

## RonaDeck Resin Bound Surfacing

Resin bound permeable paving for pedestrian and vehicle traffic



### FEATURES

- aliphatic resin will not deteriorate or discolour when exposed to typical UK weather
- Low VOC
- high slip resistance—tested to BS 8204-6:2008+A1:2010 Appendix B
- SuDS compliant
- highly permeable—up to 850 litres / m<sup>2</sup> / minute
- 38% of resin formulated from a botanic source
- product warranty up to 10 years available
- natural appearance
- suitable for pool surrounds, pathways, driveways and car parks
- low maintenance
- Wide range of colour blends, see pages 8 & 9

### Description

RonaDeck Resin Bound Surfacing is a resin bound aggregate surface for pedestrian and vehicular traffic that has been formulated for the UK market. The open matrix allows water to drain through to the base, eliminating water ponding and allowing water to drain to planted areas or land drains. The surfacing may be applied to SuDS compliant bases and sub-bases, reducing the impact of urban development on flood risk and allowing water to flow into water courses. Edgings created from brick, stone, timber or steel should be installed to retain and protect the resin bound surfacing.

RonaDeck Resin Bound Surfacing is a two component polyurethane resin which binds a range of selected decorative kiln-dried aggregates. RonaDeck Resin Bound Surfacing provides an attractive porous surface which is strong enough for foot and light vehicle traffic.

### Traffic and Scuffing

RonaDeck Resin Bound Surfacing is designed for foot traffic and occasional vehicle traffic such as on domestic driveways, residential developments with light domestic traffic or car parking bays. It is however, not a road surface for heavy volumes of domestic or commercial traffic. Heavier vehicle traffic, including heavy impact and high point loading will damage the surface and may result in failure.

Due to the destructive scuffing forces created by power steering (e.g. three point turns) in car parks or on driveways where cars will repeatedly turn within a confined area, localised wear is more likely. It is therefore recommended that when the product is used in such locations, the surface is regularly inspected by the client or installer and maintained as required.

### Resin and Aggregate

RonaDeck Resin Bound Surfacing Resin has been designed for the UK market. Under normal UK weather conditions the system is considered UV light and heat resistant and will not discolour. If exposed to weather beyond those of typical UK conditions, slight discolouration may occur.

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### Resin and Aggregate (continued)

The performance and appearance of the finished surface is dependent on the aggregate used. The RonaDeck Resin Bound Surfacing Aggregate blends have been designed to achieve strength, resilience, porosity and decoration.

Natural aggregates may contain small amounts of iron which can produce rust staining when exposed to air and water; standard RonaDeck Resin Bound Surfacing blends contain aggregates selected for infrequency of incidence of staining but iron may be present in any natural aggregate. The presence of iron cannot be identified before use and Ronacrete Ltd cannot accept responsibility for any loss or damage suffered as a result of staining.

### Appearance

The appearance of RonaDeck Resin Bound Surfacing samples and materials are dependent on the colour, shade and grading of individual aggregates supplied to Ronacrete Ltd by its suppliers. Being largely natural aggregates, the appearance may be variable within batches and from batch to batch and uniformity of appearance should not be expected. Darker aggregate blends are less likely to show tyre marks. RonaDeck Resin Bound Surfacing is hand finished with a steel float and some variation in finished levels is to be expected. Levels variation may be accentuated in certain natural and artificial light conditions, such as at sunrise or sunset or when lighting is set into the surfacing.

### Design of Edgings

Edgings should be securely fixed to prevent movement. A flexible joint filler should be used at edgings where there is potential for movement, to separate the surfacing from the edging.

### Compaction of the Construction

Adequate compaction of the sub-base and base is essential to prevent cracking of the base, a minimum 1 tonne "sit on" roller should be used when possible and the contractor must ensure that the construction is fully restrained at all edges to ensure dimensional stability.

### Reflective Cracking & Differential Movement

Re-entrant corners, which are angular intrusions into resin bound surfacing by walls; edgings etc., may cause formation of reflective cracks in the surfacing. Intrusions into the surfacing should be avoided whenever possible and when unavoidable, intrusions should be curved rather than angular. Cracking of the base is likely to result in cracking of the resin bound surfacing. Application to different types of base materials in the same area of paving should be avoided, when this is not possible, allowance should be made for differential movement between differing types of base, to prevent cracking of the surfacing.

### Maintenance

It is possible to repair localised damage by cutting out and replacing, ideally using the same aggregate as originally supplied. Ageing and weathering of the original may prevent an invisible repair. "Picking out" of some stones is possible but is likely to be minimal and localised. Any major loss of stone should be reported.

### Slip Resistance

All RonaDeck Resin Bound Surfacing aggregate blends have been tested for slip resistance in accordance with BS 8204-6:2008+A1:2010 Appendix B. All aggregate blends achieved 'low potential for slip' in dry conditions. In wet conditions, test results for Autumn Forest and Golden Jubilee blends marginally fell into the medium potential for slip range, testing of all other blends continued to

## Resin Bound and Bonded Surfacing

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**Slip Resistance (continued)** show low potential for slip. Slip Resistance Values for all RonaDeck Resin Bound Surfacing blends can be found on pages 8 and 9 of this document. Application of RonaDeck Resin Bound Surfacing System Anti-Slip Aggregate will significantly increase the slip resistance of the surface in the wet and on steep gradients without substantial change to appearance.

**Surface Sealing** RonaDeck Thixotropic Surface Sealer is designed to minimise entry of water into the matrix of RonaDeck Resin Bound Surfacing applied to non-porous substrate, at least 24 hours should elapse between application of coats. The product should not be expected to fully exclude water; pin holes may remain and mechanical damage may penetrate the sealer. The appearance of the surface will be affected and wet slip resistance will be reduced.

RonaDeck Thixotropic Surface Sealer should be applied by white polyurethane squeegee, the sealer should be forced into voids in the surfacing, leaving as little material on aggregate surfaces as possible. Excess material should be removed using a dry sponge. During its early life, the sealer may be expected to bloom when wet; blooming will subside when the sealer is dry and will be gradually reduced with age, as the sealer’s absorbency reduces.

Usage rates of RonaDeck Thixotropic Surface Sealer will vary according to the blend it is applied to, the approximate rate of application to RonaDeck Resin Bound Surfacing Silver Moon is shown in the table below, usage when applied to other blends will differ.

Application Rate	
First Coat	1.69m <sup>2</sup> per kg
Second Coat	5.35m <sup>2</sup> per kg
Third Coat	16.8m <sup>2</sup> per kg

**Contractors** RonaDeck Resin Bound Surfacing System is a specialist product and must only be applied by specialist applicators. Do not apply or allow it to be applied by contractors who do not possess the necessary skills and experience. You should consider appointing a Ronacrete Ltd Approved Contractor.

**Suggested Construction for Footpaths** **RonaDeck Resin Bound Surfacing**  
RonaDeck Resin Bound Surfacing blend minimum 15mm thickness with optional RonaDeck Resin Bound Surfacing Anti-Slip Aggregate

**Binder Course**  
60mm minimum depth of AC14 open graded asphalt concrete (macadam) maximum 100/150 pen binder to BS EN 13108-1.

**Granular Sub-base**  
175mm minimum well compacted Type 3 granular sub-base or similar approved

**Optional Impermeable Membrane**  
Impermeable membrane to carry water to infiltration/ storage system/ soakaway  
**or**  
**Geotextile Layer**  
Geotextile layer to prevent upward migration of soil

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## Suggested Construction for Footpaths (continued)

### Capping Layer

If required, depending on sub-grade condition

### Sub-grade

## Suggested Construction for Driveways

### RonaDeck Resin Bound Surfacing

RonaDeck Resin Bound Surfacing blend minimum 15mm thickness with optional RonaDeck Resin Bound Surfacing Anti-Slip Aggregate

### Binder Course

80mm minimum depth of AC14 open graded asphalt concrete (macadam) maximum 100/150 pen binder to BS EN 13108-1.

### Granular Sub-base

200mm minimum well compacted Type 3 granular sub-base or similar approved

### Optional Impermeable Membrane

Impermeable membrane to carry water to infiltration/ storage system/ soakaway or

### Geotextile Layer

Geotextile layer to prevent upward migration of soil

### Capping Layer

If required, depending on sub-grade condition

### Sub-grade

## Suggested Construction for Car Parks suitable for cars & light delivery vehicles

### RonaDeck Resin Bound Surfacing

RonaDeck Resin Bound Surfacing blend minimum 18mm thickness with optional RonaDeck Resin Bound Surfacing Anti-Slip Aggregate

### Binder Course

100mm minimum depth of AC14 open graded asphalt concrete (macadam) maximum 70/100 pen binder to BS EN 13108-1.

### Granular Sub-base

300mm minimum well compacted Type 3 granular sub-base or similar approved

### Optional Impermeable Membrane

Impermeable membrane to carry water to infiltration/ storage system/ soakaway or

### Geotextile Layer

Geotextile layer to prevent upward migration of soil

### Capping Layer

If required, depending on sub-grade condition

### Sub-grade

The above information is produced for guidance only, the designer/ contractor should be satisfied that the construction is suitable for the expected traffic and ground conditions. Guidance about thickness and type of asphalt concrete has been provided by an asphalt supplier and while due care has been taken to

# Resin Bound and Bonded Surfacing

*Continued on following page...*

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**Suggested Construction for Car Parks (continued)** ensure the information is correct, it is not the responsibility of Ronacrete Limited to design this or any other element of the construction.

Mix Design	RonaDeck Resin Bound Surfacing Resin	7.5kg
	RonaDeck Resin Bound Surfacing Aggregate	100kg
	RonaDeck Fine Aggregate	6.25kg

**Coverage** Coverage rates for individual blends can be found on pages 8 and 9 of this document. Coverage is based on application to a smooth flat surface and will vary when applied to undulating surfaces, according to compaction, and to the aggregate grading, which can change from batch to batch.

**Working Times and Temperatures** Working time is affected by temperature; at temperatures above the maximum recommended in the following tables, the pot life and working time may be insufficient to allow a wet edge to be maintained. Work should therefore not proceed when product and / or air temperature exceeds recommendations. The air temperature must therefore be monitored during application and work should stop when temperature exceeds recommendations. Care must be taken to keep materials as cool as possible in warm weather. At low temperatures RonaDeck Resin Bound Surfacing resin will not flow sufficiently to achieve a smooth finish and work should not proceed when air, material or substrate temperature is below 5°C.

- 5°C-15°C Winter Grade resin should be used.
- 15°C-25°C Summer Grade resin should be used.
- 25°C-40°C High Summer Grade resin should be used.

**Winter Grade**

Ambient Temperature	5°C	10°C	15°C
Working Time	40-60 minutes	30-45 minutes	20-30 minutes
Lay before rain	3-4 hours	2-3 hours	1-2 hours
Pedestrian traffic after	12-14 hours	7-9 hours	5-7 hours
Vehicle traffic after	1-2 days	24 hours	15-17 hours

**Summer Grade**

Ambient Temperature	15°C	20°C	25°C
Working Time	50-60 minutes	40-55 minutes	35-50 minutes
Lay before rain	6-8 hours	4-5 hours	3-4 hours
Pedestrian traffic after	24 hours	13-14 hours	9-12 hours
Vehicle traffic after	2-3 days	1-2 days	1-2 days



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## Working Times and Temperatures (continued)

### High Summer Grade

Ambient Temperature	25°C	30°C	40°C
Working Time	55-90 minutes	45-75 minutes	30-45 minutes
Lay before rain	5-6 hours	4-5 hours	2-4 hours
Pedestrian traffic after	24 hours	14-16 hours	7-8 hours
Vehicle traffic after	2-3 days	1-2 days	24 hours

**Site conditions will affect the times quoted. All data is provided as a guide only.**

## Instructions for Use

When constructing a new concrete base, the following should be considered:

1. Concrete bay proportions should be ideally 1:1 and should not be greater than 3:2, long narrow strips of concrete will crack across the bay width and these cracks are likely to be mirrored in the surfacing.
2. Open bay joints are likely to cause cracking in the surfacing and formation should be prevented by application of Ronafix/ cement slurry to bay edges immediately before laying adjacent bays and by ensuring that bays are linked with steel mesh reinforcement. Concrete shrinkage may be limited by reducing the water/ cement ratio to 0.4 and adding a superplasticiser to enhance workability.
3. Ensure that the concrete has a minimum design strength of C35 and that the concrete has a minimum compressive strength of 15-20N/mm<sup>2</sup> before the surface is prepared.
4. Prepare the concrete surface to remove laitance and provide a lightly textured surface to ensure adequate adhesion, vacuum shot blasting is the preferred method.
5. New asphalt concrete should be left to cool and gain strength before application of RonaDeck Resin Bound Surfacing.
6. The surface of the asphalt concrete must be clean, dry and free from loose materials.
7. Ensure that the mixing station is fully waterproof when rain is expected, discontinue mixing when fog or mist are anticipated. Light rain on the surface of the system is unlikely to damage or affect the surface, see later reference to application in rainy conditions.
8. Place RonaDeck Resin Bound Surfacing Aggregate (100kg) followed by RonaDeck Fine Aggregate (6.25kg) into a clean, dry, forced action mixer minimum capacity/ power 120 litres/ 1.8kW, Baron E200 mixer or similar.
9. Scrape all of the contents of RonaDeck Resin Bound Surfacing B component into the larger A component container and mix with a slow speed drill ( $\leq$  450RPM) and MR2 paddle mixer attachment for 2 minutes. Overmixing will increase heat generation and reduce working time.
10. Immediately add the mixed resin to the aggregate in the mixer. Mix the aggregate and resin together until all the aggregate is evenly coated with resin. Mix for approximately 3-4 minutes. Overmixing will increase heat generation and reduce working time.
11. Discharge the mixed resin and aggregate onto the prepared surface, level and smooth. Excessive compaction will reduce permeability.
12. Finish the surface with a suitable float. RonaDeck Low VOC Tool Cleaner/ Trowel Finishing Aid should be used if required, the use of white spirit is not acceptable.
13. If required, immediately cast RonaDeck Resin Bound Surfacing Anti-Slip

## Resin Bound and Bonded Surfacing

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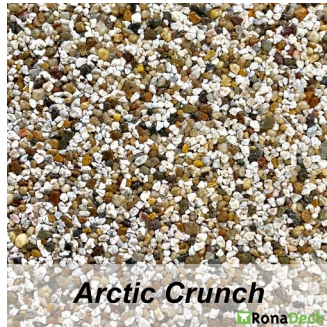
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Instructions for Use (continued)	<p>Aggregate onto the top surface of the wet resin and aggregate, at the rate of approximately 0.1kg/m<sup>2</sup>. Ensure even coverage to prevent a patchy appearance.</p> <p>14. Allow to cure and open to traffic as described in Physical Properties.</p>
Rain During Application	<p>Application during rain or when rain is anticipated during the cure period is not recommended. Light rain on the surface of the system is unlikely to affect the surface but may affect the bond between particles, reducing the strength of the system. Note that application to a damp substrate will reduce bond strength. Unmixed aggregate must be kept dry at all times. Care must be taken to keep the mixing station dry, thus avoiding entrapment of moisture between aggregate and resin.</p>
Shelf Life and Storage	<p>Shelf life of RonaDeck Resin Bound Surfacing Resin is 6 months, aggregates have an unlimited shelf life. Store materials in clean, dry, frost free warehouse conditions between 5°C and 25°C. Protect from sunlight.</p>
Health and Safety	<p>Refer to Safety Data Sheet.</p>
Site Attendance	<p>When on site Ronacrete Ltd representatives are able, if asked, to give a general indication of the correct method of installing an Ronacrete Ltd product. It is important to bear in mind that Ronacrete Ltd is a manufacturer and not an application contractor and it is therefore the responsibility of the contractor and his employer to ensure he is aware of and implements the correct practices and procedures to ensure the correct installation of the product and that liability for its correct installation lies with the contractor and not with Ronacrete Ltd.</p>



# RonaDeck Resin Bound Surfacing

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**Arctic Crunch**

SRV (dry)	53 (low risk)
SRV (wet)	41 (low risk)
Coverage	4.48m <sup>2</sup> @ 15mm
	3.73m <sup>2</sup> @ 18mm



**Argent Rouge**

SRV (dry)	47 (low risk)
SRV (wet)	38 (low risk)
Coverage	4.22m <sup>2</sup> @ 15mm
	3.52m <sup>2</sup> @ 18mm



**Autumn Forest**

SRV (dry)	50 (low risk)
SRV (wet)	34 (medium risk)
Coverage	3.90m <sup>2</sup> @ 15mm
	3.25m <sup>2</sup> @ 18mm



**Aztec Gold**

SRV (dry)	48 (low risk)
SRV (wet)	37 (low risk)
Coverage	4.06m <sup>2</sup> @ 15mm
	3.38m <sup>2</sup> @ 18mm



**Butterscotch**

SRV (dry)	40 (low risk)
SRV (wet)	37 (low risk)
Coverage	4.37m <sup>2</sup> @ 15mm
	3.64m <sup>2</sup> @ 18mm



**Dorset Gold 10mm**

SRV (dry)	45 (low risk)
SRV (wet)	37 (low risk)
Coverage	2.45m <sup>2</sup> @ 25mm



**Golden Jubilee**

SRV (dry)	45 (low risk)
SRV (wet)	35 (medium risk)
Coverage	3.95m <sup>2</sup> @ 15mm
	3.25m <sup>2</sup> @ 18mm



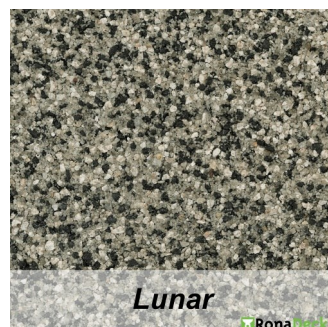
**Harvest Crunch**

SRV (dry)	50 (low risk)
SRV (wet)	39 (low risk)
Coverage	4.01m <sup>2</sup> @ 15mm
	3.34m <sup>2</sup> @ 18mm



**Ivory**

SRV (dry)	53 (low risk)
SRV (wet)	49 (low risk)
Coverage	4.37m <sup>2</sup> @ 15mm
	3.64m <sup>2</sup> @ 18mm



**Lunar**

SRV (dry)	55 (low risk)
SRV (wet)	47 (low risk)
Coverage	4.12m <sup>2</sup> @ 15mm
	3.43m <sup>2</sup> @ 18mm



**Maple Glow**

SRV (dry)	55 (low risk)
SRV (wet)	48 (low risk)
Coverage	4.13m <sup>2</sup> @ 15mm
	3.44m <sup>2</sup> @ 18mm



**Midnight**

SRV (dry)	52 (low risk)
SRV (wet)	47 (low risk)
Coverage	4.19m <sup>2</sup> @ 15mm
	3.49m <sup>2</sup> @ 18mm

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SRV (dry)	56 (low risk)
SRV (wet)	44 (low risk)
Coverage	4.04m <sup>2</sup> @ 15mm 3.37m <sup>2</sup> @ 18mm



SRV (dry)	50 (low risk)
SRV (wet)	39 (low risk)
Coverage	2.43m <sup>2</sup> @ 25mm



SRV (dry)	52 (low risk)
SRV (wet)	40 (low risk)
Coverage	4.17m <sup>2</sup> @ 15mm 3.48m <sup>2</sup> @ 18mm



SRV (dry)	46 (low risk)
SRV (wet)	36 (low risk)
Coverage	4.19m <sup>2</sup> @ 15mm 3.49m <sup>2</sup> @ 18mm



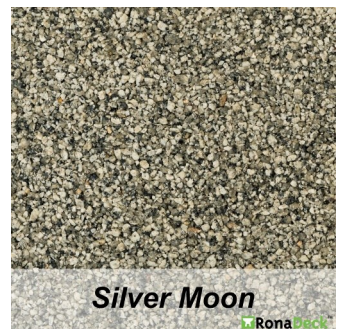
SRV (dry)	56 (low risk)
SRV (wet)	43 (low risk)
Coverage	4.11m <sup>2</sup> @ 15mm 3.43m <sup>2</sup> @ 18mm



SRV (dry)	44 (low risk)
SRV (wet)	42 (low risk)
Coverage	4.26m <sup>2</sup> @ 15mm 3.55m <sup>2</sup> @ 18mm



SRV (dry)	54 (low risk)
SRV (wet)	44 (low risk)
Coverage	2.42m <sup>2</sup> @ 25mm



SRV (dry)	55 (low risk)
SRV (wet)	50 (low risk)
Coverage	4.36m <sup>2</sup> @ 15mm 3.63m <sup>2</sup> @ 18mm



SRV (dry)	55 (low risk)
SRV (wet)	46 (low risk)
Coverage	2.72m <sup>2</sup> @ 25mm



SRV (dry)	46 (low risk)
SRV (wet)	40 (low risk)
Coverage	4.33m <sup>2</sup> @ 15mm 3.61m <sup>2</sup> @ 18mm



SRV (dry)	51 (low risk)
SRV (wet)	40 (low risk)
Coverage	4.26m <sup>2</sup> @ 15mm 3.55m <sup>2</sup> @ 18mm



SRV (dry)	57 (low risk)
SRV (wet)	46 (low risk)
Coverage	4.52m <sup>2</sup> @ 15mm 3.76m <sup>2</sup> @ 18mm

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The information detailed in this leaflet is liable to modification from time to time in the light of experience and of normal product application, and before using, customers are advised to check with Ronacrete Ltd, quoting the reference number, that they possess the latest issue. Any person or company using the product without first making further enquiries as to the suitability of the product for the intended use does so at his own risk, and Ronacrete Ltd can accept no responsibility for the performance of the product, or for any loss or damage arising out of such use.

## Resin Bound and Bonded Surfacing

**Ronacrete**