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Whispercast

In situ exposed aggregate pavement

- Whispercast Rustique - traditional matrix exposed aggregate
- Whispercast Surface Seeded - imported aggregate as a surface treatment
- Whispercast Silkstone Toppings - imported aggregate within a monolithic screed
- Whispercast Micro ETCH - slip resistance and decorative effect surface finish

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Whispercast: in situ Exposed Aggregate Paving

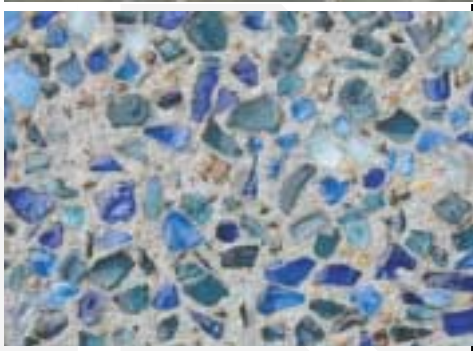
AN INTRODUCTION

Whispercast Exposed Aggregate pavement is a proprietary system for the production of controlled depth reveal of decorative aggregate at the concrete surface to form an attractive, durable, wearing course for most paving applications.

The system comprises four methods of achieving those finishes.

- **Whispercast Rustique - traditional matrix exposed aggregate.**
- **Whispercast Surface Seeded - using imported aggregate as a surface treatment.**
- **Whispercast Silkstone Toppings - using imported aggregate within a monolithic screed.**
- **Whispercast Micro ETCH a post finish process to etch the surface for slip resistance and decorative effect.**

At the heart of the Whispercast concept is leading edge technology in depth controlled surface retardation and effective admixture inclusion to ensure consistent appearance.



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Whispercast Rustique Matrix Exposed Aggregate

Whispercast Rustique - Matrix exposed aggregate is the simplest form of achieving a decorative finish to the concrete surface. With this method care is necessary to ensure that the correct proportion of coarse aggregate is included. Admixture provision in the mix design to restrict segregation of course and fine material is strongly recommended. This will help ensure a more consistent final appearance.

Matrix exposed aggregate finishes will typically show aggregate exposure over 65 - 75 % of the surface area. Careful consideration of colour of sands and any colour in the final matrix is essential. The finish is generally rustic in appearance, hence the name.

METHOD STATEMENT

1. Mix design should be carefully considered in relation to the ratio of course to fine aggregate. Trial panels should always be produced. Inclusion of HRL ARCON WFA admixture will help to restrict aggregate segregation, aid compaction and improve workability at the surface. (Typical mix design guidelines are available on request)
2. The concrete should have a minimum cement content of 320 kg per cubic metre for horizontal and 360 kg per cubic metre for vertical pours. Inclusion of polypropylene fibres is strongly recommended as secondary reinforcement. Primary reinforcement should be incorporated, as required for structural performance of the slab.
3. Attention must be paid to correct spacing of expansion, contraction and crack control joints. It is recommended that spacing of such joints should not exceed a grid of approximately 4.5 metres x 4.5 metres. Length of individual bays should not exceed 2 x width. (See seperate leaflet on HRL K-form permanent forming)
4. The concrete is placed as normal and the slab floated flat at the finished surface level. After bleed water has evaporated, the self neutralising retarder, Hebau CSE Multitop, should be applied by spray. Application can be as thin as practicable, consistent with total coverage. After 15-30 minutes, once the retarder has reacted, the material provides a significant degree of surface protection from rain damage, whilst acting as an effective curing membrane.
5. After 24 to 72 hours (It is important that whatever time frame is chosen remains consistent) the retarder residue can be washed off with a standard power washer. On large areas or where it is important to restrict run off residue, wet/dry vacuum equipment can be used for removal.
6. Once the process is complete the surface should be protected by an application of Hebau Colorfresh Intensiv or Hebau Colortec Max. This will ensure efflorescence is inhibited and the surface protected from dirt and stain contamination.

Production of on site trial panels are strongly recommended.

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Whispercast Seeded Controlled Aggregate Distribution

Whispercast Seeded is the process where selected specially graded aggregates are broadcast onto the surface of the concrete slab and trowelled in, before exposure. This allows for a pre determined rate of coverage to be established, with the aim of controlled aggregate distribution at between 75 and 85% of the surface area.

The process also allows for the economic utilisation of more expensive imported decorative aggregates, without any special requirements of the basic ready mixed concrete. Whispercast Seeded does create a more contemporary stone carpet like appearance, subject to dosage. Some simple techniques beyond standard concrete finishing are involved.

METHOD STATEMENT

1. "Seeding" is the careful broadcasting of aggregate into the surface of standard, paving quality concrete. The concrete should include polypropylene fibres, as a secondary reinforcement, have a minimum cement content of 320 kg per cu. metre, a maximum slump of 100 mm. and utilise maximum aggregate size of 20 mm. The mix should be air entrained, to prevent excessive bleed water. Primary reinforcement should be incorporated as required for the structural performance of the slab. Attention must be paid to the correct spacing of expansion, contraction and crack control joints. It is recommended such joints should not exceed a grid of approximately 4.5 m x 4.5 m square. Length of individual bays should never exceed 2 x width. (See seperate leaflet on HRL K-form permanent forming)
2. Concrete should be placed as normal and the surface floated flat. Level should be struck at between 3mm and 12 mm below the top of the forms, depending on the size of aggregate used, to allow for 'bulking up' from the additional seeded aggregate.
3. "Seeding" aggregate should be washed through a sieve and allowed to drain, before broadcasting onto the surface of the slab. Application should be at the pre determined rate of between 10 kg and 20 kg per square metre, depending on the size and weight of the selected aggregate. (e.g. 4mm - 8mm aggregate would require 10 kg per sq. metre and 16 - 20mm aggregate would require 20 kg per square metre).
4. "Seeded" aggregate should be lightly tamped below the surface of the slab and the surface then trowelled smooth. Once surface bleed water has evaporated, an application of Hebau CSE-Multitop, top surface retarder should be sprayed evenly over the surface, paying particular attention to edges and corners. After 15-30 minutes, once the retarder has reacted, the material provides a significant degree of surface protection from rain damage, whilst acting as an effective curing membrane.
5. Retarder can be removed, usually after 24 hours (although this time frame can be varied), by washing and brushing the residue from the surface. On rare occasions there may be some small localised areas where the residue is not fully removed by this method and these can be removed by a gentle application of Hebau Microgel. The exposed aggregate should then be washed clean. This should NOT be done with aggressive power washing.
6. Once the process is complete the surface should be protected by an application of Hebau Colorfresh Intensiv or Hebau Colortec Max. This should ensure efflorescence is inhibited and the surface is protected from dirt and stain contamination.

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Whispercast Silkstone Monolithic Topping Screed

Whispercast Silkstone Toppings are a range of monolithic screeds pre mixed to give the necessary aggregate distribution and workability, for placement 'wet on wet' onto a previously poured sub slab. The Silkstone Topping concept is a refinement on an old established concrete principle utilised for many years to produce high performance wearing courses onto industrial floors.

In exposed aggregate terms, Silkstone Toppings are a hybrid concept, designed to give some of the cost/aesthetic benefits of surface seeding within the more simple technique of exposing the matrix aggregate.

It is a highly productive process, requiring no additional concrete finishing skills

METHOD STATEMENT

1. Silkstone Toppings are a monolithic topping designed to be placed 'wet on wet' onto a 'green' base slab, usually between 2 and 6 hours of the base slab being installed. The topping will monolithically bond with the base concrete to form an integrated concrete slab.
2. Attention should be paid to correct spacing of expansion, contraction and crack control joints. It is recommended that such control joints should not exceed a grid of approximately 4.5 metres x 4.5 metres. Length of individual bays should not exceed 2 x width. All joints in the base slab must be mirrored through the topping screed to surface. Under no circumstances should the topping screed be poured over a joint, except where the joint line is to be replicated at the surface by saw cutting after installation. (See separate leaflet re: HRL K-Form permanent forms)
3. The base slab should be poured into forms and struck at a pre determined dimension below the finished floor/pavement level. This dimension will vary depending on the aggregate to be exposed. Typically the topping screed depth should be 2.5 times the maximum size of the aggregate (i.e. For a 10 mm aggregate topping screed will be 25mm deep).
4. The base slab should be tamped to a finish consistent with achieving a suitable 'Key' for the topping screed.
5. Within a window of 2 - 6 hours, depending on ambient temperature, cement content of the concrete and any other concrete set control inclusions, the topping screed should be poured over the base slab, struck to level and trowel finished as normal
6. Once bleed water has evaporated, Hebau Multitop self neutralising top surface retarder, should be applied by spray. Colour coded application ensures full coverage over the area to be exposed. Particular attention must be paid to edges and joints. After 15 - 30 minutes, once the retarder has fully reacted, the material provides a significant degree of rain protection, whilst acting as an effective curing membrane.
7. Preferably after 24 hours (although this period may be extended in certain circumstances) the retarder residue may be washed off with a standard power washer. Excessive pressure should not be required On larger areas where control of run off water is necessary, wet/dry vacuum equipment can be used to remove the residue.
8. Once the process is complete the surface should be protected by an application of Hebau Colorfresh Intensiv or Hebau Colortec Max. This will ensure efflorescence is inhibited and the surface protected from dirt and stain contamination.

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Whispercast MicroETCH
Post Finish Surface Etching

Whispercast Concrete - Micro-etch is a post finishing technique to produce an attractive and slip resistant surface. The finish can be applied to grey, white or coloured concrete on horizontal and vertical elevations. The process is equally suitable for both in situ and precast concrete production.

The etching gel is self neutralising after reaction, so residues are non hazardous.

METHOD STATEMENT

1. Micro etch surfaces are achieved by the application of Hebau Microgel, to the concrete surface, usually within 24 hours of the concrete installation.
2. It is possible to micro etch the concrete at a later date, or to apply the finish to existing concrete surfaces. In such cases trials are necessary to determine the depth of etch achievable. On existing or older concrete more than one application may be necessary.
3. The in situ concrete can be constructed to any approved mix design or specification, although exceptionally high cement contents or rapid hardening inclusions will be reflected in the depth of etch achieved. The finish is suitable for application to standard coloured and uncoloured concrete, dry shake hardeners, screeds, toppings, and surface broadcast fine fraction aggregates and sands.
4. Surfaces to receive a Micro-etch finish should be clean and free of any residual curing, sealing or any other membrane which might act as a barrier between the concrete surface and the etching gel. The surface to be treated should be saturated with water and allowed to dry until damp. Microgel is then applied liberally to the surface with a stiff brush. A surface reaction will become immediately apparent. Every effort should be made to ensure an even coverage of the material, with particular care taken at edges and corners. The Microgel must be left on the surface to react for a period of between 20 minutes and one hour, depending on the finish sought. Treated surfaces should then be thoroughly rinsed with clean water. On larger areas, or where run off residue needs to be controlled, wet/dry vacuum equipment can be used for removal after reaction. This process can then be repeated over any part or the whole panel, if additional etch is required.
5. Microgel applied in accordance with these instructions, results in the acid based ingredient of the gel being neutralised by the alkaline concrete surface. In these circumstances, the ph value of the wash off water should not be critical with regard to environmental concerns.
6. Once the process is complete the surface should be protected by an application of Hebau Colorfresh Intensiv or Hebau Colortec Max. This will ensure efflorescence is inhibited and the surface protected from dirt and stain contamination.

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Colouring Concrete

Protection & Maintenance

FOR CONCRETE AND NATURAL STONE SURFACES
HRL protective coatings are designed to maintain the natural appearance of decorative concrete, limestone and marble.

The water based formulations are non hazardous, effective, economic and simple to use. They are recommended for protection of both new construction and refurbishment of existing installations,

Principal Benefits include:

- **Water based, deep penetration protective coatings for dirt and stain resistant paving surfaces.**
- **No solvents or environmentally harmful constituents.**
- **Water repellent and efflorescence inhibiting.**
- **Long term protection against colour fading.**
- **Increases resistance to freeze/thaw attack.**
- **Simple and safe to apply.**

Available in two forms:

HRL COLORFRESH
A colour enhancing coating, which gives a light satin finish to the surface.

Coverage 8-10 square metres per litre.

HRL COLORTEC MAX
Invisible after use, leaving a natural appearance of the surface unaffected.

Coverage 5-8 square metres per litre.

Coverage varies depending on the porosity of the paving to which the coating is applied.

Full technical and installation instructions available on request.

HRL COLORFRESH and HRL COLORTEC MAX are long established high performance aids for durable protection to all mineral surfaces.

HRL COLORFRESH

WITH HRL COLORFRESH | WITHOUT HRL COLORFRESH

HRL COLORTEC MAX

PRIOR TO CLEANING | AFTER CLEANING

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