



Resin Bound Training Manual



Everything you need to know to start installing
beautiful resin bound driveways, paths and patios.

Resin Bound - An introduction

Installing Resin Bound for the First Time?

We strongly recommend you take the time to learn about the materials, equipment and techniques involved in Resin Bound installation. Like most things, the final result depends on accuracy and attention to detail.

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"What is Resin Bound?

**What Aggregates and Resin do I Use? What Kit do I Need?
Where do I Start? What about the Base? What Team do I Need?
What can Go Wrong?"**

**We've been answering your
questions for 40 years!**



Daltex is the UK's no 1 brand in resin bound. The DALTEX UVR resin bound system is trusted by thousands of specifiers and contractors and over 2 million square metres of DALTEX resin bound surfacing is laid every year.

We have been involved in the industry for over 40 years and we want to share all we know in order to help you create stunning Resin Bound installations for happy customers.

You will find more information and everything you need to complete an installation (including equipment) on our website: resinbondedaggregates.com

Of course, no two installations are the same so if you have any question about an installation – technical or sales related – **our experienced team of Resin Bound specialists can help on 01629 636500.**

We are justifiably proud of what we do and enjoy showing people around. If you'd like to visit our manufacturing site and see how we produce the cleanest, driest aggregate available, please give us a call or just drop in.

We wish you every success!

Sam Buckley
Managing Director –
Derbyshire Specialist Aggregates

Welcome to Derbyshire Specialist Aggregates



The Home of DALTEX

Established in 1984, Derbyshire Specialist Aggregates is an industry leader, exporting products all over the world.

Based in the heart of the Peak District National Park, the company has expanded and has 7 sites across the UK.

We serve a wide range of sectors including:

- Resin Bonded Aggregates
- Decorative Aggregates
- Pebbledashing
- Rock Salt
- Industrial and Dried Minerals
- Terrazzo Flooring
- Thermoplastic Anti Skid
- Decorative Concrete
- Filtration
- Surfacing Materials

We are the manufacturer of DALTEX, the UK's No.1 brand for resin bound.



Our materials are sourced from all over the world

We offer an unrivalled range of colours, sizes and shapes to suit all applications.

Our extensive network allows us to source the correct specification materials for each project and customer.

The cleanest, driest aggregates

Our aggregates and gravels are graded and processed specifically for resin bound surfacing projects. We follow a highly tuned and carefully mastered method to produce high quality aggregates.

Materials are washed to remove surface dust and grit through one of two tumble washers, then left to drain before passing through one of two rotary drying plants.

The aggregates are heated in the driers and tumbled to ensure grit and dust is removed from the stones prior to screening.





Fast and efficient bagging

To prevent any contamination, the product is quickly bagged on one of our four automated packing lines.

Palletised and protected

The product is palletised and shrinkwrapped using a robotic hooder.

Strong packaging ensures DALTEX aggregates arrive in pristine condition and can be stored outside ready for use.

1000's of tonnes of raw material

As one of the largest manufacturers of aggregate in the UK, we pride ourselves on offering 100% stock availability at all times and keep thousands of tonnes of raw material and finished product ready for next day delivery.





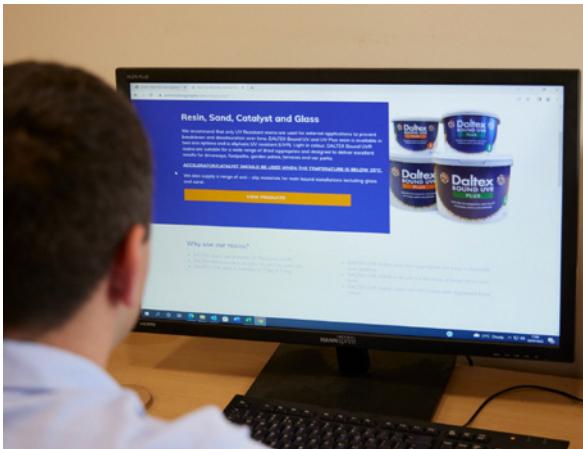
100% stock availability, ready for next day delivery

As the manufacturer of DALTEX dried aggregates, we adopt an 'always in stock' philosophy – and DALTEX UVR resin is also always available so that aggregates and resin can be delivered to site together.

Technical help and customer support every step of the way

We have over 30 years experience – and are happy to share it.

Our customer service and technical team is on hand to answer your queries.



What is Resin Bound?

Resin Bound is a system of laying a hard wearing course of mixed resin and dried aggregates onto either a new or existing macadam or concrete base.

Resin Bound is formed by mixing dried aggregates with a 2 part resin mixture. The mixture is trowelled and polished to give a uniform flat finish.



Resin Bound, the Fastest Growing Surfacing Solution in the UK



What makes Resin Bound so Popular?

There are many hardsurfacing systems available on the market! From macadam to concrete to block paving and imprinted concrete – however nothing matches the performance and visual appeal of Resin Bound.

1. SUDS COMPLIANT

Urbanisation has led to an increased flooding risk and as a consequence all new driveways have to have comply with SUDS regulations. (Sustainable Urban Drainage Systems)

Resin Bound is SUDS compliant which means it does not require planning permission (providing the sub base on which it is laid is porous or a suitable soakaway exists). This can be a special concrete or open textured macadam on top of a type 3 stone. The system can also be laid directly on top of old macadam or concrete but will require a suitable soakaway or drainage flow. The existing surface must be sound and free of cracks. It can handle up to 120 litres of water per m² per minute.

"You will not need planning permission if a new or replacement driveway of any size uses permeable (or porous) surfacing which allows water to drain through, such as gravel, permeable concrete block paving or porous macadam, or if the rainwater is directed to a lawn or border to drain naturally."

If the surface to be covered is more than five square metres planning permission will be needed for laying traditional, impermeable driveways that do not provide for the water to run to a permeable area".

UKGOV Planning Portal

2. APPEARANCE

Customers love Resin Bound's flat even appearance and its practicality.



3. DESIGN FLEXIBILITY

The system is so adaptable you can create any shape imaginable on the surface. Blends of colours and beading allow you to use two colours side by side, enabling superb design options.



4. STRENGTH

The Resin Bound aggregate system is strong and durable.

5. LOW MAINTENANCE

The surface is easy to clean if required and is weed resistant.

Benefits over other Surface Solutions

No other surfacing system can deliver ALL of the benefits of Resin Bound

	Resin Bound	Macadam	Concrete	Block Paving	P.I.C.	Resin Bonded
Colour Stable	✓	✗	✗	✗	✗	✓
Permeable	✓	✗	✗	✗	✗	✗
Slip Resistant	✓	✗	✗	✗	✗	✓
Weed Resistant	✓	✗	✗	✗	✓	✓
Frost Resistant	✓	✗	✗	✗	✗	✗
Seamless	✓	✓	✗	✗	✗	✗

Resin Bound Plus Points

Permeable

Easy to clean

Colour stable

Hard wearing

Resistant to cracking

Oil spillage resistant

Slip resistant

Weed resistant

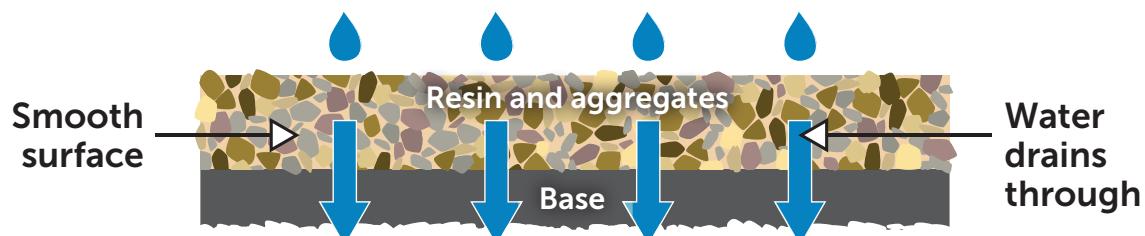
Frost resistant

Seamless

What's the Difference between Resin Bound and Resin Bonded?

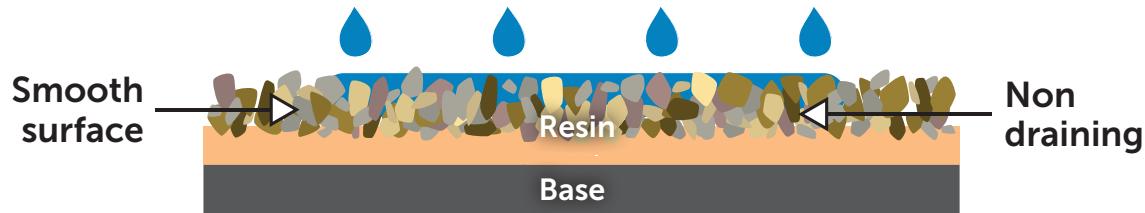
You can tell the difference between Resin Bound and Resin Bonded on sight. The way they are installed and perform is very different.

Resin Bound combines resin with aggregate before laying and after trowelling, it produces a smooth even finish.



Resin Bonded has a textured finish and gives the appearance of loose gravel. This is achieved by spreading a layer of resin across the surface and then broadcasting aggregate into it. A primer is usually used, the resin is applied by a roller and the aggregate is broadcast onto the surface. Most of the aggregate sticks to the resin whilst some is left exposed on top and not completely covered by resin. Excess gravel is removed once the resin is cured.

This creates a natural looking stone but unlike Resin Bound, Resin Bonded is non-porous and is not SUDS compliant.



Where Can I Use Resin Bound?

Resin Bound can be used in a wide variety of residential and commercial locations in exterior and interior areas.

It is also incredibly versatile and can be used to create letters, numbers or logos. Architects and designers can create any number of bespoke patterns and intricate designs with details reproduced and contrasting colours used to create zones.

Residential, Retail, Leisure, Commercial

- Driveways
- Paths
- Patios
- Parks and Gardens
- Concourses
- Car Parks
- Cycle paths
- Race courses and sports stadia
- Picnic areas
- Towpaths
- Schools, Medical Centres and Hospitals
- Terraces
- Bridges
- Shopping centres

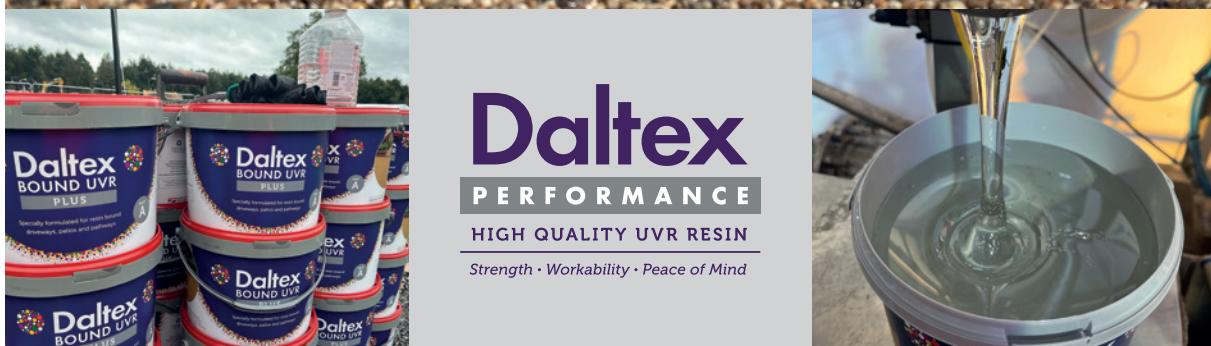


What is The DALTEX Performance UVR Resin Bound System?

The DALTEX Performance UVR System is a Resin Bound surfacing system with enhanced UV resistance for use as a surface course in landscaping domestic driveways, patios, pedestrian areas, lightly trafficked car-parks, low speed access roads and lightly trafficked areas.

The system comprises of a two-component, solvent-free, cold-applied polyurethane binder (DALTEX Performance UVR resin) and a range of DALTEX dried aggregates (typically 1-3mm and 2-5mm) and binding quartz.

When installed according to DALTEX installation instructions and mix design, this system is proven to demonstrate quality, durability and ease of maintenance.



15 year DALTEX Product Quality Guarantee

DALTEX is the UK's no.1 brand in resin bound.

DALTEX Performance UVR Resin is a solvent free aliphatic polyurethane resin and has been specifically formulated for resin bound.

We guarantee that DALTEX Performance UVR Resin is made from the highest quality raw materials and manufactured in the UK.

The resin contained within the DALTEX System has been independently assessed and is manufactured in the UK at our production sites under strict quality control and performance standards.

The DALTEX UVR Resin Bound System is produced to the highest quality standards and has been researched and independently tested in laboratory and real-life applications to ensure strength, workability and performance.

We guarantee that the colour of the polyurethane resin will not change when installed and are happy to provide a 15 year guarantee with the DALTEX UVR Resin Bound System (product only, installation excluded). In the unlikely event that a resin bound surface experiences failure, we will provide you with support and agree to rectify the situation should the product be responsible.*

*Conditions apply.



What does BBA Mean?



BBA certification is widely recognised throughout the construction industry as a symbol of quality and reassurance.

The BBA (the British Board of Agrément) is impartial and only products and systems that have passed a series of comprehensive assessments – including laboratory tests, on-site evaluations, quality management checks and inspections of production are awarded an Agrément Certificate.

Products that receive Agrément Certificates are recognised by building control, government departments, architects, specifiers and industry insurers. It's a mark of quality, safety and reliability that provides reassurance of the product's fitness-for-purpose.

Once the certificate has been awarded, annual monitoring is carried out by the BBA to maintain the Certificate's validity.

To view the DALTEX UVR System Certificate, issued by the BBA please visit:
www.bbacists.co.uk



Why Should You Use a BBA Approved System?

In order to achieve BBA certification, the DALTEX UVR System has had to undergo stringent testing and pass the necessary standards for:

Strength and Stability:

Are the systems able to deal with loads associated with vehicular and pedestrian traffic expected from their intended use?

The assessment has included a rigorous set of mechanical tests to mimic load and volume associated with higher trafficked areas.

Surface Characteristics:

How has the surface been designed to deal with slip and skid resistance?

The assessment considered initial and retained slip and skid resistance by taking into account how abrasion from trafficking will affect this key factor over time.

Rainwater Drainage:

Can the system eliminate surface water?

Dealing with surface water is an increasing issue around dwellings. Systems can be designed to reduce or eliminate surface ponding.

Durability:

How long will it last?

Any trafficked system will be subject to varying degrees of foot and vehicular traffic over its expected service life. In order for the systems to perform and be considered fit for their intended use, they must be installed, used and maintained as set out in the BBA Certificate and these instructions.

Installing DALTEX Performance UVR to BBA Standards

Important

Only contractors who have undergone training and passed the training module and site audit run by Derbyshire Specialist Aggregates can advertise that they are installing DALTEX UVR Systems to manufacturer standards to their customers.

The training consists of a course covering the approved mix designs, site preparation, application instructions, auditing information and ongoing administration requirements. An onsite audit will need to be successfully completed before a certificate is awarded.

Contractors MUST complete the following procedures for each project for Manufacturer Accreditation:

1. The system must be supplied to site and mixed as described in the DALTEX UVR installation guidelines.
2. The resin and aggregate must comply with the DALTEX approved mix design. Using the resin on its own or with aggregate not as described in the mix design will not qualify for Approval.
3. The following documentation must be completed:
 - A Day Sheet for every day of the Project and a copy submitted to Derbyshire Specialist Aggregates within one week of project completion (See appendix for day sheet document).



We recognise that not all contractors will wish to undergo the strict auditing and inspection procedures required but we strongly recommend all installations are completed to the standards described in the training.

Choosing Resin Bound Aggregates

An excellent Resin Bound aggregate should be:

Clean - clean aggregates ensure bonding is optimised.

Dry - it is essential aggregates are dried to reduce moisture.

Dust free - dust can absorb resin and reduce the strength of the bond.



DALTEX – The No 1 Choice for Resin Bound Aggregates

Derbyshire Specialist Aggregates source materials from all over the UK and worldwide to provide an unrivalled range of colours, sizes and shapes to suit all applications.

Our Resin Bound aggregates and Resin Bound gravels are designed and produced specifically for Resin Bound surfacing. High quality DALTEX dried aggregates deliver beautiful, consistent results time after time.



The Production Process

The unique DALTEX production process of screening, washing and rotary kiln drying of aggregates is designed to deliver clean, dry aggregates.

We are committed to investing in the very latest technology and the new dust extraction system has resulted in high quality DALTEX dried aggregates being cleaner than ever.

For quality control, we conduct moisture testing on the aggregate at regular hourly intervals - the target is under 0.5% moisture content (to avoid burning the stone) and the company invests regularly to ensure its state of the art processing and dedicated drying facilities are maintained.





Large Production Runs

To ensure consistency, our production runs are between 100 and 300 tonnes per product. As the manufacturer and home of DALTEX dried aggregates, we guarantee 100% stock availability and keep thousands of tonnes of raw material and finished product in stock at our central processing plant in Derbyshire.

Strong Packaging

The importance of good, strong **weatherproof** packaging and clear labelling cannot be overemphasised. After drying and screening, the product is bagged into polythene bags using one of four automated packing lines.

On site, good, well labelled packaging helps keep the product dry and ensure no mistakes are made during mixing. 40 x standard bags are placed on a pallet, shrink-wrapped for additional protection and made ready for immediate dispatch.

Iron Spotting - Risk of Iron Staining

Iron staining is not always caused by iron in the stone. The mixing process grinds iron particles from paddles/drums into the mix and iron staining can become visible as the surface resin layer wears and exposes the iron particles to water. This can be treated with 'Rustaway' (oxalic acid).

Some aggregates contain a naturally occurring element of iron. If this is released from the mix this can cause a dark stain. There are however two different types of stains that can occur and each requires a different method to resolve the issue. Seek advice in the first instance. We can help identify the cause and remedial action needed.

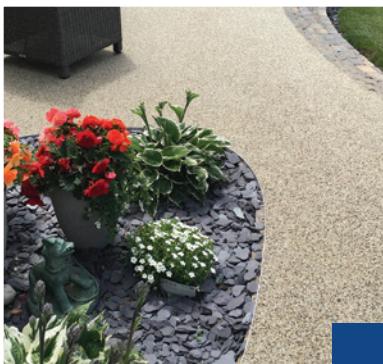
One of the ways to avoid iron spotting is either not to use the aggregate concerned or to ensure that a higher than normal resin content is used. It has been noted that in surfaces where a high resin content has been used, problems of this nature seldom occur.

 **TOP TIP** Ensure your terms and conditions contain a clause about the small risk of iron spotting in naturally occurring stones but be aware that the iron may not be coming from the aggregate.

...a Fantastic Range of Colours

Resin Bound is amazingly versatile and the DALTEX range of over 30 single colours (the biggest in the UK) can be combined in thousands of different colour combinations to create stunning mixes and beautiful results.

As well as supplying single colours, we also offer **DALTEX Bespoke** – a range of 50 popular blends to suit every project type and property style. We also ensure your customers are completely happy with their choice by offering a ‘match any blend’ service. You can even create your own unique blends to offer your customers. We can send out samples of any single colour or blend you want or you can order online.



The Full Range
Discover the full range of
DALTEX aggregates:
resinbondedaggregates.com



Choose High Quality Resin

Not all Resin Bound Systems are the same

As the Resin Bound market has grown, the number of suppliers as well as contractors entering the market has increased - and this has also led to more variance in the quality of resin available.

Resin is one of the most expensive components of a Resin Bound installation and the quality of the resin you choose will be a major factor in the success and strength of the final installation.

Resin quality is determined by many factors including:

- UV stability/resistance
- Resin content - resin to stone ratio
- Manufactured to recognised standards such ISO 9001 or BBA standards
- Independent testing
- Recognised and approved suppliers of raw materials



Derbyshire Specialist Aggregates recommend the use of UV Stable resin systems for external applications because of the following:

UV Stable

- The effect of natural light on the surface is greatly reduced and fades evenly.
- The natural stone finish is maintained.
- Price – Whilst UVR does cost more than non-UV resin, the difference in price per metre is insignificant compared to having to re-lay a surface or having to explain to a customer why they have variations in colour on their driveway.
- This is a far easier product to trowel and is far more tolerant of differing conditions.
- UVR resin provides more protection if a shower occurs once laid. You should always avoid installing if rain is forecast or if the dew point is likely to affect the curing.

Non-UV Stable

- Darkens when exposed to sunlight sometimes as quickly as within 2 weeks.
- Shading is inconsistent. The areas covered by wheelie bins, cars or caravans will maintain their original colour whilst other areas will darken and become discoloured.
- Non UV systems (Aromatic hardener) is a very strong resin BUT can sometimes become brittle and could in some circumstances crack.

The surface beneath obstacles such as pots, bins etc. will not be affected and stand out when the obstacle is moved. Inconsistent shading will also result wherever an area is protected from UV rays eg. where a car is left on a drive for any period of time, overhanging branches etc. As the resin surface layer wears, shaded wheel tracks will also become visible.



Example of Colour Change
in less than 2 weeks.

Resin Content (Resin to Stone Ratio)

There are a number of resin kit sizes which are available on the market. In the past, a mix of 6.5kg resin kits with approximately 100kg stone was used. Tests have shown this resin/aggregate ratio does not contain enough resin and may have resulted in poor performance with some aggregates due to incomplete stone coverage and a weak bond. Low resin content can also make the stone more susceptible to iron content exposure and stone loosening.

Higher resin content delivers a greater surface area bond particularly with low density aggregates (eg DALTEX Silver). A stronger surface bond delivers greater tensile strength.

Higher resin content also is less susceptible to moisture penetration and leads to a reduced risk of reflective cracking.

As well as too little resin, it is worth noting that issues can also be caused by excessive resin content which can lead to pore blockage and reduced permeability.

For that reason we recommend 7.5 kg DALTEX Performance UVR resin for all our blends.

Daltex UVR is supplied in pre-weighed kits for optimum mixing. The use of part packs is not recommended as this may result in poor product performance if not mixed at the incorrect ratio.

Online Ordering

Open an Online Trade Account for Ordering Resin Bound Materials

It is important that you have access to ordering materials whenever you need - and that the price you receive is competitive. Trade customers with Derbyshire Specialist Aggregates can open an online trade account which takes less than 2 minutes and access trade prices immediately.

We recommend you open an online trade account because it gives you many instant benefits:

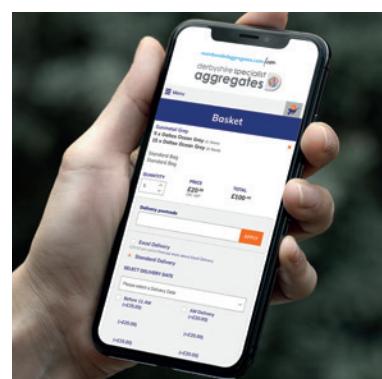
- 1. Save money** - order using your online trade account and get 10% off all resin bound and resin bonded aggregates, sand and glass*
- 2. More time to order** - order online and get extra time to order - extended cut off time of 2pm for next day delivery
- 3. Save time with one click** - your online trade account keeps a record of all your previous orders and you can add products instantly to your basket with one click - so its faster and easier.
- 4. More efficient** - you will receive an automatic order confirmation by email
- 5. More flexible** - you can order anytime from anywhere – 24 hours a day, 7 days a week.

*Terms and conditions apply

Online Resin Bound Calculator

The online DALTEX Resin Bound Calculator allows you to calculate the material required by number of mixes or by area. It lists a breakdown of the material included in your mix and provides you with an instant cost.

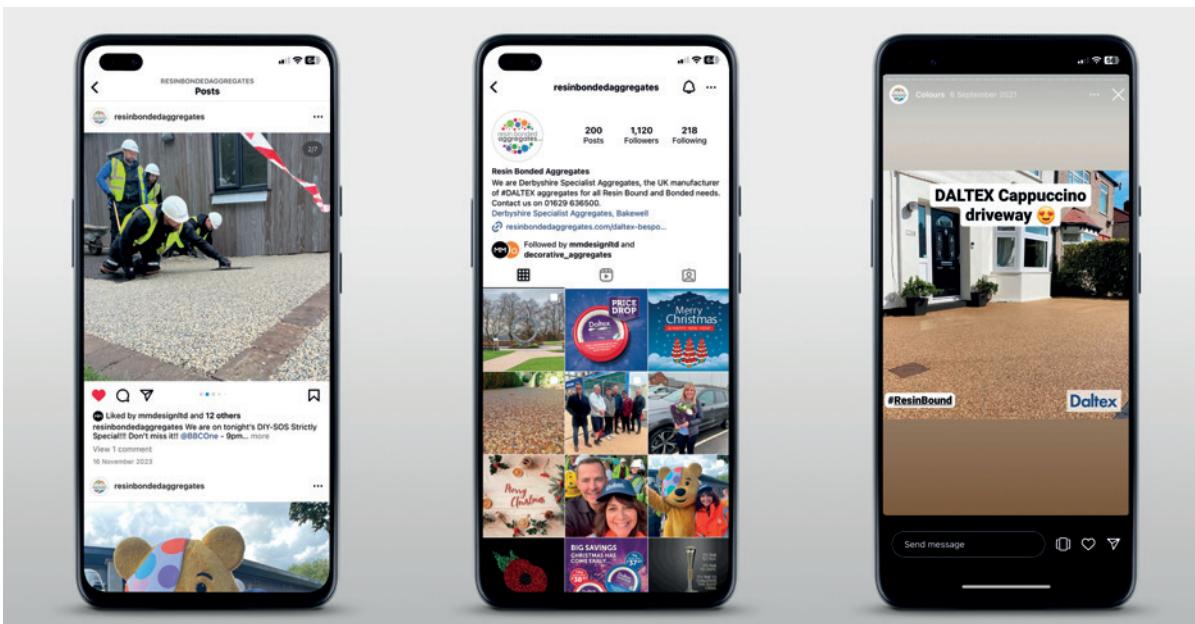
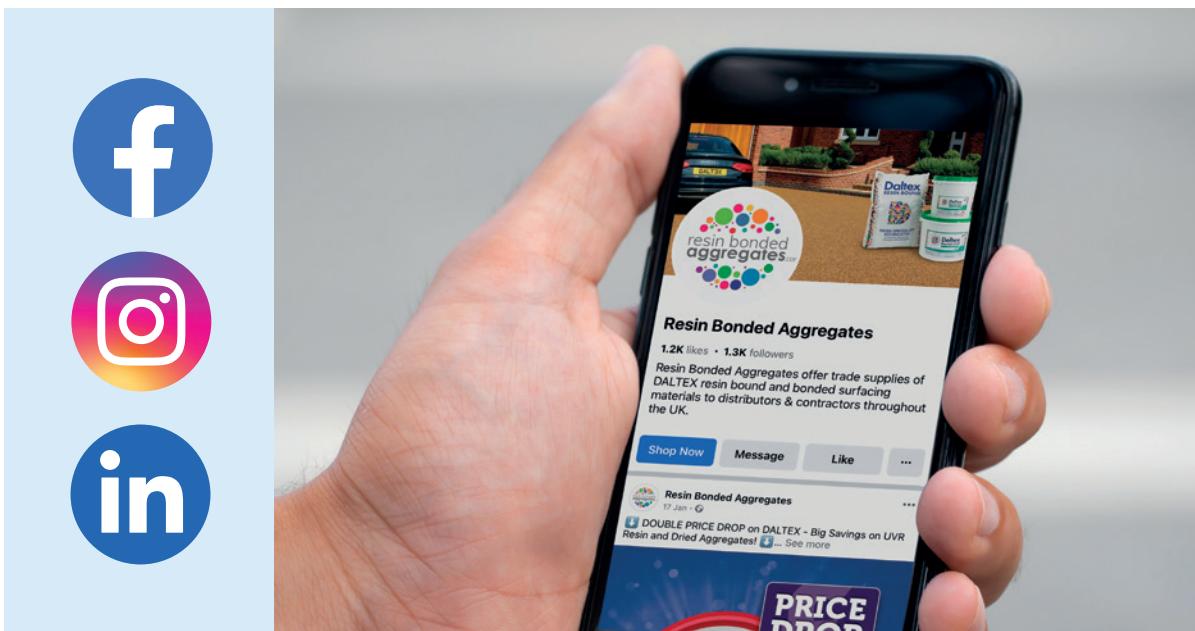
To open an online trade account visit resinbondedaggregates.com



Social Media

Stay Connected

We recommend you follow us on social media in order to hear our latest news, product launches and promotions. We are always pleased to see examples of the resin bound projects you have completed so please share them with us and we will be happy to share these with homeowners and mention your company when possible.



Recommended DALTEX Mix Specification

Derbyshire Specialist Aggregates believe that having the correct ratio of resin to aggregates is critical to achieving a lasting, durable surface and we recommend the following mix design:



DALTEX Bound Plus UVR 7.5kg

3 Standard bags of 2-5mm, 1 Standard bag of 1-3mm and 1 Mini bag of binding quartz –
Coverage approximately 3.55m² at 18mm and
4.0m² at 15mm.

Minimum depth of 18mm must be used for driveways. This is so the surface achieves the required tensile strength for the application. Binding quartz increases the strength of the Resin Bound surface and will contribute to the anti-slip properties of the finished surface. In addition, it is more difficult to trowel any blend containing 2-5mm stone as it is harder to close/knit consistently.

DALTEX 7.5kg Performance UVR resin has been extensively tested in laboratory and real life situations and can be used with all our blends.

For pathways with foot traffic only, a depth of 15mm may be used.

Pre-installation - How to Conduct a Site Survey

Things to Consider

Site examination prior to application is an important stage in the installation process as it allows for planning the correct amount of DALTEX aggregates and DALTEX UVR resin required and determining if the substrate is sound.

Please remember that the final finish will only be as good as the base beneath. Failure to follow the guidelines will almost certainly result in premature surface failure. If the customer insists on laying on an existing surface, we highly recommend a disclaimer as the wetter and warmer years currently being experienced are leading to more ground movement.

Existing Structures Must Be: Strong, Stable, Monolithic

Cracks can be caused by unstable bases or by ground movement which is caused by natural movement of the substrate. This is typically due to clay soils expanding and contracting in the presence of moisture - or lack of it.

DALTEX UVR System can be applied to concrete, macadam and compacted MOT Type 3 (foot traffic only). Movement in the sub-base will lead to reflective cracking. Any required repairs to the substrate should be made to minimise damage to DALTEX UVR System post application.

We advise against block paving, hardcore (vehicular) or other segmented paving.

All imperfections in the substrate must be reinstated with a suitable material. The substrate must 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. Remove any detritus and treat with Sodium Hypochlorite then powerwash and allow to dry.

The base must be structurally stable, clean and level and edged on the 'free edges'.

Site drainage across the application area should be considered, and where an application area meets a wall, the damp course should be taken into consideration to avoid pooling of water or water soaking into masonry.

Surface preparation and primer application is very important.

What not to overlay:

- Unstable Block Paving
- Loose Gravel
- Turf or Soil
- MOT

Please consider the following:

- **The Surface of the Site** – does it need a new Base?
- **Is the Base Stable?** The Resin Bound System will only be as stable as the Base it is laid on. If in doubt suggest a new Base.
- **Is there any Cracking?** Structural or Movement – this will need to be reinstated i.e. cutting out and refilling. Geotextile cracking mesh may also be a solution.
- **Expansion/Movement Joints** – any existing joints in the base will need mirroring in the Resin Bound surface.
- **Damage – holes, degradation?** Holes should be filled with a non-permeable material such as concrete, granolithic mortar or any proprietary external patching filler i.e Cempolay Ultra.
- **Tree Roots** – are they to be covered with the Resin Bound or left proud of the surface? Tree roots will always win in the end. If the decision is made that roots are resined over, the customer needs to be aware that they will eventually cause disruption in the surface. We recommend you discuss this with your customer and include a disclaimer.
- **Edging** – what is the Resin Bound surface going to be edged with? Setts, beading? Will the existing edging be suitable? Will it need replacing or protecting from the resin? Does anything need taping or sheeting? Use a new edge against existing fences or gravel boards as the surface will be disrupted if they need replacing.
- **Check for Slopes** – is this going to cause an issue?
- **Don't forget there is always a requirement to use anti-slip.**
- **Steps** – are the surface of the steps to be Resin Bound? Edging will probably be required for delineation purposes from a health and safety perspective.
- **Manholes** – are screed trays or recessed manholes required?
- **Threshold Edging** – consider how this will be resolved.
- **Area to Set Up and Work** – make sure there is a suitably sized area to mix and have the aggregates delivered to. This will more than likely be on the pavement outside the property. Ensure that the area is secure and safe from passers-by.
- **Delivery** – remember, if you are having a direct delivery of the aggregates, it will probably arrive on a tail lift lorry with manual pump truck. The area will need to be flat and hard standing. Your order cannot be delivered onto grass, gravel or slopes. To avoid having to move pallets of aggregates, it is advisable to have someone present for the delivery to ensure everything is put in the right place. **It is always better to have the delivery the day before!** Deliveries with HIAB's or fork lifts can be organised at an additional cost. Please advise us on any access issues.

- **Storage** – Please note that curing time can be affected if the resin has been stored below the advised minimum application temperature. Ideally, the resin should be stored overnight in a suitably dry and warm area above 10°C.
- **Cleaning** – how much does the drive need cleaning?
- **Priming** – does the drive need priming?
- **Check Meterage** – allow for natural undulations, consider the type of surface you are laying on and over order by between 5 and 15% to allow for any variances.

The 'Pre-installation Site Survey' audit sheet acts as a useful easy to use checklist and helps ensure you allow for all the necessary materials and time required to complete the project (See appendix).

New Base Build Up

The key considerations for new bases are whether they need to be permeable constructions or SUDS compliant NON permeable construction.

Consider if the property can accommodate 1/66 falls (150mm drop over 10m). This only applies if the sub-base is non-permeable (eg concrete).

Do not forget to include the base material cost and the labour cost - and whether this is in-house or subcontracted in your quotation and allow for cure time in your timing schedule.

Pre-installation - Preparation

Application must NOT take place below 5°C.

The surface must be free from contamination or water prior to application, as such cleaning/drying may be required. The ambient temperature, relative humidity and ground temperature should be tested and recorded prior and during application. (See Appendix – Day Sheet).

All substrates to be coated should have a surface temperature at least 3°C above dew point and rising to reduce the risk of delamination due to condensation or surface foaming of the system. (See Appendix – refer to Dew Point Chart).



Cleaning

Surface preparation and primer application is extremely important. All surfaces should be free from dust, grit, grease and liquid. Ensure that the surface is clean and dry before proceeding with the application. If the system is being applied onto a difficult to bond to surface, such as concrete, the use of a primer is advised to ensure a full bond between the DALTEX UVR System and the substrate.

The driveway needs to be completely clean prior to laying the Resin Bound surface as any dust, dirt or moss will contaminate the resin and prevent adhesion (bonding). Power wash to remove all detritus and organic material. Ideally this should be done the day before installation, so the driveway has a chance to dry completely. If drying needs to be accelerated, heat guns can be used (except on macadam). Indirect heating methods are also available and have the added benefit of being safer.

Preparation of Macadam Surfaces

Macadam should be a minimum of 7 days old to ensure it is fully cured before installation. Prior to installation, inspect the surface of the macadam for any flux oils, if tar residue is present clean the surface with a detergent solution, flushed with water and the surface allowed to dry. Once the surface is dry installation can proceed.

Preparation and Priming of Concrete Surfaces

Primer

The primer can be applied between 10-30°C & the optimum for ease of application is between 15-18°C with a relative humidity between 30-85%.

If in doubt about moisture on the surface – use a Hygrometer.

Equipment should be protected from contamination with water, grease and oils. If the system is to be applied outside then protection against the rain should be ensured. Personal protective equipment should be worn.

As primer is solvated, the use of open flames or red hot surfaces should be prohibited. Please refer to datasheet at resinbondedaggregates.com

Areas not to be coated should be protected with masking tape to avoid unnecessary cleaning after application as resin will stain bricks or pavers.

Primer is best applied with a roller. Typical application is 150gsm. The final surface should appear smooth and free from foreign particles.

With new concrete bases, ensure that the concrete has fully cured, ideally for 28 days.

A breathable concrete sealer can be used as an alternative. This will allow the concrete to continue curing as a Resin Bound surface is permeable.



Remedials and Reinstatements

Concrete (non permeable):

All damaged areas should be removed to a minimum of 200mm depth and reinstated with either:

- a) 100mm type 1 MOT hardcore (mechanically compacted) and 100mm of concrete for concrete bases.

OR

- b) 200mm type 3 MOT hardcore if used as a permeable macadam repair.

Cracks can be repaired using a geotextile mat, bitumen strips, or elastic crack repair.*

*200mm based on gov.uk for driveway regulations.

Levelling:

This can be achieved 2 ways:

1. Small undulations can be addressed with surface installation.
(Be careful that it does not affect the amount of aggregate you have available to complete the installation.)
2. Levelling compounds. I.e. Exterior floor levelling
(Cempolay ultra, Flow top etc.) or site mix Granolithic concrete.

Edging detail:

Set block or concrete kerbs to protrude to the level of surface to be installed. 18mm is recommended, above the existing base edge. It is not advisable to edge up against an existing fence or gravel board. If the fence moves or has to be replaced in the future, the Resin Bound surface could be disrupted.

Manhole covers:

Replace with recessed alternatives (known as screed trays or block paving drains).



TOP TIP

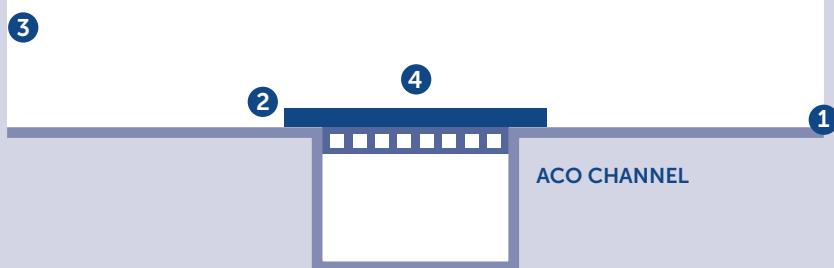
Drill holes in the sides of the screed tray to allow water to drain through.

Drainage:

Install ACO drainage channels or soakaways as required
(See SUDS summary - page 6).

ACO Drainage

- 1 Primer
- 2 Debonding with dual cross-over GFO-Membrane boxed with CTI type adhesive
- 3 RBS



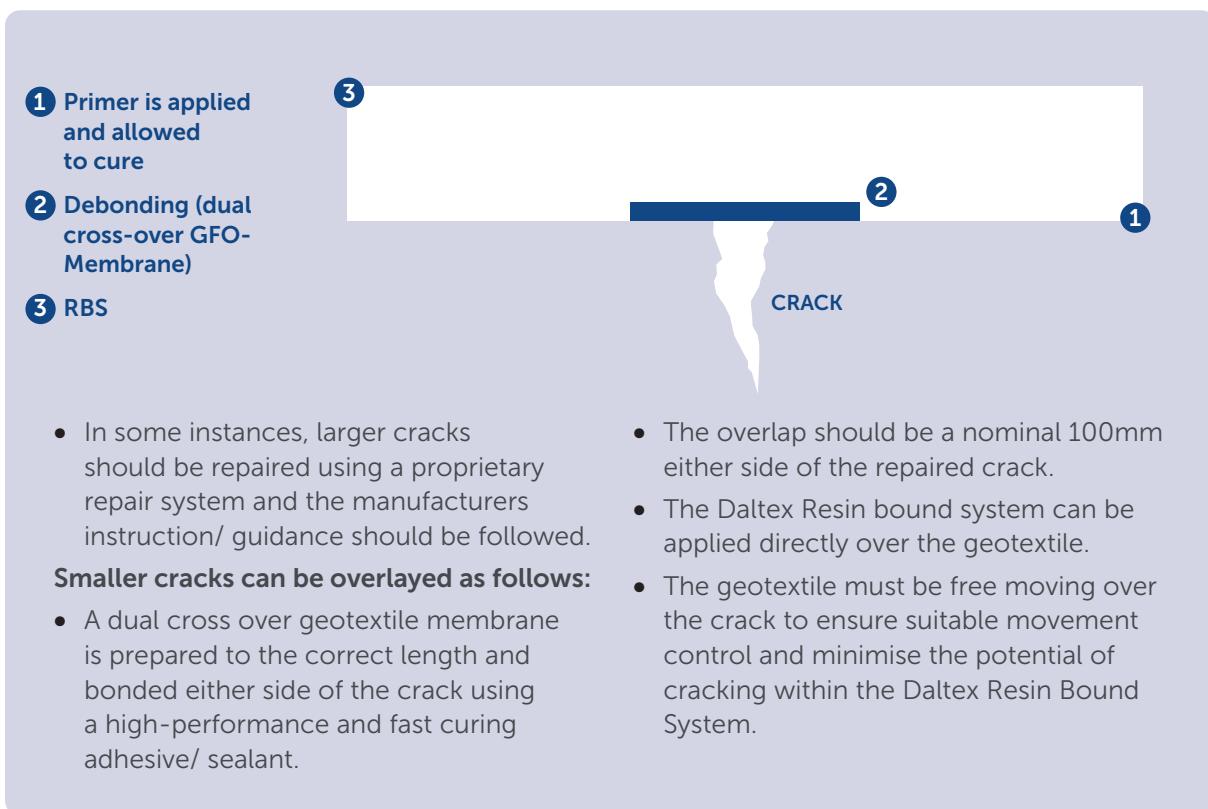
- New ACO channels should be prepared in advance and installed following the manufacturer's instruction.
- This includes the use of cementitious/ epoxy mortars. Fast setting/ low moisture/ high early strength gain systems are desirable to minimise time on site.
- Existing ACO drains should be cleaned and replaced if damaged/ rusty etc.
- A dual cross over geotextile membrane is to be cut to the appropriate size and bonded either side of the channel drain ensuring a minimum 100mm either side.
- The membrane is to be bonded to the prepared surface using a suitable high-performance, fast curing adhesive/ sealant.
- Once cured, the Daltex Resin Bound system can be applied directly over the geotextile.
- The geotextile must be free moving over the channel drain to ensure suitable movement control and minimise the potential of cracking within the Daltex Resin Bound System.



TOP TIP

A Resin Bound surface can be laid over the top of ACO drains as it is porous.

Expansion Crack Repair



Edge Separation

Ground movement can cause edge retraction. Stepped haunches and priming inside edges of blocks can reduce the risk. Follow crack repair procedure.

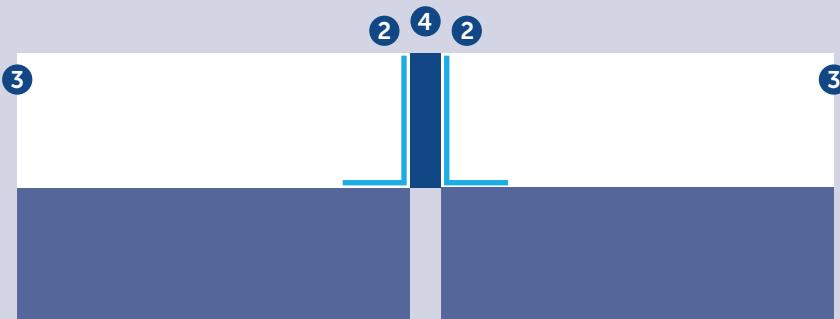
Unstable Bases - Reflective Cracking

Cracks can be caused by unstable bases or by ground movement, which is caused by natural movement of the substrate. This is typically due to clay soils expanding and contracting in the presence of moisture (or lack of it).

Ensure that you have clear terms and conditions regarding ground movement. If the base has moved and you have installed the base, you will have to repair it. However make it clear to the customer that if you have not put the base down then you aren't responsible for any subsequent cracking (Heavy clay soils are vulnerable to movement through shrinking and expansion). Follow the crack repair procedure.

Expansion/Movement Joints

- ① Concrete/Surface Day Joint
- ② Beading
- ③ RBS
- ④ Soft Seal



- The existing crack once cleaned should have a proprietary sealant applied to the repaired surface and allowed to cure following the manufacturers instruction.
- Once cured, the Daltex edging trim is to be applied and bonded either side of the movement joint as shown in the diagram.
- The trim is to be bonded using a high-performance adhesive/ sealant and this must be allowed to cure.
- The Daltex Resin Bound system can be applied to the appropriate depth up to the trim ensuring it is fully compacted and trowelled up to the edge of the installed trim.
- A proprietary sealant should be applied to the gap between the adjacent trims as shown.

Marking Out the Site

Some contractors mark the area out in square metres (mixes). This can serve as a guide and an early indicator of using too much aggregate (laying too deep) or too little (not deep enough).

**The surface needs to be completely dry prior to laying the surface.
Water and resin do not mix!!**



- 1 Step:** Think about adding a step detail.
- 2 Cracks:** Use cross layer membrane to cover cracks or if expansion joints replicate in Resin Bound surface with beading.
- 3 Repairs:** Badly damaged areas need to be removed to a minimum of 200mm depth and reinstated with 100mm type 1 MOT hardcore (mechanically compacted) and 100mm of concrete for concrete bases.
- 4 Boundary:** Always install an edge on a boundary as if that boundary is removed it can damage the Resin Bound surface, especially if up to a fence, which could move or be removed.
- 5 Edging Detail:** Block or Concrete kerbing set to protrude 18mm above existing base edge.
- 6 Expansion Joints:** These should be carried through to the surface of DALTEX UVR System. Any day joints or expansion joints should be detailed with a suitable edging strip eg aluminium edging or similar.
- 7 Cleaning:** Power wash to remove all debris and organic material.

Suitable Bases - Summary

Concrete, Tarmacadam, Rubber, Cellular grids are acceptable.

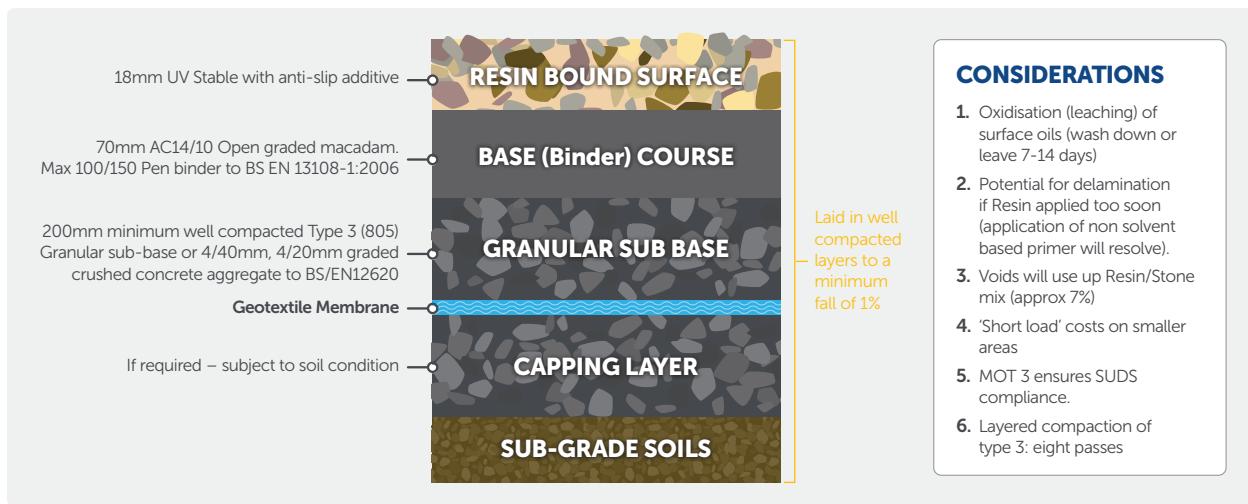
- Must be stable if existing or follow the base specification if new.
- Must be clean, free of debris and organic matter.
- Prime/seal all surfaces (highly recommended).
- Must have edging detail to 'free edges' protruding 18mm (see base builds as some require 24/25mm).
- Must comply with SUDS regulations if required.
- Granular bases are appropriate for pedestrian traffic BUT ONLY if using high strength UVR systems at a greater depth (25mm minimum).

Resin Bound Base Requirements

Open Grade Tarmacadam – Domestic driveways

TYPICAL BASE BUILD UP - PRIVATE DRIVEWAYS

(Permeable and SUDS compliant)



PURPOSE:

To provide an attractive, durable and seamless natural stone or gravel finish.

ADVANTAGES:

An attractive and durable surface that allows water to pass through the surface and is easy to clean.

NOTES:

Resin Bound can be overlaid onto existing concrete or macadam surfaces of suitable construction for the traffic expected.

Joints or cracks should be broken out to a minimum of 300mm depth and filled in with well compacted macadam base layers as above.

PLEASE NOTE: We always recommend the use of a geotextile membrane or ground stabilisation membrane - A ground stabilisation membrane helps maintain the stability of the subbase as the membrane prevents stone from migrating into the subsoils.

The specification is based on normal good practice for flexible surfacing and does not absolve the specifier from designing a construction suitable for the expected traffic and ground conditions pertaining on a given site. Areas that may be heavily trafficked by heavy vehicles should have structure layers designed according to DoT requirements.

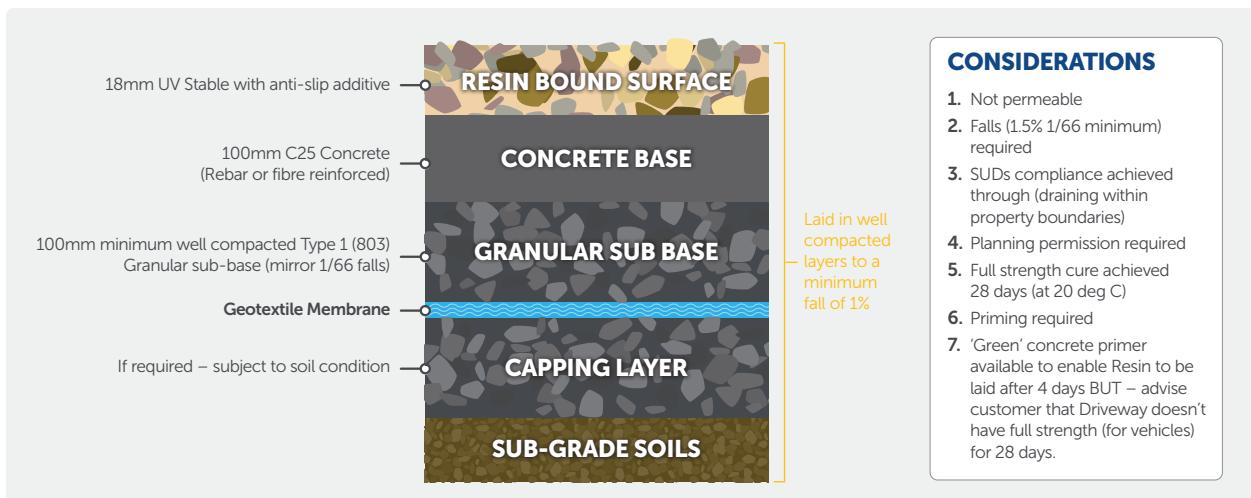
The thickness of the sub base layer required is dependent on sub grade soil condition.

Resin Bound Base Requirements

Concrete (not permeable) – Domestic driveways

TYPICAL BASE BUILD UP - PRIVATE DRIVEWAYS

(Non-permeable – Additional drainage required to comply with SUDS)



PURPOSE:

To provide an attractive, durable and seamless natural stone or gravel finish.

ADVANTAGES:

An attractive and durable surface that is permeable and remains easy to clean.

NOTES:

Resin Bound can be overlaid onto existing concrete or macadam surfaces of suitable construction for the traffic expected.

Joints or cracks should be broken out to a minimum of 200mm depth and filled with well compacted macadam or concrete base layers as above.

PLEASE NOTE: We always recommend the use of a geotextile membrane or ground stabilisation membrane - A ground stabilisation membrane helps maintain the stability of the subbase as the membrane prevents stone from migrating into the subsoils.

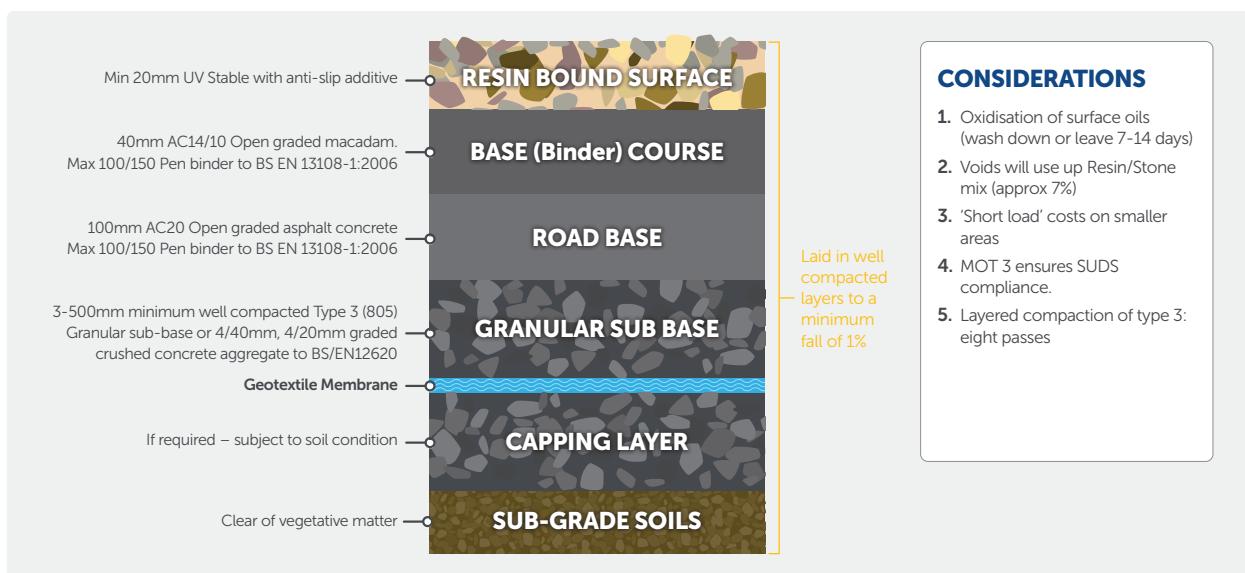
The specification is based on normal good practice for flexible surfacing and does not absolve the specifier from designing a construction suitable for the expected traffic and ground conditions pertaining on a given site. Areas that may be heavily trafficked by heavy vehicles should have structure layers designed according to DoT requirements.

The thickness of the sub base layer required is dependent on sub grade soil condition.

Resin Bound Base Requirements

Open Grade Tarmacadam – Access roads/Car parks

TYPICAL BASE BUILD UP – CAR PARKS AND ACCESS ROADS



PURPOSE:

To provide an attractive, durable and seamless natural stone or gravel finish.

ADVANTAGES:

An attractive and durable surface that allows water to pass through the surface and is easy to clean.

NOTES:

Resin Bound can be overlaid onto existing concrete or macadam surfaces of suitable construction for the traffic expected.

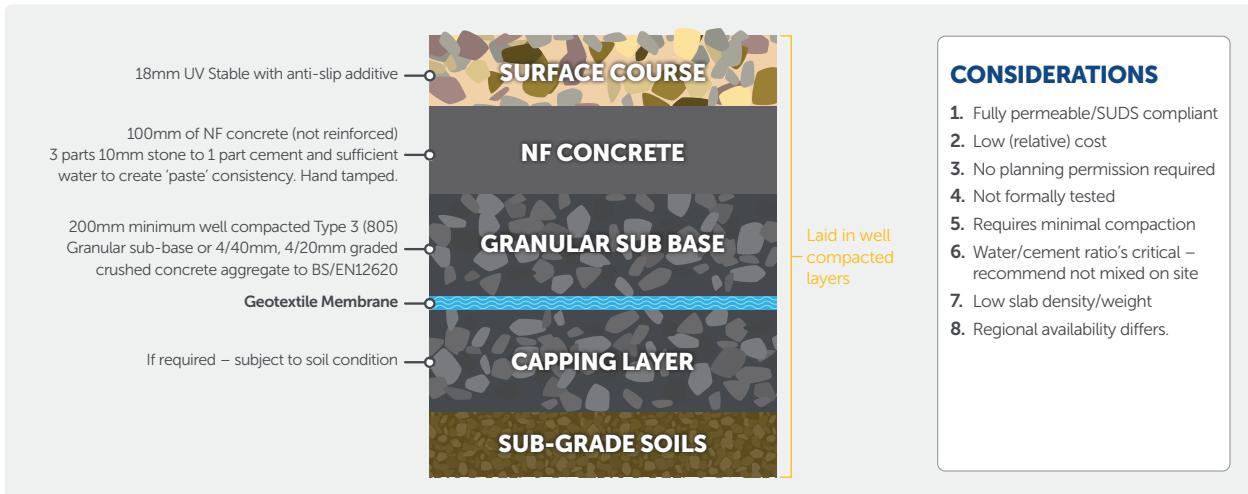
PLEASE NOTE: We always recommend the use of a geotextile membrane or ground stabilisation membrane - A ground stabilisation membrane helps maintain the stability of the subbase as the membrane prevents stone from migrating into the subsoils.

The specification is based on normal good practice for flexible surfacing and does not absolve the specifier from designing a construction suitable for the expected traffic and ground conditions pertaining on a given site. Areas that may be trafficked by heavy vehicles should have structure layers designed according to DoT requirements.

The thickness of the sub base layer required is dependent on sub grade soil condition.

Resin Bound Base Requirements

Permeable (no fines concrete)



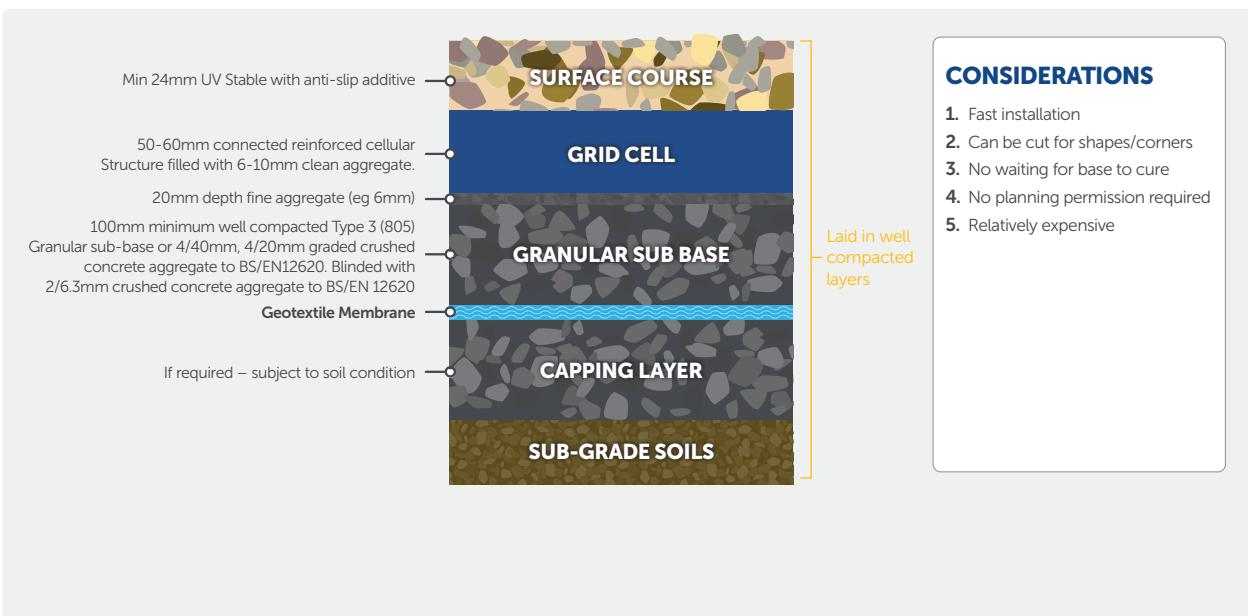
CONSIDERATIONS

1. Fully permeable/SUDS compliant
2. Low (relative) cost
3. No planning permission required
4. Not formally tested
5. Requires minimal compaction
6. Water/cement ratio's critical – recommend not mixed on site
7. Low slab density/weight
8. Regional availability differs.

Permeable Grid System - Domestic Driveways

TYPICAL BASE BUILDUP -

Domestic Driveways



CONSIDERATIONS

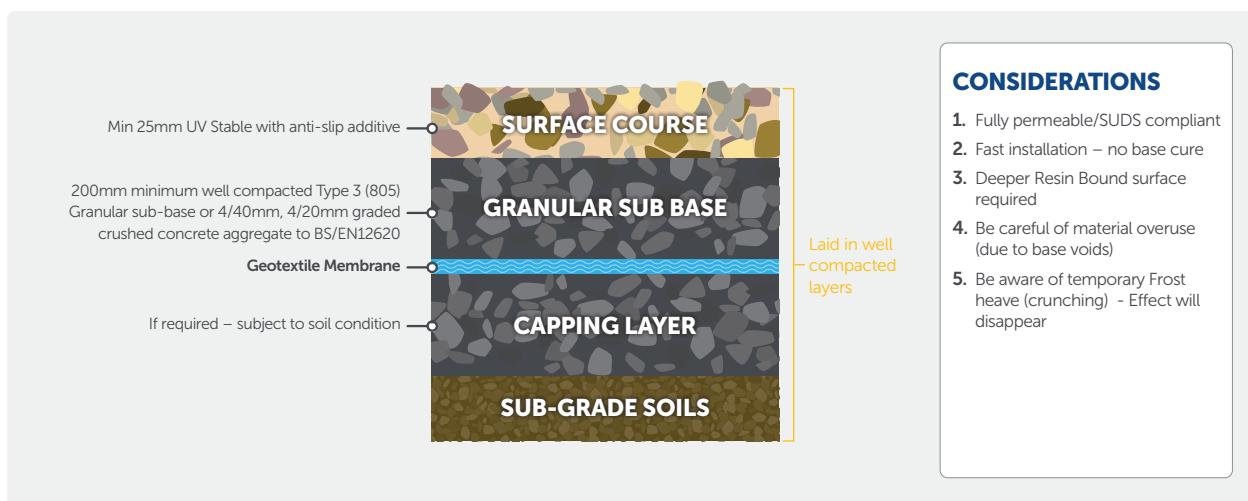
1. Fast installation
2. Can be cut for shapes/corners
3. No waiting for base to cure
4. No planning permission required
5. Relatively expensive

Resin Bound Base Requirements

Permeable Granular Base - Domestic paths/patios

TYPICAL BASE BUILDUP

Domestic Paths & Patios



Disclaimer

The details given in this specification are intended only as a guide. Actual details should be developed by the project designers taking into account the specific circumstances of the intended application. Derbyshire Specialist Aggregates assumes no responsibility for improper reliance upon or misuse of the data herein. Product design and specification are subject to change with further notice.



How to Mix the Resin and use of Accelerator/Catalyst

Mixing DALTEX UVR Resin

The formulation of resins, mixed with dry graded aggregate, has been carefully designed to suit the requirements of the site. It is essential that the specified blend is not varied by the contractor. The process of mixing and laying is simple, but it requires accuracy and care at EVERY stage.

Mixing of the resin is a very important part of the process. Shortcuts must NOT be taken. It is recommended to use one batch on a project. If more than one batch is used, care should be taken to use the same batch in one area in case of batch variation.

Mix the resin in the container on a plasterer's board or some other protective surface in case of splashes.



Make sure the resin container is secure (between your feet) before you start mixing.



The Part A component resin should be mixed briefly (10-20secs) using a slow speed, high torque, helical blade mixer. Accelerator/Catalyst should be added at this stage if needed – see Accelerator/Catalyst guidelines for details.



Part B component resin should then be added and mixed thoroughly at slow speed for a minimum of 60 seconds until uniform.

Cure Speed Modification

The surface should be allowed to cure for approximately 8 hours, but we do not recommend foot traffic for at least 24 hours. This will be longer if the temperature is lower. At low temperatures, Accelerator/Catalyst can be added to maintain cure speed.

Accelerator/Catalyst should be used for temperatures below 15°C (especially note overnight temperatures) as this can lead to longer curing times and contamination of the surfacing. Accelerator/Catalyst should be used with each mix to ensure uniformity of cure except for higher consistent temperatures of 25°C.

Accelerator/Catalyst Guidelines

Hardening of DALTEX Performance UVR Resin is progressive. A small quantity of catalyst is included at the time of manufacture to ensure curing occurs. However, in many situations, a faster cure may be required, particularly in cold conditions. Extra catalyst can be added to accelerate curing as follows:

Surface Temperature (°C)	Catalyst Addition Level (ml)
5-10	3-5
10-15	2-3
15-20	1-2

Remember – Catalyst is added to Part A Base and mixed thoroughly before adding Part B Activator. Use catalyst consistently and not in random batches.

ADVISORY NOTES

The optimum quantity of catalyst to be added can really only be determined on site according to experiences with initial material batches and adjustments being made accordingly to achieve the desired result.

Generally speaking, for a given temperature, the more catalyst added to the mix, the shorter the working and cure times will be. Adding too much catalyst may make the mix cure too quickly and make laying and/or achieving a smooth working edge unworkable; adding too little catalyst may cause the mix to take too long to cure and make the surface prone to deformation.

For guidance please contact our Technical Department.

PRECAUTIONS

Start work earlier in daylight and aim to finish early afternoon allowing maximum curing time during daylight hours. The aggregate must be dry with a moisture content of 0.5% or lower. Damp aggregate should not be used under any circumstances.

You should not start work if:

There is risk of rain or frost before the resin has had a chance to fully cure (we recommend you check on a weather App). The operating temperature and surface temperature and/or air temperature is outside the range identified 5°C (and rising) to 30°C. (We recommend you use a Digital non-contact thermometer)

The Relative Humidity range is outside 30%-80% (check your mobile phone App).

The surface temperature is less than 3°C and rising above the dew point of the measured air temperature and the relative humidity. (Use a dew point calculator or download a dewpoint chart from here).

Important Checks Before You Start Installing

Ambient and base surface temperatures, along with relative humidity, should be recorded at the start of the installation process. If the weather is variable readings should also be taken during the installation process.

INSTALLATION SHOULD NOT PROCEED IF:

- The relative humidity is outside the range of 30%-80%.
- The surface temperature is less than 3°C above the dew point of the measured air temperature and the relative humidity.
- The operating temperature and road surface temperature and/or air temperature is outside the range 10°C to 30°C.

Use a Hydrometer and Thermometer and/or refer to Dew Point Chart (See Appendix – Dew Point Chart for guidance)

The aggregate should be sorted into the required number of mixes.
Mix bags of aggregates from each pallet to guarantee a consistent mix.



IMPORTANT POINTS TO REMEMBER

1. Incorrect mixing of the resin will cause the material to fail. The operative must monitor the efficiency of resin mixing by checking the empty tubs. After circa 30 minutes, they should scrape out the skin of the congealed resin from the first few tubs with a sharp tool. There should be no liquid residue between the skin of the resin and the base or sides of the tub. Repeat this check randomly at least once an hour.
2. Keep the resin as cool as possible. We do not recommend you do not keep the resin in your van or store in direct sunlight.
3. DO NOT USE aggregates that appear damp in the bags.
4. Insufficient mixing time in the mixer may give rise to uncoated material.
5. For each batch, make sure that the correct blend of aggregates is used.
6. Aggregates can also absorb heat and should be kept away from direct sunlight. The aggregates will heat up and this will decrease the curing time.
7. Laying a Resin Bound surface on to macadam on a hot day will also increase the curing time of the resin.
8. Start the job early if it looks like it is going to be hot!

BEFORE YOU START

1. Is rain forecast? – Do not attempt to lay if rain is forecast during installation or within 4 hours of completion. Get a rain app for your phone.
2. Use an outdoor Hygrometer to test humidity and dew point.
3. Is the ground/surface wet? – Delay install or force dry with a gas lance or other suitable indirect methods.
4. Is the humidity below 85%? – Higher and there is a chance of rain and moisture in the air.
5. Is the surface temperature at least 3°C higher than the Dew Point temperature? – Use a Hygrometer. Delay install or force dry with a gas lance if appropriate.
6. Has the surface been primed? Primer must be tacky dry i.e if gloved finger is pressed to primer it should just be slightly tacky.
7. Have materials been checked (quantity, batch, colour etc.) and area re-measured?
8. Have trowels and equipment been cleaned and ready for use?
9. All cracks have been repaired.
10. All edging is protected with tape to avoid resin staining.

SAFETY

- Whilst skin contact should be avoided by the use of PVC gloves or gauntlets, the accelerator (catalyst) can, upon skin contact, cause blisters to appear so great care must be taken in its use.
- Eyes should be protected from splashes and from stones flying out of the mixer with the use of goggles.
- All operatives should wear overalls and ensure arms and legs are not exposed.
- Any safety guards on the mixer should NOT be removed, avoiding the risk of injury from the paddles.
- The aggregates have been dried and screened, so dust will be minimal. If any dust occurs an approved nuisance grade dust mask must be used.
- Approved ear defenders must be worn when in proximity to mixers, generators etc.
- PPE to be worn as per site rules.
- NEVER heat the resin to aid the mixing, this can liberate harmful vapour. Never spray the resin as this is also harmful.
- Xylene thinners or white spirit are advised for cleaning floats and other hand tools.



Technical and Safety data sheets are available on request.

The Installation Team – the Mixer

Be Consistent – Be Clean – Be Safe

STEP 1

Mix your resin as per instructions on page 42



STEP 2

Place the first Standard bag of 2-5mm stone and the bag of 1-3mm stone.



STEP 3

Add the premixed resin immediately to the pre-mixed aggregate. Now is the time to start your stopwatch.



STEP 4

Add the two bags of 2-5mm stone.



STEP 5

Add the binding quartz slowly and steadily to ensure an even consistency.



Step 2 - Ensure the aggregates are mixed consistently for all mixes. (Mixing dry stone can grind the stone and introduce dust or grind contaminants of the drum walls).

Steps 3-5 - must be mixed for the same amount of time on every mix! Failure to do this will cause a variation in the colour mix. Ideally use a stop watch to ensure consistency for every mix.

It should take no longer than 4 minutes once the resin has been added. Once the sand has been added, ensure it has been distributed evenly through the mix.

Loose Stone

This is caused by poorly mixing aggregates with resin so that not enough resin has coated the stone. It can also be caused by badly worn blades or not using enough resin. In all instances the stone will not adhere to the mix and become loose.



IMPORTANT!!

Ensure each batch is mixed for exactly the same time, as the colour of the finished material can alter with small changes in mixing time. It is advisable that a stopwatch is used to ensure that the correct mixing time is adhered to consistently.



TOP TIP

Make sure the mixer man has a stopwatch to ensure every mix is the same!

Empty the mix into your lined barrow.

Switch the mixer off and ensure all the mix is scraped out of the mixer – taking special care to remove it from the blades and from the door of the mixer where it will tend to gather.

The "Luter" then takes the mix to the "Troweller".

The Mixer cleans the mixer down and checks that it is in good order.

It is important to clean the mixer down each time to avoid build-up of resin and lengthy cleaning of cured resin at the end of the day.

This also avoids contamination and clumping as any residue from previous mixes could potentially end up in a new mix.

Wipe the mixer with white spirit till all the residue of the previous mix has gone. Once the mixer is thoroughly cleaned, the mixer is ready to start with the next mix.



IMPORTANT!!

Whilst cleaning check:

The blades are not worn – excessive wear will mean the mix is not mixed evenly and will get stuck underneath the blades. It will also take longer to mix and will not mix evenly.



TOP TIP

At the end of the day lightly spray the inside of the mixer with WD40 when clean.



TOP TIP

Keep manhole covers handy and you can use any excess aggregate to fill the lids so that they are ready to use on future jobs!

The Installation Team – the Luter

The Luter Has 3 Key Responsibilities

The Luter needs to tip manageable quantities of material between the batons. It is important to judge the right amounts because if too much material is tipped it will take more trowelling and work.

The Luter must spread the mix as evenly as possible between the batons.

Most importantly, the Luter needs to look at the surface that has been previously trowelled out and check for trowel marks and inconsistencies in the surface, **from every possible angle**.

Any anomalies can be easily rectified at this stage before the mix has cured.



The Installation Team – the Troweller

Trowelling the Perfect Finish

The Troweller's job is to plan the laying route and grid the area out in squares with chalk. The Troweller lays batons in place to indicate where he wants the Luter to tip the mix.

Once the Luter has levelled the mix, the Troweller can begin.

The main objectives are to knit the mix together, smooth the surface and leave a final sheen ('polish'). This must all be done using a hand trowel or lightweight finishing tool and with the least amount of strokes possible.

The Troweller must judge the levels and depth of the mix. Care should be taken to ensure that the correct coverage rate is evenly applied across the area. One way to check the levels are even is for the Troweller to lay a large trowel on top of the mix (like a spirit level) to judge any uneven parts of the surface.

In order to knit the mix together, the Troweller must ensure the aggregates form a closely compacted surface. The trowel must be used with the edge slightly raised away from the stroke. This will prevent the trowel digging into the mix.

The Troweller must trowel the mix until all the aggregates stop moving in a fluid movement and become solid. To test this cut a section into the edge of the surface being trowelled to see if it slumps or stays intact.



IMPORTANT!!

The last stroke of the trowel must be always be in the same direction otherwise it can cause a striped effect on the finish.

The surface should be installed to a minimum of 18mm for driveways. For areas with foot traffic only, a minimum depth of 15mm may be used. Once levelled and compacted, the surface can be smoothed (polished). Ensure your trowel is cleaned regularly using white spirit or xylene and especially before the final polish to ensure a smooth finish. Water should not be used as it may cause foaming in the system.



TOP TIP

To create a non-slip surface the top can be scattered with glass grit. Application rates will vary depending on the aggregate used but it is in the range of 50g-100g per m². This should be lightly scattered vertically after each mix has been trowelled to ensure consistency.

The Resin Bound system must be allowed to cure. During the curing period no disturbance or trafficking is permitted and the surface should be protected from rain.

When the Project has been completed:

- Block entrance with safety barriers and safety tape/warnings
- Advise client of cure time (approximately 8 hours, but do not recommend foot traffic for at least 24 hours)
- Ensure site is left clean and tidy
- Take photos (including photos of barriers/warnings!)
- Leave client with maintenance guide



Cure times relate to temperatures above 20°C.

Troubleshooting

Surface Shading - Inconsistent Mixing

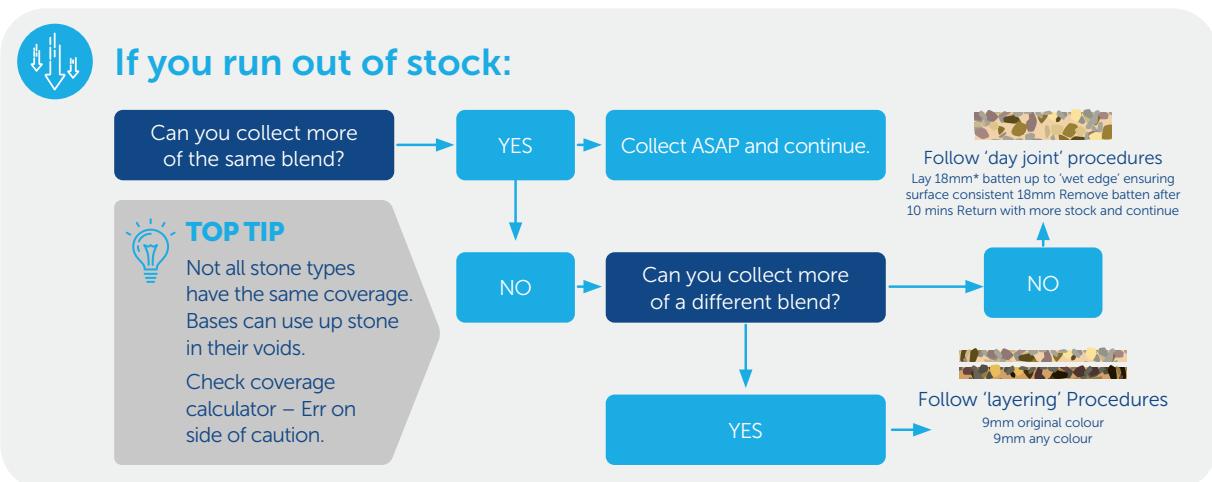
This cannot be rectified after the resin has cured. Each resin batch must be the same! Shading can occur if mixes are prepared inconsistently. i.e. left in the machine (or the wheelbarrow) for different amounts of time. It is important to mix each mix for exactly the same time, every time.

Surface shading can also be caused by an inconsistent trowelling action and pressure, especially towards the end of the day when tiredness sets in. It is important that everyone looks at the surface from different angles to ensure there are no inconsistencies.



Running Out of Stock

Coverage rates can vary according to stone type and accuracy in the depth of laying. Installers should always carry at least 5-15% more stock than the coverage rates stated. It is a good idea to mark out the surface (with line marker paint) every 10 square metres or so. Regularly checking the usage versus the marked lines will give you an opportunity early on in the installation to anticipate product shortage which could possibly give you the opportunity to source more product before it is needed or to correct the over usage.



Someone Walks on the Surface After It Has Been Laid

If this happens shortly after the surface has been laid (within 2 hours) and the damaged area is accessible without causing more damage, it should be possible to re-trowel the affected area flat.

If this cannot be rectified and the surface has fully cured, carefully chisel out the affected area (do not mechanically cut). Mix up a small amount of stone and resin/hardener. Use syringes to measure out correct quantity of resin/hardener and postal scales to weigh out the correct amount of stone. Carefully compact the new mix into the exposed area.

Hard Barriers are Recommended.

Clearly marking the area with hard barriers, cones and warning tape will help prevent people inadvertently walking on the surface.



TOP TIP

It is a good idea to take some photos of the area with the cones and tape in place. Beware of cats – these are the worst culprits!!

The Impact of Heat and Moisture on Your Installation

There are many factors which can influence the success of a resin bound installation – but as a manufacturer, the major cause of product failures we see are due to issues concerning heat and/or moisture.

To understand why, we want to briefly describe how the resin product works – and we hope this helps emphasise the importance of following the recommended procedures closely.

The Impact of Heat

Resin hardens (permanently cures) due to a chemical reaction known as Thermosetting. Thermosetting uses heat and there are several external and internal factors which can increase/decrease the amount of heat generated, thereby affecting the curing speed of the product.

2 part polyurethane resins are thermosetting and when mixed will generate their own heat as the reaction is exothermic. There are several factors that will affect the cure speed - these can be as follows:

THESE FACTORS ARE:

External Factors:

- Air Temperature
- Ground Temperature
- Stored Temperature of Stone/Resins

Internal Factors:

- Time taken to mix
- Time in mixer
- Time taken to trowel

Ignore the impact of these factors and the results may not be what you wish.



Failure to understand Thermosetting

Mix Curing Too Quickly – Higher than Anticipated Temperatures

In the height of summer, surfaces can be as much as twice the temperature of the ambient air temperature. This is especially true of black surfaces such as macadam where the resin can cure in as little as 10 minutes.

If laying to macadam surfaces during a hot spell, **Start early** before the temperature reaches its height and **keep resins in the shade, but do not store in a van**. Leaving resin tubs in direct sunlight can significantly reduce cure times. Also it is advisable to **keep the aggregates out of the sun** as the stone will also heat up and increase the temperature of the mix.



Troubleshooting



System curing too fast (typically high summer):

Is it Winter?



Reduce catalyst quantity
NOT HARDENER

Is it Summer?



If laying to 'black top' cover surface
in white or reflective sheets.

→ NO

Check you're not using
precatalysed Winter Resins



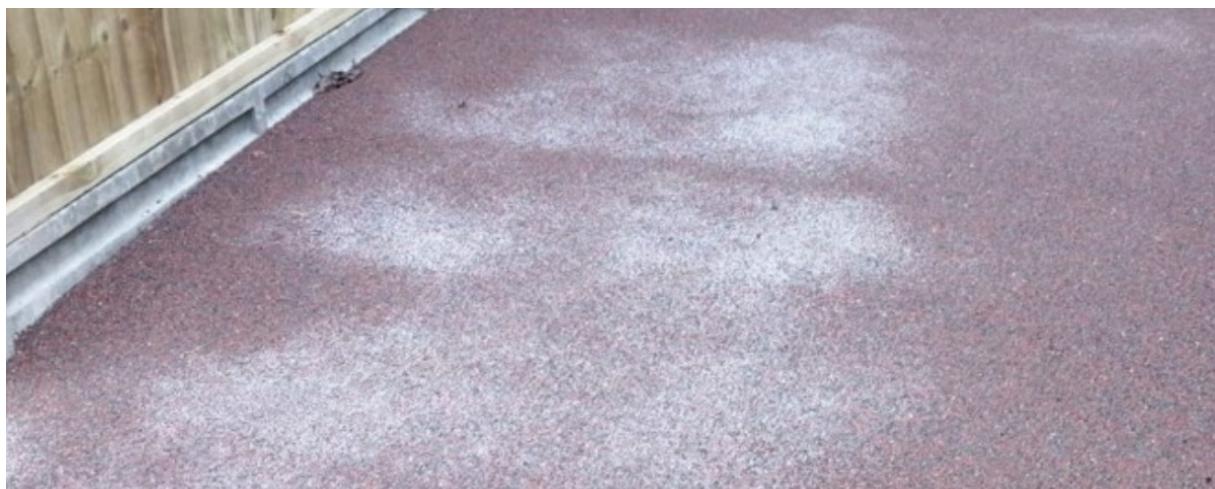
TOP TIP

During high temps, try
and start installation
as early as possible
before temperatures
rise to high.

The Impact of Moisture

For years, the installation guidelines for resin bound were: 5°C and rising and no rain! However much more has been learned – often the hard way - about the no.1 enemy of perfect Resin Bound installations – moisture.

Excess moisture reacts with Isocyanate (Resin Hardener) to produce amines and a bi-product of Carbon Dioxide. Trapped bubbles of Carbon Dioxide create a white 'bloom' on the surface which is typically only visible when dry.



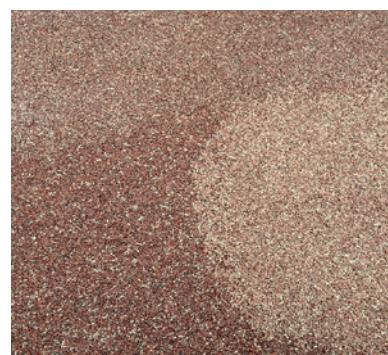
Failure to understand Moisture

Troubleshooting

Unexpected Rain - what to do

Rain and resins do not mix well. It is highly likely that the surface can be damaged should it rain during or shortly after installation (min 4 hours). There are however, steps you can take to reduce the risk of permanent damage.

- 1) Erect a good quality 3 metre gazebo and ensure the forced action mixer is underneath it.
- 2) Ensure the resin is mixed in the dry.
- 3) Cover ALL stone with tarpaulins.



TOP TIP

Get a good weather app for your phone.

These steps can be taken if the installation is nearing completion. If the job isn't near completion or the rain is heavy and prolonged, it is advisable to terminate the edge of the last laid mix to a neat line, laid and finished at the correct depth and return the following day to complete. A 'day joint' is likely to be visible.

Accept the fact that if you've been caught in the rain it is likely you will have to relay the surface.



If it rains:

3 mixes or less down?



Layer out to 10mm
and return when dry

50% of job done?



Follow 'day joint'
procedures

3 mixes or less to finish?



Follow 'day joint'
procedures



Ensure stone and mixing
is kept dry – continue*

*Only on permeable bases. Important factor is to keep mixes and stone dry whilst being prepared. Still carries risk.



TOP TIP

Good quality systems have reasonable moisture tolerance but the systems should not be laid in rain.

Options above are a site decision based on how heavy and prolonged the rain is and the experience of the contractor.

Resin Reacts to Moisture Causing Clouding

This can be caused by moisture dropping onto the surface before it has cured or humidity. This can even be caused by rain spots and sweat or by accidentally flicking excessive white spirit onto the surface when cleaning the trowel.

Avoid rain as previously discussed. It is better not to lay if the humidity is above 85%. Use a Hygrometer if in doubt. Blooming is not usually visible during wet weather.

In terms of remedial action: you can try to clean the surface with WB128/40 water based primer (short pile roller). This treatment may work however the only alternative is removal of the surface and reinstatement (or overlay) - so prevention is paramount!

Equipment Required

- A Forced Action Mixer is Crucial For Installations

When working in the resin bound trade, a reliable, durable and long-lasting forced action mixer is crucial for every project. A forced action mixer is the only choice for resin bound installation - a cement mixer and any other type of electronic mixer will not adequately distribute the resin in each mix.



- Generator or Power Supply

- 110v Transformer and Lead

- Drill with slow start facility

- Whisk Paddle

- Gaffer Tape

- Resin Trowel



- 5L/10L Buckets, Scrapers and Small Paint Brush for keeping Mixer Clean



- Plenty of Cleaning Rags

- Wooden Lute

- Knit Wrist and Latex Gloves

- Clean Wheelbarrow –
Polythene Liners recommended



- Clean Shovel

- Stanley Knife

- Tarpaulins

- WD40

- Gas Burner and Bottle

- Stiff Brush

- Knee Pads

- Disposable Trousers

- Stopwatch

- Gazebo



- Hard Barriers, Cones and Warning Tape

- Beading if required

- Reflective Blankets
(to cover stone and resin in hot weather)

- Eye Bath & Safety Glasses

- Trowel Cleaner



Customer Aftercare and Maintenance

Whilst every effort has been made to ensure that the Resin Bound surface is of the highest quality, it will look better and last longer if a few simple maintenance procedures are adopted.

NORMAL USE:

Resin Bound surfaces are intended to be used by normal pedestrian or vehicular traffic for which they have been designed. Protection should be provided wherever possible against abnormal damage. Heavy goods vehicles should not be permitted to park on or regularly traverse Resin Bound surfacing unless it has been allowed for in the overall construction. The Resin Bound installation will have no problem with parked cars or other regular uses for a driveway.

DRY STEERING:

Dry steering, where the wheel is turned whilst the car is stationary, is likely to leave tyre marks and with the action being constantly repeated could see the surface damaged with the aggregate being crushed and coming away from the driveway.

ABNORMAL USE:

You should be careful not to damage the Resin Bound surface with any of the following abnormal usages:

Skips: Heavy skips with edges should not be placed directly onto the Resin Bound installation. For lighter skips, load bearing planks may be used, but we recommend placing a skip elsewhere if possible.

Sharp points: Avoid anything that applies a sharp point of pressure onto the surface, such as the stand of a heavy motorcycle.

Dragging: Heavy objects should never be dragged across the Resin Bound surface.

Spillage risks: Protection should be provided during building and construction work to avoid unsightly contamination from oil, grease, cement and dirt. Spillage of solvents should be avoided as these will soften and damage the resin binder.

ROUTINE MAINTENANCE:

The Resin Bound surface should be regularly swept clean with a stiff broom, removing leaves and detritus materials in order to prevent moss growth and hosed with clean water.

WASHING:

The surface must be cleaned periodically using a pressure washer or a sweeper fitted with water jetting and vacuuming equipment. Washing can be carried out using a portable pressure washer (up to 150 bar rating) to remove dirt, grime and moss. Ensure care is taken not to damage the surface with excessive pressure. Only cold water should be used and the water lance must be kept at least 200mm from the surface and a fan type jet used.

CLEANING:

Chewing gum removal: Removal of individual pieces of chewing gum can be carried out by treating each piece with a freezing spray and then scraping off the hardened gum with a wall/paint scraper. For more extensive gum removal, contact a specialist cleaning contractor.

WEED RESISTANCE:

Due to its construction, a Resin Bound surface is resistant to weeds. However, no matter how much care is taken, weeds may occasionally appear (as on any surface), usually as a result of windblown seeds. Ensure customers understand weed resistant doesn't mean weed free when you are discussing the advantages of Resin Bound. Small numbers of weeds can be removed by hand without damaging the surface. If the weeds are removed by hand, it is important to ensure that the full root of the weed is extracted, not broken off. Some weeds are more prolific if they are simply cut off at surface level. If the weeds are deep rooted, it is advisable to kill them off with an appropriate herbicide or weed killer. Localised areas of weed seeding infestation can be treated with domestic weed killers without causing damage to the surface.

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

It is important to have an after care maintenance guide for customers. Ensure your Terms & Conditions contain a clause about the need to keep Resin Surfaces clean - cleaning at least once per year including treating with weeds as and when they appear.

Consider offering cleaning as one of your services.

MOSS AND ALGAE GROWTH:

Weed growth should be treated prior to surfacing and it is highly unlikely that any new growth will be sustained. Periodical application of a proprietary moss and algae killer, such as "algon", in accordance with the manufacturer's instructions, will remove and prevent any regrowth. Ingrained algae growth can be removed and the colour of the original surface restored by the application of a strong bleach solution. This should be used in accordance with manufacturers guidelines and local environmental constraints. After application, the surface should be well rinsed with clean water.

CEMENT OR CONCRETE MARKS:

Cement or concrete marks can be removed with careful use of diluted hydrochloric acid or a proprietary cement remover, immediately followed by a thorough rinsing with clean water. (Please note that if a lime based aggregate is used, the acid will tend to dissolve this as well).

OIL/FUEL CONTAMINATION:

Oil stains must be removed as soon as possible by using a mild detergent to prevent possible staining and degradation of the surface. A good quality detergent should be applied neat using a stiff brush. This should be allowed to penetrate for 10 minutes and followed with pressure washing.

SPILLAGES:

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

SAND/SOIL:

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

MINERAL STAINING:

The system is made up from natural aggregates. Whilst every step is taken to minimise its presence, naturally occurring iron pyrites may 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/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.

CHEMICAL RESISTANCE:

Resin Bound surfacing is resistant to a wide range of chemicals. 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. Spillages need to be cleaned by power washing to avoid any potential staining.

PATCH REPAIRS:

If the surface is damaged, small areas can be repaired. The damaged area should be chiselled out to a solid edge. The same aggregate blend can then be mixed with DALTEX UVR Resin and installed in 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.

Please note: The information provided is intended only as a guide, formal procedures should be developed considering the particular circumstances applicable. Always trial any treatment on an unobtrusive area first to assess suitability. Derbyshire Specialist Aggregates assumes no responsibility for improper reliance upon or misuse of the information. Appropriate precautions should be taken when using chemicals and advice sought from the statutory authority for their correct disposal.

FAQs

As a helpful resource, we have collated many of the most frequently asked questions we receive.

What is Resin Bound?

Resin Bound is the fastest growing surfacing solution in the last 5 years. Resin Bound is a system of laying a hard wearing course of mixed resin and dried aggregates onto either a new or existing macadam or concrete base.

It is formed by mixing dried aggregates with a 2 part resin mixture. The mixture is trowelled and polished to give a uniform finish.

Why is Resin Bound so popular?

There are a number of reasons why Resin Bound is so popular:

- Appearance** – customers love the flat even appearance and its practicality. It is also fade resistant.
- Unlimited design options** – you can create any shape or design using the blend of colours available.
- Strength** – it is strong, durable and slip resistant.
- Low maintenance** – the surface is easy to clean if required (a simple jet wash) and it is weed resistant.
- Permeable** – Resin Bound is SUDS compliant which means it does not require planning permission when laid on a suitable sub-base.

What's the difference between Resin Bound and Resin Bonded?

You can tell the difference between Resin Bound and Resin Bonded on sight. The way they are installed and perform is also very different.

Resin Bound has a smooth, uniform finish - but Resin Bonded has a textured finish and gives the appearance of loose gravel. Unlike Resin Bound, Resin Bonded is non-porous and is not SUDS compliant.

Where can Resin Bound be used?

Resin Bound can be used in a wide variety of residential and commercial locations in exterior and interior areas such as: driveways, paths, patios, parks, gardens, concourses, car parks, cycle paths, picnic areas, schools, medical centres and hospitals, terraces, bridges, shopping centres etc.

Can you install Resin Bound internally?

Yes – we recommend using only using 1-3mm aggregate for internal use.

Can I install Resin Bound on a driveway with a steep incline?

Yes, but always ensure you have added crushed glass so that the finished surface is slip resistant.

What is the recommended mix design?

DALTEX Bound Plus UVR 7.5kg

3 Standard bags of 2-5mm, 1 Standard bag of 1-3mm and 1 mini bag of binding quartz – Coverage approximately 3.55m² at 18mm and 4.0m² at 15mm.

How much do I need to order? How do I work out how much I need to order?

Firstly, you need to determine the depth you are laying at. If you are laying at 18mm, then you need to divide the total meterage by 3.55m². This will give you the total number of mixes required. We recommend you add a contingency of at least 10%. A Resin Bound calculator is available at resinbondedaggregates.com which will automatically calculate the materials required.

What depth should I install at?

We recommend that for driveways a minimum depth of 18mm is used. For foot traffic and pathways a minimum 15mm may be used, however we highly recommend all installations are applied at a minimum depth of 18mm to ensure the aggregate is knit consistently.

Can I install on to a compacted MOT?

We don't recommend it. There will be a risk of movement in the sub-base which could lead to reflective cracking in the future.

What sub base should I use?

Resin Bound is SUDS compliant (providing the sub-base on which it is laid is porous or a suitable soakaway exists). This can be a special concrete or open textured macadam on top of a type 3 stone. The system can also be laid directly on top of old macadam or concrete but will require a suitable soakaway or drainage flow. The existing surface must be sound and free of cracks. For more information, see 'Resin Bound Base Build' specifications.

Is it OK to install on concrete?

It won't be permeable?

Installations can be made on concrete but suitable soakaways and drainage should be considered. Please note this will not be SUDS compliant.

How much catalyst should I use per mix?

The amount of catalyst varies according to the temperature. Tables are provided on the catalyst bottle which show the ml to be added based upon the conditions.

What is the maximum temperature I can install at?

Installations should not proceed if the operating temperature, road surface temperature and/or air temperature is outside the range 10°C to 30°C.

What is the minimum temperature for an install?

The recommended minimum temperature for an installation is 10°C. Be aware of differences in ground temperature compared to air temperature and the impact of sun/shade on installation surfaces.

Is there something I can use to slow the resin down?

No, there is nothing available to slow down the curing time of resin.

How much working time will I get with Resin Bound?

This varies with the working temperatures and humidity. However, with the correct amount of catalyst used, 30 - 40 minutes per mix is normal.

What is the least amount of time I can get away leaving the Resin Bound before it rains?

Rain and resins do not mix well. It is highly likely that the surface can be damaged should it rain during or shortly after the installation (minimum 4 hours). Accept the fact that if you have been caught in the rain, it is likely you will have to relay the surface.

How long do I have to leave the Resin Bound before it can be walked on?

The resin will take approximately 8 hours to cure, however we do not recommend any foot traffic for at least 24 hours. This will vary according to the temperature. Do not drive on it for at least 48 hours.

I need to patch repair, how do I go about it?

If the surface is damaged, small areas can be repaired. The damaged area should be chiselled out. The same aggregate blend can then be mixed with DALTEX UVR Resin and installed in 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. However, it is likely there will still be a slight colour variation.

Can I use a cement mixer?

Absolutely not. A forced action mixer is essential to ensure the stone is evenly coated with resin.

Where can I hire a mixer?

Mixers can be purchased from resinbondedaggregates.com

How many metres can a team of 3 complete in a day?

This depends on the experience of the team. This can vary between 70m² – 150m².

Do you have a list of approved installers I can join?

We do not have an approved installer list. However, we will provide homeowners with details of installers in their area if asked.

I've got 20 years working experience with groundworks and I used to be a plasterer, why would I need additional training?

The training is practical and hands on and covers everything required to ensure installations are successful. A number of factors will influence and affect the appearance and longevity of the finished surface. Resin Bound training will highlight key factors to consider when installing, helping you avoid costly mistakes. Please call us on 01629 636500 if you are interested.

Appendix

Separate sheets to include:

Site Survey

Day Sheet

Dew Point Chart



SITE SURVEY (PRE-INSTALLATION)

Customer Name:	
Site Address:	
Date:	
Application length (m)	
Application width (m)	
Application area (m²)	
Is the site sloped/undulations:	
Substrate to be laid onto:	
Any surface cracking:	
Any evidence of sub base movement:	
Drainage considerations:	
Area repairs required:	
List of required repairs	
Type of Edging required:	

DALTEX UVR product to be used – UVR or non-UVR resin	
Application system required: (ie Size of resin kit: 7.5kg or 6.5kg)	
Aggregate mix to be used:	
Is this an approved aggregate mix:	
Primer required:	
Catalyst required:	
Thickness of application required:	
Additional Site observations	

DERBYSHIRE SPECIALIST AGGREGATES - DAY SHEET

One day sheet must be completed for each day of installation and for each component being laid. (This is required in order for the installation of the DALTEX UVR system to be approved to Manufacturer standards).

Completed day sheets must be returned within 7 days of installation to DSA either by post or by email to marketing@derbyaggs.com

Site Information:

	Initials
Date	
Customer	
Site Reference & address	
Application length (m)	
Application width (m)	
Application area (m ²)	
Thickness of application (m ²)	18mm/ 15mm/ Other: (please specify)
Site Conditions:	Initials
Subbase construction	
Is the subbase approved	
Is any remedial work required	
Is drying or cleaning required	
Is priming required	

Environmental Conditions:

	Initials
Application Time	Start:
Air Temperature (°C)	Start:
Ground Temperature (°C)	End:
Relative Humidity (%RH)	End:
Determine Dew Point (°C)	Start:
	End:

DALTEX UVR Application:

	Initials
Product number	UV or non-UV:
Part A	
Part B	
Number of kits Used	
Aggregate Blend Used	
Mixing Checks Performed (ratio/timing of mixes etc)	
Accelerator Used	
Cleaning Agent Used	
Anti-Slip Used	

Additional Information:

	Initials

NAME:.....

COMPANY:

DATE:

DEW POINT CHART

Definition: Dew Point is the temperature at which condensations forms. To determine the Dew Point from the charts below, find the temperature of the air in question on the left side of the table. Next, locate the relative humidity of the air in question across the top of the table. The intersection of these two numbers in the matrix identifies the temperature at which Dew Point is reached.

Air Temperature in Degrees Celsius

Air Temp °C	% Relative Humidity										Temperature in Degrees Celsius								
	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
43	43	42	41	40	39	38	37	35	34	32	31	29	27	24	22	18	16	11	5
41	41	39	38	37	36	35	34	33	32	29	28	27	24	22	19	17	13	8	3
38	38	37	36	35	34	33	32	30	29	27	26	24	22	19	17	14	11	7	0
35	35	34	33	32	31	30	29	27	26	24	23	21	19	17	15	12	9	4	0
32	32	31	31	29	28	27	26	24	23	22	20	18	17	15	12	9	6	2	0
29	29	28	27	27	26	24	23	22	21	19	18	16	14	12	10	7	3	0	
27	27	26	25	24	23	22	21	19	18	17	15	13	12	10	7	4	2	0	
24	24	23	22	21	20	19	18	17	16	14	13	11	9	7	5	2	0		
21	21	20	19	18	17	16	15	14	13	12	10	8	7	4	3	0			
18	18	17	17	16	15	14	13	12	10	9	7	6	4	2	0				
16	16	14	14	13	12	11	10	9	7	6	5	3	2	0					
13	13	12	11	10	9	8	7	6	4	3	2	1	0						
10	10	9	8	7	7	6	4	3	2	1	0								
7	7	6	6	4	4	3	2	1	0										
4	4	4	3	2	1	0													
2	2	1	0																
0	0																		

Example: Read the air temperature in the left-hand column and the humidity at the top of the chart. If the air temperature of the site is 24°C and the relative humidity is 35%, the intersection of the two shows the dew point of the area to be 7°C. The surface temperature should be at least 3 degrees above that point, i.e. 10°C or above, to prevent water condensing on the road surface.

Template Examples

Separate sheets to include:

Materials Checklist
Job Progress & Sign Off Sheets
Groundworks Cost Checklist
Example Quotation to customer
Quotation
FAQS
Customer Cancellation Rights
Standards Terms & Conditions for sale of goods

MATERIALS CHECKLIST**FOR GUIDANCE ONLY**

The attached should be read in conjunction with the quotation for the client

Client name:
Address:
Postcode:
Client contact numbers:
Start date:

MATERIALS

MATERIAL	TYPE	SIZE	QUANTITY
EDGINGS 1			
EDGINGS 2			
DRAINAGE 1			
DRAINAGE 2			
BALLAST 1			
BALLAST 2			
CEMENT			
OTHER SAND/AGGREGATE			
SUB BASE MATERIAL			
BASE MATERIAL			
OTHER 1			
OTHER 2			
OTHER 3			
OTHER 4			
OTHER 5			
SURFACE PRIMER			
C52 SAND			
RESIN			
DALTEX AGGREGATE			

LOCAL SUPPLIER DETAILS

MATERIAL	SUPPLIER	CONTACT

JOB PROGRESS AND STANDARD. SIGN OFF – GROUNDWORKS

Client name:
Address:
Postcode:
Client contact numbers:
Start date:

JOB PROGRESS AND SIGN OFF PROCEDURE

DATE OF ASSESSMENT:

STAGE	MIN STANDARD	STANDARD (Mark current standard)	
SETTING OUT	Levels and plains linear and consistent		
EDGINGS	15-18mm lip from base to top of edging		
	Haunching neat and finished		
	Levels/plain checked		
	Grout joints (if applicable) consistent		
	Blocks kept clean from cement residue		
SURFACE PREP	Powerwashed, weeds and dirt removed		
	Crack bridging /repairs complete		
	Levelling of undulations		
THRESHOLDS	(I.E GARAGE), checked for clearance and depth (min 15-18mm)		
BASE	Geotex membrane in place (if required)		
	Hardcore laid to level (edge to edge)		
	Hardcore compacted to correct depth		
	Base material laid to correct depths and finished level		
DRAINAGE	Recessed drains set level with finished surface		
	Recessed drains to have 15-18mm lip all around frame edge		
	Replaced drains checked for debris		
	Channel drains checked for effective draining		
CLEANLINESS	Footpath/road debris		
	Client property (windows, splashback from washing etc)		
	Waste removed from site/approved disposal		
COMMUNICATION	Client given accurate update on progress		

GROUNDWORKS STAGE COMPLETE AND READY FOR INSTALLATION OF FINAL SURFACE

NAME	SIGNED	DATE
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JOB PROGRESS AND STANDARDS SIGN OFF – FINAL SURFACE

Client name:	
Address:	
Postcode:	
Client contact numbers:	
Start date:	

JOB PROGRESS AND SIGN OFF PROCEDURE – TRAINING SHEET. DATE OF ASSESSMENT:

STAGE	MIN STANDARD	STANDARD	
WEATHER	Forecast checked for temperature and rain		
PRIMING	Correct primer used (see spec sheet) with consistent coverage		
PROTECTION	Edgings protected from resin residue		
SURFACE	Depths MINIMUM 15mm consistently across surface		
	Surface closed and free from trowel marks and blemishes		
	Surface flat and level		
	Slip resistance added		
EQUIPMENT	Cleaned and ready for next install		
SITE	Cleaned and cleared , Waste disposed of		
AD BOARD	Placed		
COMMUNICATION	Client informed of completion and curing times for use		

FINAL SURFACE STAGE COMPLETE AND READY FOR INVOICING

NAME	SIGNED	DATE

GROUNDWORKS COST CHECKLIST

CUSTOMER NAME	
LOCATION	
SQUARE METRES	

ITEM	Guidance Cost (ex. VAT)	Recommended Customer Price (ex. VAT)	NOTES
Resin/Stone (Sq.m)			
Dig out (3 rd Party)			
Muckaway (per load)			
Membrane (Per 100 Sq.m)			
Recessed drains (Each)			
Aco Channels (per lin. mtr)			
Block edging (Lin.mtr)			
Block edging (lin. mtr uprights)			
MOT for base (100mm/ sq.m)			
MOT for base (140mm/sq.m)			
Concrete per sq.m (100mm)			
Rubber Base (per sq.mtr)			
Biax tape (lin.mtr)			
Steel edging (lin.mtr)			
Wages			
Fuel/Overheads (Per sq.m)			
Other			
TOTAL			

Date: 20 May 2022

Customer name

Address

Postcode

Dear Mr & Mrs XXXX,

Thank you for taking the time today to discuss the installation of a Resin Bound surface.

As requested, I have compiled our quotation for the works discussed.

At the time of writing, our next available slot is w/c XXXXXX. The work would take approximately XX days (weather permitting)

Resin Bound surfaces offer many benefits over traditional paving and other surfacing products:

1. Resin Bound is a permeable surface which is SUDS compliant and not prone to puddles.
2. Low maintenance and weed resistant.
3. Slip resistant.
4. Natural stone – No artificial colours.

In addition to the above, I would like to confirm that this resin bound system offers further benefits such as:

1. **UV stable** - we use only UVR resin which is colour stable and will not fade (like cheaper non-UV stable resins).
2. **Higher resin content** creating a stronger, more durable surface. Some contractors use a 6% resin kit whereas we only use 6.6% to 7.0% resin bound mixes. Whilst this doesn't seem a big difference, we believe that the amount of resin and the resin % which coats the stone affects the strength and durability of the final surface solution.

I hope the attached is to your satisfaction. If you have any questions, please do not hesitate to contact me.

Yours sincerely,

xxxxxxxxxxxxxx

Quotation

Date: May 20, 2022

[Your Company Name]
[Street Address]
[City, ST]
[Phone]
[E-mail address]

TO: [Name]
[Company Name]
[Street Address]
[City, ST]
[Phone]

QUOTATION SPECIFICATION

GROUNDWORKS: eg Excavate existing grass area to 200mm below finished surface levels and install xx linear metres of tumbled block edging to perimeter. Install geotex membrane followed by 100mm of type 1 MOT hardcore (mechanically compacted), followed by 100mm of concrete – Allow to cure.

SURFACE PREPARATION: Prime/seal cured concrete surface

SURFACE INSTALLATION: Install UV stable resin bound stone surface (7kg mix) at 18mm, hand trowelled and finished.

OTHER ITEMS SPECIFIED: Quotation includes all associated muckaway costs.

DELIVERY: Confirm if this is a delivered price.

SQ. METRES	SURFACE TYPE	COLOUR CHOICE	EDGING REQUIRED	PAYMENT TERMS
				See Below

QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
	GROUNDWORKS – SEE ABOVE FOR DETAIL		
	SURFACE PREPARATION – SEE ABOVE FOR DETAIL		
xxxSQ.M	SURFACE INSTALLATION – SEE ABOVE FOR DETAIL	£xxxx/SQ.M	
		Sub total	
		VAT @ 20%	
		Total	

Payment terms

Deposit (payable when placing your order) = £

Stage Payment (payable once groundworks complete) = £

Final payment (payable when surface installed) = £

YOUR LOGO
HERE

[Your company slogan]

Make all cheques payable to [Your Company Name]

FREQUENTLY ASKED QUESTIONS

Does your company have public liability insurance?

Yes, we have public liability insurance of £XXXXXX

Do you sub contract any of the works?

No, all works are carried out by my team of permanent staff.

Can resin surfaces be installed in any weather?

No, resin surfaces are vulnerable to certain weather conditions whilst they are being laid. Temperatures need to be a minimum of xx degrees C and rising for the duration of the installation and at least 4 hours after completion. It must also be a dry day with no rain forecast during the installation and for at least 4 hours after completion.

What is the difference between UV stable and non-UV stable resins?

Non UV stable resins are popular with some installers due to their cheaper cost and used typically with buff coloured resin driveways. The use of these resins will cause the surface to darken and develop a 'orangey' shade where exposed to sunlight. This will lead to an inconsistent shade difference.

We **ONLY** use UV stable resins that are not affected by such 'shading'.

Do your bound surfaces comply with the requirements of the S.U.D.S. regulations?

Yes. All of our bound surfaces are permeable and are designed to allow up to 850 litres of surface water per metre per second to drain through into the water table.

Do you have local references we could contact?

Yes, references from our customers are available on request.

After the quotation is agreed, are you prepared to carry out any additional works or 'extras' other than those quoted for?

We will always be happy to take on additional works/extras or make changes to the agreed quotation at our clients request. We will confirm any additional costs to you in writing and invoice you separately for any such works.

What access to services will you require during the job?

All we need is access to an external water source such as an outside tap and an electrical power outlet. **How long after the installation will we be able to use the surface?**

In most cases, the newly installed surface will take vehicle traffic after 24 hours.

Does weed resistant mean weed free?

Unfortunately, there is no such thing as a weed free surface. Wind blown seeds can be deposited on any surface. However, due to their construction, our surfaces are extremely resistant to weeds and are very effective at restricting weed growth. The maintenance guide provided on completion of your installation contains recommendations for maintenance and cleaning.

Can I power wash the surface?

Yes, in fact we recommend that the surface is powerwashed once a year to maintain its great looks. Please ensure that the manufacturer's instructions are closely followed when power washing any surface.

If you have any other questions not covered here, please do not hesitate to contact me.

NOTICE OF THE RIGHT TO CANCEL

Phone: _____ DATE: _____

CUSTOMER CANCELLATION RIGHTS

The customer has the right to cancel the contract if he/she wishes and this right can be exercised by delivering, or sending (including by electronic mail), a cancellation notice to the company whose details are provided at the base of this notice at any time within the period of 7 days starting with the day of receipt of this notice in writing of the right to cancel the contract.

The notice of cancellation is deemed to be served as soon as it is posted or sent to the trader, or in the case of an electronic communication from the day it is sent to the trader.

You may use the cancellation form below if you wish, but your notice of cancellation does not need to be in this format. However, if you do decide to cancel the contract you must make this intention clear in any communication.

If you decide to cancel the contract, you may be required to pay for the goods or services supplied if the performance of the contract has begun with your written agreement before the end of the cancellation period.

Cut /tear along this line and send to address below if you wish to cancel your contract

CUSTOMER CANCELLATION NOTICE

If you wish to cancel the contract you MUST DO SO IN WRITING and deliver personally or send (which may be by electronic mail or post) this to ourselves at the address stated below. You may use this form if you wish to but you do not have to. (Complete, detach and return this form ONLY IF YOU WISH TO CANCEL THE CONTRACT)

TO: COMPANY NAME

ADDRESS:

I/We (delete as appropriate) hereby give notice that I/We (delete as appropriate) wish to cancel my/our (delete as appropriate) contract (please insert the reference number stated on your order confirmation).

Name of Consumer

Address of consumer.....

.....

Customer signature..... Dated.....

STANDARD TERMS AND CONDITIONS FOR SALE OF GOODS (QUOTATIONS)

THE TERMS AND CONDITIONS BELOW SHALL APPLY TO THE QUOTATION ATTACHED AND ANY SUBSEQUENT CONTRACT FOR THE SUPPLY OF ANY ITEMS DETAILED IN THIS QUOTATION. PLEASE READ CAREFULLY. THESE TERMS AND CONDITIONS WILL NOT AFFECT ANY STATUTORY RIGHTS WHICH YOU MAY BE ENTITLED TO FROM TIME TO TIME AND WHICH BY LAW CANNOT BE VARIED OR EXCLUDED.

1. Formation of a Contract

1.1 The quotation given on or attached to these terms and conditions will only remain valid for a period of 28 days.

1.2 On acceptance of the quotation by placing an order within the specified period in paragraph 1.1 above, you will be bound by these terms and conditions. Each quotation accepted shall constitute an individual legally binding contract between you and us. Such contract is hereinafter referred to in these terms and conditions as "an order".

1.3 No addition, alteration, substitution or waiver of these terms and conditions will be valid unless expressly accepted in writing by us or a person authorised to sign on our behalf.

1.4 Nothing in these terms and conditions shall prejudice any condition or warranty expressed or implied, or any legal remedy to which we may be entitled in relation to the goods / and or the work the subject of this quotation.

1.5 These terms and conditions shall be construed in accordance with the laws of England and shall be subject to the exclusive jurisdiction of the English courts.

2. Specification

2.1 All goods supplied by us shall be in accordance with the quotation given and any further specifications or descriptions agreed or expressly listed or set out on the face of the order.

3. Acceptance (to be read in conjunction with the right to cancel notice attached)

3.1 You will be deemed to have accepted all goods upon their delivery by us to the address specified in the order.

3.2 We must be informed in writing, not less than 7 working days prior to the agreed date for commencement of works of any changes, alterations, reductions or cancellations. We reserve the right to retain any deposits or charge in full for any goods supplied or fabricated or losses incurred where cancellation is not made within the period specified.

4. Title and Payment

4.1 We warrant that we have good title to the goods and will transfer such title as we have in the goods to you pursuant to paragraph 4.3 below.

4.2 Unless otherwise stated in the order, payment of the price of the goods comprised in each order shall become due once the surface has been installed

4.3 Title to the goods (and guarantee) comprised in the order shall not pass to you until you have paid the balance in full, although we reserve the right to sue for the price once payment becomes due notwithstanding that title may not have passed.

5. Price

5.1 If the rate of value added tax (VAT) increases between the date of your order and the date of completion we will add the necessary additional amount of value added tax to the price of the goods.

6. Force Majeure

6.1 We shall not be liable for delay or failure to perform any of our obligations under this order if the delay or failure is caused by any circumstances beyond our reasonable control.

6.2 For the purposes of this condition, "force majeure" shall include, but not be limited to acts of God, war, terrorism, civil disorder, industrial dispute, fire or explosions.

6.3 Upon the happening of a "force majeure" event we shall be entitled to a reasonable extension of time for the performance of our obligations.

7. Guarantees

Insert guarantee period. This guarantee is limited to the surface installed and does not extend to damage caused by movement or subsidence of the existing base unless this base was installed by ourselves.

The guarantee may be affected if the recommended maintenance of the resin bonded surface is not carried out in accordance with the schedule provided on completion of the job

We only use naturally occurring, non pigmented stone and as such your driveway will retain its colour year after year. Naturally occurring stone can occasionally contain small iron deposits.. This will not affect the structural stability of your installation but there may be up a 1% risk of harmless 'iron spots' on the surface.

8. Exclusions

8.1 We do not exclude liability for death or personal injury, however we shall not be liable for any direct loss or damage suffered by you howsoever caused, as a result of any negligence, breach of contract, misrepresentation or otherwise in excess of £20,000, Twenty Thousand Pounds.

8.2 We or our insurers shall not be liable or investigate any claim for loss unless you have given us written notice within 21 days of its occurrence and given us or our insurers every facility to investigate such occurrence.

9. Complaints

We aim to provide a high level of service. If you do have an enquiry or complaint regarding the goods provided by us please address them to Company name/address.



RESIN BOUND
TRAINING

RESIN BOUND TRAINING MANUAL - APR 2024 V1



FOR MORE INFORMATION CONTACT
OUR TECHNICAL AND SALES HELPLINE

01629 636500
sales@derbyaggs.com
resinbondedaggregates.com

derbyshire specialist
aggregates



Arbor Low Works, Youlgrave, Bakewell, Derbyshire, DE45 1JS