

## RonaDeck Ultra Bound

UV stable resin bound system suitable for use worldwide



### FEATURES

- aliphatic resin will not deteriorate or discolour when exposed to UV light anywhere in the world
- Use with any colour aggregate including white
- Low VOC
- high slip resistance
- SuDS compliant
- highly permeable—up to 850 litres / m<sup>2</sup> / minute
- product warranty up to 10 years available
- natural appearance
- suitable for pool surrounds, pathways, driveways and car parks
- low maintenance

### Description

RonaDeck Ultra Bound is a two component polyurethane resin which binds kiln-dried aggregates to produce a UV stable, SUDS compliant permeable surface. RonaDeck Ultra Bound provides an attractive porous surface which is strong enough for foot and light vehicle traffic.

RonaDeck Ultra Bound is designed for use on pathways, patios, driveways, pool surrounds. Whilst RonaDeck Ultra Bound is supplied pre-catalysed, additional catalyst may be added on site. A guide on adding catalyst can be provided.

### Performance Under UV Light

Standard PU formulations achieve Delta E values in excess of 30 whereas RonaDeck Ultra Bound achieves a value of 0.99. Delta E values of 2 and below are not considered to be visible to the human eye. UV degradation of Standard PU formulations will reduce the physical properties, in particular the elasticity, toughness and the impact resistance of the surface. These mechanical and physical properties of RonaDeck Ultra Bound actually improve when exposed to UV light.

**Testing carried out using QUV/se Method: ASTM G154 Cycle 1 (1000 hours).**

### Traffic and Scuffing

RonaDeck Ultra Bound 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.

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### Resin and Aggregate

RonaDeck Ultra Bound is UV light and heat resistant and will not discolour or degrade. The performance and appearance of the finished surface is dependent on the aggregate used. The RonaDeck Ultra Bound 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 Ultra Bound 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 Ultra Bound 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 Ultra Bound 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 Ultra Bound 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

## Resin Bound and Bonded Surfacing

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Other Ranges—Concrete Repair and Coatings, Screeds, Waterproofing and Tanking, and, Flooring and Bedding

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**Slip Resistance (continued)** Autumn Forest and Golden Jubilee blends marginally fell into the medium potential for slip range, testing of all other blends continued to show low potential for slip. Slip Resistance Values for all RonaDeck Ultra Bound blends can be found on pages 8 and 9 of this document. Application of RonaDeck 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 Ultra Bound 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 Ultra Bound 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 Ultra Bound 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 Ultra Bound**  
RonaDeck Ultra Bound blend minimum 15mm thickness with optional RonaDeck 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

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## Suggested Construction for Footpaths (continued)

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 Driveways

**RonaDeck Ultra Bound**  
RonaDeck Ultra Bound blend minimum 15mm thickness, or minimum 18mm thickness for traffic by turning vehicles or larger/ 4WD vehicles with optional RonaDeck 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 Ultra Bound**  
RonaDeck Ultra Bound blend minimum 18mm thickness with optional RonaDeck 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

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**Suggested Construction for Car Parks (continued)**

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 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**

<b>RonaDeck Ultra Bound Resin</b>	<b>7.5kg</b>
<b>RonaDeck Ultra Bound Aggregate</b>	<b>100kg</b>
<b>RonaDeck Sand</b>	<b>6.25kg</b>

**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 Ultra Bound 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 Standard Grade resin should be used.
- 25°C-40°C Tropical 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

**Standard 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)

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

### Tropical Grade

**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 Ultra Bound.
6. The surface of the asphalt concrete must be clean, dry and free from loose materials.
7. Minimum application temperature is 5°C on a rising thermometer, the temperature should also be at least 3°C above the dew point. Application should be avoided when dew, fog or frost are expected within 24-48 hours after application of the resin (depending on temperature) to prevent absorption of moisture by the fresh resin.
8. 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.
9. Place RonaDeck Ultra Bound Aggregate (100kg) followed by RonaDeck Sand (6.25kg) into a clean, dry, forced action mixer minimum capacity/ power 120 litres/ 1.8kW, Baron E200 mixer or similar.
10. Scrape all of the contents of RonaDeck Ultra Bound B component into the larger A component container and mix with a slow speed drill ( $\leq 450$ RPM) and MR2 paddle mixer attachment for 2 minutes. Overmixing will increase heat generation and reduce working time.
11. 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.

## Resin Bound and Bonded Surfacing

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## Instructions for Use (continued)

12. Discharge the mixed resin and aggregate onto the prepared surface, level and smooth. Excessive compaction will reduce permeability.
13. 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.
14. If required, immediately cast RonaDeck Anti-Slip 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.
15. Allow to cure and open to traffic as described in Physical Properties.

## Rain During Application

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.

## Shelf Life and Storage

Shelf life of RonaDeck RonaDeck Ultra Bound 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.

## Health and Safety

Refer to Safety Data Sheet.

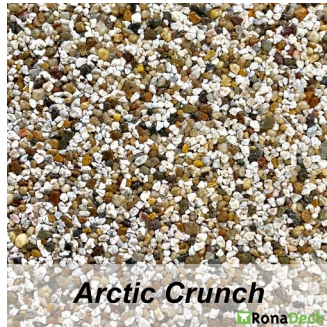
## Site Attendance

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.



# RonaDeck Ultra Bound

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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



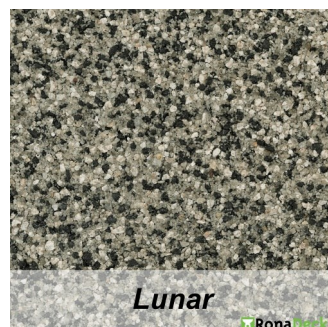
**Harvest Crunch**

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

All RonaDeck Ultra Bound aggregate blends have been tested for slip resistance in accordance with BS 8204-6:2008+A1:2010 Appendix B. The slip resistant values shown above were obtained in laboratory conditions. Results obtained on site may differ.

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Other Ranges—Concrete Repair and Coatings, Screeds, Waterproofing and Tanking, and, Flooring and Bedding



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**Quartz Parallel**



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



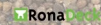
**Rhine Gold 10mm**



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



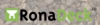
**Riverbed**



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



**Rouge**



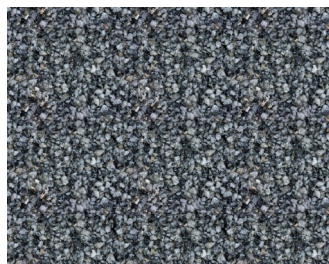
SRV (dry)	46 (low risk)
SRV (wet)	36 (low risk)
Coverage	4.19m <sup>2</sup> @ 15mm 3.49m <sup>2</sup> @ 18mm



**Rustic Bronze**



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



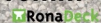
**Silver Blue**



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



**Silver Granite 10mm**



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



**Silver Moon**



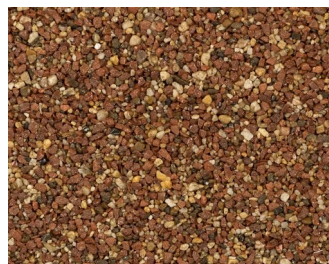
SRV (dry)	55 (low risk)
SRV (wet)	50 (low risk)
Coverage	4.36m <sup>2</sup> @ 15mm 3.63m <sup>2</sup> @ 18mm



**Terracotta 10mm**



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



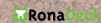
**Terracotta Gold**



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



**Terracotta Medium**



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



**Terragrey**



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**