN

## Tank Lining Epoxy Coating

**Pentens® E-501LN** Tank Lining Epoxy is a 100% solids modified epoxy coating designed for high performance waterproofing, chemical resistance and traffic compatibility under a wide range of application and service conditions.

Pentens® E-501LN features odorless application, "zero" VOC content, low viscosity and self-priming to concrete, steel, aluminum, ceramic tile*, plywood, natural stone, glass*, vinyl tile and many other substrates. (*Note: Some glassy surfaces require use of adhesion-promoting additives.) Clear or a wide range of colors is available.

### USES

Common uses for Pentens® E-501LN include:
- Tank lining for sewage tank, waste treatment plant, water purification tank.
- Industrial flooring underlayment.
- Mechanical room flooring non-slip surfacing.

### ADVANTAGES:

- Non-toxic.
- Odorless.
- High adhesive strength.
- Low viscosity.
- Good penetration.
- High mechanical and chemical resistance.
- Short waiting times.

### TECHNICAL & PHYSICAL DATA

| | | |
|---|---|---|
| Composition | 100% Solids Modified Epoxy: "0" V.O.C. | |
| Viscosity @ 250C | 1110 cps (resin)<br>385 cps (hardener) | |
| Tensile Strength | 250 kgf/cm$^2$ | |
| Elongation at break | 9 % | |
| Adhesive strength | 64 kgf/cm$^2$ | |
| Compressive strength | 640 kgf/cm$^2$ | |
| Hardness (Shore D) | 68 | |
| Pot life (15kg set at 300C) | 15 minutes | |
| Consumption | As primer: | 0.2kg/m$^2$ |
| | Saturating coat: | 0.3kg/m$^2$ |
| | (Depends on the thickness of the fiberglass mat). | |
| | Top coat: | 0.3~0.4kg/m$^2$ |
| Curing time | Initial curing after 6 hours<br>Full cured 7 days | |
| Shelf Life | 1 year when unopened and undamaged | |
| Storage Condition | Store in a dry cool place | |
| Packaging | E-501LN A: | Clear: 18 kg pail<br>Pigmented: 22.5 kg pail |
| | E-501LN B: | 9 kg pail |

### INSTRUCTION FOR USE

#### SURFACE PREPARATION

Surfaces to be coated must be clean and dry, and free of grease, oil, dirt and other contaminants. Old lining must be completely removed. If product will be applied over smooth surfaces, a test application should be performed to assure adhesion and compatibility. It is recommended that steel surface be sandblasted to bare metal. Concrete should be neutralized or acid-etched and washed thoroughly. Level off uneven surfaces using Pentens® EPTM epoxy putty & filler.

#### THINNING & MIXING

Pentens® E-501LN is supplied as a low viscosity, two-component, 100% solids coating. For most applications, no thinning is required. In some cases thinning may be economically advantageous, to increase product spread rate. In other cases, slight solvent addition may improve the "bite" on a bard existing coating or may improve penetration of slightly oily surfaces. Thinning should be limited to the minimum required, typically about 5 - 10% solvent addition should be sufficient. Use only compatible solvents.

Mix ratio is nominally 2:1 resin to hardener by volume. Measure and mix consistently. Product is also available in pre-measured units, eliminating the need for field measuring of components. Mix thoroughly for at least two minutes, scraping the container bottom and sides to assure complete mixing. There is no induction or waiting time required after mixing before application.

The exothermic nature of epoxy setting reactions may cause rapid temperature rise when the mixture is left massed in a bucket, resulting in high temperatures and loss of utility of the product.

To maximize handling and working time, pour the mixture into shallow pans or dump and squeegee tile mixture out onto the surface to be coated within a few minutes of mixing.

**APPLICATION**
Apply a primer coat by brush, roller, squeegee or plural component spray. Epoxy mixture thinned out with reducer using not more than 15% by volume.

Immediately lay out the fiberglass mat on the still wet primer coat. Allow 2 to 3 hours drying time.

Apply saturating coats and allow for initial curing time of 6 to 8 hours. Grind surface to a smooth finish before application of topcoats.
Clean tools and equipment immediately after use with Pentens® SO1 or Xylene.

**NOTE:**
Solvents are hazardous materials. Read and observe guidelines on their manufacturers' Material Safety Data Sheets. Do not subject to immersion for at least 5 days after application, or discoloration may result.

**CURING & CLEANING**
The applied epoxy tank lining must be allowed to cure 72 hours before using the tank for storage of potable water. Seven (7) days curing time is necessary to attain chemical resistance. Wash the cured lining using detergents and rinse thoroughly.

TAIWAN GREEN LABEL PRODUCT
CER. NO: GBM0100149

# ECO-600TR

## Epoxy Clear Coat

**Pentens® ECO-600TR** is a special formulated two component solvent-less epoxy transparent coating which is good abrasion resistant chemical resistant high polish gloss floor protective coat.

### USES

- Marble-like design/ Decorative floor
- Polished Porcelain tile design floor
- Food / Hygienic Industrials
- Electric / Clean room design
- Car park / Traffic Zones design
- Assembling plants/Storage and logistic areas
- Chemical and pharmaceutical industries
- Institutional Areas

### ADVANTAGES:

- Polish gloss, Self-leveling
- Seamless and easy to clean
- High mechanical loading capacity
- Extremely high chemical resistance against a range of aggressive chemicals, oil, various solvents, etc.

### INSTRUCTION FOR USE

#### MIXING

Pentens® ECO-600TR consists of exact quantities of base and hardener components contained within the same pack.
Before application, the base and the hardener components are carefully mixed together by means of a slowly rotating electric drill with paddle. To complete mixing the resin is poured from one can to another and mixed again. To ensure the correct mixing ratio and for ecological reasons packs should be emptied thoroughly.

#### APPLICATION

Normally by means of steel floats or rubber squeegees. Freshly applied coatings have to be rolled with a spiked roller over the entire surface to remove entrapped air bubbles. To obtain higher anti-skid finishes the fresh Pentens® ECO-600TR coating should immediately be strewn with Silica sand in excess.

#### CURING

Room Temp : 25°C ~35°C : 24 hrs
Room Temp : 10oC ~25oC : 48 hrs
Full mechanical and chemical resistant is achieved after 7 days for full cured.




### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Form | Liquid |
| Flexural Strength (kgf/cm²) | 600 (ASTM D790) |
| Tensile Strength (kgf/cm²) | 350 (ASTM D638) |
| Compressive Strength (kgf/cm²) | 700 (ASTM D695) |
| Pot life (25°C) | 20 minutes |
| Consumption | |
| - Clear Protective Coat | 0.3 kg/m² |
| - Self-leveling Coat | 1.0 kg/m² |
| Shelf Life & Storage Condition | 1 year at dry and cool place |
| Packaging | ECO-600TR-A: 15 kg pail<br>ECO-600TR-B: 5 kg pail |


1. PRIMING


2. MOISTURE BARRIER


3. DRAWING


4.CLEAR TOP COAT

# E-601

## Solvent Free, Self-Leveling Epoxy Top Coat

**Pentens® E-601** is a two-component modified epoxy resin mixed with pigments (A-Comp.), and polyamine hardener (B-Comp.)

Pentens® E-601 is a High Build Coating Systems are available in a variety of thicknesses (2 to 3 mm typical). The glossy, easy-to-maintain surface resists dirt and chemical penetration while enhancing the appearance and light reflectivity of your facility.

### USES

It provides a hard wearing attractive leveled floor, which is chemical resistant, impervious and extremely easy to clean. Pentens® E-601 property provides dust free, seamless floor.

- Food Industrials
- Clean room
- Traffic Zones
- Hygienic
- Assembling plants
- Storage and logistic areas
- Chemical and pharmaceutical industries
- High mechanical wear aresa
- Institutional areas

### ADVANTAGES:

- Solvent free
- Easy application.
- High strength.
- USDA approved
- Aesthetics
- High mechanical.
- Short waiting times.
- Easy to maintain
- Excellent wear and impact resistant properties
- Impervious to liquids and excellent resistant to chemicals
- Varying degree or anti-skid finish available
- Protects and beautifies
- Design application to fit budget

**SELF-LEVELING TOP COAT**

A and B Component of Pentens® E-601 to be mixed until a homogeneous substance has been reached.
Distribute the mixture over the floor. Apply using a rake to achieve required thickness, trowel to obtain finish and spike roller to release entrapped air.

**ANTI-SLIP TOP COAT**

Pentens® E-601 is anti-skid finish available.
Add aggregates (AG-3 + AG-9) into mixed E-601A/B, slowly under continuous mixing. Mechanical mixer should be used.
Distribute the mixture over the floor. Trowel or scrape the mixture to the thickness less than 1mm and obtain an anti-slip finish.
Trowel marks should be smoothed away by using a wool roller longitudinally and transversely.

**TECHNICAL & PHYSICAL DATA**

| | |
|---|---|
| Form | Liquid |
| Specific Gravity | 1.3 |
| Flexural Strength (N/mm$^2$) | 32 (ASTM C 580) |
| Tensile Strength (N/mm2) | 40 (ASTM C307) |
| Elongation at break (%) | 9 (ASTM D638) |
| Compressive Strength (N/mm$^2$) | >75 (ASTM C 579 : 93) |
| Abrasion Resistance CS-17 (ASTM D 4060) | 10 mg weight loss after 1000 cycle of abrasion. |
| Tensile Adhesion | 3.5 N/mm$^2$ (ASTM D 4541) |
| (Pull-out-Strength) | Failure in concrete |
| Pot life (25oC) | 20 minutes |
| Shelf Life & Storage | Have a shelf lift of 1 year at dry and cool place |
| Packaging | E-601A: 20 kg pail<br>E-601B: 5 kg pail |

**CHEMICAL RESISTANCE**

| | | |
|---|---|---|
| ACIDS | Citric Acid 10% | Excellent |
| | Tartaric Acid 10% | Excellent |
| | Acetic Acid 5% | Excellent |
| | Hydrochloric Acid 25% | Excellent |
| | Sulphuric Acid 50% | Excellent |
| | Nitric Acid 25% | Very Good |
| ALKALI | Fuel / Petrol | Excellent |
| | Sugar Solution | Excellent |
| | Lactic Acid 10% | Excellent |
| | Sodium Hydroxide 50% | Excellent |
| | Phosphoric Acids 50% | Very Good |
| SOLVENT | Xylene | Excellent |

**CURING**

- Foot traffic after 72 hours
- Full mechanical and chemical resistant is achieved after 7 days

# E-610CR

## High Performance, Chemical-Resistant Epoxy Resin

**Pentens® E-610CR** is a 100% solids, pigmented, two-component solvent free epoxy resin. It is highly resistant to acids, alkalis and a broad range of chemicals.

Pentens® E-610CR is ideal for use as a protective coating for concrete and steel in extremely corrosive areas where resistance to 99% Glacial acetic acid and 70% sulfuric acid or other strong caustics is needed.

### USES

Food / Drink Factory which will use high concentrate organic acid for washing production process.

- PCB or electroplating process
- Chemical plants
- Pulp mills secondary containment areas
- Waste treatment
- Gas and electric utilities

### ADVANTAGES:

- Exhibits excellent resistance to strong acids, alkalis, and most industrial chemicals and solvents.
- High mechanical loading capacity.
- Solvent free

#### INSTRUCTION FOR USE

#### SURFACE PREPARATION

The substrate must be clean and free from all lose particles, dust, cement laitance, oil and other contaminants.

#### PRIMING

Mineral based substrates must be primed with the low viscosity, solvent-free epoxy resin Pentens® E-500. On porous substrates or on substrates which are uneven, an epoxy resin scratch coat should be applied to avoid formation of bubbles. A scratch coat consists of Pentens® E-500 and AG-40 in a mixing ratio of 1:4

#### MIXING

To premix the Pentens® E-610CR-A part is necessary to make it homogeneously before mixing with B part.

#### APPLICATION

#### COATING :

Application of Pentens® E-610CR is normally by means of airless spray, brush, roller.

#### SELF-LEVELING

Application of Pentens® E-610CR is normally by means of steel trowels or rubber squeegees. Freshly applied coatings have to be rolled with a spiked roller over the entire surface to remove entrapped air bubbles.

#### TECHNICAL & PHYSICAL DATA

| | | |
|---|---|---|
| Color | Green,Yellow | |
| Solid content | 100% | |
| VOC content | 0% | |
| Pot life (25°C) | 20 minutes | |
| Consumption | Coating 0.3mm | 0.40 kg/m$^2$ |
| | Self-leveling 0.8mm | 1.0 kg/m$^2$ |
| Foot traffic | 8 hours | |
| Full cure | 7 days | |
| Hardness (Shore D) | 85 | |
| Compressive strength | 680 kg/cm$^2$ | |
| Abrasion resistance (CS-17) | 30 mg | |
| Adhesion to concrete | 21 kg/cm$^2$ (100% concrete failure) | |
| Shelf Life & Storage | 1 year at dry and cool place | |
| Packaging | E-610CR A: 12.5 kg pail | |
| | E-610CR B: 5 kg pail | |

#### CHEMICAL RESISTANCE

| Reagent | Time of immersion | | | |
|---|---|---|---|---|
| Sulfuric acid | 10 min | 1 day | 30 day | 60 day |
| 98% | ○ | ○ | X | X |
| 70% | ◎ | ◎ | ◎ | ◎ |
| 30% | ◎ | ◎ | ◎ | ◎ |
| Sodium hydroxide | | | | |
| 70% | ◎ | ◎ | ◎ | ◎ |
| 50% | ◎ | ◎ | ◎ | ◎ |
| 10% | ◎ | ◎ | ◎ | ◎ |
| Hydrochloric acid | | | | |
| 27% | ◎ | ◎ | ◎ | ◎ |
| Nitric acid | | | | |
| 60% | X | X | X | X |
| 30% | ◎ | ○ | X | X |
| 10% | ◎ | ◎ | ◎ | ◎ |
| Glacial acetic acid | | | | |
| 99% | ◎ | ◎ | ◎ | ◎ |
| 70% | ◎ | ◎ | ◎ | ◎ |
| 30% | ◎ | ◎ | ◎ | ◎ |

◎: Excellent ○: Good X: No good

# E-620F

## Water-Based Epoxy Coating

**Pentens® E-620F** is a pigmented, reactive two-component system, consisting of water-emulsified epoxy resin hardener (A-Comp.) and. modified phenol type epoxy resin (B-Comp.) This system could actually be formulated using water as a carrier and still produce film with outstanding appearance.

Pentens® E-620F is safe to use in sensitive locations and it is environmentally friendly with extremely low V.O.C.(volatile organic compound). It makes an ideal moisture barrier for water tanks, reservoirs, swimming pools, storage tanks.

### USES

- Food Industrials
- Clean room
- Hygienic
- Assembling plants
- Storage and logistic areas
- Chemical and pharmaceutical industries
- Institutional areas

### ADVANTAGES:

- Environmentally friendly
- Cured membrane will withstand high levels of hydrostatic pressure up to meter head of water or 250 kPa
- Excellent wear and impact resistant properties
- Impervious to liquids and excellent resistant to chemicals
- Can be applied to damp surfaces
- Can be safety applied to freshly laid gardened (green) concrete
- Non-flammable, negligible odor and toxicity
- Has excellent adhesion to most substrates including brick, masonry, concrete, compressed fiberboard, stone and timber
- Easy clean-up using water

### COVERAGE

Each coat is applied by roller at 3 $M^2$/liter. Coverage depends on surface porosity and substrate conditions.
Pentens® E-620F is designed to be applied in two coats to achieve an approximate dry film thickness of theoretically 300$\mu$m (microns).

### ANTI-SLIP TOP COAT

Pentens® E-620F is anti-skid finish available.

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Appearance (mixed) | Brushable/rollable/sprayable uniform paste in color with a matt appearance |
| Finish | Semi-gloss |
| Pot life | 45-60 minutes @ 25°C |
| Re-coat time | 6 hours @ 25°C and 50% RH |
| Application of adhesive/coverings | 24 hours @ 25°C and 50% RH |
| Full Cure | 5-7 days @ 25°C and 50% RH |
| Specific gravity (mixed) | Approx. 1.25 @ 25°C and 50% RH |
| Dry film thickness | 300 $\mu$m (microns) |
| Shelf life | 1 year when unopened and undamaged |
| Packaging | E-620F A: 20kg/pail,<br>E-620F B: 2kg pail |

### CHEMICAL RESISTANT

| Chemical Solutions | | E-620F | E-620F(FRP) |
|---|---|---|---|
| Water | | ◎ | ◎ |
| Ethylene Glycol | | ◎ | ◎ |
| Isopropyl Alcohol | | Δ | ◎ |
| Butyl Cellulosive | | Δ | ◎ |
| N-Butyl Acetate | | Δ | ◎ |
| Toluene | | Δ | ◎ |
| Ethanol | | Δ | ◎ |
| Acetone | | Δ | ◎ |
| Sodium Hydroxide | 10% | ◎ | ◎ |
| | 30% | ◎ | ◎ |
| | 60% | ◎ | ◎ |
| Hydrocholoride | 10% | ◎ | ◎ |
| Acid | 30% | ◎ | ◎ |
| | 60% | ◎ | ◎ |
| Nitric Acid | 10% | ◎ | ◎ |
| | 20% | ◎ | ◎ |
| | 30% | ◎ | ◎ |
| Sulfric Acid | 30% | ◎ | ◎ |
| | 70% | ○ | ○ |
| | 99% | X | X |
| Acetic Acid | 30% | Δ | Δ |
| | 70% | X | X |
| | 99% | X | X |

Sample: Cured for 7 days and immersed in chemical sol. for 14 days (Room Temp.)

◎: Excellent (no effect on color or strength)
○: Well (slightly color changed)
Δ : Poor (slightly softened)
X : Worse (Brokened)

# NPU-12

## Water-Based Polyurethane Nano Coating

**Pentens® NPU-12** is a nanotechnology HDI based polyurethane coating of finest quality, durable, water repellent, fungus/algae/bacteria resistant, UV resistant, scratch resistant, anti-corrosive sealer, primer & finish for a wide variety of exterior and interior surfaces.

### USES

Interior / Exterior applicable surfaces are including:
- Concrete
- Plaster
- Metal
- Stone

Areas of use are such as:
- Food and pharmaceutical industries
- Hospital and hygienic clean rooms

### ADVANTAGES:

- Outstanding adhesion
- High resistance to weathering and blistering
- Self-cleaning
- Excellent color retention, non-yellowing
- Zero VOC
- Additional features like termite-free, stain resistant and anti-sticking.
- Easy clean-up using water

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Appearance (mixed) | Brushable / rollable / sprayable uniform liquid in color |
| Finish | Semi-gloss |
| Pot life @ 25°C | 45-60 minutes |
| Re-coat time | 6 hours @ 25°C and 50% RH |
| Full cure @ 25°C | 3 days |
| Viscosity (Brookfield LVF, 30rpm, 25°C) | 1100 cps |
| Drying Time (touch dry) | 4 hours |
| Pliability (ø 3mm) | Unaffected |
| Water resistance in 100% Relative Humidity, 24 hours | Unaffected |
| Chemical resistance (5w/v % $H_2SO_4$ / 24 hours) | Unaffected |
| Heating residue | 65% |
| Light exposure (Fluorescent UV-Condensation Light) | Unaffected |
| Consumption | Approx. 0.15 kg/m² |
| Self life | 12 months when unopened/damaged |
| Storage condition | Store in a dry cool place |
| Packaging | |
| Clear: | NPU-12TA: 10 kg/pail<br>NPU-12TB: 1 kg/can |
| Pigmented: | NPU-12A: 10 kg/pail<br>NPU-12B: 1 kg/can |

### INSTRUCTION FOR USE

### PRECAUTIONS FOR USE

- The application and drying temperature must be between 10°C and 35°C.
- Do not apply to heavy duty industrial floor.

### SURFACE PREPARATION

Surface must be clean, smooth, dry, and free of wax, grease, oil, loose or peeling paint, and other foreign material.

### MIXING

Pentens® NPU-12 must be mixed homogeneously prior to application, using an electrical or pneumatic power stirrer until a homogeneous mix is achieved.

### APPLICATION

The mixed Pentens® NPU-12 should be applied to the prepared surface by using brush or lamb wool roller or spray equipment. The second coat may be applied as soon as the first coat has initially dried (typically 4 to 6 hours). The time will be dependent on the type of surface and the ambient conditions.

### NEW WORK

For maximum durability for exterior or interior application, use Pentens® T-009 as a primer & sealer, followed by two coats finish.

### REFINISH WORK

Follow conditions listed above. Previously painted, glossy surfaces should be lightly sanded. Remove old flaking paint and clean down thoroughly to remove any dust or powdery paint. Fill cracks with Pentens® EPTM as a sealer for best result. Spot prime all patched areas with Pentens® T-009 primer. Allow all primers to dry thoroughly before applying finish coats.

### COVERAGE

Approximately 6~10 square meters per kg, depending on the porosity of the substrate.

# T-303
## Moisture Barrier

**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 – 3.0 mm). 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 walls
- Concrete gutters
- Bathrooms, Basements, Seawalls

### ADVANTAGES:
- Easy application, Excellent adhesion
- Optimal pore sealer
- Good chemical resistance
- Increased frost and salt resistance
- Resist carbon dioxide penetration
- Waterproof, water vapor permeable
- For internal and external use
- Non-toxic
- Slightly flexible
- Can be applied over new concrete (after 3 days of curing)

### TECHNICAL & PHYSICAL DATA

| | | |
|---|---|---|
| Color (mixed) | Grey | |
| Mixing ratio (by weight) | Comp. A:B=2:5 | |
| Pot life (25 °C) | 30 minutes | |
| Mixed density | 2.0 kg per liter | |
| Bond strength on concrete (sandblasted) | 15 kg/cm$^2$ | |
| Elongation | 30% | |
| Index of resistance | | |
| To diffusion of water vapor | | ($\mu H_2O$): 850 |
| To diffusion of carbon dioxide | | ($\mu CO_2$): 34000 |
| Water absorption coefficient A | 0.03 kg/m$^2$×h0.5 | |
| Permeability | | |
| Positive water pressure | | 15 bar |
| Negative water pressure | | 3 bar |
| Application temperature (°C) | 5 to 35 | |
| Service temperature (°C) | 5 to 50 | |
| Shelf life | 12 months in unopened original containers | |
| Storage condition | Store in a dry cool place | |
| Packaging | A: 10 kg/pail<br>B: 25 kg/bag | |



### INSTRUCTION FOR USE

#### SURFACE PREPARATION
Concrete or mortar substrate must be sound and clean, free from grease, oil and loosely adhering particles. Oil or wax containing layers, as well as laitance must be completely removed.
Dilute 1 portion of Pentens® T-007 primer with 3 portion of clean water and then apply directly to the surface. Allow 30 minutes to dry.

#### MIXING
Add Pentens® T-303B (25kg powder) gradually to the Pentens® T-303A (10kg resin) and mix thoroughly until it blends completely with cement compound. Use mixture within 30 minutes.

#### APPLICATION
Apply or plaster first and finish coat of Pentens® T-303 to construction surface by using brush, roller of spray method. The time interval between coats shall be 4-8 hours, and make sure that the first layer of plastering has been dried and formed as membrane.

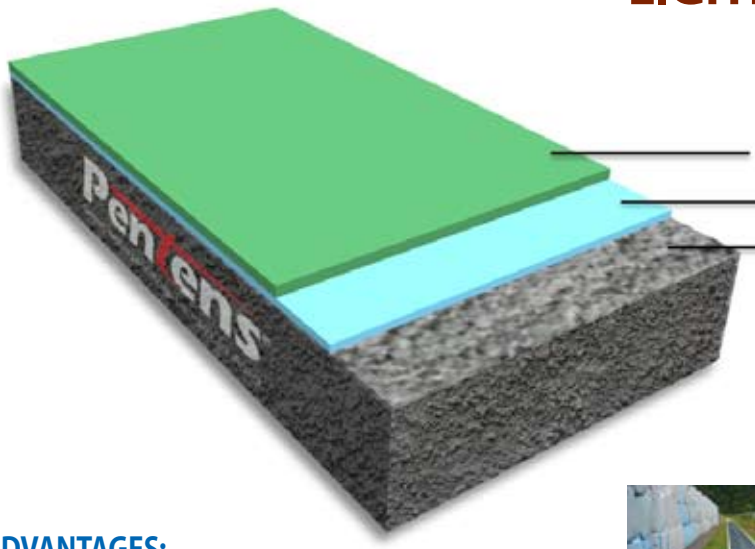
#### LAYER THICKNESS
Minimum 0.5 mm, maximum 3 mm, isolated small areas up to 5 mm.

#### CURING
For optimum performance, Pentens® T-303 should be allowed to cure for 12 hours before the finishing concrete, tiles etc, 24 hours before the epoxy coating. During this time precautions must be taken in order to prevent damaging to the coating.

# ANTI CORROSION PROTECTIVE COATING SYSTEM

## RC/METAL TANK LINING, MACHANICAL & CHEMICAL RESISTANT SOLUTION

## LIGHT



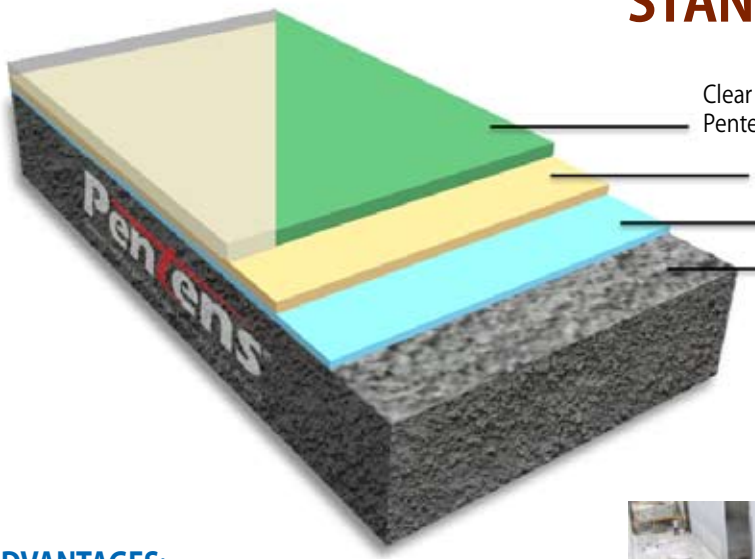

**300~400 micron**

**ADVANTAGES:**

- Sovent free, Non-flammable
- Low VOC, Odorless
- Good chemical resistance
- Excellent wear and impact resistant properties

- Taiwan Taipei Water Company water purification plant.
- Thailand Pathum Thani Water Company purification pool.

## STANDARD



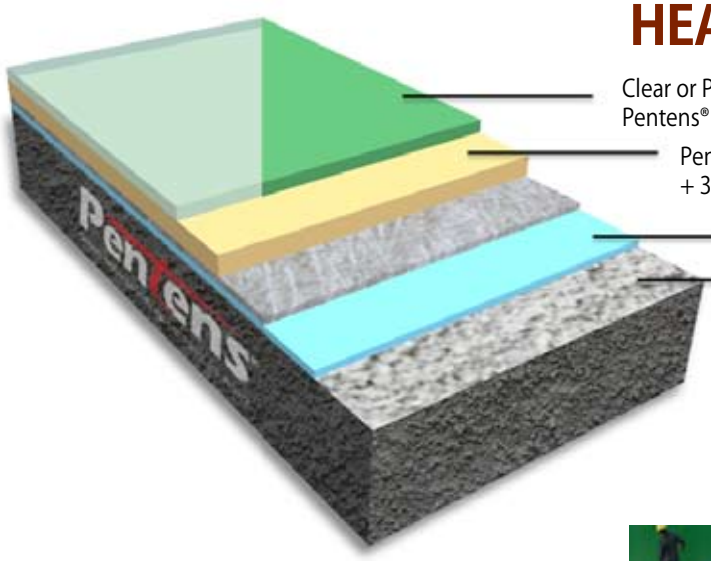

**950~1100 micron**

**ADVANTAGES:**

- Sovent free, Non-flammable
- Low VOC, Odorless
- High adhesive strength
- Low viscosity, Good penetration
- High mechanical and chemical resistance
- Short waiting times

- Taiwan Tainan Science Park water treatment plant.
- Vietnam Ha Tinh waste water treatment plant.

# HEAVY (FRP)




Clear or Pigment color
Pentens® E-501LN 2x coat, 0.6 kg/m²

Pentens® E-501S 2.4 kg/m²
+ 3 Ply Pentens® FM-300 Fiberglass Mat (FRP)

Pentens® E-10F or Pentens® E-500 Primer

Substrate

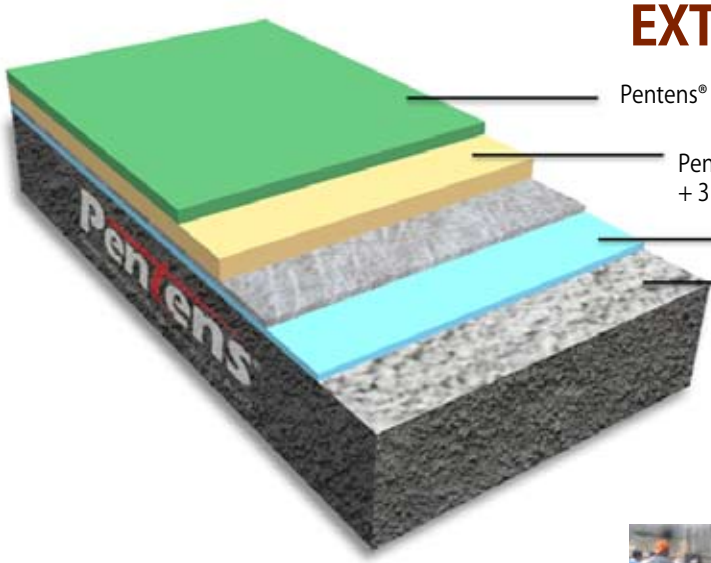
**4000 micron**

- Malaysia Johor POWER (TANJUNG BIT) Plant waste water treatment.
- Vietnam Binh Duong winery waste water pit.
- Taiwan Taichung Science Park water treatment plant.

## ADVANTAGES:

- Sovent free, Non-flammable
- Low VOC, Odorless
- High adhesive strength
- Low viscosity, Good penetration
- Very high mechanical and chemical resistance

# EXTREME (FRP)




Pentens® E-610CR 2x coat, 0.6 kg/m²

Pentens® E-501S 2.4 kg/m²
+ 3 Ply Pentens® FM-300 Fiberglass Mat (FRP)

Pentens® E-10F or Pentens® E-500 Primer

Substrate

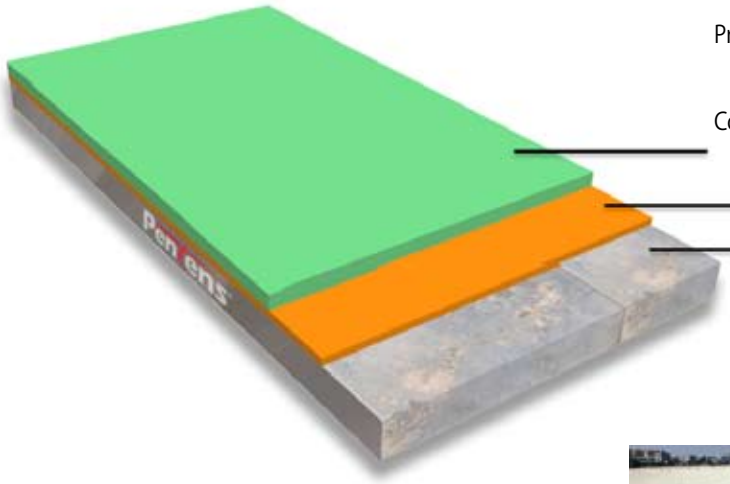
**4000 micron**

- Vietnam VEDAH waste water treatment.
- Taiwan HIWIN Technologies Corp, Plating pit, pH control pit.
- Taiwan Winling CO-TECH Development, Plating waste water pit

## ADVANTAGES:

- Sovent free, Non-flammable
- Exhibits excellent resistance to strong acids, alkalis, and most industrial chemicals and solvents.
- High mechanical loading capacity

# ANTIRUST



Protective Coating:
Pentens® E-501LN 2x coat, 0.6 kg/m²
or
Cool Roof + Waterproofing using
Pentens® T-202 2x~3x coat, 0.6~1.0 kg/m² (White)

Pentens® E-10SR Zinc Rich Primer

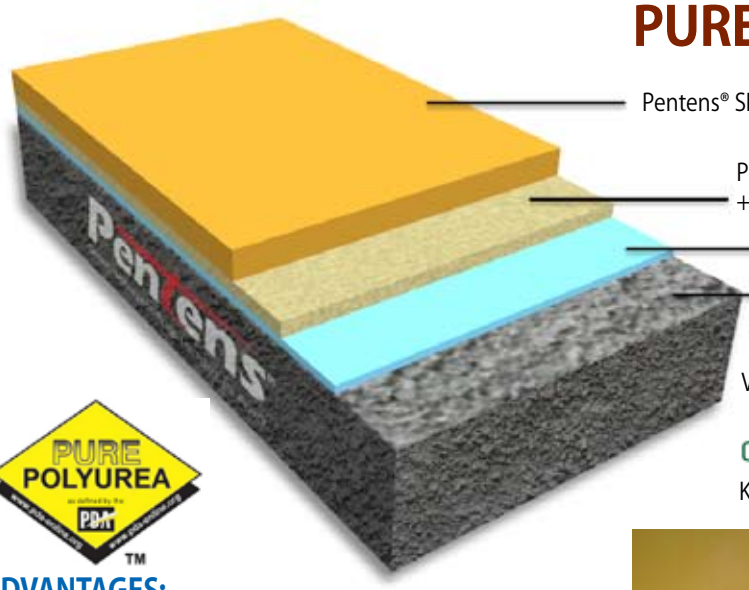
Substrate (Metal)

**ADVANTAGES:**
- Environmentally friendly
- Easy application
- Negligible odor and toxicity
- Excellent adhesion to most substrates.



- China, Shenzhen Metal Roof Anti Rust + Waterproofing
- Taiwan Nantou Sun-Moon Bridge Project.
- Taiwan Taipei Kuwan-Du Bridge.
- Indonesia, Tjiwi Kimia CVT Solar reflective coating

# PURE POLYUREA SPRAY



Pentens® SPU-1000 Spray, 2.4 kg/m²

Pentens® E-501S 0.3 kg/m²
+ Pentens® AG-5 Broadcast silica sand 1.0 kg

Pentens® E-10F or Pentens® E-500 Primer

Substrate

Video available
ON YouTube CHANNEL
Keyword: pentens polyurea

**ADVANTAGES:**
- High elasticity, Seamless
- Strong and tough, extremely high mechanical properties. Outstanding impact resistance.
- very good resistance to wide range of industrial chemicals.
- Fast Set. Return to Service in Minutes



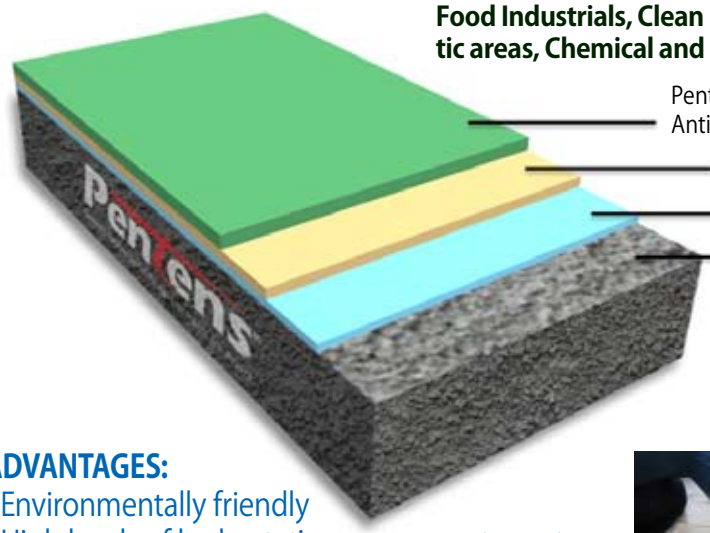
- Taiwan Hsinchu Science Park -IV, waste water treatment plant.
- Taiwan Cheng Loong Paper Mill, Sludge storage pit.
- Malaysia Subterranean Penang International Conference & Exhibition Centre Olympic-size swimming pool.

# ECO INDUSTRIAL FLOORING SYSTEM

**FOOD INDUSTRY, CHEMICAL PLANT, CAR PARK, HOSPITAL**

## SEMI GLOSS THIN COAT

**Food Industrials, Clean Room, Hygienic, Assembling Plants, Storage and Logistic areas, Chemical and Pharmaceutical Industries, Institutional Areas**




**600~1500 micron**

### ADVANTAGES:

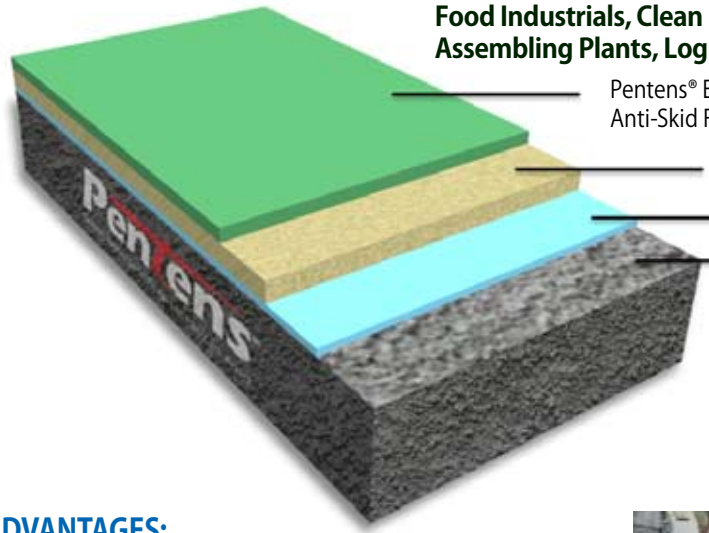
- Environmentally friendly
- High levels of hydrostatic pressure up to meter head of water or 250 kPa
- Excellent wear and impact resistant properties
- Excellent resistant to chemicals
- Can be applied to damp surfaces, Safety applied to freshly laid gardened (green) concrete
- Non-flammable, negligible odor and toxicity



- Taiwan, Daxi Gallery
- Taiwan, Siyuan Car Porch
- Taiwan, Taipei Nangkang pump station

## SELF-SMOOTHING

**Food Industrials, Clean Room, High Mechanical wear, Traffic Zones, Hygienic, Assembling Plants, Logistic Areas, Chemical and pharmaceutical Industries**




**1250~5000 micron**

### ADVANTAGES:

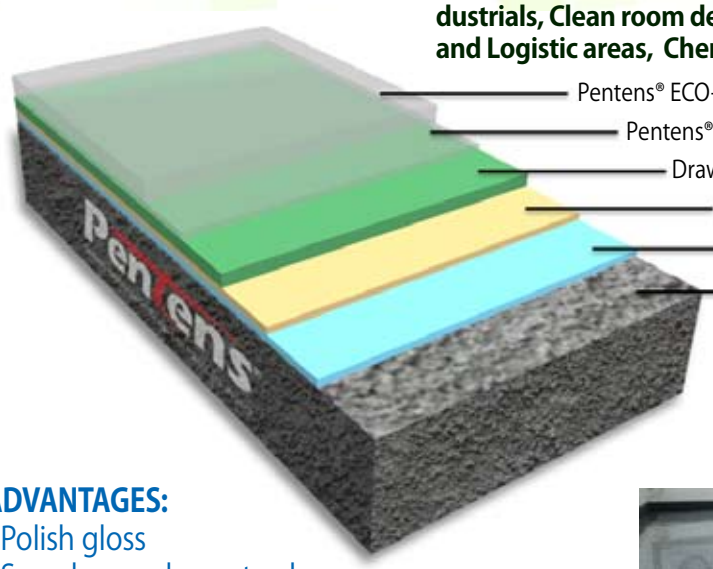
- Solvent free, Excellent wear and impact resistant
- Excellent resistant to chemicals
- High strength, High mechanical
- USDA approved.
- Protects and beautifies
- Aesthetics



- Taiwan, Hsinchu Solartech Energy Corp.
- Taiwan, Hsinchu Sunshine PV Corp.
- Taiwan, Taizhong Mosa Corp.

# SELF-SMOOTHING DECORATIVE

**Marble-like Decorative floor, Polished Porcelain tile design floor, Hygienic Industrials, Clean room design, Traffic Zones design, Assembling plants / Storage and Logistic areas, Chemical and Pharmaceutical industries.**




**1500~5000 micron**

## ADVANTAGES:

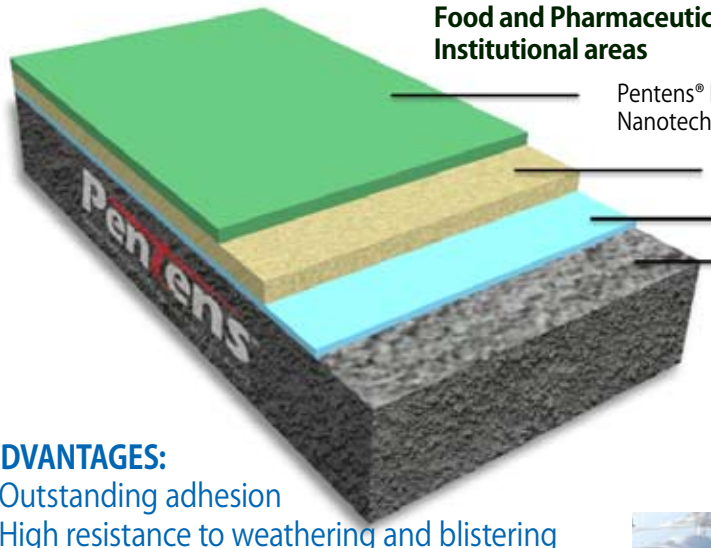
- Polish gloss
- Seamless and easy to clean
- Self-leveling
- High mechanical loading capacity
- Extremely high chemical resistance against a range of aggressive chemicals, oil, various solvents, etc.



- Taiwan, Taichung Fly Dragon Company
- Thailand Suvarnaprn Company
- Taiwan Tainan ChiefTek Precision Co, Ltd.

# NPU PROTECTIVE PLUS

**Food and Pharmaceutical industries, Hospital and Hygienic clean rooms, Institutional areas**




## ADVANTAGES:

- Outstanding adhesion
- High resistance to weathering and blistering
- Self-cleaning
- Excellent color retention, non-yellowing
- Zero VOC
- Additional features like termite-free, stain resistant and anti-sticking.
- Easy clean-up using water
- Fungus/algae/bacteria resistant



- Indonesia, Exxon mobile bojonengoro, Helipad
- Taiwan, Xinchu Hi-Tech Park projects
- Myanmar Aircraft maintance work shop

MORE FUNCTION & MORE OPTION ...

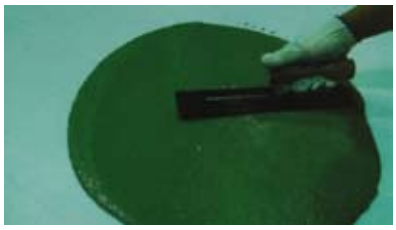
## MOISTURE BARRIER



**MATERIALS, FUNCTION & ADVANTAGES:**

- Pentens T-303, 2 component.
- Apply at bottom layer as Moisture barrier, damp-proofing coating
- Easy application, Excellent adhesion, Optimal pore sealer, Good chemical resistance
- Increased frost and salt resistance, Resist carbon dioxide penetration, Water vapor permeable
- For internal and external use, Non-toxic, Slightly flexible
- Can be applied over new concrete (after 3 days of curing)

## MOTAR BODY COAT


**MATERIALS, FUNCTION & ADVANTAGES:**

- Pentens E-501 + Sand
- Apply as under coat to get high Mechanical strength.
- Excellent wear and impact resistant properties.
- Impervious to liquids and excellent resistant to chemicals.
- Non-flammable, negligible odor and toxicity
- Has excellent adhesion to most substrates including brick, masonry, concrete, compressed fiberboard, stone and timber

## ANTI-STATIC



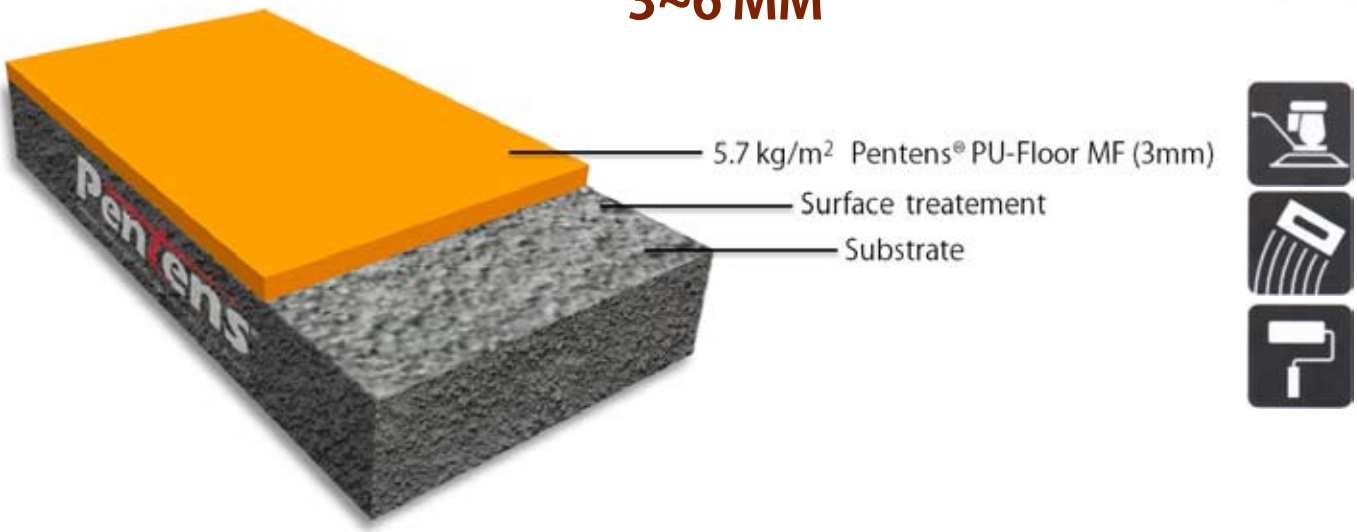
**MATERIALS, FUNCTION & ADVANTAGES:**

- Pentens Anti-Static series epoxy products
- High Chemical Resistant
- Sovent Free.
- Easy for cleaning

# PU-FLOOR MF

## FLOW-ABLE POLYURETHANE MORTAR FLOOR

## 3~6 MM




Pentens PU-FLOOR MF is a pigmented three component semi-gloss VOC compliant Polyurethane High Abrasion & Chemical Resistant flow-able mortar floor system. This mortar system can be applied from a 3 to 6 mm and form a smooth matte monolithic surface finish. The thickness is determined by the service used. Pentens PU-FLOOR MF floor is extremely tough with superb resistant to most industrial chemicals, heat resistance and have many physical properties exceeding those typical concrete. It is also recommended for light vehicular traffic.

### AREAS OF APPLICATION INCLUDE:

- High human & forklift traffic area
- Food & pharmaceutical factories
- Textile industry & engineering workshop
- Chemical plant & assembly plant
- Electronic & electrical plant
- Lubricant and oil industries

### TYPICAL CHEMICAL RESISTANCE

- Dilute mineral acids, hydrochloric (<35%), phosphoric (50%) & sulfuric (30%)
- Alkalis including sodium hydroxide (<50%)
- Dilute organic acids, citric, formic & uric
- Oils, salt, sugar & fats
- Mineral oil, gasoline, diesel & kerosene

### PHYSICAL DATA:

| | |
|---|---|
| Mixing Ratio | : A:B:C |
| Recommended Thickness | : 3 ~ 6 mm thick |
| Theoretical Coverage | : 5.7 kg/3 mm/$m^2$ |
| Pot Life | : 30 minutes at 27 ° C |
| Packing Size | : Part A – 3 kg<br>Part B - 3 kg<br>Part C - 14 kg |
| Drying time ( 27 ° C ) | : Gel time – 25 min<br>Initial cure – 12 hours<br>Full Cure - 48 hours |
| Compressive Strength | : 55 N/$mm^3$ |
| Flexural Strength | : 18 N/$mm^3$ |
| Tensile Strength | : 7 N/$mm^3$ |
| Density (gm/$m^3$) | : 1.97 |
| Water Absorption | : <0.01 % |
| Abrasion Resistance (Taber) | : 0.07 gm / 1000 cycle |
| Adhesion | : Concrete failure |

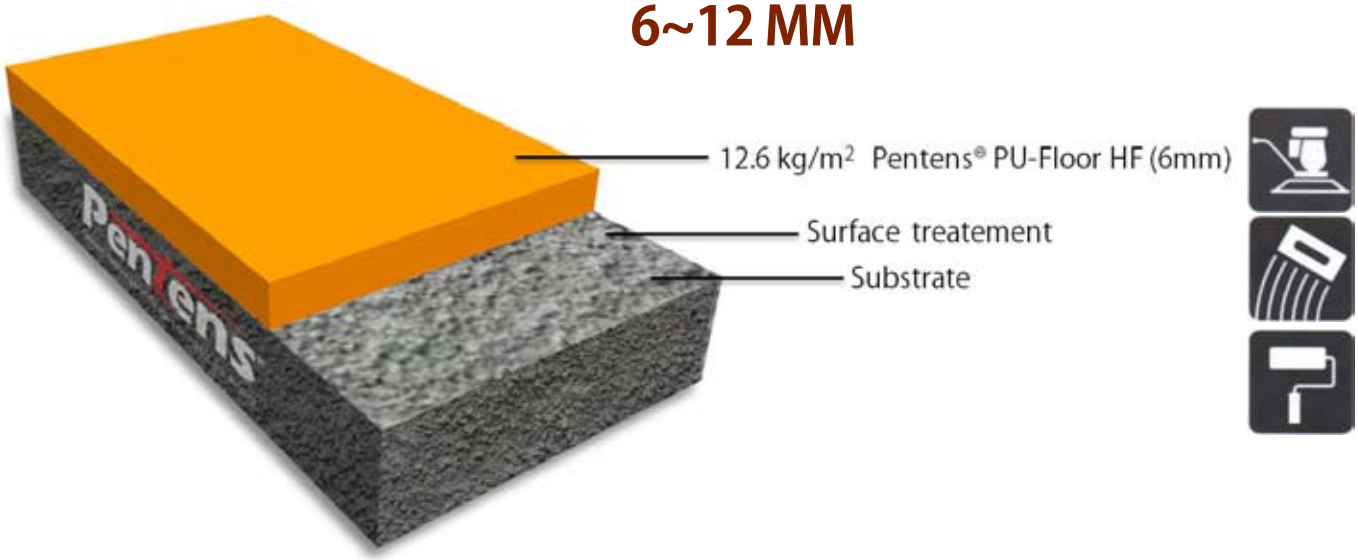
### ADVANTAGES:

- Hygienic/safe, microbiologically inert. VOC compliant means non-hazardous after fully cured.
- Fast curing. ( 48 hours )
- High impact resistance at 6 mm thick. High heat resistance up to 100°C
- Tolerate organic & inorganic acids, alkalis, and salt.
- Seamless, Prevents ingress of chemicals into the substrate and bacterial growth.
- Hard wearing, Suitable for vehicular traffic.
- Easy maintenance, Facilities house-keeping works and lower maintenance costs.
- Color variety - available in wide range of colors to suit individual needs.

# PU-FLOOR HF

## HEAVY DUTY POLYURETHANE MORTAR FLOOR

## 6~12 MM




Pentens PU-FLOOR HF is a three component VOC compliant Polyurethane High Abrasion & Chemical Resistant mortar floor system. This toweled mortar system can be applied from a 6 to 12mm and form a monolithic surface finish. The thickness is determined by the service and cleaning temperature used. Pentens PU-FLOOR HF floor are extremely tough with superb resistant to most industrial chemicals, heat resistance and have many physical properties exceeding those typical concrete. It is also recommended for heavy duty uses.

### AREAS OF APPLICATION INCLUDE:

- High human & forklift traffic area
- Food, pharmaceutical factories & freezer
- Textile industry & engineering workshop
- Chemical plant & assembly plant
- Primary and secondary containtment
- Lubricant and oil industries
- Waste water treatment plant
- Loading & warehouse

### TYPICAL CHEMICAL RESISTANCE

- Dilute mineral acids, hydrochloric (<35%), phosphoric (50%) & sulfuric (30%)
- Alkalis including sodium hydroxide (<50%)
- Dilute organic acids, citric, formic & uric
- Oils, salt, sugar & fats
- Mineral oil, gasoline, diesel & kerosene
- Most organic solvent

### PHYSICAL DATA:

| | |
|---|---|
| Mixing Ratio | : A:B:C |
| Recommended Thickness | : 6~12 mm thick |
| Theoretical Coverage | : 12.6 kg/6 mm/$m^2$ |
| Pot Life | : 30 minutes at 27 ° C |
| Packing Size | : Part A – 3 kg<br>Part B - 3 kg<br>Part C - 24 kg |
| Drying time ( 27 ° C ) | : Gel time – 30 min<br>Initial cure – 12 hours<br>Full Cure - 48 hours |
| Compressive Strength | : 62 $N/mm^3$ |
| Flexural Strength | : 13 $N/mm^3$ |
| Tensile Strength | : 6 $N/mm^3$ |
| Density ($gm/m^3$) | : 2.8 |
| Water Absorption | : <0.01 % |
| Abrasion Resistance (Taber) | : 0.069 gm / 1000 cycle |
| Adhesion | : Concrete failure |
| Coefficient of thermal expansion | : 1.5 x $10^{-5}$/°C |
| Surface resistivity | : 3 x $10^8$Ohm |

### ADVANTAGES:

- Fast curing. ( 48 hours )
- Resist steam or continues hot water cleaning. Solvent free. VOC compliant, Non hazardous after fully cured.
- High impact resistance. High heat resistance up to 112°C
- Tolerate organic & inorganic acids, alkalis and salt.
- Seamless, Prevents ingress of chemical into the substrate and bacterial growth. Microbiologically inert.
- Hard wearing, Suitable for vehicular traffic.
- Easy maintenance, Facilities house-keeping works and lower maintenance costs.
- Color variety, Available in wide range of colors to suit individual needs

# PU-FLOOR APPLICATION METHOD STATEMENT

**SURFACE PREPARATION**
Surface shall be structurally sound, properly cured, waterproofed from rising damp and free from other contaminants. Mechanical profiling is fully recommended, e.g. grit blasting or vacuum blasting. Allowed 5mm x 10mm minimum groove for MF & 10mm x 10mm minimum groove for HF at bay joint or termination edge for anchoring purpose.

**PRIMER**
This product is a self-priming system. However a scratch coat of epoxy primer with selected silica sand broadcast on top to enhance the adhesion of material to concrete surface if deem necessary.

**MIX**
Add Part A into clean mixing drum follows by Part B and mix thoroughly with a helical spinner for 1 minute. Add the entire content of Part C into the mixture. Mix for another 2 minute minimum until a homogeneous mixture is achieved. Fully discard previous mixed to avoid contamination of next batch.

**APPLICATION**
Pour the mixture to the floor of primed surface and spread evenly with steel trowel to achieve the specified thickness. Trowel on partially set area shall be avoided. The spreading and jointing work can be carried out while it is still tacky.

**MAINTENANCE**
Regular cleaning and maintenance will prolong the life of all polymer flooring system and enhance appearance. Pentens PU-FLOOR flooring can withstand high pressure cleaning or hot water cleaning of 2500 psi at 95$^{o}$C for MF (& 100$^{o}$C for HF) with wide range of degreasing agent. A thin coat of sealer coat can be applied to increase aesthetic and easy cleaning.

**TECHNICAL SUPPORT**
Consider of variable application condition & enviroment, the method may need to adjust according project needs.

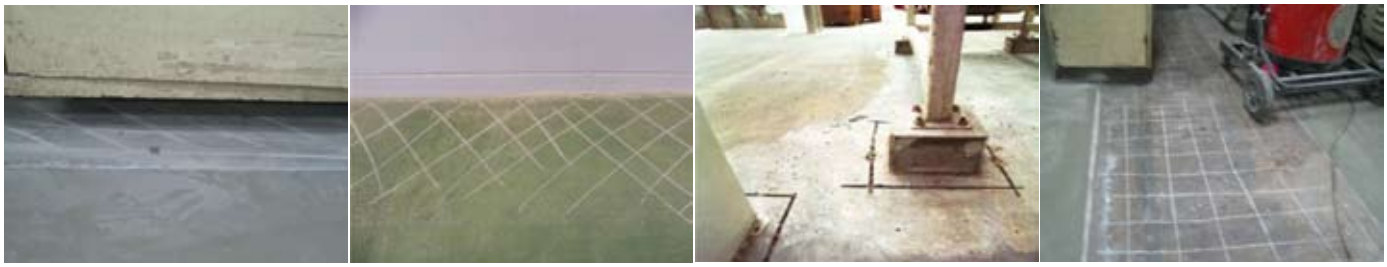
If there are any question, please refer to your applicator or contact our technical support -
Indonesia : +62 31 8015345
Taiwan : +886 2 2668 2003

**NOTE:** This product is intentionally for professional use only. Proper application and quality control shall be the responsibility of the user. Our representative and flooring specialist are available to assist you in the selection and technical details. Not for sale or use by general public.

## SUBSTRATE PREPARATION BY SHOT-BLAST ,SCARIFIER

## REPAIR / PATCHING BY PU-FLOOR MATERIAL

## CUTTING JOINT



## PU-FLOOR COATING

## FINISH

# T-250

## Colorful Wear-resistant Surface Coating

International Tennis Federation
Court Place Classification

**Pentens® T-250** is a specially formulated mineral based coating system of inorganic nature for both exterior and interior use. As a decorative and protective finish, Pentens® T-250 has outstanding durability. When applied correctly to a suitable backing, it will neither flake nor peel. What makes Pentens® T-250 durable is an acrylic-based resin and selected pigments to which are added mica, hollow ceramics, and fine hard aggregates, to ensure long life and special anti-slip properties. Pentens® T-250 also contains a biocide which combats bacterial and fungus growth.

### USES

Pentens® T-250 is suitable for application on to the following surfaces:

- Any indoor and outdoor ball court for tennis, basketball, badminton, hand ball, volleyball, squash, skate, in-line skate···etc.
- Dust-proof and wear-resistance floor of warehouse, parking yard.
- Metal roof for reducing heat.
- Protective coating for waterproofing materials.

### ADVANTAGES:

- Wear-resistance.
- Heat resistance – thick application.
- Vapor barrier.
- Resistance to pollution attack, Ideal for industrial and coastal areas.
- Good mechanical and chemical stability.
- Water based, environment friendly.
- Air and UV protection.
- Non-toxic.
- Prevention of ravages of acid rain, freeze-thaw,
- cycles, sunlight, bacteria and fungus.

### TECHNICAL & PHYSICAL DATA

| | |
|---|---|
| Form | Liquid |
| Color | Blue, White, Green, Red etc (Other refer to color chart) |
| Solid content | >60% by weight |
| QUV Accelerated Weathering | No cracking |
| Curing Time | 12 hours |
| Application Temperature | 10°C to 50°C |
| Storage condition | Store in a dry cool place |
| Packaging | 20 kg/pail<br>200 kg/drum |

### INSTRUCTION FOR USE

### SURFACE PREPARATION

All surfaces must be sound, clean and grease, oil, curing compound and any foreign materials which will inhibit proper bond. Concrete should have a surface texture similar to a light broom finish. For old surface, ensure that loose and flaking materials are removed with a stiff bristle brush. Cracks and damaged area should be required and allowed to dry and harden prior to application of Pentens® T-250

Remove all gravel. The main reason of applying gravel on the roof was to protect the old surface from the sun's rays. Removing grave will greatly reduce the weight load on provide a firm surface for the new coating.

Sweep and vacuum or power wash surface to remove dirt and dust. Cut out roof blisters and repair with acrylic embedded in polyester fabric or polymer concrete.

Remove mildew with sodium hypochlorite or other algaecide and rinse with Tack down curled, lifted seams flush with the surface. Fill any other gaps with silicon impregnated latex caulk. Any loose shingles should be gently lifted and glued down with roofing cement.

### APPLICATION

Dilute 1 portion of Pentens® T-007 permeable primer with 3 portion of clean water and then plaster directly to the surface in order to improve the bonding.

After application of Pentens® T-007 permeable primer, Pentens® T-250 is suggested to apply 3 coats. Apply the first coat of PENTENS T-250 on the application surface. Leave to cure for approximately 8 hours before applying another coat. Depending on ambient conditions in the application area, Pentens® T-250 can be installed with conventional rubber squeegee, airless spray equipment, brush or roller.

### COVERAGE

Approximately 0.16 Liter/$m^2$/coat

### OVER COATING

After the primer, PENTENS T-250 can be applying directly provided with areas exposed hot drying winds. For indoor areas, it is recommended that allow approximately 30 minutes after the primer. For more details, please refer to our Technical Department.

### CURING

Allow a minimum of one hour between coats

### NOTE

The best method to assure good penetration of the first coat into the surface is by application with a nap roller. The succeeding coats may be spray or roller applied.

### SUBSTRATE TYPES

Provide good bonding to:
- Concrete, cement mortar, sand renderings
- Asphalt concrete
- Asbestos cement

# Acrylic Sports Court Floor Coating (RC substrate)

Video available on YouTube CHANNEL
Keyword: pentens sport rc

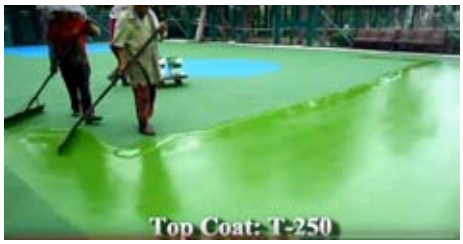


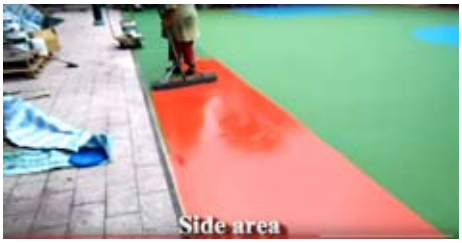


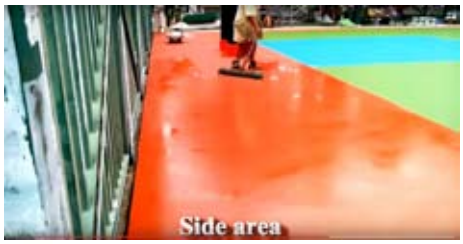


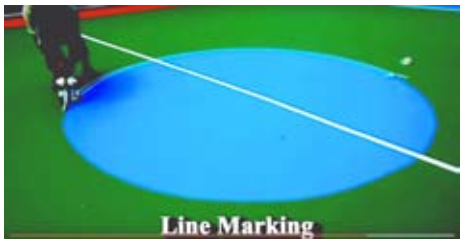






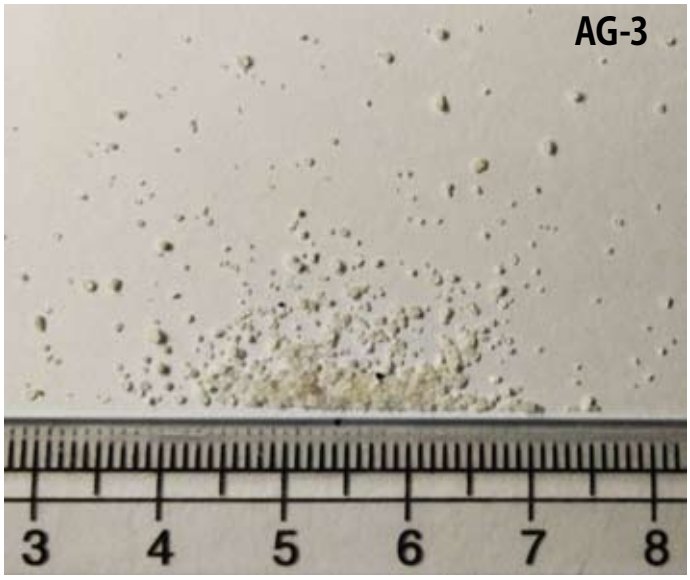



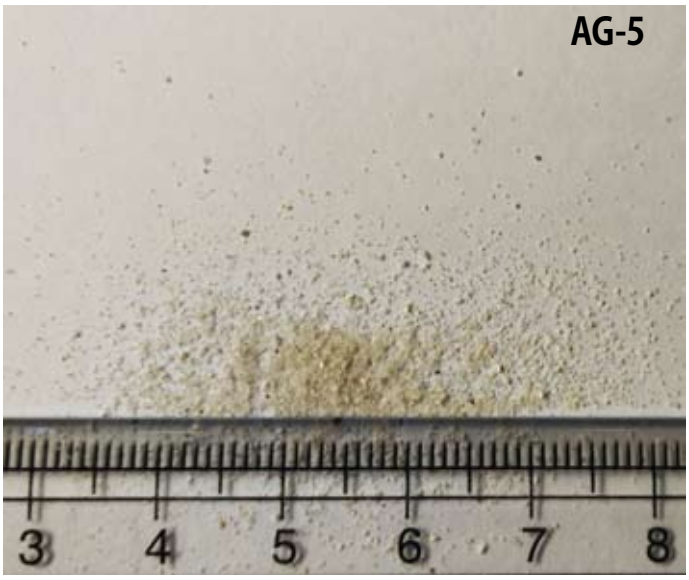

ITF classified court pace 2 MEDIUM-SLOW

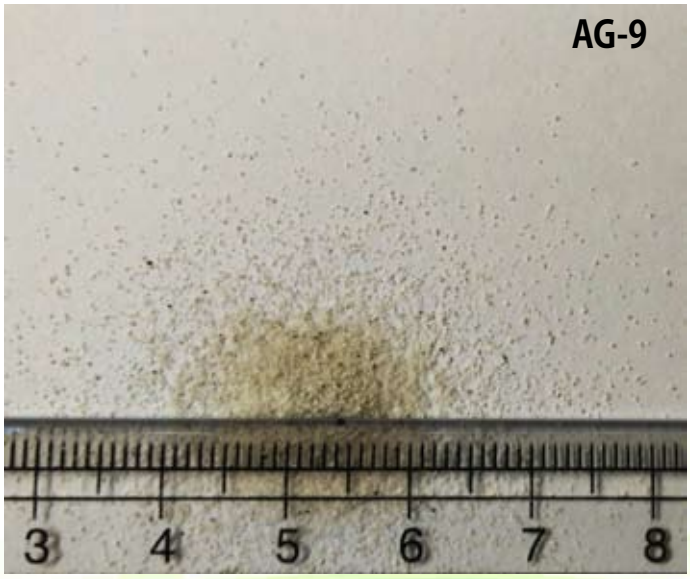
# AG-1, AG-2, AG-3, AG-5, AG-9

## Pentens Aggregate Size Reference






Mixing

Broadcast

# BEFORE APPLICATION

## Tools preparation

Spike shoe

Empty pail

Mixer

Trowel

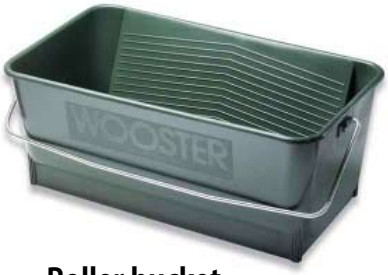
Patching knife

Brush

Wiper

Roller

Foam remove roller




Roller bucket

Tape

# APPLICATION METHODS

## Common Method Reference (ex. Pentens E-620F)

### GROUTING

Grouting uneven area or big damage area.

### PATCHING HOLE

Hole patching by E-501S (+ sand)

### PATCHING CRACK

Patching cracking line by E-501S (+snad)

### GRANDING

Granding until even surface

### CLEANING

Sweeping and cleaning the surface free from dirt / dust.

### USING TAPE

Using tape for application eage.

# Method may be different depand on system design and requirement

## PRIMING

Provide primer

## (BODY COAT / PUTTY FILLER / MOTAR)

Provide putty filler E-501S or Provide Epoxy motar by E-501 + 6x~12x sand.

## COATING DETAIL FIRST

Always applicating detail first.

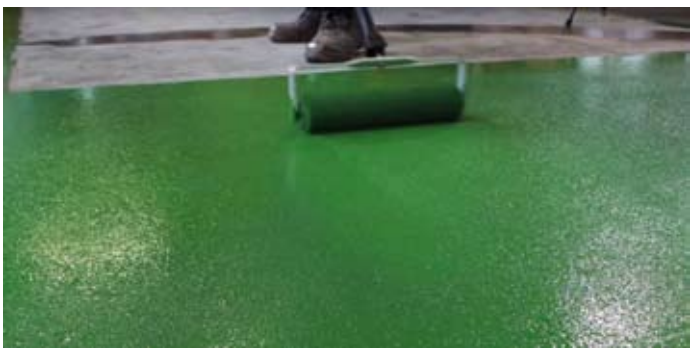
## FIRST COAT

Provide first coat

## SAND BROADCAST (FOR ANTI-SKID)

Provide sand powder for anti-skid need.

## FINISHING COAT



Provide finishing coat

*Website:*

**pentens**waterproof**.com**
(Indonesia)

*Community:*

*Product Video:*

ON YouTube CHANNEL

Premium Product
Taiwan

***Pentens® Flooring Products***

PT. UFON NANO CHEMICAL

Pentens® Products Indonesia Provider