

KingDeck[®] HPW System

UV resistant, waterproofing and hard-wearing polyurethane traffic coating system.

DESCRIPTION

KingDeck HPW System is a UV resistant, waterproofing and hard-wearing polyurethane traffic coating system. It is specially designed to consist of a waterproofing and crack-bridging intermediate layer that would protect the concrete slab from water in intermediate and exposed car park decks. It has excellent resistance to abrasion and wear and excellent chemical resistance to petrol, diesel, engine oil, brake fluid and de-icing salts.

The KingDeck HPW System consists of the following component:

- ☐ KingDeck Primecoat U: a two component, solvent-free epoxy primer with excellent adhesion to concrete and cementitious substrates.
- ☐ KingDeck Flexcoat 100: a two component, solvent-free waterproofing and crack-bridging intermediate layer.
- ☐ Anti-slip Aggregate #3: a hard-wearing quartz aggregate for producing an anti-slip finish.
- ☐ KingDeck Wearcoat TE: a two component, solvent-free, pigmented wearing course with excellent resistance to abrasion and chemical attack.
- ☐ KingDeck Wearcoat TP100: a two component, pigmented wearing course with excellent resistance to abrasion and chemical attack. It is applied as the final coat for areas of the car park that are exposed to UV light. It is specifically formulated for colour stability and will not discolor upon exposure to sunlight or other sources of UV light.

APPLICATIONS

KingDeck HPW System is designed for application in different areas of car parks where waterproofing is required, such as intermediate and exposed decks of the car park.

ADVANTAGES

- ☐ Waterproofing and crack-bridging.
- ☐ Excellent resistance to petrol, diesel, engine oil and brake fluid.
- ☐ Resistant to de-icing salts.
- ☐ Available in both smooth and aggregate broadcast finishes for different slip resistance requirements.
- ☐ UV resistant.

CHEMICAL RESISTANCE

KingDeck HPW provides resistance to a wide range of oils, fuels, solvents, acids and bases commonly encountered in car parks. For detailed information, contact KINGKRETE's Technical Department.

SYSTEM SPECIFICATION

The combination of products specified depends on the area within the car park to which KingDeck HPW is being applied, as follows:

EXPOSED DECKS (OUTDOOR APPLICATION)

Anti-slip finish for ramps and turning circles

- ☐ One coat KingDeck Primecoat U.
- ☐ One coat KingDeck Flexcoat 100.
- ☐ One coat KingDeck Wearcoat TE + full blind of Anti-slip Aggregates #3.
- ☐ Two coats KingDeck Wearcoat TP100.

Anti-slip finish for traffic aisles and parking bays

- ☐ One coat KingDeck Primecoat U.
- ☐ One coat KingDeck Flexcoat 100.
- ☐ One coat KingDeck Wearcoat TE + full blind of Anti-slip Aggregates #3.
- ☐ One coat KingDeck Wearcoat TP100.

Smooth finish for traffic aisles and parking bays

- ☐ One coat KingDeck Primecoat U.
- ☐ One coat KingDeck Flexcoat 100.
- ☐ One coat KingDeck Wearcoat TE.
- ☐ One coat KingDeck Wearcoat TP100.

Note: Other grades of Anti-slip Aggregates can be used but the finish should be checked and approved by end user.

STANDARDS

KingDeck HPW complies with the requirements of ASTM C957 (except for recovery from elongation).

METHOD OF USE

Substrate Preparation

A minimum compressive strength of 25 N/mm² and a minimum pull-off strength of 1.5 N/mm². The concrete substrate should be below 75% RH and have less than 4% moisture content. Alternatively, consult with KINGKRETE's Technical Department.



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SURFACE PREPARATION

Concrete surfaces must be degreased using degreasing products, torching or any other suitable method which assures the surface is free from any oil traces. Surfaces should be sound and with no irregularities as they can affect the finish of the applied product.

Concrete surfaces are to be mechanically prepared to remove laitance and achieve a flat surface, grit blasting or surface profiling equipment are preferred. Acid etching can be used after consulting with KINGKRETE's Technical Department. Surface defects such as voids and blowholes should be repaired before application. Consult KINGKRETE's Technical Department for the best repair material.

Surfaces must be free of any dust or loose particles before product application. Use suitable methods like vacuuming or sweeping. If possible, apply the product on a small test area before actual application to check for any problems with the surface preparation.

KINGDECK PRIMECOAT U

Mixing

KingDeck Primecoat U comprises two components; a resin and hardener which are supplied pre-weighted in the correct proportions. Under no circumstances should part mixing be carried out. Taking care to ensure that the bottom and sides are thoroughly drained, pour the contents of the hardener portion into the resin container.

Using a power whisk attached to a slow speed electric drill, mix for approximately 2 minutes, scrape down and re-mix for a further 1 minute, avoiding the entraining of excessive air, until a uniform consistency is obtained. Allow to stand for 1 minute.

Note: Never mix KingDeck Primecoat U by hand as this could lead to areas of uncured material.

Application

Once mixing is complete, spread the KingDeck Primecoat U onto the prepared surface by brush or lamb's wool roller.

Overcoating

KingDeck Primecoat U may be over-coated as soon as it becomes tack free within 24 hours.

KINGDECK FLEXCOAT 100

Mixing

KingDeck Flexcoat 100 comprises two components, a resin and a hardener, which are supplied pre-weighted in the correct proportions. Under no circumstances should part mixing be carried out.

The contents of each component should be thoroughly stirred separately to disperse any possible settlement. Taking care to ensure that the bottom and sides are thoroughly scraped, transfer the entire contents the hardener component into the base component.

Using a power whisk attached to a slow speed electric drill, mix for approximately 3 minutes and until uniform colour and consistency are achieved.

Note: never mix KingDeck Flexcoat 100 by hand as this could lead to areas of uncured material.

Application

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. Application can be done by brush or squeegee.

Overcoating

KingDeck Flexcoat 100 may be over-coated as soon as it becomes tack-free within 24 hours.

KINGDECK WEARCOAT TE

Mixing

KingDeck Wearcoat TE comprises two components, a resin and a hardener, which are supplied pre-weighted in the correct proportions. Under no circumstances should part mixing be carried out.

The contents of the resin pack should be thoroughly stirred to disperse any possible settlement. Taking care to ensure that the bottom and sides are thoroughly scraped, transfer the entire contents of both components into a separate mixing container.

Using a power whisk attached to a slow speed electric drill, mix for approximately 3-5 minutes and until uniform colour and consistency are achieved.

Note: Never mix KingDeck Wearcoat TE by hand as this could lead to areas of uncured material.



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APPLICATION

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. Application can be done using a brush, roller or an airless spray machine.

To obtain an anti-slip finish, whilst KingDeck Wearcoat TE is still wet, broadcast with Anti-slip Aggregate #3 according to the table of the coverage rates and allow to dry. All excess aggregates shall be removed before applying the final top coats.

Over-coating

KingDeck Wearcoat TE should become tack-free before it is over-coated with a coat of KingDeck Wearcoat TP100. This can be achieved after a minimum 6 - 8 hours from application at 25°C.

KINGDECK WEARCOAT TP100

Mixing

KingDeck Wearcoat TP100 comprises two components, a resin and a hardener, which are supplied pre-weighted in the correct proportions. Under no circumstances should part mixing be carried out. The contents of each component should be thoroughly stirred separately to disperse any possible settlement.

Taking care to ensure that the bottom and sides are thoroughly scraped, transfer the entire contents the hardener component into the base component. Using a power whisk attached to a slow speed electric drill, mix for approximately 3 minutes and until uniform colour and consistency are achieved.

Note: Never mix KingDeck Wearcoat TP100 by hand as this could lead to areas of uncured material.

Application

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. Application can be done by brush, roller or airless spray machine.

Over-coating

KingDeck Wearcoat TP100 may be over-coated as soon as it becomes tack-free within 24 hours.

CLEANING

Tools should be cleaned with KINGKRETE Solvent immediately after use.

PACKAGING

KingDeck Primecoat U is available in 18 kg packs. KingDeck Flexcoat 100 is available in 18 kg packs. KingDeck Wearcoat TE is available in 18 kg packs. KingDeck Wearcoat TP100 is available in 18 kg packs. Anti-slip Aggregates is available in 25 kg bags.

LIMITATIONS

- KingDeck HPW System should be protected from contact with water for the first 24 hours after application as discoloration could occur.
- For cold weather working (down to 5°C), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances.
- Application to commence while temperature is 5°C and rising. In hot weather working conditions (35°C) and above, it is recommended to keep material in a cool shaded area to ensure ease of application.

STORAGE

Shelf life is 1 year when stored under cover, out of direct sunlight and protected from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult KingKrete's Technical Services Department.

HEALTH AND SAFETY

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well ventilated areas and avoid inhalation.

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TECHNICAL PROPERTIES	KingDeck Primecoat U	KingDeck Flexcoat 100	KingDeck Wearcoat TE	KingDeck Wearcoat TP100
Colour:	Brownish clear	Yellowish white	Variable	Variable
Mixed density:	1.50 ± 0.10 g/cm ³	1.30 ± 0.05 g/cm ³	1.40 ± 0.05 g/cm ³	1.30 ± 0.10 g/cm ³
Volume solids:	100%	100%	100%	55 ± 5%
Pot life @25°C:	60 - 90 min	60 - 90 min	100 - 140 min	4 - 6 hr
Over-coating time @25°C:	24 hr	24 hr	6 - 8 hr	24 hr
Full cure @ 25°C:	7 days	7 days	7 days	7 days
Bond strength on C25/30 concrete: ASTM D4541	≥ 2.0 MPa (concrete failure)	≥ 2.0 MPa (concrete failure)	≥ 2.0 MPa (concrete failure)	≥ 2.0 MPa (concrete failure)
Shore D hardness: ASTM D2240	Not tested	≥ 40	≥ 80	≥ 25
Taber abrasion: (1000 g, 1000 cycles) ASTM D412 CS17 wheel	Not tested	Not tested	≤ 80 milligram	≤ 120 milligram
Tensile strength @ 7 days: ASTM D412	Not tested	≥ 2.0 MPa	≥ 10.0 MPa	≥ 4.0 MPa
Elongation at break @ 7 days: ASTM D412	Not tested	≥ 100%	≥ 25%	≥ 15%
Adhesion in peel after water immersion: ASTM C794 (modified)	≥ 22.2 N (pass)		Not tested	Not tested
Low temperature crack bridging: ASTM C1305 (modified)	No cracking in base coat (Pass)			
Slip resistance: BS 7976	≥ 60 wet ≥ 63 dry For the full system with Anti-slip Aggregate #3			

COVERAGE			
Application	Anti-slip finish		Smooth finish
	Ramps & turning circles	Traffic aisles & parking bays	Traffic aisles & parking bays
KingDeck Primecoat U	One coat 0.20 - 0.30 kg/m ² /coat, depending on surface texture and porosity		
KingDeck Flexcoat 100	One coat 0.65 - 0.75 kg/m ² /coat		
KingDeck Wearcoat TE	One coat 0.35 kg/m ² /coat		One coat 0.28 kg/m ² /coat
Anti-slip Aggregate #3	2 - 3 kg/m ²		
KingDeck Wearcoat TP100	Two coats 0.25 kg/m ² /coat	One coat 0.25 kg/m ² /coat	One coat 0.25 kg/m ² /coat
Total system thickness	1.60 - 1.80 mm	1.50 - 1.70 mm	0.90 - 1.10 mm



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NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local KingKrete representative. KingKrete Inc. reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from KingKrete's Qatar facility are manufactured under a management system independently certified to conform to the requirements of the quality standard ISO 9001.

* Properties listed are based on laboratory-controlled tests.

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KingKrete-Qatar/KingDeck_HPW System_02/v2/07_18

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this KingKrete Inc. publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

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NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by KingKrete Inc. either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not KingKrete Inc. are responsible for carrying out procedures appropriate to a specific application.

