



EXPOSED AGGREGATE CONCRETE DATA SHEET

By Core Concrete & Landscape Solutions

Exposed aggregate concrete is a highly durable and visually striking surface ideal for driveways, patios, and walkways. At Core Concrete & Landscape Solutions, we pride ourselves on delivering premium-quality exposed aggregate finishes that stand the test of time. Below is a step-by-step guide of our typical installation process.

The duration of works is dependent upon the size and configuration of the slab, but we would normally allow 4-5 days from start to finish, excluding sealing, which is wholly weather dependent and often done upon completion of the larger scope, and after final site clean.

Prior to these steps, we will create an initial design for your area, and make considerations for set out, drainage, falls, and stress points, whilst also assessing the feasibility of such design on site. We will make initial decisions and recommendations regarding the steel type used, thickness of slab required, drainage points and also the Mpa strength of the concrete to be used.

STEP-BY-STEP INSTALLATION GUIDE

1. Excavation and Sub-Base Preparation

Proper groundwork is essential for longevity. We begin by excavating the area to the required depth, ensuring a solid foundation. A minimum of 50mm compacted crushed rock is recommended for stability, although this often increases depending on the composition of the natural ground.

We will use machinery to excavate and remove any existing surfaces, before bringing through new bulk crushed rock for the new sub base. Any required drainage points will also be installed at this time.

We are highly experienced machine operators and are able to cut precise grades into the ground as required.

2. Formwork Installation (Framing of concrete area)

Strong and accurate formwork is crucial. We set up formwork to define the project's shape as per design, ensuring proper levels and structural integrity are considered. If we believe that it is required, we will increase the depth or width of the area, if permitted.

3. Steel Reinforcement Installation

To enhance strength and durability, steel mesh or reinforcement bars (as per structural specifications) are installed, ensuring proper concrete support and crack resistance.

For relatively flat residential slabs, we will normally use SL72 steel mesh, installed on bar chairs to ensure the steel lies running through the slab and not just sat on the bottom. We may upgrade the steel size if the slab is heavily graded, or required to withstand increased loads. We will also install steel dowel bars to existing garage or porch slabs to ensure levels will not drop in the future and the slab is sufficiently secured in place.

In addition to this, we also install steel bars around all drains and to further reinforce these areas, especially in areas which will be trafficable.

Whilst these are minimum standards for our works, they are not necessarily standard installation requirements for other contractors. You can trust us to build your solution to the required specifications, with or without engineering drawings or external structural advice.

4. Final Checking of Formwork & Setting Heights

Before pouring, we meticulously check formwork alignment and confirm heights and slopes for proper drainage.

5. Pouring the Concrete

We pour the exposed aggregate concrete mix, either through a pump (if the distance from the truck to the works area is too great, or if the land or access is sloped, or difficult for easy passage with wheelbarrows). The size of the job will also determine whether or not we utilise a concrete pump for placement.

The mix that you choose is batched at the concrete plant, and we have no control over the actual placement of the aggregate within the mix. It is important to know that your exposed aggregate may not look exactly like the sample you have seen on the supplier website or one of our previous works photos.

Whilst pouring the concrete, we don't just throw it on the ground and smooth it out, the process is a little more technical than that. We ensure even placement across the area, taking into consideration heights and grades as we go, often breaking the pour up into sections, guided by height pins which we have set prior to the pour. When this is not done, you will often find that the finished slab may not have the required falls to drainage outlets, as designed.

6. Finishing the Concrete

Once poured, we level and smooth trowel the surface while taking care not to overwork the mix, preserving the aggregate's placement and removing any screed. float marks which may be present.

We initially use a bull float, which is dragged across the surface, not only smoothing out the concrete but also manipulating the concrete to bring the aggregate to the surface and ensure they are flat under the top crust of concrete.

We may then wait for the concrete to harden a little before getting onto the slab to hand trowel the surface, again, working the concrete to ensure the surface is flat and the aggregate is evenly distributed.

We will also tend to all edges and exposed faces of the slab, to ensure the correct finish is applied.

7. Spraying with Retarder

A surface retarder is applied to slow the curing process of the top layer, allowing controlled exposure of the aggregate. The retarder is quite simply a highly concentrated sugar solution, which slows the chemical reaction which takes place during curing, to enable us to expose the aggregate as required.

We use sprayers to apply the brightly coloured retarder to the slab. The colouring enables us to see which areas have been treated and not, and we can also see the rate of absorption into the slab.

8. Initial Exposing of Aggregate

After the retarder has been absorbed into the top layer of concrete and the concrete has time to cure beneath the surface (typically 12-24 hours), we carefully remove the cement paste from the surface using a pressure washer, revealing the desired aggregate texture. This process takes time and requires experience to achieve the desired level of consistent exposure. If left too long, the surface can over cure, despite the retarder treatment, and the desired effect may not be achievable.

We will always assess the weather conditions, and the actual concrete mix delivered before determining how long the concrete can be left to sit before exposure.

9. Saw Cutting / Fine Finishing

To control cracking, expansion / articulation joints are strategically cut once the concrete reaches the correct hardness, typically within 48 hours of pouring. Weather conditions can affect this period.

The purpose of saw cuts is to relieve pressure from the slab at points where it will be prone to cracking. Concrete is a natural product and is going to crack at some point. Strategically

placed saw cuts help to ensure that when this happens, the cracks run along the joints so as not to be visible from the surface.

We will always make your saw cuts look as uniform as possible and sometime even add more to bring consistency and a decorative aspect to the slab.

To be clear, aesthetics are not the primary concern when placing joints into a slab.

Whilst implementing saw cuts, we will also take care of any fine finishing required, which includes tidying of any edges around drains and perimeter, cleaning of drains, caulking or silicon application to pipework.

10. Acid Washing and Rinsing

A diluted acid solution is applied to further clean and enhance the aggregate exposure, followed by thorough rinsing.

The acid is poured onto the slab and left to work for up to 5 minutes. During this time, it fizzes and works to remove the fine cloudy film which is present across the slab, and also remove any small areas of slurry build up which may remain.

After a proper acid wash and rinse, the slab may be ready for sealing once dry.

11. Final Rinsing

Whilst the slab may already be clean enough to seal, we always complete a final clean, which ensures no residue remains, revealing the natural beauty of the aggregate. After this rinse, the slab is generally as clean as we will get it, and each individual stone within the mix should be clear and shiny.

12. Sealing

To protect and enhance the finish, we apply a high-quality sealer, improving durability and making maintenance easier.

We only use premium sealant products, which are mainly acrylic based. The sealant penetrates into the slab and coats the surface, to leave a glossy and shiny effect to the slab. Once the sealant is dried, you can finally see your new exposed aggregate slab as a finished article.

WHY CHOOSE CORE CONCRETE & LANDSCAPE SOLUTIONS?

At Core Concrete, we don't just install concrete and landscaping scope, we engineer lasting solutions. Our industry expertise, attention to detail, and commitment to quality mean every

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project is completed to the highest standard, ensuring long-term performance and aesthetic appeal.

For expert advice and professional installation, get in touch with Core Concrete & Landscape Solutions today!





