

RonaDeck Resin Bound Surfacing

Resin bound porous stone surfacing for pedestrian and vehicular trafficked surfaces

FEATURES

- SuDS compliant—highly permeable
- UV stable—non yellowing resin
- Natural aggregate appearance
- Alternative to conventional paving
- Recycled aggregates available
- Suitable for driveways, footpaths, pool surrounds, car parks, water features and many more applications
- Installed by approved contractors
- Highly slip resistant

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RonaDeck Resin Bound Surfacing is a resin bound aggregate surface for pedestrian and vehicular trafficked surfaces. It is used to create pedestrian and drive-on surfaces which are decorative and functional, seamless and with slight flexibility.

The open matrix allows water to drain through to the base, helps to reduce water ponding and allows water to naturally feed surrounding planted areas and trees. This open matrix construction is in line with the requirements of Sustainable Drainage Systems Regulations (SuDS) which are designed to reduce the potential of flooding on new and existing urban developments. An edging created from brick, stone, timber or steel should be installed to restrain the resin bound surfacing and create a clean tidy edge detail.

Areas laid with RonaDeck Resin Bound Surfacing can be complemented with the RonaDeck Tree Pit System using the same or contrasting colour/effect aggregates. Refer to separate data and information sheet.

RonaDeck Resin Bound Surfacing must be laid onto a sound stable and solid base such as concrete, asphalt or onto permeable bases for full SuDS compliance.

Areas of use

- Footpaths, playgrounds, pool and pond surrounds
- Concourses and promenade decks
- Driveways and car parking bays
- Showrooms, shops, reception areas and galleries
- Patios, terraces, conservatories, gardens, gazebos, water features and roof gardens

Features

- Natural aggregate appearance
- Attractive, complements surrounding area
- UV stable non yellowing resin
- Recycled aggregates available
- An alternative to conventional paving
- Highly permeable
- Anti-slip surface dressing increases safety

Description

RonaDeck Resin Bound Surfacing comprises a two component polyurethane hybrid resin and a range of selected attractive aggregates. The design of this resin bound aggregate system provides a surface which is attractive, secure to receive foot traffic, and highly porous.

It's porosity reduces surface ponding of rain and water run-off from surrounding areas, allowing water to drain naturally, feeding plants, natural watercourses or manmade drainage systems. Problems associated with freeze / thaw cycle degradation are also reduced. This is in line with the requirements of Sustainable Drainage Systems Regulations (SuDS).

The resin is mixed with the aggregate and laid at the specified thickness. Brick, stone, timber or steel edging should be placed at the perimeter to restrain the material and provide a well defined decorative edge. A fine aggregate may be used to increase the slip resistance of the finished surface.

Traffic

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.

Scuffing

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.

Non yellowing UV resin

RonaDeck Resin Bound Surfacing Resin is UV resistant, it will not yellow on exposure to UV light. This is a more attractive option than other types of resin which can yellow and dramatically alter the appearance of the finished surface.

Aggregate

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. They can be supplied pre-bagged by Ronacrete Ltd or can be blended on site by the contractor



following the guide mixes issued by Ronacrete. It is important that aggregates independently sourced by the contractor are clean, kiln-dried, (typically with a moisture content no more than 0.5%), well graded and properly mixed in their correct proportions.

Certain aggregates can contain small amounts of iron minerals as part of their natural chemical makeup. On exposure to water this can result in areas of rust spot staining. As this is a natural occurrence within the aggregate at no point prior to application can any potential iron be identified. As such we cannot accept any responsibility for any loss or damage suffered as a result of staining.

Appearance

The appearance of samples and of materials supplied by Ronacrete are based on the colour, shade and grading of individual aggregates supplied to Ronacrete by its suppliers. Being largely natural aggregates, the appearance will vary from bag to bag and batch to batch, a uniform appearance should not be expected and cannot be achieved. Where appearance is important, darker aggregate blends are less likely to show wheel marks and accumulated debris.

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

Application of RonaDeck Resin Bound Surfacing Anti-Slip Aggregate will significantly increase the slip resistance of the surface in the wet, without substantial change to appearance and its use will help comply with Health and Safety obligations. See Table 3.

Contractors

RonaDeck Resin Bound Surfacing 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.

Substrate Requirements

Only apply to a suitable substrate which is capable of supporting, restraining and bearing the weight of the traffic load. The best substrate is a well designed and constructed concrete, asphalt or tarmacadam. Application to any other surface is likely to result in early failure. If you are unsure of the substrate and its ability to receive RonaDeck Resin Bound Surfacing, do not proceed. RonaDeck Resin Bound Surfacing is a thin layer of 12mm minimum thickness or more, depending on the aggregate size. It may therefore mirror and reflect any surface unevenness. Substrates should therefore be levelled or smoothed prior to application to avoid this.

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Construction of base

For pedestrian traffic

From base upwards, construction is typically 50-100mm of well compacted non-frost susceptible Type 1 sub-base to DoT Clause 803, followed by 40mm of 14mm close graded asphalt macadam surface wearing course to BS 4987 Part 2: 2001 Clause 7.3 which has been laid to a fall of not less than 1% to allow for good drainage and water run-off. The surface must be smooth and flat. Alternatively apply to sound well constructed and smooth concrete substrate. The base should be sound, clean and dry. New tarmac surfaces must be allowed to cool and gain strength for not less than 24 hours at 20°C. Ronacrete's Technical Department will be pleased to discuss permeable substrates.

For domestic driveways

From base upwards, construction is typically 100-200mm of well compacted non-frost susceptible Type 1 sub-base to DoT Clause 803, followed by 50mm of 14mm close graded surface course asphalt maximum 100-150 PEN to BS 4987 Part 1: 2001 or smooth brushed concrete finish (C30 min.) which has been laid to a fall of not less than 1% to allow for good drainage and water run-off. The surface must be smooth and flat. The base should be sound, clean and dry. New tarmac surfaces must be allowed to cool and gain strength for not less than 24 hours at 20°C. It is important to use aggregate designed for vehicle traffic. Ronacrete's Technical Department will be pleased to discuss permeable substrates.

For car parking bays

From base upwards, construction is typically 200-300mm of well compacted non-frost susceptible Type 1 sub-base to DoT Clause 803, followed by 65mm of 28mm dense asphalt base course maximum 100-150 PEN to BS 4987 Part 1: 2001 followed by 35mm of 14mm close graded surface course asphalt max 100-150 PEN BS4987 Part 1, 2001 or smooth brushed concrete finish (C30 min.) which has been laid to a fall of not less than 1% to allow for good drainage and water run-off. The surface must be smooth and flat. The base should be sound, clean and dry. New tarmac surfaces must be allowed to cool and gain strength for not less than 24 hours at 20°C. It is important to use aggregate designed for vehicle traffic. Ronacrete's Technical Department will be pleased to discuss permeable substrates.

Installation Procedure

1. Only use clean, kiln-dried, well graded aggregates which are suitable for this use.
2. 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.
3. Only apply to a sound base.
4. Place RonaDeck Resin Bound Surfacing Decorative Aggregate into a clean, dry, forced action mixer, when using the 7.5kg resin unit, the mixer capacity must be no less than 110 litres.
5. Scrape all of the contents of RonaDeck Resin Bound Surfacing hardener component into the larger RonaDeck Resin Bound Surfacing resin container and mix with a drill and helical paddle mixer attachment for 30-45 seconds. Keep mixing time to a minimum to avoid a build up of heat.
6. 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. Keep mixing time to a minimum to avoid a build up of heat.
7. Discharge the mixed resin and aggregate onto the prepared surface, level and smooth. Excessive compaction will reduce permeability.
8. Finish the surface with a suitable float.
9. If required, immediately cast RonaDeck Resin Bound Surfacing Anti-Slip Aggregate onto the top surface of the wet resin and aggregate, at the rate of approximately 0.1kg/m². Ensure even coverage to prevent a patchy appearance.
10. Allow to cure. At 20°C protect against damage by heavy rain for 1 - 2 hours (see Rain during application) and open to traffic as described in Table 1.

Shelf Life and Storage

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

Health and Safety

RonaDeck Resin Bound Surfacing Resin contains small amounts of isocyanates and is harmful by ingestion and skin contact. It is not considered harmful for transportation. Protective clothing such as goggles, overalls and gloves is recommended to prevent any effect from prolonged skin contact, inhalation or ingestion. Refer to Health and Safety Data Sheet.

Temperature

RonaDeck Resin Bound Surfacing Resin is rapid setting and rapid curing. Its pot life and working time is affected by temperature including material, air and substrate temperature. At temperatures above 25°C the pot life and working time may be insufficient to allow its proper application.

Work should therefore not proceed when product, air or substrate temperature exceed 25°C. The temperature of concrete and tarmacadam will generally be higher than the air temperature. The temperature of the substrate must therefore be measured and monitored during application and work should stop when temperature is above 25°C.

At low temperatures the 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. Whilst it is possible to mix and apply at temperatures down to 0°C, the cure rate and rate of strength gain will be retarded; the surface must not be trafficked until it has gained sufficient strength.

Rain during application

Light rain on the surface of the system is unlikely to cause damage to or affect the surface. Heavy rain is likely to spoil the appearance of the surface. Very heavy rain could wash out resin and aggregate. Therefore application during rain or when rain is anticipated during the cure period is not recommended. Care must be taken to keep the mixing station dry, thus avoiding entrapment of moisture between aggregate and resin.

Site Attendance

When on site Ronacrete representatives are able, if asked, to give a general indication of the correct method of installing a Ronacrete 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.

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Table 1. Mix Designs

	114.5kg mix
RonaDeck Resin Bound Surfacing Resin	7.5kg
RonaDeck Resin Bound Surfacing Resin Decorative Aggregate	107kg
Coverage (approx) *	5.84m ² @ 12mm 4.675m ² @ 15mm
Coverage (approx). RonaDeck Resin Bound Surfacing Anti-Slip Aggregate (cast into wet resin/aggregate surface for increased slip resistance) *	0.1kg per m ²

* 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.

Table 2. Performance Data

Minimum depths	12mm when using 3mm max. size aggregate
	15mm when using 6mm max. size aggregate
	25mm when using 10mm max. size aggregate
Foot traffic after	4 hours at 20°C
	Light vehicle traffic after

Table 3. Slip Resistance - Potential for Slip

	Dry	Wet
Autumn Harvest 1.17	Low	Medium
Terracotta Gold 3.21	Low	Low
Terracotta Snow 4.26	Low	Low
Terracotta 7.30	Low	Low
Harvest Crunch 9.32	Low	Low
Rustic Bronze 10.33	Low	Low
Silver Moon 11.34	Low	Low
Sesame Gold 12.35	Low	Low
Midnight 17.40	Low	Low

* tested in accordance with BS 8204 Part 6

Table 4. Packaging

RonaDeck Resin Bound Surfacing Resin	7.5kg
RonaDeck Resin Bound Surfacing Decorative Aggregate	107kg
RonaDeck Resin Bound Surfacing Fine Aggregate	5kg

Table 5. Minimum Thickness

Blend	Max aggregate size (mm)	Minimum application thickness (mm)
Autumn Harvest (1.17)	5	15
Terracotta Gold (3.21)	5	15
Terracotta Snow (4.26)	5	15
Autumn Shingle (6.29)	3	12
Terracotta (7.30)	3	12
Harvest Crunch (9.32)	5	15
Rustic Bronze (10.33)	5	15
Silver Moon (11.34)	5	15
Sesame Gold (12.35)	5	15
Golden Glow (13.36)	5	15
Autumn Forest (14.37)	5	15
Golden Harvest (15.38)	5	15
Quartz Parallel (16.39)	6	15
Midnight (17.40)	6	15
Maple Harvest (18.55)	5	15
Lunar (19.69)	6	15
Choc Chip Harvest (20.70)	6	15
Terracotta Medium (21.80)	5	15
Beige Pearl (22.92)	6	15

All of these blends are suitable for foot and light domestic vehicle traffic.

Aggregates **must** be dry (typically with a moisture content no more than 0.5%)

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Autumn Forest 14.37



Autumn Harvest 1.17



Autumn Shingle 6.29



Beige Pearl 22.92



Choc Chip Harvest 20.70



Golden Glow 13.36



Golden Harvest 15.38



Harvest Crunch 9.32



Lunar 19.69



Maple Harvest 18.55



Midnight 17.40



Quartz Parallel 16.39



Rustic Bronze 10.33



Sesame Gold 12.35



Silver Moon 11.34



Terracotta 7.30



Terracotta Gold 3.21



Terracotta Medium 21.80



Terracotta Snow 4.26

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