

Hardcoat® - D65

Spray Fast Cure Aromatic Urethane – Extra High Hardness (70D)

PRODUCT DESCRIPTION	Hardcoat – D65 is a two-component, rapid curing, solventless, spray-applied, aromatic urethane protective coating. It is commonly used as a hard coating to provide impact resistance for polyurethane foam.	
INTENDED USES	<ul style="list-style-type: none"> • High Impact resistance of polyurethane foams (Purl Series) • High Impact resistance over Expanded Polystyrenes (EPS) 	
FEATURES	<ul style="list-style-type: none"> • Fast gel time • High Gloss • Durability extends substrate life • Impact Protection 	<ul style="list-style-type: none"> • Excellent waterproofing characteristics • Resistant to freeze/thaw expansion contractions and thermal shock cycles • Contains 0g VOC

PRODUCT DATA

Volume Solids	100%
Theoretical Coverage	0.50 Square meter / Litre @ 2000 Microns DFT
Finish	Pigmented
Colour	Grey
Gloss	High Gloss
Mixing Ratio	1:1 by volume
Gel Time	15 - 25 Seconds
Typical Thickness	2000 Microns Dry Film Thickness
Cleaner	Reactor Flush and Swell
Flash Point	>150 °C
VOC	0 Grams/Litre
Specific Gravity	1.02

CURE & RECOAT

Substrate Temp	Tacked	Hard Dry	Full Cure	Walk on Time Note 1
	2 mins	1 Hr	7 Days	30 Min (with care)

Note 1: Once Hardcoat – D65 gels and becomes tack free it will remain “cheesy” for up to 30 minutes or longer in colder weather. Care should be taken not to damage the coating during this time

Topcoating Hardcoat – D65 with itself:

Substrate Temperature	Maximum Recoat Time
5°C to 45°C	20 minutes

The maximum Hardcoat – D65 recoat window is 20 minutes. Prior to commencing next day's spraying the cold edge must be mechanically abraded to a minimum of 100 mm wide to reactivate the Hardcoat – D65 and give acceptable adhesion. Vacuum all grinding swarf as you go. The non-abraded, cured coating must be masked to prevent overspray and provide a neat edge of the new section

ENGINEERING DATA

Property	Method	Results
Elongation	ASTM D412-92	35 %
Tensile Strength	ASTM D412-92	28 MPA
Hardness	ASTM D 2240-91, Shore D	69 – 73

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A & B Liquid Properties

Property	Hardcoat D65 Part A	Hardcoat D65 Part B
Appearance	Amber to Brown	Grey
Viscosity	600 – 1000cPs	500-900cPs
Density	1.23	1.10

LIMITATIONS

- Aromatic based Polyurethane products such as Hardcoat – D65 will change colour over time, with lighter colours changing more than darker colours. Although this does not affect the long-term physical performance of the lining. If colour change is not acceptable and for aesthetic reasons, a colour-fast topcoat should be applied
- In order to achieve predictable results, Hardcoat D65 should only be applied using specialised plural spray equipment, operated by an experienced applicator

SURFACE PREP Foam

1. Prepare the foam surfaces to a clean, dry sound finish
2. Ensure that any surface contamination is removed

APPLICATION

Preconditioning

In Australia, parts A and B are normally stored and fed into the Reactor at ambient or room temperatures. However, in cold weather, it is recommended to “pre-condition” each of parts A and B to about 20°C prior to processing through the heated plural spray equipment. This can typically be done by leaving the containers in a warm room or warming box overnight or by placing a thermostatically controlled drum heater or heating blanket on them overnight

Mixing

Stir Part B at high speed with a Graco Twistork drum stirrer for about 10 minutes then reduce speed to slow during the spraying. Take care not to entrap air while stirring. For smaller containers use a mechanically powered flat paddle stirrer

Equipment

Proportioning pump:	Graco E-XP2 or similar - heated, high-pressure, plural component
Gun:	Graco Fusion-AP or similar - Impingement mix, airless

Processing

In order for polyurethane to be properly mixed and sprayed onto the substrate, each of the two parts A and B must be mixed thoroughly and at the correct ratio. To achieve that, using impingement mix technology, the viscosity of each component must be similar and as low as possible and the pressure of each must be above 2,200 psi.

The only way to lower the viscosity of each part is to heat it. If the viscosity of one component is higher than the other, it will need to be heated more in order to “balance” the viscosities. For example, Hardcoat D65 part A is more viscous than part B. Therefore, by heating the part A to a higher temperature, the viscosities are balanced.

Graco Reactors have 3 heat zones:

1. Primary heat zone - part A (materials heated in the machine on the A-side)
2. Primary heat zone - part B (materials heated in the machine on the B-side)
3. Hose heat zone - can only be set the same for both hoses except for the new Reactor 3 which has separate heat zones for each hose.

Part A Temperature	60°C
Part B Temperature	60°C
Hose Temperature	60°C
Working Pressure	>2'200psi

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Environment

Relative humidity:	The relative humidity must be less than 85%
Dew point:	The substrate temperature must be at least 3°C higher than the dew point temperature
Substrate Temperature:	The substrate temperature must be a minimum of 5°C

Thinning

Hardcoat – D65 should never be thinned

Clean-Up

Reactor Flush may be used for general clean-up of equipment and flushing hoses. For soaking of contaminated metal parts use SWELL. Keep all gun part A side components in soak containers on the left side of the work bench and all part B side components on the right side of the work bench. The use of plastic soak containers with clip on lids and removable baskets makes the job easier. Replace the SWELL regularly as soon as it starts turning cloudy and dirty.

COMPATIBILITY

Foams

Purl SP32
Purl GP42

Topcoats

Opalon - S30

Typical Systems

Substrate	Environment	Coat	System	DFT
Polyurethane Foam	Impact Resistant	1 st Coat	Hardcoat D65	2000µm
Expanded Polystyrenes	Impact Resistant	1 st Coat	Hardcoat D65	2000µm

STORAGE & HANDLING

Store in dry, shaded conditions away from sources of heat and in the original properly sealed containers. Protect from heat and frost. Protect contents from moisture. A shelf life of 12 months minimum is typical with unopened containers if stored at ambient conditions at 25°C. If either component is opened and partially used, it should be purged with nitrogen or desiccated air and resealed

PACK SIZE

400L Kits
245Kg of Hardcoat – D65 Part A in a 200L Container
220Kg of Hardcoat – D65 Part B in a 200L Container

40L Kits
24.5Kg of Hardcoat – D65 Part A in a 20L Container
22.0Kg of Hardcoat – D65 Part B in a 20L Container

HEALTH & SAFETY

Hardcoat D65 is for professional use only.
This product contains isocyanates and may require the use of air feed hoods.
This product should not be used without consulting the Safety Datasheets first.
Please observe all health and safety as well as environmental legislation that applies in your state

DISCLAIMER

The information contained herein is offered without charge and is for use by technically qualified personnel at their own risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and no warranty of any kind is made with respect thereto.

LiquiMix Pty Ltd - ABN 32 062 887 585
24 Rosa Place, Richlands QLD 4077
Phone: 07 3277 6655

Web: - www.liquimix.com
Sales Enquiries: - sales@liquimix.com
Account Enquiries: - accounts@liquimix.com