



LEESON BOUND®

Installation Guide



{ A bond for life }



LEESON BOUND® UVR (PU4844/60)

LEESON BOUND® UVR (PU4844/60) is a high-performance polyurethane based, SUDS compliant porous aggregate bond system incorporating resin and a range of aggregate blends. LEESON BOUND® UVR (PU4844/60), when cured, gives excellent strength and elongation performance and is therefore an exceedingly durable system. LEESON BOUND® UVR (PU4844/60) is based on aliphatic polyurethane technology to give enhanced UV performance.

LEESON BOUND® UVR (PU4844/60) is maintained under the BBA Agrément Certificate 17/5413.

- Usability:** Its ease of spreading allows for rapid application, and the cure speed for the product allows for application sites to be opened to use in a timely fashion.
- Site Safety:** LEESON BOUND® UVR (PU4844/60) is a solvent free system and does not require heat lances or burners to apply, lowering the number of risks installers may be exposed to.
- Versatile:** LEESON BOUND® UVR (PU4844/60) can be used to produce a range of surfaces include roads, pedestrian bridges, cycle paths, driveways, walkways, stairs, car park decks, balconies, patios, and internal flooring. LEESON BOUND® UVR (PU4844/60) can be used with a range of aggregates to provide varied aesthetic finishes.
- Strong, resilient system:** The cured LEESON BOUND® UVR (PU4844/60) exhibits excellent resistance to extreme temperatures (-20°C to +120°C), moisture and chemical contact for extended periods without loss of strength.

Technical Specification

Parameter	Specification	
	LEESON BOUND® UVR (PU4844/60) Part A Resin	LEESON BOUND® UVR (PU4844) Part B Hardener
Colour:	Opaque Buff	Transparent Colourless
Specific gravity:	1.01 g/cm ³	1.16 g/cm ³
Solids Content:	100%	100%
Mixing Ratio by Weight:	1.04	1
Mixing Ratio by Volume:	1.16	1
Viscosity at 23°C:	2,500 ± 500 mPa.s	2800 ± 500 mPa.s
Mix Viscosity at 23°C:	2,650 ± 500 mPa.s	
Pot life at 19°C:	60 ± 3 minutes	

Parameter	Specification
Binder Tensile Strength (28 Days)	5.5 ± 1 N/mm ² to BS2782 part 3 methods 320A-320F
Binder Elongation (28 Days)	110 ± 10 %BS2782 part 3 methods 320A-320F
Binder Hardness, Shore A (48 hrs)	≥80



LEESON BOUND® NON UVR (PU5384/60)

LEESON BOUND® NON UVR (PU5384/60) is a high-performance polyurethane based, SUDS compliant porous aggregate bond system incorporating resin and a range of aggregate blends. LEESON BOUND® NON UVR (PU5384/60), when cured, gives excellent strength and elongation performance and is therefore an exceedingly durable system.

LEESON BOUND® NON UVR (PU5384/60) is maintained under the BBA Agrément Certificate 17/5413.

- Usability:** Its ease of spreading allows for rapid application, and the cure speed for the product allows for application sites to be opened to use in a timely fashion.
- Site Safety:** LEESON BOUND® NON UVR (PU5384/60) is a solvent free system and does not require heat lances or burners to apply, lowering the number of risks installers may be exposed to.
- Versatile:** LEESON BOUND® NON UVR (PU5384/60) can be used to produce a range of surfaces include roads, pedestrian bridges, cycle paths, driveways, walkways, stairs, car park decks, balconies, patios, and internal flooring. LEESON BOUND® NON UVR (PU5384/60) can be used with a range of aggregates to provide varied aesthetic finishes.
- Strong, resilient system:** The cured LEESON BOUND® NON UVR (PU5384/60) exhibits excellent resistance to extreme temperatures (-20°C to +120°C), moisture and chemical contact for extended periods without loss of strength.

Technical Specification

Parameter	Specification	
	LEESON BOUND® NON UVR (PU5384/60) Part A Resin	LEESON BOUND® NON UVR (PU5384) Part B Hardener
Colour:	Opaque Buff	Sem-transparent Brown
Specific gravity:	1.04 g/cm ³	1.23 g/cm ³
Solids Content:	100%	100%
Mixing Ratio by Weight:	1.94	1
Mixing Ratio by Volume:	2.30	1
Viscosity at 23°C:	2,800 ± 300 mPa.s	60 ± 40 mPa.s
Mix Viscosity at 23°C:	1,500 ± 200 mPa.s	
Pot life at 19°C:	40 ± 5 minutes	

Parameter	Specification
Binder Tensile Strength (28 Days)	9 ± 2 N/mm ² to BS2782 part 3 methods 320A-320F
Binder Elongation (28 Days)	90 ± 10 %BS2782 part 3 methods 320A-320F
Binder Hardness, Shore A (48 hrs)	≥90



Installation of LEESON BOUND® Systems

Introduction

This installation guide, together with all necessary Safety Data Sheets, and COSHH Risk Assessment for the Works shall be deposited with the Purchaser and maintained on-site during installation.

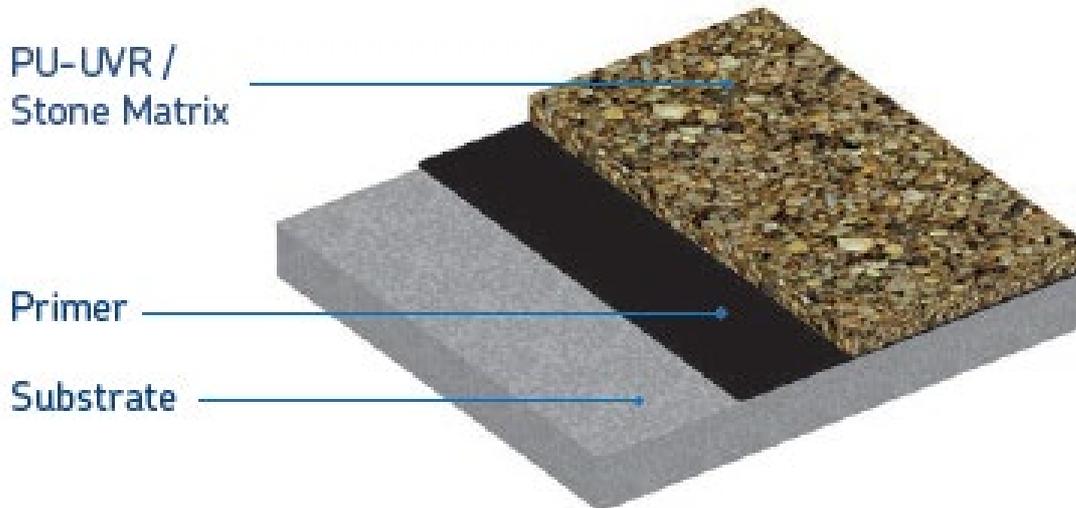
Leeson Polyurethanes have been supplying stone bound systems since the mid 1990's and over that time the systems have demonstrated their quality, durability and ease of maintenance. When used as described in the installation guidance, the LEESON BOUND® systems retain their integrity and have a service life in excess of 10 years. A maintenance guide is provided to keep the surfacing in optimum condition.

LEESON BOUND® is a high-performance polyurethane based, SUDS compliant porous aggregate bond system incorporating resin and a range of aggregate blends. LEESON BOUND®, when cured, gives excellent strength and elongation performance and is therefore an exceedingly durable system.

LEESON BOUND® is available in 2 grades, PU5384/60 is not UV stabilized and therefore will darken in UV exposure. The strength of the system is not compromised. LEESON BOUND® UVR (PU4844/60) is also available. This is an aliphatic system and is therefore colour stable when exposed to UV.

We have an approved range of aggregates for use within the LEESON BOUND® range. The system, when installed with an approved stone mix, achieves a minimum standard for strength. We have also pre-screened for which types of aggregates are suitable with which product (PU5384/60 or PU4844/60). The systems both have excellent physical characteristics to give long service life and all of the resins are waterproof and have high thermal tolerance.

Applied System



Surface Preparation

The system can be applied to concrete, asphalt and compacted MOT Type 1. The sub-base must be sound and free from cracks. Movement in the sub-base will lead to reflective cracking in the LEESON BOUND® system.

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.

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.



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.

Where the surface does not comply with above it shall either be cleaned by the installer or others, by grit blasting, high pressure water jetting, low pressure water/abrasive blast cleaning, scarifying, scrubbling 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.

Priming of surfaces

Bituminous Surfaces:

- Asphalt should be at least 30 days old to ensure it is fully cured before installation. The road surface should have a texture depth of between 0.5mm and 2.0 mm as determined by the sand patch test.
- A cementitious scratch coat system can be used for filling porous asphalt to reduce topcoat consumption.

Concrete Surfaces:

- Concrete is to be hot compressed air blasted then primed with a solvented one component polyurethane primer with the primer being allowed to cure following the manufactures recommendations. The LEESON BOUND® should be applied within the primer's overcoat window.

Weather Conditions

LEESON BOUND® systems should only be applied in the following conditions, application outside of the conditions can lead to defects occurring in the cured installed system.

- Installation of the System shall only be carried out at a temperature of 10°C to 35°C and relative humidity of 30 to 85%.
- The System shall be applied at least 3°C above the dew point measured for the application surface
- Ambient and road surface temperatures together with relative humidity shall be recorded at the start and if weather is variable during the installation process.
- Application surfaces shall be dry before and during the installation of the System.
- The Installer will notify the purchaser of the curing period of the system dependent upon the prevailing weather conditions.

Mixing and Application

LeesonBound stone binders are both 2 component systems available pre-weighed kits to the correct ratio and should not be split.

Mixing Pack A and Pack B:

Mix A component prior to addition of B component, mix the A & B for 1-2 minutes to a smooth consistency. It is recommended to use one batch on a project. If more than one batch is to be used, care should be taken to use the same batch in one area in case of small batch to batch variation, this equally applies to the aggregate.

Accelerator (D4860):

Accelerator (D4860) should be used with each mix to ensure uniformity of cure. Accelerator must be used for temperatures below 15°C (especially note overnight temperatures), as this can lead to protracted cure times and contamination of the surfacing. Refer to the table below for addition levels.



PU4844/60	
Air Temperature (°C)	D4860 Accelerator Addition Level
20	0.0ml per kit
17.5	5.1ml per kit
15	11.3ml per kit
12.5	19.2ml per kit
10	33.8ml per kit

PU5384/60	
Air Temperature (°C)	D4860 Accelerator Addition Level
20	0.0ml per kit
17.5	0.6ml per kit
15	1.3ml per kit
12.5	2.0ml per kit
10	2.7ml per kit

Premixing with aggregate:

The mixed PU resin should then be introduced into the mixer containing the aggregate. The aggregate must be dry (<0.5% moisture) and free from dust.

While the mixer is running with the dry aggregate, add the PU resin at a ratio of minimum 6.5% up to 15% depending on end user requirements and the size and particle distribution of the aggregate – smaller particles, or greater particle distribution will require relatively more PU resin as the overall surface area is increased. Resin additions at these levels will ensure a well bonded, durable and sound system.

A rotary mixer or low speed paddle mixer are suitable for mixing.

Mix for 5 minutes until all of the aggregate is uniformly coated.

Application of LeesonBound:

The blend of PU and aggregate should then be immediately applied to the surface and compacted with a trowel. The surface temperature should be between +10°C and +35°C for application (note comments above regarding the accelerator use for lower temperatures). The system should be applied at least 3°C above the dew point measured for the application surface. Care should be taken to ensure that the correct, even coverage rate is applied across the application area. This is especially important at high temperatures where the PU can be thinner. The surface should be installed at a minimum thickness of 3x the maximum stone grading used. Once levelled and compacted the surface can be smoothed with a trowel coated in a release agent, this allows for the top facing stones to be knitted together, giving an even surface. Suitable release agents are organic solvents such as xylene and white spirit, water should not be used as a release agent as it may cause foaming in the system.

A LeesonBound Application Day Sheet is available to record site information and conditions as well as recording batch numbers and stone mixes used on the application site.

Traffic:

The surface should be allowed to cure for a minimum of 4 hours; this will be longer if the temperature is low. During the cure period the surface should be protected from rain.

Detailing:

Expansion joints should be carried through to the surface of the LeesonBound. Any day joints or expansion joints should be detailed with a suitable edging strip e.g. aluminum edging or similar.



Resin Bound Stone Mixes – 106.25kg Blends

The following aggregate mixes have been tested and confirmed as suitable for use with LEESON BOUND® systems.

LPU Autumn 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Autumn Quartz	1-3mm	75	25	3
Autumn Quartz	2-5mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Autumn 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Autumn Quartz	2-5mm	75	25	3
Autumn Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Cottage Gold 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Pea	2-5mm	25	25	1
Autumn Quartz	1-3mm	50	25	2
Golden Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Cottage Gold 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Autumn Quartz	2-5mm	50	25	2
Golden Quartz	2-5mm	25	25	1
Golden Pea	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Trent 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Trent Pea	2-5mm	25	25	1
Brittany Bronze	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Trent 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Trent Pea	2-5mm	75	25	3
Brittany Bronze	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Terracotta 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Red Granite	1-3mm	75	25	3
Red Granite	2-5mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Terracotta 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Red Granite	2-5mm	75	25	3
Red Granite	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Scandinavian 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	1-3mm	75	25	3
Pearl/Danish Quartz	2-5mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Scandinavian 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	2-5mm	75	25	3
Pearl/Danish Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Silver Granite 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Sterling Silver	1-3mm	75	25	3
Sterling Silver	2-5mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Silver Granite 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Sterling Silver	2-5mm	75	25	3
Sterling Silver	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Jewel 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Pea	2-5mm	25	25	1
Golden Pea	1-3mm	50	25	2
Green Granite	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Jewel 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Pea	2-5mm	50	25	2
Green Granite	2-5mm	25	25	1
Golden Pea	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Golden Harvest 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Pea	2-5mm	25	25	1
Golden Quartz	1-3mm	50	25	2
Red Granite	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Golden Harvest 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Quartz	2-5mm	50	25	2
Red Granite	2-5mm	25	25	2
Golden Pea	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Corn Gold 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Pea	2-5mm	25	25	1
Autumn Quartz	1-3mm	25	25	1
Golden Pea	1-3mm	50	25	2
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Corn Gold 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Autumn Quartz	2-5mm	25	25	1
Golden Pea	2-5mm	50	25	2
Golden Pea	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Daybreak 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Staffordshire Pink	2-5mm	25	25	1
Golden Quartz	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Daybreak 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Staffordshire Pink	2-5mm	75	25	3
Golden Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Green 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Green Granite	2-5mm	25	25	1
Green Granite	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Green 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Green Granite	2-5mm	75	25	3
Green Granite	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Snowfall 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Winter Quartz	2-5mm	25	25	1
Winter Quartz	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Snowfall 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Winter Quartz	2-5mm	75	25	3
Winter Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Moonlight 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	2-5mm	25	25	1
Sterling Silver	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Moonlight 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	1-3mm	25	25	1
Sterling Silver	2-5mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Night Sky 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	2-5mm	25	25	1
Black	1-3mm	50	25	2
Pearl/Danish Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Night Sky 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Pearl/Danish Quartz	2-5mm	25	25	1
Black	2-5mm	50	25	2
Pearl/Danish Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Sun Set 3mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Autumn Quartz	2-5mm	25	25	1
Golden Quartz	1-3mm	50	25	2
Red Granite	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Sun Set 5mm				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Golden Quartz	2-5mm	50	25	2
Red Granite	2-5mm	25	25	1
Autumn Quartz	1-3mm	25	25	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Golden Maize 3mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Beige Marble	2-5mm	25	25	1
Autumn Quartz	1-3mm	75	25	3
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



LPU Golden Maize 5mm – UV only				
Stone Type	Stone Size	Kg in Mix	Bag Size	No of Bags
Beige Marble	2-5mm	75	25	3
Autumn Quartz	1-3mm	25	125	1
C52 Sand	0.5mm	6.25	6.25	1
Total Aggregate		106.25		



Increased Slip Resistance

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

If an aggregate blend contains 50kg or more of the following aggregates glass granules should be applied to the system surface during installation to ensure that a suitable level of slip resistance for the system is maintained:

Aggregate	Size	
Danish/Pearl Quartz	1-3mm	2-5mm
Devon Yellow	-	2-5mm
Dorset Gold	1-3mm	2-5mm
Trent Pea	-	2-5mm
Winter Quartz	1-3mm	2-5mm

Conditions to Avoid for Resin Bound Surfacing

The LeesonBound system has excellent physical characteristics to give long service life, however damage can occur under certain conditions.

Chemical Resistance:

The resin bound surfacing is resistant to a wide range of chemicals, details are specified on the appropriate Technical Datasheet. The full chemical resistance builds up over time, and care should be taken within the first 7 days of installation to not expose the surface to chemicals.

Chemicals such as weedkillers or fertilizers can form surface crusts if allowed to dry on the LeesonBound, this can lead to discolouration. Chemical spillages or run-offs should be cleaned as soon as possible with a stiff brush and hot water.

Point Load Damage:

Point loads, such as from scaffolding poles or other heavy metal objects can cause the aggregate in the system to be crushed, leading to holes or trenches forming in the bound surface, if left untreated this damage can then spread. It is advised that items such as skips or scaffolding are not placed onto the LeesonBound surface, where this is unavoidable measures should be put in place to protect the LeesonBound surface, such as placing wooden boards over the surface.

Static Wheel Damage:

Although LeesonBound shows suitable resistance to the effect of friction caused by static wheel turning, repeated static wheel turning, especially from large vehicles can cause wear damage to the surface.

Maintenance Schedule for Resin Bound Surfacing

Leeson Polyurethanes have been supplying bound stone systems since the mid-1990s. Over that time the systems have demonstrated their quality, durability and ease of maintenance. With some simple routine procedures, the surfacing can be kept in optimum condition.

General:

The resin bound surface should be regularly swept clean, removing leaves and detritus material in order to prevent moss growth. In order to keep the surface looking its best and to prevent staining any moss or weed growth the surface should be treated using an appropriate herbicide or weed killer. Any ingrained algal growth can be removed using an appropriate paving cleaner.

Please note that staining may occur from tanning if surfaces are not kept clean from leaf debris, twigs, seeds etc.



Heavy goods vehicles should not be permitted to park on, or regularly traverse resin bound surfacing, unless this has been allowed for in the overall construction. Heavy objects such as skips should not be dragged across the surface.

Periodic Cleaning:

General cleaning of the surface can be carried out by cold pressure washing up to a maximum 150 bar rating to remove dirt and grime. The water should be applied using a fan type lance which should be kept 200mm above the installed resin bound surface. Care should be taken however to prevent damage to the surface with excessive water pressure. Pressure washing can also be used to remove tyre marks.

Cement Contamination:

If the surface is contaminated with any cement or concrete marks these can be removed using dilute hydrochloric acid or a proprietary cement remover. In all cases we recommend that a small area is carried out first to confirm suitability.

Oil/ Fuel Contamination:

Oil stains should be removed as soon as possible by using a mild detergent as required to prevent possible staining and degradation of the surface. Apply a good quality detergent neat to the surface using a stiff brush. Allow to penetrate for 10 minutes then pressure wash from surface.

Spillages:

Please note it is important that any spillages or contamination are dealt with promptly otherwise permanent staining, marking or physical damage to the surfacing and underlying materials may result.

Sand/Soil:

Shovel up material and sweep surface clean with a stiff brush. Pressure washing up to 150 Bar can also be used to clean sand from the resin bound surfacing.

Chewing Gum:

Removal of individual pieces of chewing gum can be achieved by treating each piece with a freezing spray and then scraping off the gum with a suitable scraper. For more extensive gum removal, contact a specialist-cleaning contractor.

Mineral Staining:

The system is made from natural aggregates. Therefore, whilst every step is taken to minimize its presence, naturally occurring iron pyrites can be present. If staining occurs, oxalic acid is an effective method of removing the stains from the surface and is readily available. The specialist acid solution should be washed off using cold water immediately after use.

Ice and Frost:

Salt can be used on the surface to help eliminate ice and frost. Once weather conditions return to normal the salt/grit needs to be washed off thoroughly to remove all salt traces.

Patch Repairs:

If the surface is damaged, small areas can be repaired with a repair kit. The damaged area should be removed with an angle cutter, sufficient to provide a clean edge to the repair. The same aggregate blend can then be mixed with the LeesonBound resin and installed into the area. Care should be taken to “feather” the edges of the repair into the surrounding area, to give a strong, seamless, and durable repair. Full details of the repair procedure can be found in the *Damage Repair for Resin Bound Surfacing* document.



Specification Guides

	Urban Pathway Occasional vehicles	Rural Pathway Light Pedestrian use
Surfacing Course	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
Binder Course Well compacted min fall 1.5%	50mm depth of AC14 close surf asphalt concrete max 160/220 pen to BS EN 13108-1:2006 (Bituminous Macadam).	50mm depth of AC14 close surf asphalt concrete max 160/220 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Geotextile	Not Required	Not Required
Sub-base Well compacted min fall 1.5%	150 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases	100 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
Impermeable Membrane	Not Required	Not Required
Capping Layer	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.	Not Required
Geotextile Membrane	Optional – to prevent upward migration of fine soil particles if required.	Optional – to prevent upward migration of fine soil particles if required.

	Tree Pit Heavy Pedestrian use	Private Drive Straight
Surfacing Course	10mm aggregate 40mm depth 50mm collar with loose aggregate around newly planted trees	3mm aggregate 12mm depth 6mm aggregate 16mm depth 10mm aggregate 22mm depth
Binder Course Well compacted min fall 1.5%	Not Required	50mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Geotextile	Not Required	Not Required
Sub-base Well compacted min fall 1.5%	150 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620. New trees only	150-225 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
Impermeable Membrane	Not Required	Not Required
Capping Layer	Not Required	Not Required
Geotextile Membrane	Optional – to prevent upward migration of fine soil particles if required.	Optional – to prevent upward migration of fine soil particles if required.



	Private Drive Turning	Car Park Cars and Occasional light delivery vehicles
Surfacing Course	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth	3mm aggregate 16mm depth 6mm aggregate 18mm depth 10mm aggregate 24mm depth
Binder Course Well compacted min fall 1.5%	50mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).	35mm depth of AC14 close surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Geotextile	Not Required	70mm depth of AC32 dense base asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Sub-base Well compacted min fall 1.5%	150-225 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases	200-350 mm depth of non-frost Type 1 to SHW clause 803 or locally available secondary or recycled aggregates complying with the requirements of SHW for sub-bases
Impermeable Membrane	Not Required	Not required
Capping Layer	Not Required	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Geotextile Membrane	Optional – to prevent upward migration of fine soil particles if required.	Not required

	Permeable Car Park SUDS Cars and Occasional light delivery vehicles	Permeable Access Road SUDS
Surfacing Course	6mm aggregate 20mm depth 10mm aggregate 26mm depth	6mm aggregate 20mm depth 10mm aggregate 26mm depth
Binder Course Well compacted min fall 1.5%	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Road Base Well compacted min fall 1.5%	Alternative Build Up	Alternative Build Up
Sub-base Well compacted min fall 1.5%	300-500 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.	300-500 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.
Impermeable Membrane	To convey water to storage system (option)	To convey water to storage system (option)
Capping Layer	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Geotextile	To prevent upward migration of fine soil (option).	To prevent upward migration of fine soil (option).



	Permeable Private Drive SUDS	Permeable Path SUDS
Surfacing Course	6mm aggregate 18mm depth 10mm aggregate 24mm depth	6mm aggregate 18mm depth 10mm aggregate 24mm depth
Binder Course Well compacted min fall 1.5%	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108- 1:2006 (Bituminous Macadam).	70mm depth of AC14 open surf asphalt concrete max 100/150 pen to BS EN 13108-1:2006 (Bituminous Macadam).
Road Base Well compacted min fall 1.5%	Alternative Build Up	Alternative Build Up
Sub-base Well compacted min fall 1.5%	175 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.	150 mm depth well compacted Type 3 to SHW clause 805 or 4/40mm, 4/20mm blinded with 2/6.3mm crushed stone to EN12620.
Impermeable Membrane	To convey water to storage system (option)	To convey water to storage system (option)
Capping Layer	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.	If plastic or silty sub-grade layer is present (CBR < 2%) then a granular capping may be required.
Geotextile	To prevent upward migration of fine soil (option).	To prevent upward migration of fine soil (option).

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