



# BluCem FSC

FAST SET CONCRETE



BluCem FSC is a cement binder specifically formulated to be used in concrete mixes where high early strength is required.

BluCem FSC has been designed as a cementitious binder that can be mixed with coarse and fine aggregates to produce a rapid-set concrete. BluCem FSC is suitable for batching near to site, in transit mixers or volumetric mixers, for fast placement where development of high early strength for early return to service is required.

## Application Advantages

- Suitable for a range of mix designs and water ratios
- Workability control
- High early flexural and compressive strengths

## Lifecycle Advantages

- 100 year design life
- Negligible chloride content
- Engineered alkalinity
- Very low drying shrinkage
- RMS Approved

## About the Product

BluCem FSC is a highly durable, CSA based, cementitious powder binder which is blended with aggregates to form a high early strength gain concrete. BluCem FSC does not contain chloride or lime based accelerators to achieve its early strength. For added durability, the product also utilises engineered alkalinity to inhibit corrosion and protect reinforcing steel. BluCem FSC is specifically designed to be applied using volumetric based continuous mixers. The powder blend has been formulated to eliminate segregation during transport and provide consistent, repeatable results throughout large volume applications. BluCem FSC is designed for use in construction of concrete structures and pavements where only a short window of time is available to complete the works and return the asset to service.

## Application Solutions

- Airport runways
- Concrete road pavements/rail bridges
- Car parks
- Sewer structures
- Industrial process plants and mining infrastructure
- Precast concrete panels

## Project Specification Clause

FAST SET CONCRETE - The cement for this project should be based on a calcium sulfo-aluminate cement system which requires only the addition of aggregates and water, to a maximum of 0.4:1, to provide a durable concrete with high strength gain in the first few hours after mixing. It shall be a cement product that has independent testing to validate the performance outlined in the technical data table on the following pages. BluCem FSC manufactured by Bluey Technologies or equivalent will be accepted. To meet durability requirements, the fast set cement shall not contain chloride or lime based accelerators.

## Project Examples

Airport pavement replacement, freeway pavement replacement, sewer pump station remediation, process plant structures, emergency repairs to damaged pavements, car parks etc.





# BluCem FSC

## FAST SET CONCRETE

### Application Specification

#### MIX DESIGN

- 1.1 Select suitable coarse and fine aggregates.
- 1.2 Design a concrete mix within the water cement ratio and powder proportion ranges using BluCem FSC.
- 1.3 Carry out laboratory trials to validate work time, workability and early strength gain targets.

#### TRANSIT MIXER

- 2.1 Use BluCem FSC.
- 2.2 Erect access platform for safe unloading of bulk bags of BluCem FSC into mixer or use a cement powder unloader with hopper and elevating screw conveyor.
- 2.3 Load potable water into mixer.
- 2.4 Load aggregates into mixer.
- 2.5 Load BluCem FSC powder into mixer.
- 2.6 Travel to pour location while mixing.
- 2.7 High speed mix for three minutes.
- 2.8 Discharge concrete into place, vibrate and finish as required within the work time established by trial mix.

#### VOLUMETRIC MIXER

- 3.1 Use BluCem FSC loaded into the powder bins of the Volumetric mixers.
- 3.2 Load potable water, aggregates and BluCem FSC into the mixer storage compartments in a safe manner.
- 3.3 Locate mixer beside pour location.
- 3.4 Mix concrete volumetrically and discharge.
- 3.5 Vibrate and finish as required within the work time established by trial mix.



# BluCem FSC

FAST SET CONCRETE

## Product Data

Please refer to Important Notice on following page

Packaging	20kg, 1000kg, 1200kg bags
Water to Cement Ratio	0.3:1 - 0.4:1
Powder Addition	350 - 550kg per m <sup>3</sup> concrete
Working Time	20 - 30 minutes @ 20°C

TESTED CHARACTERISTIC	STANDARD	RESULT
Compressive Strength	AS1012.9	10MPa @ 2 hours 15MPa @ 3 hours 20MPa @ 4 hours 45MPa @ 24 hours 50MPa @ 7 days 70MPa @ 28 days
Flexural Strength	AS1012.1	2.0 - 3.0MPa @ 2hrs 3.0 - 4.0MPa @ 3hrs 4.0 - 5.0MPa @ 4hrs
Chloride Content	AS1012.20	Less than 0.005%
Shrinkage	AS1478.2	Less than 300µm
pH Value		>11pH @ 28 days >11pH @ 900+ days

Note: The values shown in this table are based upon laboratory testing using a typical bluey mix design and aggregates. Note that results will vary depending upon the source, quality and shape of aggregates used in the blend. All mix designs and results shall be verified on site prior to commencement.

The work time and early strength gain using BluCem FSC are a function of the temperature of the mix water, aggregates and powder at the time of batching. Consult with Bluey before placement of concrete using BluCem FSC where temperatures are below 8.0°C and above 35.0°C.



# BluCem FSC

## FAST SET 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