

INTEGRALLY COLOURED CONCRETE

March 2022

WEATHER

- Do not pour coloured concrete when rain, frost or high winds are forecast.
- Ideal pouring conditions are when the temperature is between 15–26°C.
- Schedule placement of coloured concrete to minimise exposure during the hottest part of the day.
- Provide extra curing protection to dark or black coloured concrete as these colours absorb more heat.
- Be aware of the air temperature. In cool weather it takes less water to achieve a workable mix.
- Variations in the water/cement ratio can significantly affect colour.
- In weather conditions that result in the increase in evaporation of pore water within the concrete, we recommend the use of a finishing aid such as CCS Aliphatic Alcohol.

MIXING

- Open paper bag and remove the fast-melt plastic bag containing pigment. The plastic bag is a fastmelt bag only when in contact with water. Dispose of the outer packaging.
- Add the fast-melt bag full of pigment to the concrete mixer in conjunction with initial water and aggregate. Alternatively, add sufficient preweighted disintegrating paper sacks to the mix with initial water and aggregate and mix with >10mm angular aggregate to pulp stage prior to adding remaining raw materials.
- Once sufficient bags have been added to the mixer, allow the mixer to turn for 5–10 minutes.
- Ensure that the same ratio of water, cement and raw materials is used for each load of concrete of the same colour.
- The concrete slump should be kept consistent at 100mm or less, and should not exceed 125mm for any load. A richer, more intense colour is achieved with a low water/ cement ratio.
- If possible, use the largest size of coarse aggregate to keep the water content level low.
- Purchase all concrete from the same supplier and plant location for each project.
- Do not add calcium chloride to accelerate the mix.
- CCS Pigments can be used with set accelerators and retarders (non-chloride type), surface retarders, water reducers, superplasticisers, internal waterproofing, fly ash and air entrainer. Take extreme caution when using third generation plasticisers such as poly carboxylates as they impact on the final colour and finish.
- Allow no more than 1–1.5 hours between batching and placing.
- Avoid using reactive aggregates.
- Minimise vibration of the concrete. Place concrete near its final location and use shovels to move it.
- A maximum dose rate of colour should not exceed 10% of the total cementitious content (ie. cement, fly ash, lime and silica fume). Dose rates of 3–6% are common.
- Always add pigment by weight, not by volume.
- Avoid direct exposure of coloured concrete to moisture and condensation whilst curing to minimise

SUB-GRADE / REINFORCEMENT

- Use a compact, dampened, though well drained consolidated sub-grade.
- Use correct joints and saw cuts to minimise cracking.
- Protect surrounding slabs and structures to prevent damage.

FINISHING

- Bull float after striking off the slab. Avoid using magnesium bull floats.
- Wait for bleed water to evaporate before trowelling. Early final trowelling before bleed water has evaporated can cause entrapped moisture, discolouration and dusting of the surface.
- Avoid over-trowelling. This causes burning and discolouration. Darkening and discolouration is more likely to occur as trowelling time increases.
- Hand finishing of coloured concrete is ideal.
- Take extreme caution if power trowelling with a helicopter as uneven or over-trowelling may result in discolouration.
- Avoid adding excess water to tools or to the surface. No additional water should be added after a portion of the load has been discharged.
- Do not add cement powder or CCS Pigments to the surface of wet concrete.
- All final hand finishing should be done in the same direction. Use consistent finishing practices at all times.
- CCS Aliphatic Alcohol can be used to help reduce evaporation during the placement and finishing (trowelling) stage. Aliphatic Alcohol should be applied in a consistent manner following the manufacturer(s) recommendations. Coloured concrete should then be cured with a curing compound that meets AS3799 and is suitable for coloured concrete - for example CCS Slab Clad R. Alternatively, cover in used wet hessian and keep consistently moist for a minimum period of five days.

CURING

- To prevent surface blemishing, do not cure with plastic sheeting, intermittent wetting and drying, membranes, paper, sodium or fluoro-silicate hardeners and other compounds which can cause discolouration.
- Apply a curing compound as soon as the surface will allow. Ensure any curing compound is structurally and aesthetically suitable for decorative concrete. CCS Slab Clad R is recommended.
- CCS Same Day Sealer in conjunction with a top coat of a premium sealer such as CCS Hi-Build Enduro is suitable for domestic projects.
- Only apply CCS Hi-Build Enduro 7–21 days after application of CCS Same Day Sealer (Concrete should not be sealed until it has a uniform colour and there is no apparent moisture). Alternatively, allow to cure for a minimum of 28 days and to a clean, dry surface apply one of the CCS Penetrative or Urethane sealers.
- The application of a sealer will also protect from effects of oil, grease, dirt and weather.
- Ensure that sufficient joints are provided to control cracking.

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USER RESPONSIBILITY-PRODUCT SELECTION AND COMPATIBILITY

CCS warrant that their manufactured product is free from defects as well as being suitable for the purpose for which it is intended as long as it has been used and applied in accordance with the most current Technical Data Sheet from CCS.

In practice, differences in materials, substrates and actual site conditions require an assessment of product suitability for the intended purpose.

The user is responsible for checking the suitability of products for their intended purpose.

Further, combinations of products that form a total system are often required to service particular applications. Due to the multitude of products available to service an application, only products from the CCS system of products must be used in combination with this product to ensure it will be suitable for the purpose for which it is intended.

The product must also not be mixed or used in combination with any other product which is not a product supplied by CCS

For further information consult the Safety Data Sheet and read the product label carefully before use.

Safety Data Sheets are available from www.concretocoloursystems.com.au or by calling 1800 077 744.

Please note: This is a guide only and not a guarantee of chemical resistance. Please contact our office for further information on individual application requirements.