

# Method statement for BCI Resin bound systems

## Introduction

A Resin Bound system is a versatile, hard-wearing, and low-maintenance surface solution that brings a huge range of benefits compared to other surfaces. In order for a new Resin Bound surface to deliver on each of its benefits, it must be installed correctly from start to finish.

## Resin bound systems

A Resin Bound system is a surface solution that involves a hard-wearing course of resin mixed with dried aggregates. This is laid onto a new or existing macadam or concrete base. Unlike a Resin Bonded system, in which the dried aggregates are scattered over a full layer of resin, a Resin Bound system is permeable ..

## Appication area

Resin Bound systems are highly versatile, and can be used for a wide range of surfaces, including... Driveways, Paths, Patios ,Parks & Gardens Concourses, Car Parks, Cycle Paths, Terraces, Bridges and Schools

## Recommended Resin Bound Mix Specification

Through research and experience, we believe that having the correct ratio of resin to aggregates is critical to achieving a lasting, durable surface and we recommend the following amounts of aggregates: 25kg (1 bag) 1-3mm aggregates

6.25kg (1/4 bag) of C52 sand
Total 106.25kgs - % resin 7.05%
Coverage approx. 3.55m <sup>2</sup> at 18mm and 4.0m <sup>2</sup> at 15mm.

BC Fast hold resin 6.5kg

We recommend that a minimum 18mm depth be used. This is so the surface achieves the required tensile strength for the application. Sand increases the strength of the Resin Bound surface by approximately 15-25% and will contribute to the anti-slip properties of the finished surface. Due to the variability of aggregate type and size, we believe that a minimum of 7% ratio is the best content and acts as a “cover-all”. For pathways with foot traffic only, a depth of 15mm may be used. In the past, a mix of 6.5kg kits with 100kg of 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.

## Quantity estimation for dried aggregates

### Before you start installing a resin driveway

You must also consider the following before you begin:

Is the surface suitable?
Is the base stable?
Is there any cracking in the surface?
Is there any damage?

### Pre-installation:

#### Preparation

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 to and during application. All substrates to be coated should have a surface temperature at least 3°C above the dew point and rising to reduce the risk of delaminating due to condensation or surface foaming of the system.

A Resin Bound system base must be stable and suitable for the load it is expected to take once completed.

#### Installation

Use an outdoor hygrometer to check for humidity.
If the humidity level is below 80%, it is okay for working.
If any higher, you may need to delay the project.
<b>Surface checks:</b>
Make sure the base surface has been primed and dried.
<b>Materials:</b>
Check your aggregates and other materials for quantity, batch and color.
<b>Check area:</b>
Re-measure the work area to ensure you have all the materials you need to complete the project.

<b>Clean and prepare equipment:</b>
You will need to make sure all your equipment is clean and ready for use.
<b>Edging tape:</b>
Make sure all edges of your work area have been protected with tape to avoid resin staining.

### Mixing of resin

1. The Part A component of the resin should be mixed for 10-20 seconds at a slow speed, using a high-torque, helical-bladed mixer. An accelerator should be added at this stage if required.

The Part B component should then be added. Mix thoroughly at a slow speed for around 60 seconds until it is uniform.

### How to change the curing speed

You should allow the surface to cure for around 8 hours, but we do not recommend foot traffic for at least 24 hours. If you wish to maintain curing speed, you may add an accelerator (also called a catalyst). You must use an accelerator for temperatures below 15°C, especially when curing will take place overnight. Your accelerator should be used with each mix to make sure there is uniformity of curing. The only exception is for higher consistent temperatures of 25°C.

A should already be mixed before the accelerator is added. The resin comes with a syringe, which can be used to dispense accurately into the Part A component. Mix for approximately 15-20 seconds before the Part B component is added.

Air Temperature (°C)	Accelerator (Catalyst) Addition level (per 7.5kg kit)
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17.5	5.1ml
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15	11.3ml
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12.5	19.2ml
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10	33.8ml
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Air Temperature (°C)	Accelerator (Catalyst) Addition level (per 6.5kg kit)
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17.5	4.4ml
15	9.8ml
12.5	16.6ml
15	29.3ml

### Step 2. Mixing resin, dried aggregates and sand

The following should be carried out by the Mixer of your three-person team. 1) Place one 25kg bag of 2-5mm aggregates and one 25kg bag of 1-3mm aggregates into your Forced Action Mixer. 2) Add the pre-mixed resin to the mix and start your stopwatch. 3) Add the two remaining 25kg bags of 2-5mm aggregates. 4) Slowly add the bag of C52 sand.



Steps 2-4 of the above instructions must be carried out for the same duration for every mix. Failure to do this will cause color variation in the mix. The mixing should take no longer than 4 minutes. Make sure the sand has

been distributed evenly throughout the mix. 1) When ready, empty the mix into your plastic-lined wheelbarrow. 2) Switch the mixer off and ensure all of the mix is scraped from the mixer. The forced action mixer must be cleaned thoroughly after every mix to avoid contamination.

**Step 4. Trowelling the material** The following must be completed by the Troweller of your three-person team.



1. Plan the laying route and grid the area out in squares with chalk.
2. Lay batons to indicate where the troweller should tip the mix
3. You may use a screed bar to even out the mix further, prior to trowelling
4. Make sure the trowel is cleaned thoroughly with white spirit prior to trowelling. It should be cleaned regularly throughout the trowelling process. We recommend this be done approximately every six strokes. A dirty trowel will become sticky and will drag aggregates out of place.
5. Pack aggregates into every edge to ensure there are no gaps



6. Knit the mix together, making sure the aggregates form a closely compacted, level surface. Use the trowel with the edge slightly raised away from the stroke, applying consistent pressure to prevent the trowel from digging into the mix.
7. The mix should be trowelled until the aggregates stop moving in a fluid movement and become solid. This must be done in as few strokes as possible.
8. Once leveled and compacted, the surface can be smoothed (polished). This will help to leave an attractive sheen on the surface.
9. Ensure the edge of each trowelled section is rough and uncorked so the next batch of aggregate can seamlessly and easily be blended into it.
10. Add light and even sprinkling of crushed glass to provide additional slip resistance.

### **HELPFUL TIP**

To test whether the mix is compact and knitted. Cut a section into the edge of the surface being trowelled. It should remain intact. This is also a good way to check your trowelling depth is correct and consistent. Once completed, mark the area clearly with cones and tape to prevent anybody from accidentally walking on the surface before it is ready.

### **Your customer's finished Resin Bound driveway**

It is very important that you adhere to these steps rigidly to prevent any variation in the installation. Consistency and accuracy are key to success in Resin Bound. The completed surface should be smooth, flat and, of course, stunning to look at!



### **Materials and equipment**

**DRIED AGGREGATES** You can choose from a aggregates in multiple sizes and colors. Your aggregates will determine the overall appearance of your customer's Resin Bound driveway, so it is important to choose well! If in doubt, you can order a sample before committing to a large order. **RESIN** We recommend using resins for external applications, such as Resin Bound driveways. This will help prevent the breakdown and discoloration of the surface over time. **FORCED ACTION MIXER** In order to mix your resin and aggregates, you will require a forced action mixer. We recommend the Baron F110 forced action mixer because it is strong and durable; with 110 liters of mixing capacity, it can accommodate the recommended DALTEX UVR system mix design.