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LeesonGrip D3149/20 Resin Bonded Surfacing System

DESCRIPTION

LeesonGrip D3149/20 is a two component solvent free urethane system which when used with, for example, 1-3mm Bauxite to give a resin bonded surface.

Urethanes cure rapidly especially at low temperatures allowing earlier opening of sites to traffic. This is a significant advantage when application is made at night when temperatures are low. LeesonGrip D3149/20 is maintained under the BBA Agrément Certificate 19/5665.

APPLICATIONS

Typical surfaces include roads, pedestrian crossings, cycle paths, driveways, bridges, walkways, stairs, car park decks, ramps, flooring, airport runways, etc.

The main product advantages are:

- Rapid Setting – ability to increase the product speed.
- Excellent fuel and chemical resistance
- Solvent free – nonflammable.
- Anti-skid surfaces with high SRV's
- Waterproofing for substrate protection
- High Thermal Tolerance (-20°C to +120°C)

The system is available in a range of colours which are available as pre weighed additions.

SURFACE PREPARATION

Bituminous Surfaces

The road surface should have a texture depth of between 0.5mm and 2.0 mm as determined by the sand patch test.

All imperfections in the surface should be repaired prior to laying the product.

The surface to be treated must be clean, free from frost, ice and road salt. The surface should also be sound, dry and free from dust and any loose material. Any visible oil should be removed with a detergent solution, flushed with water and the surface allowed to dry.

Other methods of cleaning the road include grit blasting, high pressure jet washing, low pressure water/abrasive cleaning scarifying and scabbling. Dust and loose surface material can be removed by brushing or treated with hot compressed air. This will also remove any surface moisture.

Any areas which are not to be treated are to be masked with a suitable tape.

We also have available a cementitious scratch coat system (D5126), for filling porous asphalt to reduce topcoat consumption. Please consult our Technical Data Sheet for D5126 for further information.

Concrete and timber

Concrete is to be hot compressed air blasted then primed with primer no.10 PU3922 (see individual data sheet for more information) and this allowed to cure for a minimum of 2 hours and maximum of 12 hours before applying the finish coating. On timber, the surface should be primed with primer no.10 (PU3922) and conditioned as above.

Steel

It is to be shot blasted to SA2.½ and primed and allowed to cure 1-2 hours minimum, maximum 12 hours before finish coating.

MIXING AND APPLICATION

Add 1 part by weight of LeesonGrip D3149 Part B (curing agent) to 2.15 part by weight of LeesonGrip D3149/20 Part A (resin) and mix until a mass of uniform colour is obtained. The surface is then coated with the blend within 10 minutes (@ 19°C) at a minimum coverage rate of 1.5 kg per m² dependant on surface porosity and then allowed to self-level to give total coverage. The non-slip aggregate (moisture content less than 0.4%) is then scattered over the resin within 5 minutes (@ 19°C) excess aggregate can be removed after 2 hours. The site can be reopened to traffic after 4 hours depending on ambient temperature or until the binder is hard to the touch. For the BBA Agrément Certificate 19/5665 Calcined Bauxite is to be used as the aggregate.

A bulk container of D4860 Coating Accelerator (2k) can be supplied for addition to LeesonGrip D3149/20. 38g of D4860 Coating Accelerator (2k) should be added to reduce the pot life by half. A syringe or measuring pot should be used to measure quantity.

Colour additions can be added to change the base colour. Contact Leeson Polyurethanes for details of colour additions.

DO NOT USE IN TEMPERATURES BELOW 5° C

In some cases, particularly low temperatures, D4860 coating accelerator (2k) may need to be added to reduce the cure time.

D4860 Accelerator Addition Level	Approximate Cure Time at 20°C (min)
0% Accelerator	20
38cc Accelerator	10
76cc Accelerator	5

TYPICAL SPECIFICATION

	LeesonGrip D3149/20 Part A Resin	LeesonGrip D3149/20 Part B Hardener
Colour:	Buff*	Brown Liquid
Density:	0.960 g/cm ³	1.236 g/cm ³
Solids:	100%	100%
Mixing Ratio	2.15	1
Viscosity at 23°C:	4,000 ± 600 mPa.s	300 ± 75 mPa.s
Mix Viscosity at 23°C:	1,600 ± 400 mPa.s	
Pot life at 19°C:	25 ± 5 minutes	

*Other colours available.

POLYMER TECHNICAL SPECIFICATION

Parameters	Range	Standard
Binder Tensile Strength (28 Days)	>16 N/mm ²	BS2782 part 3 methods 320A-320F
Binder Elongation (28 Days)	>100%	BS2782 part 3 methods 320A-320F
Binder Hardness (48 hrs)	>90 (Shore A)	LPU STM 9
SRV	Initial SRV>100 After 100,000 wheel passes approximately 85	LPU STM 80

STORAGE

Store in unopened original containers.

LeesonGrip 2-1 (D3149/20) Part A and Part B will have a shelf life of one year.

Store between 10°C and 35°C.

Once opened, containers of D3149 Part B should be used within 14 days.

HEALTH & SAFETY

LeesonGrip D3149/20 Part A (Resin) is not classified as a dangerous substance, however, the wearing of goggles and gloves is to be recommended.

LeesonGrip D3149 Part B (Hardener) contains a non-volatile isocyanate. Avoid prolonged contact with skin. In cases on contact with eyes, flush out with excess water and seek medical attention. Wear goggles.

Before use, ensure that you have read the relevant Health & Safety Data Sheets for this product.

The Company will supply, upon request, individual advice in writing in connection with the use and application of its products in all appropriate cases. Customers are urged to make use of this service. This leaflet is provided for general guidance only. All recommendations and suggestions are made in good faith but without guarantee and are subject to the Company's terms and conditions

INSTALLATION GUIDE

INSTALLATION AND QUALITY CONTROL OF LEESONGRIP D3149/20 HIGH-FRICTION SURFACING SYSTEM FOR HIGHWAYS

1. General
 - 1.1 The current Method Statement together with all necessary Health & Safety Data Sheets, and COSHH Risk Assessment for the Works shall be deposited with the Purchaser and maintained on-site.
2. Quality Control
 - 2.1 Every batch shall be subject to visual quality control checks to ensure compliance with the System specification.
 - 2.2 Each component received on-site shall be logged and stored to prevent contamination or deterioration, in accordance with the Manufacturer's instructions.
3. Suitability of the Road Surface
 - 3.1 The System is deemed suitable for use on Highways with existing bituminous surfaces and concrete with texture depths of between 0.5mm and 2.00mm, measured using the Sand Patch Test as defined in BS 598 : Part 105 : 1990.
 - 3.2 The Purchaser should ensure that the pavement structure is adequate to support the traffic without undue cracking or deformation during the life of the System.
4. Preparation of Road Surface
 - 4.1 The areas to which the System is to be applied shall be clearly defined and marked by the Purchaser on the existing road surfacing prior to commencement of work on-site.
 - 4.2 All imperfections in the road surface not acceptable to the Installer shall be reinstated with a material approved by the Purchaser in consultation with the Installer.
 - 4.3 The road surface shall be clean, dry and free from ice, frost, loose aggregate, oil, grease, road salt and other loose matter which may impair the adhesion of the System.
 - 4.4 Where the road surface does not comply with Section 5.3 it shall either be cleaned by the Installer or others, by grit blasting, high pressure water jetting, low pressure water/abrasive blast cleaning, scarifying, scrubbing or other means approved by the Purchaser. To remove dust and other loose matter the road surface should be vigorously brushed or treated with hot compressed air. Any oil visible on the road surface shall be removed by washing and scrubbing with a suitable detergent solution followed by flushing with clean water or by other suitable means.

- 4.5 Existing road markings, ironwork, road edges or areas not to be treated and road studs shall be suitably masked.
5. Weather Conditions
- 5.1 Installation of the System shall only be carried out at a road surface temperature of 5°C to 35°C.
- 5.2 Ambient and road surface temperatures together with relative humidity shall be recorded at the start and if weather is variable during the installation process.
- 5.3 Road surfaces shall be dry before and during the installation of the System.
- 5.4 The Installer will notify the purchaser of the curing period of the system dependent upon the prevailing weather conditions.
6. Installation
- 6.1 System Installation Procedure
- 6.1.1 The Installer shall check and record the surface temperature, air temperature and relative humidity. The installation shall not proceed if:
- a) the relative humidity is greater than 80%.
 - b) the surface temperature is less than 2°C above the dew point for the measured air temperature and relative humidity.
 - c) Operating temperature and road surface temperature should not be outside range +5°C to + 35°C.
- The Installer shall also record the batch numbers of the binder and aggregate (where possible).
- 6.1.2 The binder will be mixed in a ratio 2.15 Part A to 1 Part B by weight and is supplied in 18.9 kg and 31.65 kg pre-weighed composite tubs or bulk containers and applied at a minimum coverage rate of 1.5 kg/m² and a maximum of 2.5 kg/m². The amount of binder required is calculated by multiplying the surface area (m²) of the site to be treated by the required coverage rate.
- 6.1.3. The material is then mixed as required using a high torque, slow speed drill fitted with a helical mixing blade until a homogeneous mix is achieved.
- 6.1.4. A pre-weighed catalyst is also available for use on site. If the pre-weighed catalyst is to be used it is added to the Part A and thoroughly mixed using a high torque, slow speed drill fitted with a helical mixing blade. The Part B is then added in its entirety and mixed in as above until a uniform coloured product is obtained. Tubs of binder can be mixed as required or up to 10 minutes before they are applied (dependent upon catalyst addition).

- 6.1.5 The mixed material is then poured onto the road surface and spread out to give an even coating. Extra binder can be used, dependent on surface texture and porosity, up to a maximum of 2.5 kg/m².
- 6.1.6 Within 5 minutes of the application of the binder on to the surface, excess aggregate is cast (ensuring that the aggregate is dry) over its surface and the system allowed to cure.
- 6.2 System Installation Checks by the Installer.
 - 6.2.1 A visual check shall be carried out for uniform surface texture, surface blemishes and any discernible faults.
- 6.3 Maintenance and Repair
 - 6.3.1 If repair work is required to an established surface, the area to be treated should be cut back to firmly bonded material, cleaned with hot compressed air (or any other suitable means) and the high friction system applied to the original specification.
- 7. Aftercare
 - 7.1 The masking shall be removed and the System allowed to cure. During the curing period no disturbance or trafficking of the System shall be permitted. Before opening to traffic at the end of the curing period the excess aggregate shall be removed by vacuum sweeper or other suitable means.
 - 7.2 The Installer shall inspect the road after 24 hours and carry out any necessary remedial work, or further sweeping.