



BluCem 50-10

HIGH STRENGTH CONCRETE



BluCem 50-10 is a prepackaged concrete mix which is designed to be used where ready-mix concrete may not be a practical option.

BluCem 50-10 comes in a variety of bag sizing combinations which will cater for all types of projects. Bulk-bags are easily transported and loaded into tumble mixers no matter where the application. This includes off-shore projects and projects in remote regional locations. BluCem 50-10 is a cost effective and very high quality alternative which is easy to mix and flexible in its packaging sizes.

Application Advantages

- Easily transported to remote locations
- Very good workability
- Pumpable
- High compressive strength
- Packaging options for small or large pours

Lifecycle Advantages

- Low drying shrinkage
- Durable with 25% flyash addition

About the Product

BluCem 50-10 is a multi component cement powder and selected aggregate blend which requires only the addition of water to form an engineered concrete. BluCem 50-10 is a pumpable, remote application product suitable for civil engineering applications. BluCem 50-10 incorporates cement and selected aggregate blend to form a concrete which is workable, low drying shrinkage and durable with 25% flyash addition.

Application Solutions

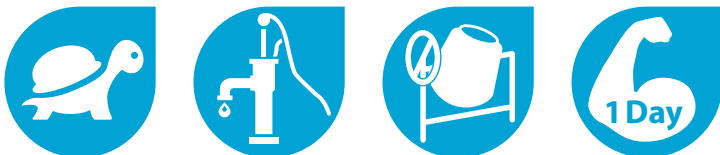
- Concrete construction
- Off shore concreting
- Columns and slabs
- Remote pouring of structural elements
- Pile construction

Project Specification Clause

HIGH STRENGTH CONCRETE - The engineered concrete used for this project shall be a multi component cement powder and selected aggregate blend which requires only the addition of water to form a durable engineered product. It shall be preblended and tested to achieve the technical requirements outlined in the technical data table detailed below in accordance with the standards shown. BluCem 50-10 manufactured by Bluey Technologies or similarly performing products may be accepted for use on this project.

Project Examples

Jetty construction and repair, airport construction, bridge repair, building repairs, dams construction and repair, concrete structures, road repairs, runway repairs and shutdowns, sea wall repair and maintenance, wharf repair and construction





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Application Specification

MIXING

- 1.1 Measure and place the specified volume of potable water to the tumble mixing vessel. Start mixer and slowly add BluCem 50-10 aggregates and powder. If powder addition is too fast then large lumps will form and final mix will be slow reaching uniform consistency. Following addition of all powder, mix for 1 - 2 minutes or until uniform consistency. More or less water may be added within the ratio limits specified on this data sheet. Do not mix more material than can be placed in one hour.

PUMPING

- 2.1 Once the concrete has been mixed you need an effective pumping method to deliver it to the area of application. BluCem 50-10 is a concrete blend and therefore best mixed using tumble style agitators. It is also best to pour or pump shorter distances using concrete pumps. Bluey Technologies are able to recommend the right mixer for your project.
- 2.2 Prior to pumping concrete, rinse the mixer and charge the pump hopper with sufficient water to flush and cool the pump and all concrete lines thoroughly. Check to ensure that all lines and hoses are clear and unobstructed. Once concrete is mixed, it is important to keep it agitated continuously prior to pumping. If the concrete is allowed to sit then it will 'gel' and may become more difficult to pump or otherwise set earlier than expected.
- 2.3 Once the site is ready for concrete placement, commence pumping. It is important to pump continuously and avoid the formation of cold joints.
- 2.4 Following completion, dispose of excess production material in consideration of the environment. Carefully wash out mixer tanks and agitators into the pump hopper and pump the resulting washout material through the concrete hoses to a suitable disposal site. Drain any water out of the lines and hoses. Clean down the machinery and surrounding areas.

APPLICATION TEMPERATURES

- 3.1 The mix water's temperature should be kept as low as possible to prevent the concrete from hydrating too rapidly.
- 3.2 As with the water temperature, the higher the air temperature the more quickly the concrete hydrates and sets. Bluey Technologies specify mixing times and set times at an ambient temperature of 20°C. These times vary with temperature fluctuations, and adjustments will be required to compensate for this. Exposing the pumping hoses to the sun on a hot day accelerates the product's set time. In some cases it may be necessary to cool the material, the mix water, or even the hose itself during the process and pre-planning the storage of all materials to keep the temperature as low as possible.
- 3.3 High-shear mixing can add 1 to 2°C per minute of mixing. In order to minimise this effect, add all ingredients to the mixer as quickly as possible and minimise prolonged batch-mixing procedures.
- 3.4 It is estimated that every 10°C increase in temperature will halve the product set time. Likewise every 10°C reduction will double the set time. These set time variances may have detrimental consequences for the final set product and Bluey Technologies should be consulted where extreme temperatures are anticipated.

APPLICATION

- 4.1 BluCem 50-10 may be poured or pumped into place.

CURING

- 5.1 It is recommended that the final surface finish layer is coated with curing compound or otherwise maintained wet for at least three days.



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Product Data

Please refer to Important Notice on following page

Packaging	45kg or 4500kg kits
Water Addition	4.0 - 4.2 litres per 45kg
Yield	2l litres per 45kg @ 4.1 litres water
Application Thickness	Refer to Bluey Technologies for advice and approval on pour thicknesses with dimensions exceeding 500mm
Maximum Particle Size	10mm

TESTED CHARACTERISTIC	STANDARD	RESULT
Portland Cement	AS3972	Complies
Aggregates	AS2758.0	Complies
Compressive Strength	AS1012.9	4.0 - 4.2 litres water per 45kg 20MPa @ 24 hours 40MPa @ 7 days 60MPa @ 28 days
Drying Shrinkage	AS1012.13	<700µstrain @ 28 days
Setting Time	AS1012.18	Approx 4hrs @ 20°C
Mass per Unit Volume	AS1012.5	2340kg/m ³



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