

Concrete Finishes

The manner in which decorative concrete is finished will ultimately dictate its appearance and slip resistance.

There are many innovative ways to finish decorative concrete to create original designs and patterns. Listed below are a few finishing techniques to provide some inspiration.

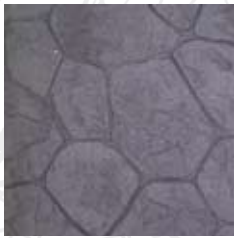
Textured Finishes



Broomed Finishes are achieved by pulling a broom across the concrete surface after it has been wood floated or steel towelled. Course textures are produced by stiff bristle brooms, medium textures are obtained by using soft bristle brooms. Fine to medium broomed textures are commonly used to produce slip-resistant surfaces on exterior entertainment areas and flat or gently sloping driveways and footpaths. Driveways and pathways are also normally broomed at right angles to the direction of the traffic. It is important when specifying that you mention whether a fine, medium or heavy broom finish is required.



Wood Float or Coving Trowel finishes are achieved by rubbing the surface on the concrete in a circular or figure of eight motion with a wood float to produce a textured finish. In order to achieve a consistent finish it is important that all circular motions be made in the same direction.



Stamped finishes are achieved by imprinting the concrete surface with metal moulds or textured (urethane) rubber mats or rollers. Finishes can resemble anything from stone paving, to brick, tile, wood and slate like patterns. Slate like patterns have shallow impressions, whereas those resembling natural stones or rocks have deep impressions. To better resemble natural stone, stamped concrete often combines at least two colours. Most commonly a dark coloured release agent is used to highlight the impressions in the concrete as well as to ensure that the moulds do not adhere to the concrete surface. By using Colourmix in the concrete as the base colour, more time is made available to apply the release agent to the surface, which is particularly helpful in dry weather conditions. After 2-3 days excess release agent is removed through pressure washing to reveal the true two-tone finish.



Rock Salt finishes are achieved by broadcasting water softener salt crystals 1/8" to 3/8" in size into fresh concrete. A roller is then used to press the salt crystals into the concrete. After the concrete sets, the concrete surface is power washed with water, dissolving the salt and revealing a speckled pattern of shallow indentations left by the dislodged salt particles.

Exposed Finishes



Sand Blasting or Grit Blasting produces a cost effective finish with good weathering characteristics. There are three types of mediums used to create this type of finish they include airborne or air/water borne sands, boiler slag and carborundum. It is best left up to the concrete contractor to decide which medium is most suitable to create the desired finish. It is important to note that good placement and compaction practices are compulsory as sandblasting can often reveal voids in the concrete from uneven or inadequate vibration. Once blasting has been completed the concrete surface is cleaned with a mild acid wash.

When selecting a Sand Blasted finish there are four types of abrasion that can be specified, these included brush blasting, light blasting, medium blasting and heavy blasting.

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Brush blasting is a light surface texturing that resembles and feels like sandpaper. It does not reveal the coarse aggregates and the resulting colour is that of the cement paste. Brush Blasting generally occurs seven days after the placement of the concrete.

Light blasting reveals the fine aggregates (sand) and a few stones of the coarse aggregate. Generally the sand dominates the colour whereas the cement paste and aggregates are secondary. Light blasting occurs between 7 and 14 days after the placement of the concrete.

Medium blasting exposes the coarse aggregate so that it protrudes approximately 6mm from the concrete surface. Medium blasting should occur within the first seven days of the initial concrete placement.



Heavy blasting results in the coarse aggregate protruding up to one third of its overall size from the concrete surface. The surface colour is totally dominated by the coarse aggregate and often a higher proportion of coarse aggregates are required in the concrete mix to achieve uniformity. Heavy blasting occurs within the first 24 hours of the initial concrete placement before it has reached a fully hardened state.



An **Exposed Aggregate** finish can also be achieved by gently washing and brushing the surface of the concrete with a stiff nylon brush several times to expose the structural aggregate used in the concrete. This process takes place once the concrete has hardened sufficiently to bear the weight of a person. It is important once again when specifying that you mention the level of exposure required i.e. light, medium or heavy. It is essential to note, that with a heavy level of exposure the coarse aggregate becomes the more dominant feature and the colour in the concrete becomes less visible.

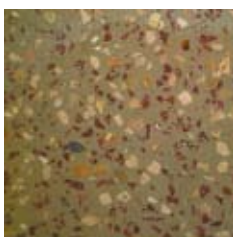


An exposed aggregate finish can also be achieved by '**seeding the surface**'. This is when selected aggregate is broadcasted over the surface and fully embedded by tapping and repeatedly working the surface with a wood float. Generally aggregate up to 20mm can be embedded without difficulty. The cement paste is then removed by brushing and washing the surface once the concrete has stiffened sufficiently.

Acid Etching involves using diluted acid (usually diluted hydrochloric acid) to remove the surface skin of cement paste to reveal the underlying matrix of the concrete - usually sand and smaller stones. Textures resembling fine sandpaper are most commonly produced, although deeper etching that reveals coarse aggregate is possible. After etching the surface is thoroughly washed with water to remove any residual acid.



Honed/Polished. These finishes are produced by grinding the surface of the concrete to remove the thin layer of cement paste and expose the underlying aggregates. This is often referred to as a 'terrazzo look'. The resulting finish can range from a dull honed finish through to a high lustre. The depth of grinding, i.e. the number of stages in the honing process, will determine the smoothness and shininess of the finished surface. To achieve a high lustre increasingly finer grinding pads are used. When specifying it is important to stipulate the level of grinding required. For example, a high lustre finish may be specified as follows:- the initial matrix removal would utilise a 30/60 grit and be followed by further grinding using 120 grit and completed using 220 grit.



Not all aggregates will polish to a high lustre. For example, limestone and basalt can be honed but not highly polished, whereas granites, quartz and most river gravels will give a highly polished effect. When selecting aggregates, consideration needs to be given to their hardness, as the rate of wear and tear on the grinding pads will in turn affect the overall cost of the project. On the other hand, the hardness of aggregates will have long term beneficial implications on the durability of the surface.

Smooth Finishes



Steel Trowel. Once the concrete has been placed, screeded, bullfloated and the bleed water has evaporated, a steel trowel is used to produce a smooth hand finished surface. The steel trowel is run smoothly and evenly over the surface of the concrete, right to left, in an arc, whilst slightly inclined in the direction of each motion. Sometimes it is necessary to trowel the surface a second or third time, after hardening of concrete has taken place, in order to achieve the desired smoothness.



Burnished. The desired outcome of burnishing is to achieve a smooth, impervious and durable surface, free of residual trowel marks with a considerable lustre. Burnished concrete finishes have been utilised primarily in industrial buildings, carparks and warehouses but are increasingly being used in residential and commercial buildings. Burnishing is achieved by applying a power trowelling machine (commonly referred to as a 'helicopter' or 'whirlybird') to the concrete surface. By nature of the process, burnishing results in densification of the concrete, and therefore darkening of the surface from overworking.