



# BluCem 80-10

## EARLY STRENGTH CONCRETE



BluCem 80-10 is a multi component cement powder and selected aggregate blend which requires only the addition of water to form a rapid strength concrete.

BluCem 80-10 will cure to form a structurally supporting element in two hours using special cement systems suitable for permanent structures. BluCem 80-10 is a pourable product suitable for civil engineering applications. BluCem 80-10 incorporates cement and a selected aggregate blend to form a concrete which is workable, low drying shrinkage, durable concrete.

### Application Advantages

- Easily transported to remote locations
- Good workability
- Rapid strength gain
- High compressive strength
- Packaging options for small or large pours

### Lifecycle Advantages

- Ultra low shrinkage
- High chloride and sulphate resistance
- Chloride free
- Suitable for 100 year design life applications

### About the Product

BluCem 80-10 is a prepackaged concrete mix which is designed to be used where rapid strength gain in large applications is required. The product will cure to form a structurally supporting element in two hours using special cement systems suitable for permanent structures. BluCem 80-10 comes in a variety of bag sizing combinations which will cater for all types of projects. Bulkbags are easily transported and loaded into tumble mixers no matter where the application. BluCem 80-10 is a time saving and durable solution for applications where fast turnaround times are required.

### Application Solutions

- Pavement repairs and replacement
- Marine concreting
- Pile construction
- Bridge construction
- Shut down works
- Sewer remediation

### Project Specification Clause

EARLY STRENGTH CONCRETE - The rapid curing 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 rapid curing 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 80-10 manufactured by Blueey Technologies or similarly performing products may be accepted for use on this project.

### Project Examples

Road pavement repairs, runway repairs, airport shutdowns, sea wall repair and maintenance, airport construction, bridge repair, building repairs, dams construction and repair, rail, and underground works.





# BluCem 80-10

## EARLY STRENGTH CONCRETE

### Application Specification

#### MIXING

- 1.1 Measure and place the specified volume of potable water and BluCem 80-10 aggregate (Part B ) to the tumble mixing vessel. Start mixer and slowly add BluCem 80-10 powder (Part A). 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 twenty minutes.

#### PLACEMENT

- 2.1 Once the concrete has been mixed you need an effective placement method to deliver it to the area of application. BluCem 80-10 is a fast setting concrete blend and therefore best mixed using tumble style agitators. It is also best to pour into place. Bluey Technologies are able to recommend the right mixer for your project.
- 2.2 It is important to place continuously to avoid the formation of cold joints.
- 2.3 Following completion, dispose of excess production material in consideration of the environment. Carefully wash out mixer tanks and agitators. 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. In some cases it may be necessary to cool the material, the mix water, or even the kibole 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 80-10 may be poured 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 two hours.



# BluCem 80-10

## EARLY STRENGTH CONCRETE

### Product Data

Please refer to Important Notice on following page

<b>Packaging</b>	45kg kit (Part A 25kg and Part B 20kg) or 2160kg kit (Part A 1200kg and Part B 960kg)
<b>Water Addition</b>	3.4 litres per 45kg
<b>Yield</b>	2l litres per 45kg @ 3.4 litres water
<b>Application Thickness</b>	Refer to Bluey Technologies for advice and approval on pour thicknesses with dimensions exceeding 200mm
<b>Maximum Particle Size</b>	10mm

TESTED CHARACTERISTIC	STANDARD	RESULT
Portland Cement	AS3972	Complies
Aggregates	AS2758.0	Complies
Target Slump		250mm (3.4 litres water per 45kg)
Compressive Strength	AS1012.9	3.4 litres water per 45kg 15MPa @ 3 hours 30MPa @ 4 hours 50MPa @ 24 hours 80MPa @ 28 days
Drying Shrinkage	AS1012.13	<300µstrain @ 56 days
Setting Time		20 - 30 minutes @ 20°C while still
Pot Life		30 - 50 minutes @ 20°C while agitated
Fresh Wet Density	AS1012.18	2400kg/m <sup>3</sup> @ 3.4 litres water per 45kg
Flexural Strength	AS1012.11	6.9 MPa
Modulus of Elasticity	AS1012.17	34.2GPa @ 3 days 40.3GPa @ 28 days



# BluCem 80-10

## EARLY STRENGTH CONCRETE

### Contact Bluey

#### BRISBANE (HEAD OFFICE)

Bluey Technologies Pty Ltd  
Unit 8, 53 Metroplex Avenue, Murarrie Qld 4172 Australia  
Ph +61 7 3399 3635 Fax +61 7 3899 9822 [brisbane@bluey.com.au](mailto:brisbane@bluey.com.au)

#### SYDNEY

Bluey Technologies Pty Ltd  
Unit 3, 35 Higginbotham Road, Gladesville NSW 2111 Australia  
Ph +61 2 9807 2207 [sydney@bluey.com.au](mailto:sydney@bluey.com.au)

#### MELBOURNE

Bluey Technologies Pty Ltd  
PO Box 170, Tullamarine VIC 3043 Australia  
Ph +61 3 9826 5570 [melbourne@bluey.com.au](mailto:melbourne@bluey.com.au)

#### PERTH

Bluey Technologies Pty Ltd  
Ph +61 402 372 308 [perth@bluey.com.au](mailto:perth@bluey.com.au)

#### AUCKLAND

Bluey Technologies  
Ph +64 21 102 4797 [nz@bluey.com.au](mailto:nz@bluey.com.au)

[www.bluey.com.au](http://www.bluey.com.au)

#### BLUEY ASIA PACIFIC DISTRIBUTOR

##### QUICSEAL CONSTRUCTION CHEMICALS PTE LTD

No.7 Eunos Avenue 8A, Eunos Industrial Estate, (S)409460 Singapore  
Ph +65 6742 4466 Fax +65 6741 4666  
[www.quicseal.com](http://www.quicseal.com)

#### IMPORTANT NOTICE

This Technical Data Sheet is provided for general information and instruction only. Bluey does not warrant that the information it contains is accurate, reliable or complete. Bluey does not warrant that the product (or any related services) will achieve any of the characteristics set out herein in any particular application in the field, nor that it will be suitable for any specific use or purpose. The properties and characteristics set out herein represent typical testing results under laboratory conditions only. Results of actual product implementation may vary. Site-specific and project-specific criteria will affect product performance, including without limitation: surfaces, materials or products used with the product or to which the product is applied; and weather, climatic or seasonal conditions. The user must take into account all such criteria relevant to the project concerned when considering any desired results, including by undertaking trial mixing and application under site conditions. Not all product parameters are batch tested as part of the manufacturing quality control process, and performance may vary between batches.

If Bluey gives any express written product warranty in relation to the product, that warranty is subject to the foregoing qualifications, despite anything to the contrary in any other document. All other representations, advice, suggestions or promises regarding the product's performance or its implementation, whether verbal or in writing, and whenever given, including in the course of any field services, are expressly disclaimed. Without limiting the foregoing, Bluey will have no liability for loss or damage of any kind if any application specifications are not followed.

The foregoing is not intended to exclude any warranties or guarantees which by law cannot be excluded. Subject only to the foregoing provisions of this Notice, and to the extent permitted by law, Bluey disclaims all liability for loss or damage of any kind suffered as a result of or in connection with the product or its implementation. If such liability cannot be wholly excluded, Bluey's liability will, to the extent permitted by law, be limited to the replacement of the product itself or the direct cost of replacement of the product itself (not including any collateral or consequential loss or damage of any kind).

© Bluey Technologies Pty Ltd