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PU5541 Aliphatic Stone Binder

DESCRIPTION

PU5541 is an aliphatic polyurethane prepolymer encapsulation binder for use with for example Leesonmix stone blend as a pebble effect floor coating or tree pit infill. PU5541 is based on aliphatic polyurethane technology to give enhanced UV performance.

PU5541 can be used with any of the approved stone mixes tested in our laboratory. If alternative aggregates are required, we offer a UV strength testing service at our laboratory. We strongly urge our customers to make use of this service prior to installing with an unapproved aggregate.

*Note: The system will only be as strong as the weakest component. Therefore aggregate choice is important. The suitability in a given application of weaker aggregates such as crushed glass should be considered carefully.

SPECIFICATION

Criteria	Typical Value
Colour:	Unpigmented (clear)
Viscosity at 23°C:	2500 ± 500 mPa.s
Application Temperature:	5 – 40°C
Relative Humidity:	40 – 90%
Cure Time:	5 - 6 hours at 20°C

APPLICATION

The system can be applied to concrete, asphalt, compacted MOT Type 1, full details of subbases are listed below. The sub-base must be sound and free from cracks. Movement in the sub-base will lead to reflective cracking in the PU5541 system. Asphalt should be at least 30 days old to ensure it is fully cured before installation.

The surface must be free from contamination or water prior to application, as such cleaning/drying may be required. PU5541 should be applied at 10°C-35°C ground temperature and 10°C-35°C ambient temperature, temperatures in the range of 15 to 18°C are optimum for ease of application. The relative humidity should be between RH 40-85%. The system should be applied at least 3°C above the dew point measured for the application surface.

Installation of System – for detailed information please refer to our installer method statement

1. The system can be applied to concrete, asphalt, compacted MOT Type 1 or compacted soil.
2. The surface must be free from contamination or water prior to PU5541 application, as such cleaning/drying may be required.
3. All the aggregate should be mixed evenly in a mixer, such as a Baron mixer
4. Add the PU5541 to the aggregate and allow to mix until the aggregate is evenly coated
5. The mixture is then applied to the surface using a trowel. Pressure must be applied to the PU5541 mix whilst troweling to ensure levelling and adequate compression for the required mechanical properties.
6. The surface should be allowed to cure for 4 hours at 20°C; this will be longer if the temperature is lower.
7. The surface should be installed at a thickness three times the maximum stone grading used.
8. During the cure period the surface should be protected from rain.

Cure Speed Modification

At low temperatures D5474 coating accelerator can be added to PU5541 to maintain cure speed. The table below gives approximate addition level guidance:

Air Temperature (°C)	D5474
	7.5kg kit size
20	0.0ml per kit
17.5	25ml per kit
15	55ml per kit
12.5	85ml per kit
10	110ml per kit

Treepits

The soil should be free draining but well compacted. The soil should be dry prior to application.

The sub base should be dug out to allow for the resin bound system to be applied.

The sub base should be covered with 50 - 100mm of base aggregate. This usually has a size distribution ranging from 5mm to 20mm. This should be well compacted and flat.

To allow for tree growth the base of the tree should be protected. This can be done using a split pipe section or by building aggregate up to a circle. Sufficient room should be left to allow for the trunk growth.

The aggregate and binder should then be poured out onto the loose aggregate covered sub base and leveled with a trowel. The aggregate should be compacted enough to ensure a sound surface but not too much as this will reduce the water drainage.

Surface Preparation

The concrete/ MOT Type 1 should be dry. A primer should be used when applying to concrete (please contact us to discuss suitable primers).

Asphalt would be left to fully cure (minimum 30 days) before PU5541 is installed.

Guideline Installation Thicknesses

Use 18-24mm for driveways/paths. Using Leesonmix aggregate blends at 44kg will cover approximately 1m² at 24mm thick.

Use 20-26mm for car parks. Using Leesonmix aggregate blends at 48Kg will cover approximately 1m² at 26mm thick.

Finishing

To create a non-slip surface the top can be scattered with microfine glass particles available from Leeson Polyurethanes Ltd. Application rates will vary depending on the aggregate used but is in the order of 50 – 100 grams per meter of resin bound surface.

We have a range of stone mixes available that have been approved on strength testing with this product. Please request the additional literature for any further information and note that we recommend these mixes alone and any alterations made may have a damaging effect on the overall strength of the stone binder system.

STORAGE

Must be stored in closed, air-tight containers - the product reacts with moisture, leading firstly to an increase in viscosity and finally gelation.

- The containers should be kept cool
- Storage at elevated temperatures will result in a viscosity increase.



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Storage life if stored under the recommended conditions: 6 months.

HAZARDS DURING TRANSPORT AND STORAGE

For information, please refer to Health and Safety Data Sheets for this product.