

Colour Hardener-Power Floated Datasheet

Oct 2017

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A granolithic concrete material that is power floated into fresh topping or concrete which colours, and creates durable and trafficable surfaces for commercial concrete floors. It is a special blend of cement incorporating very hard-wearing aggregates, light fast pigments and certain additives which set rock-hard and which has exceptional abrasion resistance. Some cement floor finishing experience is required for the success of this application.

Purpose

To provide a hard-wearing, attractive colouring system for the surface of concrete, toppings or Cemcrete's SuperScreed, steel floated to a smooth finish.

Technical Data

Type	Cement based surface hardener
Colour	See website www.cemcrete.co.za for colour options
Working time after spreading over surface	Wait for material to wet back before power floating
Initial set	1 hour
Light floor traffic after application	24 hours
Compressive strength (28 days)	As per the surface to which it is applied
Application temperature (ambient)	6°C to 25°C
Slab temperature	6°C to 25°C
Min application thickness	2mm
Max application thickness	3mm
Density	1.5kg/litre
Protection barriers required	Wind and sun barriers (no contact with product)

Advantages

- Where pan floated into Cemcrete's SuperScreed it can be used where there are height restrictions between 15mm and 20mm and still achieve good compressive strength and improved abrasive resistance
- Thoroughly colours concrete to a depth of about 2 - 3mm
- No risk of colour being rubbed off or abraded
- No need to repaint
- Colours are light fast and alkali proof

Existing Surfaces

All surface beds should have a damp proof membrane.

Where **Colour Hardener** is to be pan floated into SuperScreed that is to be bonded to a concrete slab, these substrates should be integrally sound (no cracking, no crumbling or friability, good compressive strength and good scuff resistance etc.) and of a quality and consistency suitable for application (good mechanical key and level). Cemcrete cannot be held liable should the **Colour Hardener** application be compromised as a result of failure or de-bonding (adhesion failure) occurring between the substrate and newly applied screed due to deficiencies or lack of surface preparation.

Application over moving joints or cracks can result in cracking and delaminating. All construction, cold joints, structural joints and/or structural cracks which may be dynamic before and/or after the **Colour Hardener** application must be extended through to the surface of the **Colour Hardener** application in the form of voided joints. All voided joints including saw cuts should be filled with suitable joint filler.

Where **Colour Hardener** is to be power floated into a concrete or topping base these should be 25 MPa minimum where a 13mm or 19mm stone should be used in the mix design. (Stone sizes to be used should be 1/4 to 1/5 the thickness of the slab). Slump to be controlled within a range of 75 to 100mm at point of discharge.

Cemcrete provides a comprehensive technical service based on over 4 decades of experience in the field of surface applications and cement technology. Cemcrete believes, to the best of its knowledge, that the information contained herein is true and accurate at the date of issuance and is subject to change without prior notice. For further clarification of these instructions, contact Cemcrete.

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Applications

Recommended for dusting onto wet SuperScreed, concrete or topping when laid prior to pan/power floating.

Site Work

Storage

Unopened bags can be stored on slats in a dry shed for 6 months from date of invoice.

Preparation

Remove all bleed water. Apply **Colour Hardener** to wet concrete/topping or moist SuperScreed before final set has taken place. Please refer to addendum A (page 4 of this datasheet) for the guidelines specific to this type of application.

Weather

Do not apply if rain or temperatures are expected to fall below 6°C within 5 hours of application. Cover during hot, dry weather to avoid premature drying which will halt the hydration process of the cement and reduce the ultimate strength. Do not allow the covers to lie on the surface as this can result in water marks staining the coloured surface.

Mixing

Use in dry powder form for dusting onto concrete, topping or SuperScreed surface before pan/power and steel floating takes place.

Masking

Mask all areas where there is a risk of splashing and staining and where straight edges are required.

Application

A single batch should be used to prevent colour variation.

Concrete base application

As soon as the concrete base has been levelled off and floated, wait for the excess moisture to settle. Remove all bleed water by sponge (DO NOT add additional cement/concrete to absorb this excess water). The surface should be wet, but not glistening with water. See addendum, drying fans may be used.

Spread the **Colour Hardener** powder by dry shake hand method at the rate of about 4kg/m² by dusting directly onto surface and then wait until this has wet back to a damp state. Power float this material to work it into the concrete base as evenly as is possible. For best results apply in two operations; the first with about 4kg/m² (60 - 70%) of the **Colour Hardener** required and, once power floated, the balance of 2kg/m² (30 - 40%) to be spread evenly over the surface. Once the water from the surface has wet back into the final layer of **Colour Hardener** powder added to the surface, finish using a plastic float followed by a hand held steel trowel to a smooth finish.

SuperScreed base application

The SuperScreed should be moist, not wet. TEST: Take a fist full of material and close your fist tightly so as to "ball" it in the palm of your hand. When you open your hand the ball should hold its form. Furthermore, a light moisture residue should remain on your hand and should not be glistening wet.

It is imperative that the screed be bonded to the substrate using a single coat of Cemcrete's Concrete Primer applied by sponge and rubbed into the surface and then allowed to dry. The next step is to mix Cemcrete's PrimerCote mixed to a paintable slurry using a mixture consisting of 1 volume FlexBond and 2 volumes water. Apply the PrimerCote using a block brush and make sure that it is worked into the existing substrate. Whilst this is still wet place the screed material on top of it, then compact and level this material. The PrimerCote must not be allowed to dry before applying the screed material.

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Apply the **Colour Hardener** powder by dry shake hand method, or use a plastic container drilled with 3mm holes for even dispersion, at the rate of about 4kg/m² by dusting directly onto surface and pan float to obtain an even colour. For best results apply in two operations; the first with about 4kg/m² (60 - 70%) of the **Colour Hardener** required and once pan floated the balance of 2kg/m² (30 - 40%) to be spread evenly over the surface. Once the water from the surface has wet back into the final layer of **Colour Hardener** powder added to the surface and floated, finish using a hand held steel trowel to a smooth finish.

Curing

Leave to air cure for 1 day after completion. Mist spray with water twice daily for 7 days. This hardening period is to avoid premature drying of the concrete which will reduce the final strength. Allow to cure for a minimum of 14 days before sealing.

Sealing

The moisture in the floor must be less than 5% prior to sealing. Ensure that the surface is free of any form of laitance or dust etcetera before sealing with a suitable sealer fit for purpose in accordance with the manufacturer's instructions. Sealers are best applied to a cool surface in multiple thin coats until an even sheen is achieved. Allow sufficient drying time between coats (product specific in accordance with the manufacturer's instructions). Cemcrete manufacture a wide range of sealers designed for a specific purpose, dry film thickness and durability; (example: for use in wet areas etc.) Various sealers also offer varying final finishes to the surface (e.g. gloss, matt, colour change, etc.). Please contact your local representative for the best solution to meet your needs.

Coverage

Approximately 3.33m² per 20kg bag.

Floor Maintenance

Maintain **Colour Hardener** floors with Cemcrete's CreteCare Range of floor care products in accordance with the manufacturer's instructions. Sweeping, mopping and vacuuming is a necessity for all floors irrespective of the final finish. Refer to relevant CreteCare datasheets.

Packaging

Colour Hardener supplied in 20kg bags.

Colours

Please refer to our website: www.cemcrete.co.za for the updated colour choices. It is important to remember that final colours may differ from those depicted on the colour charts as a result of factors such as site conditions and choice of sealer etc. It is important to base your final decision on samples applied by the same contractor and under the same conditions as is governed by the relevant contracting parties. We recommend two samples should be made by the contractor, one for the client and one as a retained sample.

Manufacturer's Warranty

Cemcrete warrants that the products manufactured by it shall be free from material defects and will be consistent with its normal high quality. Should any of the products be proven defective, the liability to Cemcrete shall be limited to replacement of the product ex-factory. Cemcrete makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties expressed or implied. The user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.

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ADDENDUM A

Basic Requirements for Colour Hardener – Floated under power

With regard to the use of **Colour Hardener** system for commercial or industrial type applications the following guidelines will be of benefit:

- Concrete floors to be 25MPa minimum where a 13mm or 19mm stone should be used in the mix design. (Stone sizes to be used should be 1/4 to 1/5 the thickness of the slab). Slump to be controlled within a range of 75 to 100mm at point of discharge.
- Size of flooring panels should be cast so as to achieve the highest quality finish.
- All openings into the building to be closed off and features such as roller - shutter doors to be installed before flooring commences. Lighting to be of good quality.
- Formed construction joints to have dowels or tie bars to act as load transfer mechanism. Where shrinkage is expected to be high toggle joints are not effective.
- Blower fans may be used for excessive bleeding prior to the application of Cemcrete's **Colour Hardener**.
- **Colour Hardener** to be applied at a minimum rate of 4kg per m/sq and then power floated. Add another 2kg per m/sq and hand finish with steel trowels to a smooth finish.
- All completed sections to be saw cut into panel sizes not exceeding 4m x 4m once concrete is sufficiently set. The depth of the saw cuts to be a minimum of one third of the thickness of the slab.
- The day following application the floor should be cured with clean water mist sprayed for at least 7 days thereafter. Once touch dry the floor should be protected to help keep the floor clean. Products such as carpet underfelt or soft board can be used and should remain in place for a minimum of 14 days. During this period the floor can be trafficked by pedestrian traffic but, scaffolding etc. should be fitted with rubber tyres. Remember that this concrete system is hydrating and needs to be protected and kept clean.
- At the end of the curing period the protective covering can be removed and the floor cleaned with suitable soft pad cleaning equipment prior to joint sealing (Available from Cemcrete).
- Once the joint sealer has been cured according to the relevant manufacturer's instructions and the floor properly cleaned then the desired Cemcrete sealer may be applied in accordance with the attached datasheet.

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