

## SYSTEM CPD CAR PARK DECKING



### INTRODUCTION

System CPD is a seamless waterproofing flooring system which provides a continuous profiled slip resistant surface which is resistant to fuels, oils and cleaning materials. It has been specifically designed for use in elevated car parks which are subject to structural movement. The finished surface is extremely durable yet flexible. Four systems are available.

### Applications

System CPD is used as a surfacing and weatherproofing on elevated vehicle traffic decks and ramps as a safeguard against water penetration to occupied spaces below and to provide a safer slip resistance. It may also be used as a wearing surface for walkways, wet production area, balconies etc.

### Composition

System CPD is a "high solids" elastomeric polyurethane/epoxy resin composition. It is supplied in pre-measured factory packaged units to ensure correct site mixing. Available in Grey, Buff, Green and Red. (Special colours to order).

### Advantages

1. Seamless - no bonded joints.
2. Low temperature curing - ensures all year round application, even cures in wet.
3. Can be applied to new or existing structures.
4. Speedy application - fluid applied.
5. Lightfast - does not yellow.
6. Excellent bond strength to substrate.
7. Good flexibility combined.
8. Thixotropic grade available for inclined, uneven surfaces, ramps etc.
9. High resistance to chemicals, oil, water and weather.
10. Excellent slip resistance - even profiled surface finish.

### Systems Available

#### SYSTEM CT -

for coloured finishes to Disabled and Mother and Toddler bays and Underground Decks.

#### SYSTEM CP -

for horizontal drive areas, walkways, stalls etc.

#### SYSTEM R -

for ramps and areas requiring a heavy profile.

#### SYSTEM HD -

for turning circles/heavy wear, exposed areas.

### SYSTEM 'V' -

for skirtings, coves, vertical walls etc.

#### System CPD/CT (Coloured Bays and Underground Decks)

##### (Nominal 3.0mm)

System CPD/Prime 1.8kg m<sup>2</sup>  
 Quartz Aggregate 3.0kg m<sup>2</sup>  
 System CPD/Finish 0.8kg m<sup>2</sup>

#### System CPD/CP (Parking/Aisles)

##### (Nominal 3.50mm)

System CPD/Prime 0.7kg m<sup>2</sup>  
 System CPD/CP Membrane 1.5kg m<sup>2</sup>  
 Quartz Aggregate 6kg m<sup>2</sup>  
 System CPD/Finish 0.8kg m<sup>2</sup>

#### System HD (Turning/Heavy Wear)

##### (Nominal 4.5mm)

System CPD/Prime 0.7kg m<sup>2</sup>  
 System CPD/CP Membrane 2.0kg m<sup>2</sup>  
 Quartz Aggregate 6kg m<sup>2</sup>  
 System CPD/CP UVR Finish 0.8kg m<sup>2</sup>

#### System R (Ramps)

##### (Nominal 4.5mm)

System CPD/Prime 0.7kg m<sup>2</sup>  
 System CPD/CP Membrane 2.0kg m<sup>2</sup>  
 Quartz Aggregate 6kg m<sup>2</sup>  
 System CPD/CP UVR Finish 0.8kg m<sup>2</sup>

#### System 'V' (Coving, Vertical Surfaces)

System CPD/CP'V' 0.30 kg m<sup>2</sup>  
 System CPD/CP'V' 0.20kg m<sup>2</sup>

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Page 2 of 4

### Application

System CPD is supplied and applied only by Ryebrook Resins Car Parks Ltd.

### Surface Preparation

The success or failure of the system can largely depend upon whether or not surface preparation has been carried out correctly. We, therefore, recommend that all substrates are shot blasted to give a profile surface of clean substrate. Holes, cracks and large surface defects should be repaired with System CPD flexible mortar.

Woven sheet reinforcement flashing should be provided at locations of potential high movement and a thick coat of System CPD 'V' (0.5mm) to cover and overlap shrinkage cracks, integral flashings, drainage outlets, metal upstands, pipes, construction and day work joints.

A minimum 1 in 60 fall is recommended. Expansion joints should be as specified by the Architect.

### System CPD Application

Ideal application temperature is 20°C, although System CPD will cure at temperatures down to 5°C, at less than 5°C the cure will be retarded then continue when the temperature increases.

**System CPD/Primer** is a two part epoxy primer.

**System CPD/Membrane** is a two part free flowing unfilled polyurethane flexible membrane applied by squeegee or roller.

**System CPD/V** is a thixotropic two part polyurethane flexible membrane.

**System CPD/Finish** is a two part epoxy/polyurethane UV resistant coating.

For further details and technical advice contact our Technical Department.

### TESTING

#### Water Vapour Permeability

Tested for water vapour permeability to BS3177 using temperature conditions of 25°C and 7% RH.

Water vapour permeability - 1.87g/m/24hr.

#### Colour Fastness

Tested using a Xenon Arc weatherometer exposing specimens for 500 hours to a "full weathering" cycle comprising of full exposure to the lamp and a 5 minute water spray every 30 seconds.

The Xenon Arc weatherometer is a recognised test for colour fastness and resistance to Ultra Violet (UV) light normally if serious fading was going to occur it would be detectable within a 500 hour exposure. This accelerated weathering (500 hours) is roughly equivalent to 1 to 2 years external exposure in this country. After 500 hours - no change in colour, texture or hardness.

#### Resistance to Chemicals

Examination for this was made with six common chemicals:-engine oil (used)

- o brake fluid
- o anti-freeze mixture
- o saturated salt water
- o battery acid
- o petrol

#### Surface Staining

One coated panel of material was divided into five compartments and each chemical was put into a separate compartment. Petrol was not used in this test due to safety precautions. The effect of each chemical was noted over 7 days for staining the surface and for any other effect on the surface.

### Weight Increase

Specimens approximately 50mm x 25mm by the sheet thickness were totally immersed in the six chemicals above and the percentage increase was measured after 2 and 7 days.

### PHYSICAL CHARACTERISTICS @ 20°C (AFTER 14 DAYS CURE)

Pot Life	25 minutes
Tack Free Time	8 Hours
Over-coating Time	8 - 24 Hrs
Elongation at break	> 300 %
Tensile Strength (STM D412)	> 4.5 MPa
Pull-off adhesion	> 2.5 N/mm <sup>2</sup>
Graves Tear (ASTM D624)	> 18KN/m
Shore D Hardness	30
Density	1.2kg/Litre

### ACCELERATED WEAR TESTS

The following tests were made:-

#### Wear Abrasion Machine

The machine used for this test was developed by the Cement and Concrete Association. Revolving steel wheels were used as for testing light industrial floors.

Due to a low rate of wear, the normal period of 15 minutes for quoted measurements was doubled and a test period of 30 minutes was used. Wear is monitored by measuring the depth in mm per period of run.

In order to simulate reaction to car tyres, the metal wheels were removed and hard black rubber wheels were inserted. Using a new panel specimen for each material a test run of 30 minutes duration was made.

### Storage, Mixing & Application

The storage, mixing and application conditions can affect the quality of the finish produced. Please read technical data sheet reference TD104.

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**RESISTANCE TO CHEMICALS**

Chemical	Staining after 7 days	% w/W Increase after 2 days immersion		% w/W Increase after 7 days immersion	
Engine Oil (dirty)	None	0.1 0.2	<u>0.2</u> mean	0.2 0.2	<u>0.2</u> mean
Brake fluid	None	2.7 2.3	<u>2.5</u> mean	5.0	<u>4.4</u> mean
Anti-freeze Mixture	None	0.1 0.1	<u>0.1</u> mean	0.2 0.2	<u>0.2</u> mean
Salt Solution (Saturated)	None	0.1 0.1		0.1 0.1	
Battery Acid	None	0.9 1.0	<u>1.0</u> mean	1.4 1.9	<u>1.7</u> mean
Petrol	ND	7.5 7.5	<u>7.5</u> mean	7.6 7.5	<u>7.6</u> mean

**ACCELERATED WEAR TEST**

Wear Abrasive Machine Using Steel Wheels

Material	Test Period	Depth of groove mm			Typical figures quoted for Concrete
		Minimum	Maximum	Mean	
System 1	30 mins	0.00	0.14	0.07	0.2-0.4mm after 15 mins
CPD 2	30 mins	0.00	0.18	0.08	
3	60 mins	0.00	0.37	0.10	
Showed good abrasion resistance compared with concrete					

Using Hard Rubber

Material	Test Period	Effect On Surface
System CPD	15 mins	The material scuffed the rubber wheel. No groove, no sign of wear and no surface marking could be detected.

Using Taber Abrader using H18 wheels in Standard System CPD:-  
 400 mg loss/1000 cycle @ 1000g load.



**ANTI SKID ASSESSMENT**

This was measured using a TRRL skid tester to BS7044: Section 2.2: 1989.

Test B3 - determination of Slip Resistance. This test was made using:-

1. A hard rubber foot and
2. A soft rubber foot

Material	Machine Values			
	Soft Rubber Foot		Hard Rubber Foot	
	Dry	Wet	Dry	Wet
System CPD	64	37	59	50
	64	38	60	50
	66	38	60	52
	69	38	62	52
	67	38	60	53
	<u>66</u> mean	<u>38</u> mean	<u>60</u> mean	<u>51</u> mean