

# Langley ParaBase

## TWO PART POLYURETHANE COATING

### Description

**Langley ParaBase** is a two part polyurethane coating for bonding to steel, asphalt and concrete for anti-skid, decorative and surface protection purposes.

### Use

**Langley ParaBase** can be used to produce a wide variety of surface protection materials from self levelling coatings to mortars, screeds and mouldings.

It demonstrates good adhesion to many substrates and gives a hard but tough and flexible material. The resultant coating gives excellent water and chemical resistance.

Decorative floor coatings can be achieved by sprinkling flakes of PVA or quartz granules on to the coating before it has fully cured.

Other similar floor coatings have been used successfully in laboratories, industrial and food processing factories. In other markets urethane coatings have been applied to ships decks, bridges and communal walkways and balconies.

### Physical Characteristics

Base:	Polyurethane	Solids:	Solvent Free
Colour:	Grey as standard	Specific Gravity:	A-1.15 B-1.23

Coverage ( <i>Approximate</i> ):	5 kg kit covers approx 4.2m <sup>2</sup> @ 1mm coverage thickness
Cure time:	2 hours
Cleaner:	Use Solvent 3 whilst PU is still wet
Flash Point:	See MSDS
Mix ratio:	3:3 : 1 A : B (by wt)

	<b>PART A</b>	<b>PART B</b>
Viscosity: 25° C	5000 cps	200 cps
Pot Life:	100 g – 45 mins	5kg – 10 mins ( approx)

## Typical Properties

PHYSICAL PROPERTY	RESULTS	TEST SPECIFICATION
Hardness	60 Shore D	DIN 53505
Tensile Strength	11 N/mm <sup>2</sup>	DIN 53455
Elong. @Break	80%	DIN 53455
Tear Resistance	50 KN/m	DIN 53515
Abrasion Resistance	18mg	DIN 53754
Thermal Conductivity	0.25 Watt / m.k.	DIN 52612

If the level of cross linking is altered the resultant physical properties will be changed dramatically. If the system is over cross-linked the material will become more rigid and if under cross linked more flexible.

### Effect of Cross linking in a formulated two part polyurethane coating based on a branched polyalcohol

PHYSICAL PROPERTY	90% X-Linked	100% X-Linked	110% X-Linked
Hardness (Shore D)	50	60	65
Tensile Strength (N/mm <sup>2</sup> )	10	11	15
E @ B (%)	100	80	90
Tear Resistance (KN/m)	49	50	66
Adhesion to iron (N/mm <sup>2</sup> )	16	19	20

A better way to alter the flexibility of the film is to blend alternative polyols into the system. This makes a 100% X-Linked system which has consistent properties.

### Adhesion of a formulated two part polyurethane coating based on a branched polyalcohol to various base substrates

SUBSTRATE	RESULTS
Iron	20 N/mm <sup>2</sup>
Aluminium	12 N/mm <sup>2</sup>
Concrete	6 N/mm <sup>2</sup>
GRP	12 N/mm <sup>2</sup>

As mentioned earlier, two-pack polyurethane has excellent resistance to many chemicals. The table overleaf gives details of % weight change of specimens with time when immersed in various chemical mediums.

	3 DAYS	2 MONTHS	6 MONTHS
Fuel Oil	0	+1	+3
Petrol	+18	+34	+35
White Spirit	+1	+3	+9
Nitric acid 10%	0	+1	+2
Ethanoic acid	0	+1	+2
Sulphuric acid 10%	0	0	+1
Potassium Hydroxide 10%	0	0	0
Water	+1	+1	+1
Ethanol 10%	+1	+1	+1
Ethanol 100%	+4	+11	+20

## Application

Before applying the polyurethane coating to a porous substrate, a primer should be applied. This will both strengthen the base substrate and also prevent air from rising up from the base substrate and causing blisters. The Part B (isocyanate) should be poured into the Part A (polyol) and mixed thoroughly at low speed to prevent air incorporation. The mixture is then poured into another container and mixed again.

If a faster cure is required catalyst should be added.

Once the coating has been applied a spiked roller should be used for levelling and to release any entrapped air bubbles

## Quantities

Part A (Polyol)	215 kg drums
Part B (ISO)	250 kg drums

Smaller pack sizes are available on request.

## Storage

Store in a cool dry place away from sunlight.

Shelf life: 3 months @ 25°C

## Safety

Please read the supplied hazard labels (complying with CHIP and CDG/CPL Regs).

This document is only a guide. Langley Waterproofing Systems Ltd reserves the right to change the composition and fixing recommendations of products as a result of the evolution of knowledge and technology.

### **Langley Waterproofing Systems Ltd**

Bishop Crewe House, North Street, Daventry, Northants NN11 4GH  
Tel: (01327) 704778. Sales: (01327) 708990 Fax: (01327) 704845  
E-mail: [enquiries@langleywaterproofing.co.uk](mailto:enquiries@langleywaterproofing.co.uk)  
Website: [www.langleywaterproofing.co.uk](http://www.langleywaterproofing.co.uk)