



2013 KCC FLOOR COATING

KCC FLOOR COATING

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KCC paint
FLOOR COATING

KCC FLOOR COATING

The clean environment comes from the clean floor.
Create pure and pleasant atmosphere with the clean floor.

Clean Floor Neat Life

The clean environment comes from the clean floor.
 Create pure and pleasant atmosphere with the clean floor.
 In this fast growing world, multi-functional floor coatings with high physical properties are the essential factor for various kinds of buildings around us.
 KCC Corporation produces various kinds of high quality floor coatings for factory that handles detailed items, laboratory, chemical resistance and durable anti-dust floor coating and anti-static & anti-dust floor coating of GMP facilities for pharmaceutical co., elastic floor coating for sport facilities, road, parking lot, and general interior floor coating.
 KCC Corporation with the members of 600 KCC researchers is dedicated to develop and supply better paint only to meet customer satisfaction.



KCC FLOOR COATING

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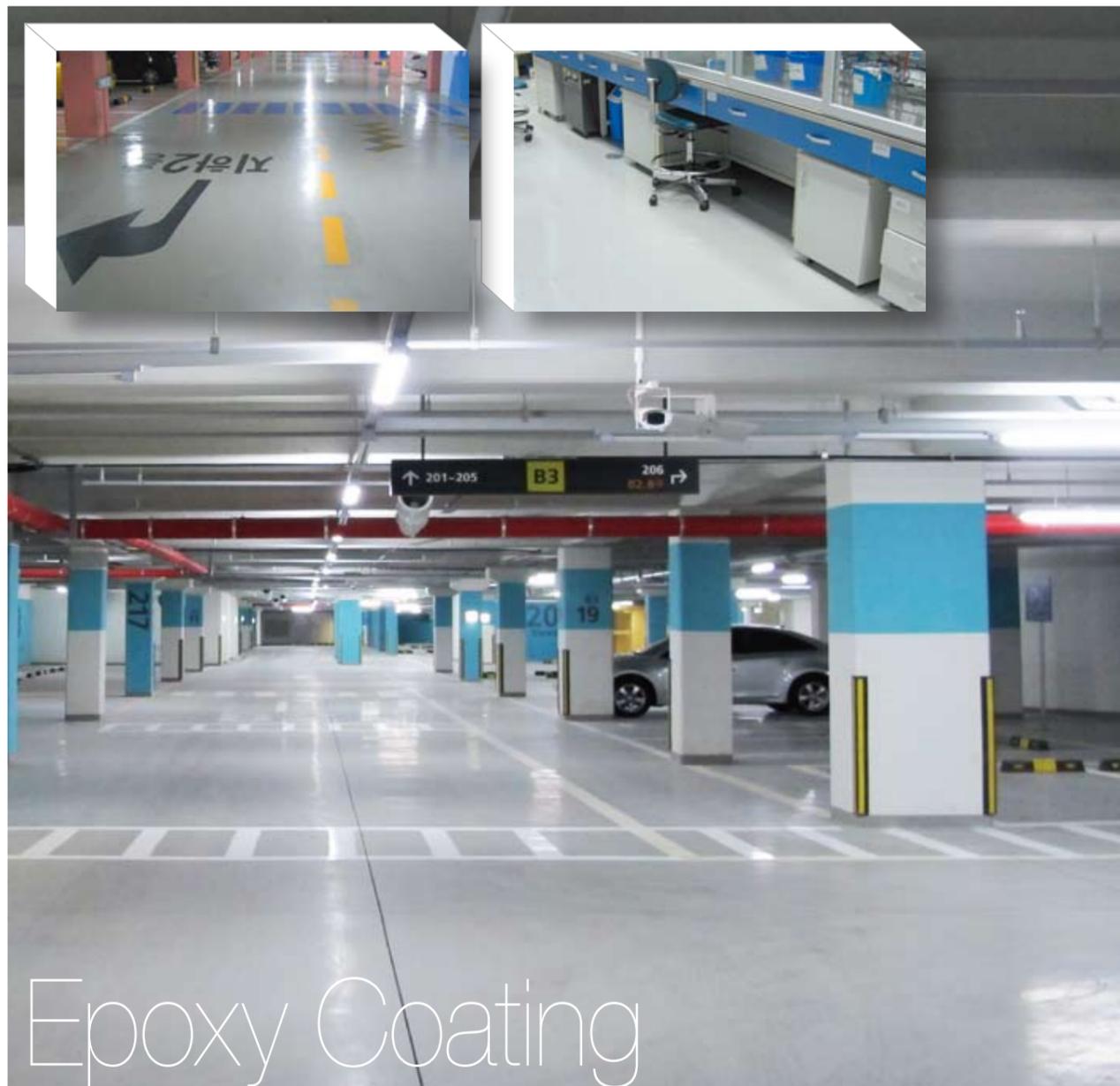
Epoxy Anti-dust Floor Coating

UNIPOXY COATING, UNIPOXY LINING



KCC UNIPOXY FLOOR COATING is high performance finishing that is designed to prevent dust generated from impact or abrasion on the cement mortar by creating tough film with anti-chemical properties (water resistance, acid resistance, alkali resistance, and etc.) as well as anti-static properties using combinations of high molecule epoxy.

Especially, UNIPOXY LINING is non-solvent type and self-leveling coating, it's environment-friendly with mechanical property and beautiful exterior.



Epoxy Coating

Application

- Parking lot in building
- Hospital, GMP facilities for pharmaceutical Co., precision apparatus factory, computer room
Semiconductor factory, examine room, and laboratory
- Food processing factory, meat processing factory, and floor of cold warehouse
- Chemical factory, and floor of factories that handles dust
- Machinery room, control room, battery room, and warehouse

Characteristics

1) COATING (Thin film type)

- High Anti-abrasion, Anti-chemical
Anti-pollution property
- Great adhesiveness on substrates
 - It has extra adhesiveness on substrate because the epoxy primer permeates into concrete or mortar surface.
- Beautiful exterior and various of different colors can be chosen.

2) LINING (Thick film type)

- High quality of Anti-chemical, Solvent resistance,
Scratch resistance
- Tough on impact
 - Tough on impact
 - Easy thickness adjustment. (2~3 mm)
- Environment friendly
 - It does not contain solvent and able to correspond with VOC regulation

Coating Specification

1) Coating

Coating Classification	Product Name	Film thickness (μm)	Theoretical Required Amount		Coating Method	Remarks
			m ² /L	L/m ²		
Primer	UNIPOXY PRIMER 100	50	5.6	0.18	B, R, S	Strengthen substrate & adhesiveness
Topcoat	UNIPOXY COATING	50	5.5	0.18	B, R, S	Excellent abrasion-resistance, chemical resistance

※ B : Brush, R : Roller, S : Spray

2) Lining

Coating Classification	Product Name	Film thickness (μm)	Theoretical Required Amount		Coating Method	Remarks
			m ² /L	L/m ²		
Primer	UNIPOXY PRIMER 100	50	5.6	0.18	B, R, S	Strengthen substrate & adhesiveness
Topcoat	UNIPOXY LINING	2,000 ~ 3,000	0.32 ~ 0.97	1.03 ~ 3.09	Rake, Hera	Excellent abrasion-resistance, mechanical property

※ Unipoxy Lining requires pre-coat for 0.5~0.8 mm of thickness to prevent substrate contamination and bubbles caused by holes on substrate.

※ B : Brush, R : Roller, S : Spray

References

Site Name	Coating Applied	Location
Shinchon LH Humancia Basement Parking Area	UNIPOXY PRIMER, UNIPOXY COATING	Guangmyung-si, Gyeonggi-do
Pyungri-dong Lottecastle Basement Parking Area		Pyungri-dong, Daegu-si
Jinjub Shindobrenew Basement Parking Area		Jinjub-eup, Namyangju
Guro Onsu Hillstate Basement Parking Area		Guro-gu, Seoul
Ulsan National Institute of Science and Technology	UNIPOXY PRIMER, UNIPOXY LINING	Jung-gu, Ulsan
Uiwang Doosan We've Basement Parking Area		Uiwang-si, Gyeonggi-do
Gumi LG Innotek Co., Factory		Gumi-si, Gyeongbuk
Lottemart Goyang and the rest 6 store		Goyang-si, Gyeonggi-do and the rest

High Intensity Epoxy Resin Mortar

UNIPOXY RESIN MORTAR



UNIPOXY RESIN MORTAR, highly intensified special polymer resin type floor coating, is combined with silica sand that is excellent in surroundings where there are severe impacts and abrasions. Also it gives shrink resistance and crack resistance.



Epoxy Coating

Application

- Building parking lot(indoor), needed non-skid property in the corner.
- Floors of factory and warehouse, passing heavy equipment frequently.
- Skid resistance floors of industrial field.

Characteristics

- High impact resistance and compression strength, it's suitable for floor of factory and warehouse, passing heavy equipment frequently.
- Noise reduction by friction, excellent skid resistance.
- It does not contain solvent, is environment friendly coating. (It has environmental mark, HB Mark Labelling 1st class)
- It has test report of non-combustible material.

Coating Specification

Coating Classification	Product Name	Film thickness (μm)	Theoretical Required Amount		Coating Method	Remarks		
			m ² /L	L/m ²				
Primer	UNIPOXY PRIMER 100	50	5.6	0.18	B, R, S	Primer to strengthen the substrate intensity		
Midcoat	UNIPOXY RESIN MORTAR	3,000 ~ 5,000	Classification		Trowel, Scoop	Superior flooring that is impact and abrasion resistance		
			Colored	Semi-leveling			Paint (kg/m ²)	Sand (kg/m ²)
				Parking lot			1.0	1.0
				Ambulation			1.0	4.0
Clear	1.0	6.0						
Topcoat	UNIPOXY COATING	50	10.2	0.098	B, R, S	Premium flooring that is abrasion and chemical resistance		

- ※ 1 more additional primer is required for tough surface on substrate.
- ※ Easy operation and high adhesiveness can be acquired by applying 100 μm UniPOxy Resin Mortar's resin right before applying intermediate with roller.
- ※ B : Brush, R : Roller, S : Spray

Mix Ratio

(Measure : kg)

Classification	For Summer				For Winter			
	Base Applying color sand	Base Applying basic sand	Curing agent	Sand	Base Applying color sand	Base Applying basic sand	Curing agent	Sand
Industrial field for walk, parking lot etc	12.5	13.3	3.67	95	12.5	13.3	3.92	95
Path for heavy equipment, place with abrasion and shock			3.67	64			3.92	64

- ※ Especially, the base and the curing agent must be mixed equally with the electric mixer.

References

Site Name	Coating Applied	Location
Gimhae Plant International Logistics Center	UNIPOXY PRIMER, UNIPOXY RESIN MORTAR, UNIPOXY COATING	Gangseo-gu, Busan-si
GM Daewoo Gunsan Plant Floor		Gunsan-si, Jeonbuk
Pyeongchang Alpensia Resort Underground Parking Lot		Pyeongchang-gun, Gangwon-do
Seoulsquare Building Parking Lot		Jung-gu, Seoul
Hyundai Asan Hospital Underground Parking Lot		Sangdong-gu, Seoul
Jeju KT&G New Company Building		Jeju-do
Yeongdeungpo Times Square Underground Parking Lot		Yeongdeungpo-gu, Seoul
Song-do, Verna Engineering Plant Floor		Yeonsu-gu, Incheon

Epoxy Embo Coat

UNIPOXY EMBO



UNIPOXY EMBO does not contain the solvent with high abrasion-resistance and shock-resistance, this floor coating forms solid and strong embo patterns. With the excellent noise control and anti-skid functions, it gives an individual exterior generally.



Epoxy Coating

Application

- Floor of parking lot required a noise control and anti-skid function (Multiple-use for facilities such as Apartment, Big market, Department store, Hospital etc.)
- On the concrete floor in plants.

Characteristics

- **Excellent Function of Noise control**
 - Reduce noises when a car moves or turn the corner in the parking lot.
- **Great Anti-skid effect**
 - It has great anti-skid effect with embo on the surface of paint.
- **Water-resistance, Abrasion-resistance, Chemical-resistance**
 - It has same properties on the same level as the general epoxy paint.
- **Individual appearance**
 - It covers a dump of concrete with the embo patterns and expresses characterful exterior.

Coating Specification

1) Epoxy Embo Coating (Thin film type) Flooring

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	UNIPOXY PRIMER 100	50	B, R, S	Clear	Primer to strengthen the substrate intensity
Midcoat	UNIPOXY EMBO	200 ~ 300	Roller for Embo	Glossy, All color	Good function of chemical-resistance, Mechanical property and noise control
Topcoat	UNIPOXY COATING	50	B, R, S	Glossy, All color	Excellent adhesive property, abrasion-resistance, chemical resistance

※ B : Brush, R : Roller, S : Spray

2) Epoxy Embo Lining (Thick film type) Flooring

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	UNIPOXY PRIMER 100	50	B, R, S	Clear	Primer to strengthen the substrate intensity
Midcoat	UNIPOXY LINING	200 ~ 300	Rake, Hera	Glossy, All color	Great chemical-resistance, Mechanical property, noise control and shock-resistance
Midcoat	UNIPOXY EMBO	50	Roller for Embo	Glossy, All color	Good function of chemical-resistance, Mechanical property and noise control
Topcoat	UNIPOXY COATING	50	B, R, S	Glossy, All color	Excellent adhesive property, abrasion-resistance, chemical resistance

※ B : Brush, R : Roller, S : Spray

References

Site Name	Coating Applied	Location
STX Ocean Tower Underground Parking Lot	UNIPOXY PRIMER, UNIPOXY EMBO	Changwon-si, Gyeongnam
GS Chungmuro Xi Apt. Underground Parking Lot		Jung-gu, Seoul
Yeongdeungpo Times Square Underground Parking Lot		Yeongdeungpo-gu, Seoul
Seoulsquare Building Parking Lot		Jung-gu, Seoul
Weolseong Nuclear Power Plant Floor		Gyeongju-si, Gyeongbuk
Youngin Sanghyun Hillstate Underground Parking Lot		Youngin-si, Gyeonggi
Onam I-Park Underground Parking Lot		Namyangju-si

Anti-static Floor Coating

UNIPOXY ANTISTATIC



UNIPOXY ANTISTATIC prevents possible accidents and obstacles such as electric shock condition that is caused by electrification, static and electric discharge, unpleasant feeling and fear from working near inflammables, explosives which leads to lack of work efficiency. Also it avoids damages of semi-conductors caused by electric discharge and dust adhesion on walls and ceilings.



Epoxy Coating

Application

- Factories for electrics, electricity, computers, and electric parts
- A place where they handle inflammable gas and organic solvent
- A place where it requires high dust resistance such as clean room, aseptic room, operating room, and so on

Characteristics

- **High degree of functionality**
 - By high anti-static effect, prevents fire from electric discharges.
 - Surface resistivity is $1 \times 10^8 \Omega \sim 9 \times 10^8 \Omega$ and applicable for clean room class 100.
 - Mainly consists of epoxy, it has high chemical resistance, abrasion resistance, adhesiveness, water resistance and impact resistance.
- **Operation and economic efficiency**
 - Coating operation can be simply done with spray, rake and roller, and recoating is easily possible as well so it is quite easy to maintain and keep its anti-static property semi-permanently.
 - ※ The thickness of the film can be adjusted depends on circumstances and it also cuts off expenses.

Coating Specification

Coating Classification	Product Name	Film thickness (μm)	Theoretical Required Amount		Coating Method	Remarks
			m^2/L	L/m^2		
Primer	UNIPOXY PRIMER 100	50	5.6	0.18	B, R, S	Primer to intensify substrate and improve adhesiveness
Midcoat	UNIPOXY LINING	2,000 ~ 3,000	0.33 ~ 0.98	1.02 ~ 3.06	Rake, Hera	Great chemical-resistance, Mechanical property, noise control and shock-resistance
Topcoat	UNIPOXY ANTISTATIC	50	4.8	0.21	B, R, S	High function of Adhesiveness, abrasion resistance and anti-static property

※ B : Brush, R : Roller, S : Spray

References

Site Name	Coating Applied	Location
LG Display P7 Project	UNIPOXY PRIMER, UNIPOXY ANTISTATIC	Paju-si, Gyeonggi-do
Hankook Novel Factory		Taebaek-si, Gangwon-do
Dongwoo Optical Film Cleanroom		Pyeongtaek-si, Gyeonggi-do
KAIST Center		Yusung-gu, Daejeon-si
China Usi Hynix Semiconductor Inc.		China
Hynix Semiconductor Inc. Extension work		Icheon-si, Gyeonggi-do
Yuyoung Pharmaceutical Factory		Jincheon-si, Chungbuk
LG Display P7		Gumi-si, Gyeongbuk
Korea Aerospace Research Institute		Yusung-gu, Daejeon
Songdo Verna Viotech		Yeonsu-gu, Incheon-si

Chemical Resistance Epoxy Floor Coating

UNIPOXY CHEMICAL RESISTANCE



UNIPOXY CHEMICAL RESISTANCE has great mechanical properties of solvent-free epoxy floor coating and self-levelling, it has strong chemical resistance to sulfuric acid, phosphoric acid, nitric acid, hydrochloric acid, NaOH and so on. Also it prevents problems such as discoloration caused by chemicals, blister, flaking, etc.



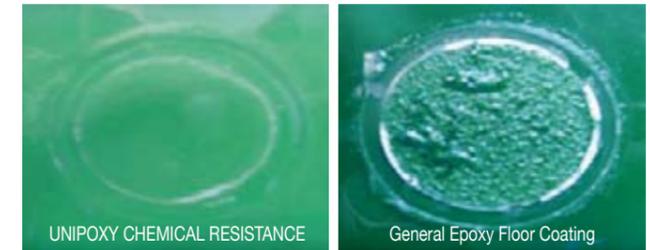
Epoxy Coating

Application

- Finishing floor for hospitals, pharmaceutical firms
- Finishing floor for food factories, chemical factories that handles acid
- Finishing floor for chemical laboratories, school science lab

Characteristics

- **Excellent Acid-resistance**
- It has great acid-resistance compared with normal epoxy floor coating.
- **Great Chemical-resistance**
- Acid-resistance, alkali-resistance, oil-resistance.
- **High mechanical properties.**
- Tensile strength, compression strength which is identical with solvent-free epoxy floor coating, it can be used in plants loading.



Condition after immersion for 24 hours
in 20~30 % acid solution

Coating Specification

Coating Classification	Product Name	Film thickness (μm)	Theoretical Required Amount		Coating Method	Remarks
			m ² /L	L/m ²		
Primer	UNIPOXY LINING	50	5.6	0.18	B, R, S	Primer to intensify substrate and improve adhesiveness
Topcoat	UNIPOXY CHEMICAL RESISTANCE	2,000 ~ 3,000	0.3 ~ 0.4	2.04 ~ 3.06	B, R, S	Finishing coating for both midcoat and topcoat, which has great chemical resistance, mechanical properties and wear resistance

※ B : Brush, R : Roller, S : Spray

Test Report



Chemical Resistance Test Report



Acid Resistance Test Report



Antibacterial Test Report

Urethane Anti-Dust Floor Coating

SPORTHANE



KCC SPORTHANE ANTI-DUST FLOOR COATING has high performance finishing that is designed to prevent dust generated from impact or abrasion on cement mortar by creating tough film with anti-chemical.

Also it is elastic and easy in walking using combinations of high molecule polyurethane, forming solid coatings.



Urethane Coating

Application

- Parking lot in building
- Hospital, GMP facilities for pharmaceutical Co., precision apparatus factory, computer room semiconductor factory, examine room, and raboratory
- School, office, library and etc.
- Machinery room, control room, battery room, and warehouse

Characteristics

- **Good elasticity and ease in walking**
 - It has good fuction of elasticity, helps that walking is more convenient.
- **Great anti-abrasion**
 - Excellent anti-abrasion after hardening as it's a two-component, chemical reaction hardening type.
- **High Chemical-resistance**
 - It has great water-resistance, acid-resistance, alkali-resistance and oil-resistance.
- **Good function of anti-pollution**
 - It is easy to remove when the surface is contaminated by dust, oil, chemicals and etc. after top coating.
- **Non-Slip function**
 - At finishing, it can be used for non-slip fuction, depending on coating method such as spattering, spraying silica sand and so on.
- **Beautiful exterior and various colors can be chosen.**
 - It's self-levelling urethane, filling up a bumpy surface and finishing beautifully. Also there are lots of color to be chosen considering innards and surrounding.

Physical property by Coating specification

Product Name		URETHANE THIN FILM			Remarks	
Coating Specification		SPORTHANE HIGH HARD LAYER TOPCOAT				
		SPORTHANE THIN FILM COATING	SPORTHANE HIGH HARD LAYER MIDCOAT			
		SPORTHANE PRIMER				
Water resistance	Appearance	GOOD	GOOD	GOOD	Deposited in clear water in 8 days	
	Change of weigh	0.06	0.3	0.1	Deposited in clear water in 8 days	
Light resistance	Appearance	GOOD	GOOD	GOOD	UV Tester (in 8days)	
	Change of Gloss	Initial stage	83	83	83	60 °C Gloss
		After test	83	83	83	UV Tester



Factory floor



Storage warehouse floor

Urethane Anti-Dust Floor Coating

SPORTHANE



Coating Specification

1) Urethane Thin Floor Coating (300 μm)

Coating Classification	Product Name	Film thickness (μm)	No. of Coating	Theoretical Required Amount (kg/m ²)	Coating Method	Remarks
Primer	SPORTHANE PRIMER	50	1	0.14	B, R, S	Primer to intensify substrate and improve adhesiveness
Topcoat 1	SPORTHANE THIN FILM FLOOR COATING	200	2	0.60	B, R, S	High abrasion resistance & mechanical properties
Topcoat 2	SPORTHANE HIGH HARD LAYER TOPCOAT	50	1	0.20	B, R, S	Excellent abrasion resistance, chemical resistance and weatherability

※ B : Brush, R : Roller, S : Spray

2) Urethane High-Intensified Floor Coating (2,000~3,000 μm) : SHORE A intensity 75~90

Coating Classification	Product Name	Film thickness (μm)	No. of Coating	Theoretical Required Amount (kg/m ²)	Coating Method	Remarks
Primer	SPORTHANE PRIMER	50	1	0.14	B, R, S	Primer to intensify substrate and improve adhesiveness
Midcoat	SPORTHANE HIGH HARD LAYER MIDCOAT	2,000 ~ 3,000	2	2.6 ~ 3.9	Rake, Hera	All-weather elastic floor coating which has great adhesion and mechanical properties
Topcoat	SPORTHANE HIGH HARD LAYER TOPCOAT	50	1	0.20	B, R, S	Excellent durability, chemical resistance and weatherability

※ B : Brush, R : Roller, S : Spray

※ Sporthane High Hard Layer Midcoat is required to pre-coat for 0.5 ~ 0.8 mm to prevent substrate contamination and bubbles caused by holes on substrate.

3) Urethane Super-Intensified Floor Coating (2,000~3,000 μm) : SHORE A Intensity 95~100

Coating Classification	Product Name	Film thickness (μm)	No. of Coating	Theoretical Required Amount (kg/m ²)	Coating Method	Remarks
Primer	SPORTHANE PRIMER	50	1	0.14	B, R, S	Primer to intensify substrate and improve adhesiveness
Midcoat	SPORTHANE SUPER HARD LAYER MIDCOAT	2,000 ~ 3,000	2	2.6 ~ 3.9	Rake, Hera	High strength elastic floor coating which has great adhesion and mechanical properties
Topcoat	SPORTHANE HIGH HARD LAYER TOPCOAT	50	1	0.20	B, R, S	Excellent durability, chemical resistance and weatherability

※ B : Brush, R : Roller, S : Spray

※ Sporthane High Hard Layer Midcoat is required to pre-coat for 0.5 ~ 0.8 mm to prevent substrate contamination and bubbles caused by holes on substrate.

Characteristics of products

Remarks	Type	Solidity Capacity (%)	Specific gravity (kg/L)	Pot life (Time, 20 °C)	Drying time (20 °C)			Thinner
					Set to Touch	Curing	Completion	
SPORTHANE PRIMER	POLYURETHANE	About 34	About 0.96	3~4	1 hrs.	5 hrs.	10 hrs	037U
SPORTHANE HIGH HARD LAYER MIDCOAT	URETHANE ELASTOMER	About 93	About 1.2	1/2	5 hrs.	15 hrs.	5 days	
SPORTHANE SUPER HARD LAYER MIDCOAT	URETHANE ELASTOMER	About 88	About 1.2	1/2	5 hrs.	15 hrs.	5 days	
SPORTHANE THIN FILM FLOOR COATING	ACRYLURETHANE	About 50	1.2~1.4	2	1 hrs.	6 hrs.	3 days	
SPORTHANE TOPCOAT	POLYURETHANE	About 60	About 1.1	2	1 hrs.	9 hrs.	3 days	
SPORTHANE HIGH HARD LAYER TOPCOAT	ACRYLURETHANE	About 60	About 1.0	3	10 mins.	6 hrs.	3 days	
SPORTHANE HIGH HARD LAYER TOPCOAT (EXTERIOR)	ACRYLURETHANE	About 60	About 1.0	3	10 mins.	6 hrs.	3 days	

※ Solidity capacity and specific gravity are subject to change depending on color.

※ Pot life and drying time are subject to change depending on temperature.

Chemical Resistance Property

NO	Name	Density	Coating system			NO	Name	Density	Coating system		
			SPORTHANE PRIMER						SPORTHANE PRIMER		
			SPORTHANE THIN FILM FLOOR COATING / HIGH / SUPER HARD LAYER MIDCOAT	SPORTHANE THIN FILM FLOOR COATING / HIGH / SUPER HARD LAYER MIDCOAT	SPORTHANE HIGH HARD LAYER TOPCOAT				SPORTHANE THIN FILM FLOOR COATING / HIGH / SUPER HARD LAYER MIDCOAT	SPORTHANE THIN FILM FLOOR COATING / HIGH / SUPER HARD LAYER MIDCOAT	SPORTHANE HIGH HARD LAYER TOPCOAT
1	NaCl	30 %	E	E	E	13	HNO ₃	10 %	E	E	E
2	NaCl	10 %	E	E	E	14	HNO ₃	20 %	E	E	E
3	NH ₄ OH	20 %	E	E	E	15	CH ₃ COOH	10 %	E	E	E
4	NH ₄ OH	10 %	E	E	E	16	CH ₃ COOH	20 %	G	G(B)	G
5	NaOH	30 %	E	E	E	17	HF	20 %	F	F	E
6	NaOH	10 %	E	E	E	18	HF	10 %	F	F	EF
7	H ₃ PO ₄	30 %	E	E	E	19	LINSEED OIL		E	E	F
8	H ₃ PO ₄	10 %	E	E	E	20	SOYA BEAN OIL		E	E	E
9	H ₂ SO ₄	30 %	E	E	E	21	ETHANOL		E	P	P
10	H ₂ SO ₄	10 %	E	E	E	22	GASOLINE		E	P	P
11	HCl	10 %	E	E	E	23	XYLENE		E	P	P
12	HCl	30 %	E	E	E				E	P	P

※ E : Excellnt G : Good F : Fair P : Poor B : Blister (※ Observe after deposition for a week)

Urethane Floor Coating For Outdoor Parking Lot



This specification is the operational method of urethane floor coating to complement light weighted steel frame structured parking lot. It does not require concrete application which gives light weighted parking lot and cuts operational cost. Also it has high adhesiveness on the substrate and high crack resistance against vibration.



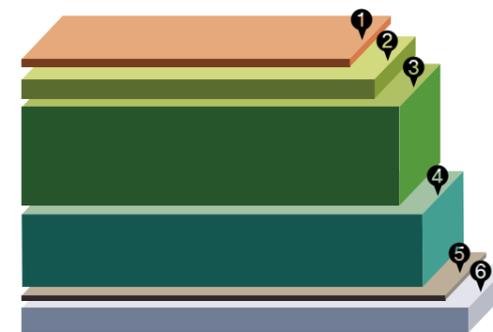
Application

- Outdoor parking lot
- Parking lot that requires light weighted frame

Characteristics

- Applicable on the steel surface.
- Light weighted steel-frame structure makes possible to operate on weak ground.
- Its high weatherability makes outdoor application possible.
- High crack resistance against vibration of metal parking lot.
- Combined use of waterproof.
- Non-slip operation can be done.

Construction Cross Section



	Name	Film Thickness
1	SPORTHANE HIGH HARD LAYER TOPCOAT	100 μm
2	SPORTHANE HIGH HARD LAYER MIDCOAT SAND SPRAY	500 μm 4-5 SAND
3	SPORTHANE HIGH HARD LAYER MIDCOAT	2,000 ~ 3,000 μm
4	SPORTHANE WATERPROOFING COAT KS CLASS 1	2,000 μm
5	FOR CEMENT, CONCRETE : SPORTHANE PRIMER FOR STEEL : EP1730	50 μm
6	Cement / Concrete / Steel plate	

Comparison of Steel Frame Parking Lot

	Urethane floor coating specification for light weighted steel frame structured parking lot	General floor coating specification of steel frame structured parking lot
Expenses	Low cost because of unnecessary application of concrete possible to operate on weak ground	Necessary concrete application, Additional cost to operate on weak ground
Operating Method	Concrete application is unnecessary under the steel frame structured parking lot	Concrete application is necessary
Durability	Durability against temperature differences of four seasons, Recommendable for outdoor, Water proof property, Non-slip property, High crack resistance against vibration	Shrinkage, discoloration, drops physical property and chalking occurs when exposed outdoor(Epoxy), Durability drops by temperature differences, High chances of cracks by vibration, No water proof property
Adhesiveness	High adhesiveness with steel plate Possible to apply on galvanized steel plate	Poor adhesiveness between concrete and steel plate

References

Site Name	Coating Applied	Location
Seongnam Shinsegae Sheden Outdoor Parking Lot	SPORTHANE WATERPROOFING COAT CLASS 1, HIGH HARD LAYER MIDCOAT	Seongnam, Gyeonggi
Shinsegae Department Store Busan Centum Parking Lot		Haeundae, Busan
Jamwondong Kimsclub Parking Tower		Seocho-gu, Seoul
Cheil Industry Uiwang Plant Floor		Uiwang-si, Gyeonggi
Hiwon Resort		Jungseon-gun, Gangwon
Samsung SDI Outdoor Parking Lot		Cheonan-si, Chungnam

Floor Coating for Sports Facilities



KCC Floor Coating for Sports Facilities is the high molecule polyurethane material that is designed in the aspect of sport mechanism and human engineering. KCC Floor coating for sports facilities is all weather elastic floor coating that gives optimal results.



Floor Coating for Sports Facilities

Application

- Athletics track, school playground
- Tennis court, badminton court
- Gymnasium (Volleyball court, basketball court, handball court and so on.)
- Sidewalks of golf fields
- Sports facilities with water proofing roof
- Types of floors for various sports facilities.

Characteristics

- High durability and less chances in changes of quality and aging.
- High physical properties such as abrasion resistance and tear strength.
- Its surface and physical properties do not change throughout the years.
- Reduces physical fatigue for regular running or types of sports.
- High adhesiveness with any types of substrates such as concrete, ascon, and etc. and peeling does not occur.
- Easy to maintain and economical management.

Sporthane IAAF Certificate

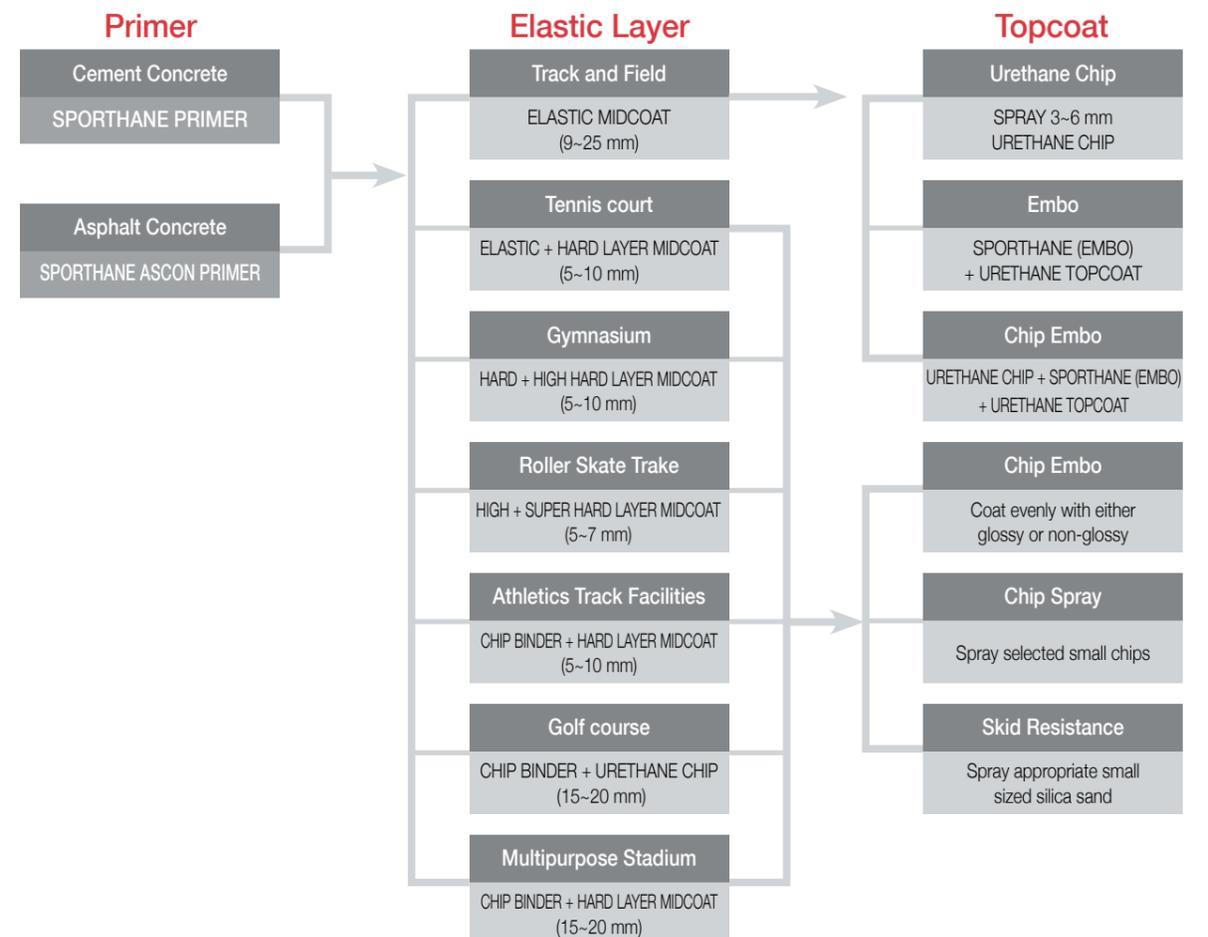


13 mm Specification

15.4 mm Specification

※ IAAF? International Association of Athletic Federation

Working Process Chart

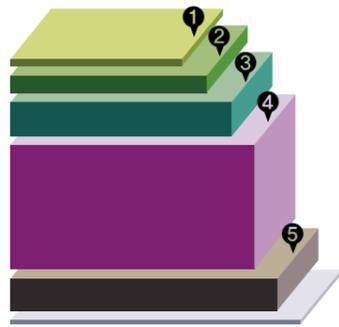


Floor Coating for Sports Facilities



TRACKS

Construction Cross Section



IAAF Certification

High Elasticity 15.4 mm Specification			13 mm Specification Concrete		
	Name	Film Thickness	Name	Film Thickness	
1	HIGH HARD LAYER TOPCOAT	50 μm	HIGH HARD LAYER TOPCOAT	50 μm	
2	SPORTHANE EMBO	1 mm	SPORTHANE EMBO	1 mm	
3	ELASTIC MIDCOAT	2.4 mm	ELASTIC MIDCOAT	2.4 mm	
4	ELASTIC MIDCOAT + ELASTIC CHIP	12 mm	ELASTIC MIDCOAT + ELASTIC CHIP	12 mm	
5	SPORTHANE ASCON PRIMER or SPORTHANE PRIMER	ASCON PRIMER : 400 μm PRIMER : 50 μm	SPORTHANE ASCON PRIMER or SPORTHANE PRIMER	ASCON PRIMER : 400 μm PRIMER : 50 μm	

School Tracks

Spec 1

Name	Film Thickness
SPORTHANE TOPCOAT	50 μm
SPORTHANE EMBO + URETHANE CHIP	0.3 mm
SPORTHANE HARD LAYER MIDCOAT	3 mm
SPORTHANE SEALER	0.4 mm
CHIP BINDER + EPDM CHIP	10 mm
SPORTHANE ASCON PRIMER or SPORTHANE PRIMER	ASCON PRIMER : 400 μm PRIMER : 50 μm

Spec 2

Name	Film Thickness
URETHANE CHIP	
SPORTHANE HARD LAYER MIDCOAT	3 mm
SPORTHANE SEALER	0.4 mm
CHIP BINDER + EPDM CHIP	10 mm
SPORTHANE ASCON PRIMER or SPORTHANE PRIMER	ASCON PRIMER : 400 μm PRIMER : 50 μm

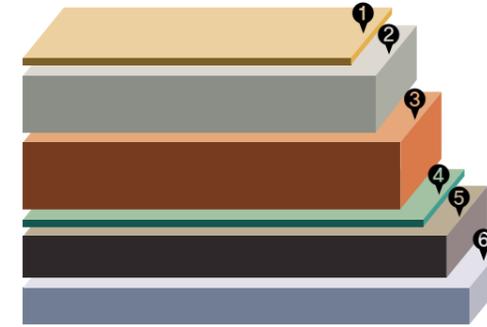
Spec 3

Name	Film Thickness
SPORTHANE TOPCOAT	50 μm
SPORTHANE EMBO	1 mm
SPORTHANE HARD LAYER MIDCOAT	3 mm
SPORTHANE SEALER	0.4 mm
CHIP BINDER + EPDM CHIP	10 mm
ASCON PRIMER or SPORTHANE PRIMER	ASCON PRIMER : 400 μm PRIMER : 50 μm



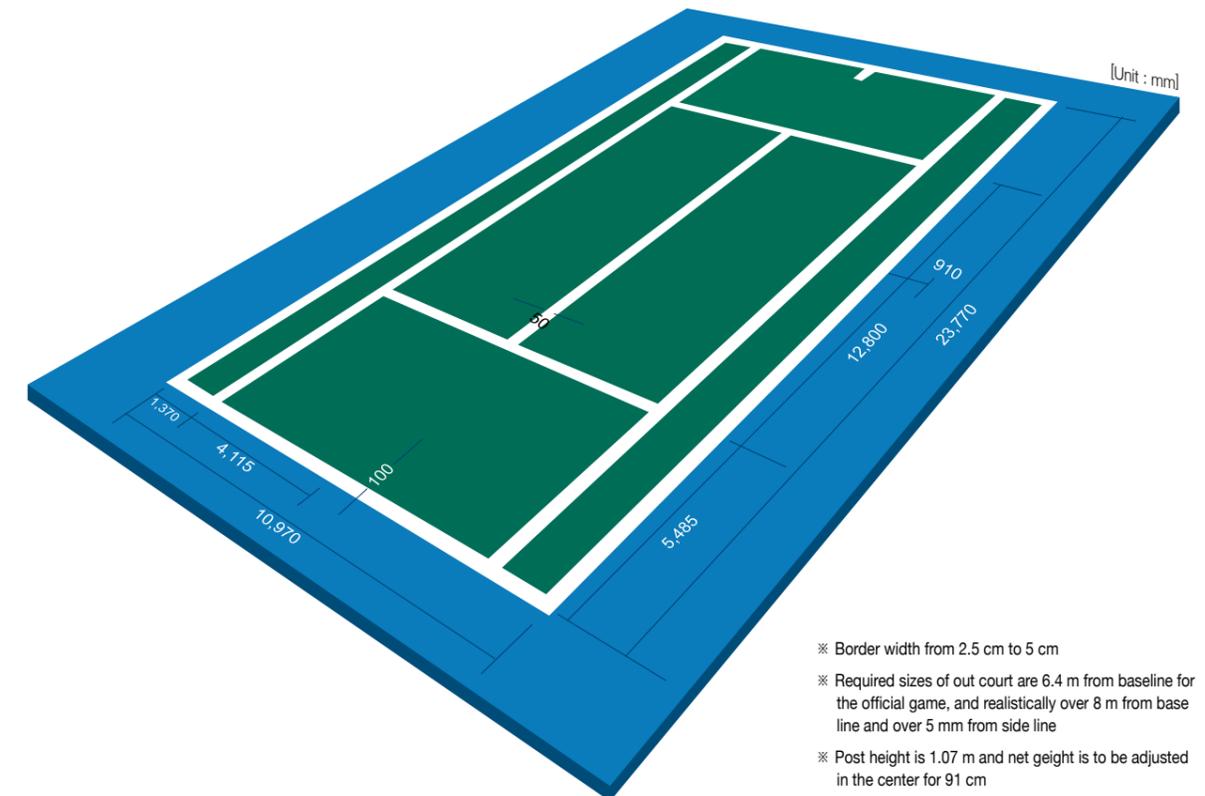
TENNIS COURT

Construction Cross Section



	Name	Film Thickness
1	SPORTHANE TOPCOAT	50 μm
2	SPORTHANE HARD LAYER MIDCOAT	3 mm
3	SPORTHANE ELASTIC MIDCOAT	4 mm
4	SPORTHANE PRIMER	50 μm
5	Cement Concrete	
6	Ground	

※ Sporthane Hard Layer Midcoat is required to pre-coat for 0.5~0.8 mm of thickness to prevent substrate contamination and bubbles caused by holes on substrate



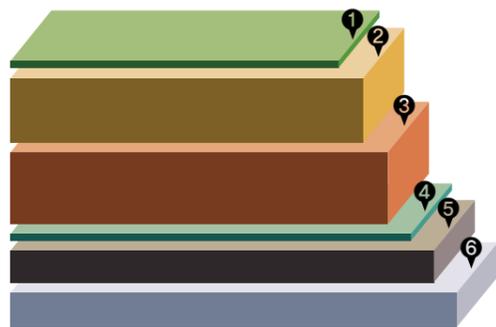
- ※ Border width from 2.5 cm to 5 cm
- ※ Required sizes of out court are 6.4 m from baseline for the official game, and realistically over 8 m from base line and over 5 mm from side line
- ※ Post height is 1.07 m and net height is to be adjusted in the center for 91 cm

Floor Coating for Sports Facilities



GYMNASIUM

Construction Cross Section

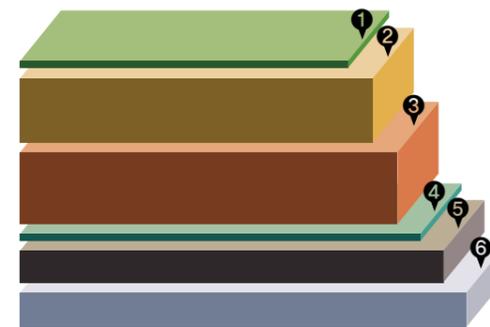


	Name	Film Thickness
1	SPORTHANE HIGH HARD LAYER TOPCOAT	50 μm
2	SPORTHANE HIGH HARD LAYER MIDCOAT	3 mm
3	SPORTHANE HARD LAYER MIDCOAT	4 mm
4	SPORTHANE PRIMER	50 μm
5	Cement Concrete	
6	Ground	

※ Sporthane Hard Layer Midcoat is required to pre-coat for 0.5 ~ 0.8 mm of thickness to prevent substrate contamination and bubbles caused by holes on substrate

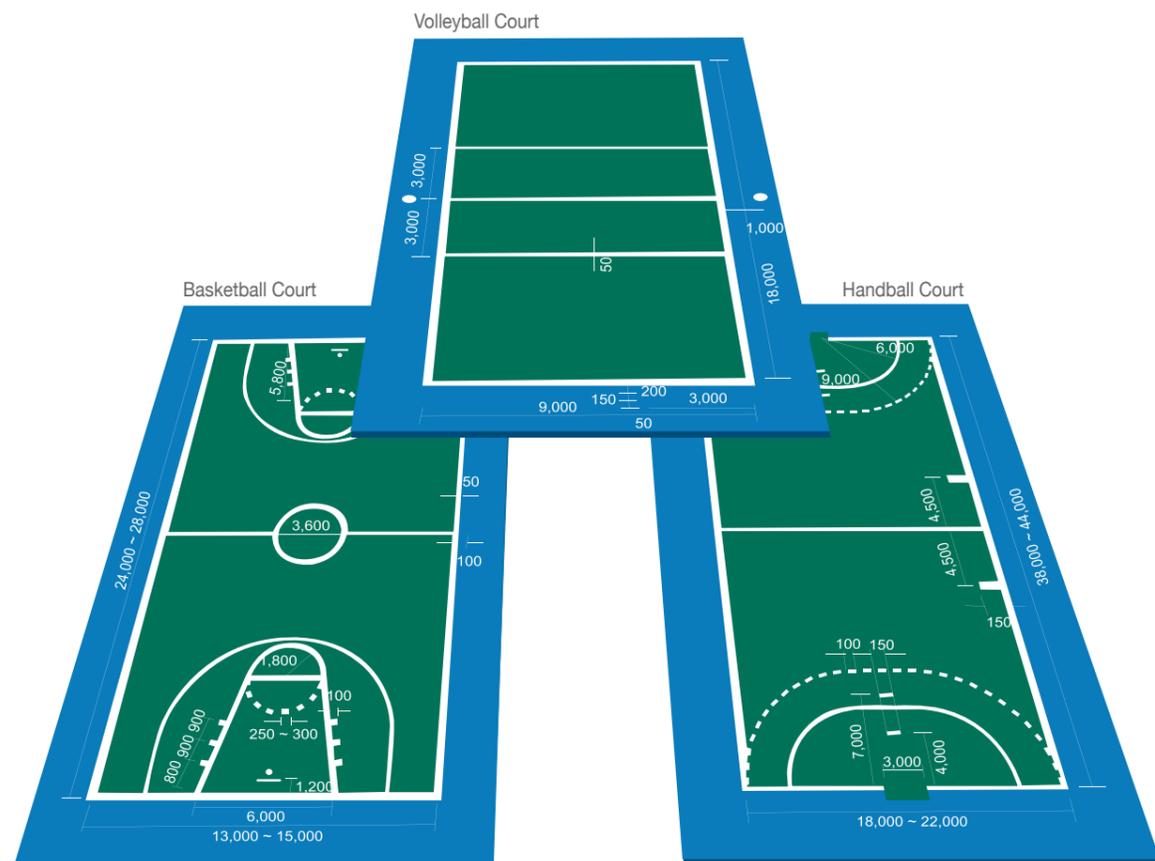
ROLLER SKATE TRACK

Construction Cross Section



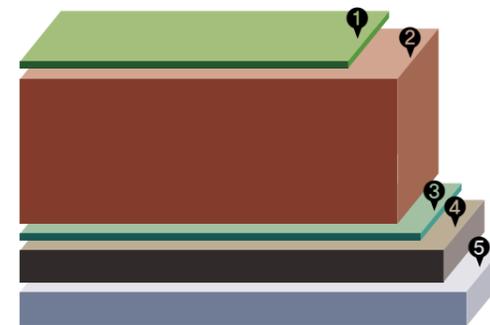
	Name	Film Thickness
1	SPORTHANE HIGH HARD LAYER TOPCOAT	50 μm
2	SPORTHANE SUPER HARD LAYER MIDCOAT	3 mm
3	SPORTHANE HIGH HARD LAYER MIDCOAT	4 mm
4	SPORTHANE PRIMER	50 μm
5	Cement Concrete	
6	Ground	

※ Sporthane Hard Layer Midcoat is required to pre-coat for 0.5 ~ 0.8 mm of thickness to prevent substrate contamination and bubbles caused by holes on substrate



GOLF FIELD PATHWAYS

Construction Cross Section



	Name	Film Thickness
1	SPORTHANE TOPCOAT	50 μm
2	SPORTHANE CHIP BINDER + URETHANE CHIP UY0492 or 969 CHIP	15 mm
3	SPORTHANE PRIMER	50 μm
4	Cement Concrete	
5	Ground	

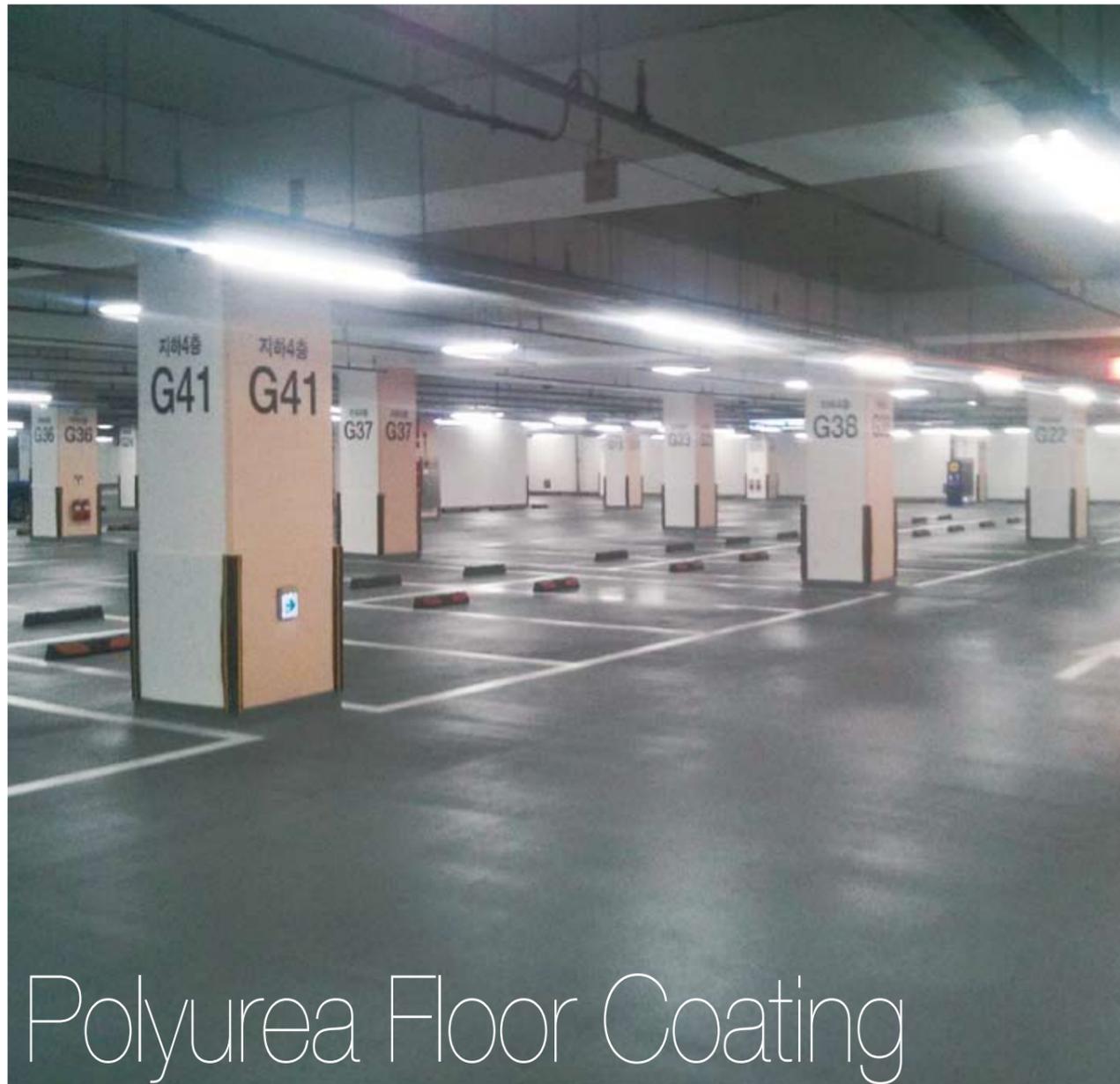
※ Generally applied for foot path at golf field, tracks and parks.
When operate, mix paint, chips and pigment as regulated and then spray to get desired thickness by using trowel and heating roller.

Polyurea Waterproof Floor Coating

HYPERUREA



HYPERUREA is created by causing a chain reaction of Isocyanate Prepolymer and Polyamin, it's curing time for hardeness is very short so that it can be applied on low temperature and high humidity without catalysts. Also it shortens construction time by making film very quickly and it is possible to repair fast on bustling street.



Polyurea Floor Coating

Application

- Waterproof floor coating for exposed part of concrete structures (parking lot, rooftop and etc.)
- Waterproofing for waterlogging part (tank, sewage treatment plant, filtration plant, swimming pool, cooling pool and so on.)
- Concrete waterproofing with heat insulation part (cold storage, ice storage tank and etc.)
- Concrete underground embedded part
- Steel frame structured parking lot

Characteristics

- **Velocity hardening type**
 - Continuing dry : within 30 sec.
 - Hardening dry : within 60 mins.
- **Great properties**
 - Tensile strength, tearing strength, shock resistance, elasticity, bond strength.
- **Excellent waterproofing/chemical resistance**
 - It can be applied to places required waterproofing, chemical resistance such as pharmaceutical factory and food factory.
- **Eco-friendly paint**
 - Solvent-free, VOCs Free type, it's harmless to human body.
- **Excellent workability**
 - Possible to work in a short period of time and easy to apply to slope and vertical plane.
- **It is very economical**
 - Hyperurea has a wide choice of selections such as pure urea (PU285A, PU295A) which has best properties as well as economical hybrid urea (HB195).

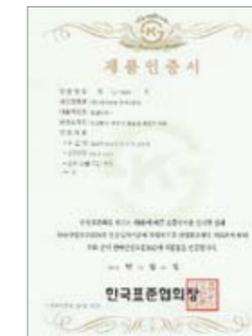
Product Type

Product Name	Drying Time (Set to touch;25°C)	Hardness (shore A)	Tensile Strength (kgf/cm ²)	Tear Strength (kgf/cm)	Elongation (%)	Recommended Use
HB195A	within 1 minute	90 ± 5	230 ± 30	70 ± 15	350 ± 100	Hybrid Urea type / Waterproof, Floor Coating
PU295A	within 1 minute	95 ± 5	210 ± 30	100 ± 15	350 ± 100	Pure Urea type / Waterproof, Floor, Corrosion Protection Coating
HB180A	within 1 minute	85 ± 5	100 <	60 ± 5	350 <	Low temperature & Low pressure type / Waterproof Coating
PU270D	within 10 minutes	65 ± 5(D)	230 ± 30	125 ± 15	60 ± 20	Pure Urea type/ Industrial Coating
BR385A	60 minutes	90 ± 5	60 ± 20	55 ± 5	250 <	Maintenance Painting

Certificate



Certificate of Patent



Korea Industrial Standards Certificate



KS Test Report

Polyurea Waterproof Floor Coating

HYPERUREA



Coating specification

1) Floor coating for parking lot(Concrete) and roof waterproofing coating

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	SPROTHANE PRIMER	50	B, R, S	Clear	Primer to intensify substrate and improve adhesiveness
Midcoat 1	SPROTHANE HIGH HARD LAYER MIDCOAT	500	Rake	Grey, Green or Etc.	High abrasion resistance & Increase rate
Midcoat 2	CHOOSE ONE : HYPERUREA PU285A, PU295A, HB195A	2,000 ~ 3,000	Coating Machine for Polyurea		Great mechanical properties and elongation
Topcoat	SPROTHANE HIGH HARD LAYER TOPCOAT (EXTERIOR)	50	B, R, S		Excellent abrasion resistance and weatherability

※ B : Brush, R : Roller, S : Spray

2) Low temperature and Low pressure spray type waterproofing coating

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	SPROTHANE PRIMER	50	B, R, S	Clear	Primer to intensify substrate and improve adhesiveness
Midcoat	HYPERUREA HB180A	2,000 ~ 3,000	Coating Machine for Low temperature and Low pressure	Grey, Green or Etc.	Low temperature and low pressure spray type, great mechanical properties
Topcoat	SPROTHANE HIGH HARD LAYER TOPCOAT (EXTERIOR)	50	B, R, S		Excellent abrasion resistance and weatherability

※ B : Brush, R : Roller, S : Spray

3) Steel frame floor coat

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	MULTIPURPOSE PRIMER EP1730	50	B, R, S	Clear	Primer to intensify substrate and improve adhesiveness
Midcoat 1	SPROTHANE HIGH HARD LAYER MIDCOAT	500	Rake	Grey, Green or Etc.	High abrasion resistance & mechanical properties
Midcoat 2	CHOOSE BETWEEN HYPERUREA PU285A and PU295A	2,000 ~ 3,000	Coating Machine for Polyurea		Great mechanical properties and elongation
Topcoat	SPROTHANE HIGH HARD LAYER TOPCOAT (EXTERIOR)	50	B, R, S		Excellent abrasion resistance and weatherability

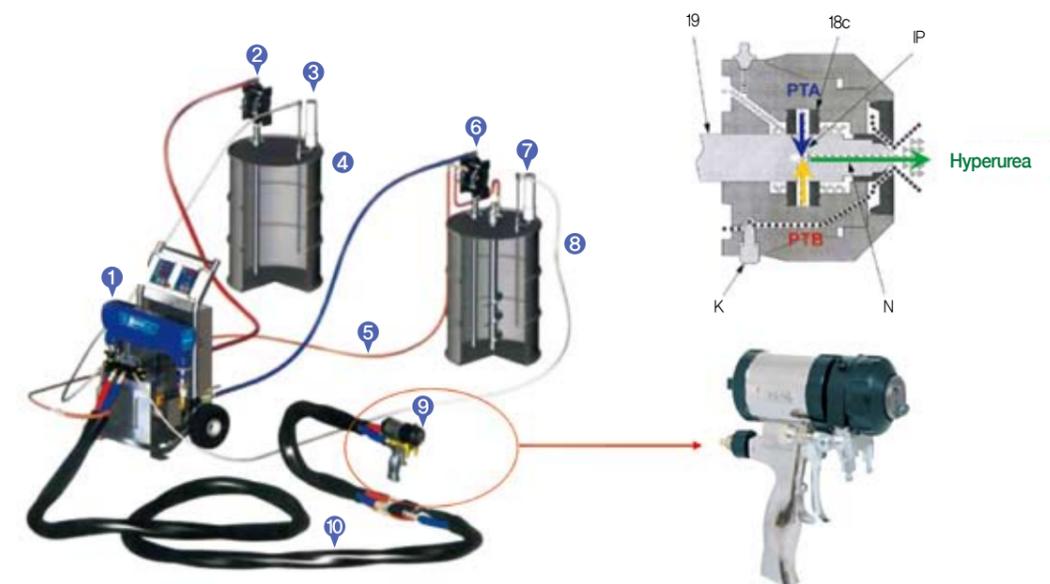
※ B : Brush, R : Roller, S : Spray

4) Tank

Coating Classification	Product Name	Film thickness (μm)	Coating Method	Color	Remarks
Primer	SPROTHANE PRIMER	50	B, R, S	Clear	Primer to intensify substrate and improve adhesiveness
Midcoat 1	SPROTHANE HIGH HARD LAYER MIDCOAT	500	Rake	Grey, Green or Etc.	High abrasion resistance & mechanical properties
Midcoat 2	HYPERUREA PU295A	2,000 ~ 3,000	Coating Machine for Polyurea		Great mechanical properties and elongation
Topcoat	SPROTHANE HIGH HARD LAYER TOPCOAT (EXTERIOR)	50	B, R, S		Excellent abrasion resistance and weatherability

※ B : Brush, R : Roller, S : Spray

Coating Machine for HYPERUREA



- ① Coating Machine Main Body
- ② A part moving pump
- ③ Dehumidifier
- ④ A part (ISO.)
- ⑤ Gun hose
- ⑥ B part moving pump
- ⑦ Dehumidifier
- ⑧ B part
- ⑨ 2K cross mixing Spray gun
- ⑩ Heating Hose for High temperature and high pressure

Unlike general Airless spray, Base(PTA) and Curing agent(PTB) join at coating gun, crossed mixing under the high temperature and high pressure.
(Pressure condition : more than 2,000 psi, Temperature condition : more than 70 °C)

Polyurea Waterproof Floor Coating

HYPERUREA

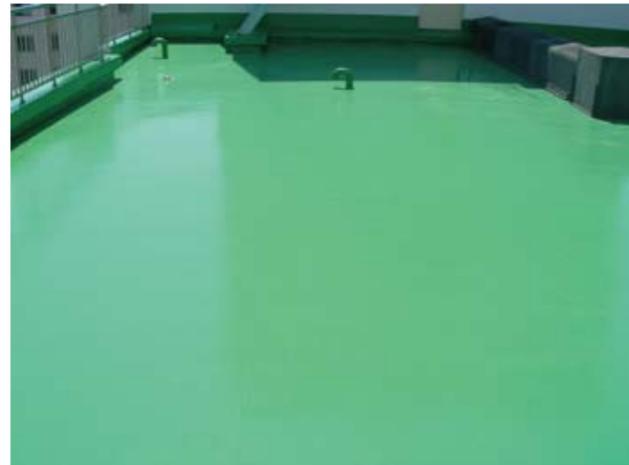


Photo of application site



Building floor coating

Finishing material for all sorts of building such as underground parking lot, factory floor.



Rooftop waterproof coating

Waterproof coating for rooftop of apartment and so on.



Waterproofing soak parts

Waterproofing a soak part of all sorts of buildings.



Water treatment equipment

Tank (fresh water tank), Swimming pool, Water waste disposal facilities.

References

Site Name	Coating Applied	Location
Yeongdeungpo 1,2 Filtration Plant	PU295A	Yeongdeungpo-gu, Seoul
Seongnam Filtration Plant	PU295A	Seongnam-si, Gyeonggi
Lotte Hotel Parking lot	PU295A	Jung-gu, Seoul
Tongyeong, Incheon LNG site	PU295A	
Amsa-dong Prehistoric Settlement Site Exhibit Hall	PU295A	Gangdong-gu, Seoul
Yeongjong Water Restoration Center	HB195A	Jung-gu, Incheon
Daeryung Post 6cha Subway Path	HB195A	Geumcheon-gu, Seoul
LS R&D Center Swimming pool	PU295A	Ansung-si, Gyeonggi

Comparison of Floor Coating by Specification

Classification	EPOXY (UNIPOXY)	POLYURETHANE (SPROTHANE)	POLYUREA (HYPERUREA)
Curing Time	Normal	Normal	Very Fast
Cold Cure	Normal	Good	Excellent
Hardness	High Hard Layer	Soft	Hard Layer
Intensity	Very Strong	Strong	Strong
Elasticity	Inelastic	Excellent	Great
Stability High Temperature	Excellent	Great	Great
Chemical Resistance	Excellent	Good	Great
Coating Method	Roller, Rake	Roller, Rake	Impact mixed type spray

※ It can be different according to the mix and constructing state.