

# BluCem HB50

## MARINE HIGH BUILD CEMENTITIOUS MORTAR



Bluey Technologies Pty Ltd  
ABN 36 115 613 646

PO Box 898, Hamilton  
QLD 4007 Australia  
Tel: + 61 7 3399 3635  
Fax: + 61 7 3899 9822

### DESCRIPTION

BluCem HB50 is a one component polymer modified, cementitious powder blend which requires only the addition of water to form a concrete repair mortar suitable for marine and other aggressive environments.

### USES

BluCem HB50 is designed for reinstatement of marine structures and for use in aggressive environments for both old and new structures. It is particularly suitable for use in tidal zones due to its fast setting properties and ability to cure in salt water. Low permeability characteristics make it highly resistant in environments containing acid gasses, chloride ions or aggressive chemicals. All structural repairs should be designed and approved by a Structural Engineer.

### ADVANTAGES

- Type C Class, dual shrinkage control grout
- Special additives to improve chloride and sulphate resistance
- Potable water use approved in accordance with AS/NZS 4020:2005
- Resistant to marine and acid environments including acid sulphate soils

### CONCRETE PREPARATION

All defective host substrate must be removed prior to application. Defective material includes cracked or structurally weakened surfaces and also chloride contaminated and carbonated concrete. A concrete corrosion expert must be consulted for critical projects or structural applications. Host concrete must be roughened and aggregate exposed to ensure good bond. High pressure water blasting or mechanical chipping of the surface is recommended for this purpose. All surfaces must be free of dust, oils and surface contaminants. This may require steam cleaning or high pressure water blasting if site conditions permit. A perimeter edge of at least 10mm depth must be provided around the area for application. Priming using BluCem AP10 is recommended. Priming by saturation of the surface using water prior to application is also acceptable. Priming with epoxy primers or other products which prevent vapour transmission is not recommended.

### STEEL PREPARATION

Following removal of all defective concrete, any partially exposed reinforcing bars shall be fully exposed to a depth of 20mm behind the bar. If the bar has lost more than 20% of its original diameter then it should be replaced and the Structural Engineer must be consulted. Where the original reinforcement is retained it must be cleaned to a standard surface purity of Sa 2.5 for chloride contaminated concrete and Sa 2.0 for carbonated concrete. This is best achieved by wet blasting or abrasive blasting. If chloride contamination is present then high pressure wet blasting is the only acceptable method of cleaning. Priming of reinforcement is generally not required. If the steel will be exposed to the atmosphere for several days after cleaning then an acceptable form of priming would be to mix BluCem HB50 into a slurry using BluCem AP10 and apply a cement rich coating to the steel surface.

### MIXING AND APPLICATION

Add BluCem HB50 to potable water in a clean vessel using a high shear mechanical mixer for at least three minutes. Do not mix more material than can be placed in 15 minutes. Add enough water to achieve the desired consistency within the water ratio limits specified in this data sheet. Work small amounts of repair material into the primed or dampened surface. Do not exceed 40mm of thickness in any wet layer. Roughen the surface between each layer and wait until initial set or all latent heat has dissolved prior to application of next layer.

### CURING

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

<b>Packaging:</b>	20kg bags
<b>Mixing Ratios:</b>	Apply by trowel: 3.0 - 3.5 litres of water per 20kg bag of BluCem HB50 Apply by pour: 4.0 - 4.2 litres per 20kg bag of BluCem HB50
<b>Yield:</b>	~12.8 litres per 20kg bag (applied by trowel)
<b>Set Times:</b>	Initial - 30 minutes (AS1012.18) Final - 45 minutes (AS1012.18)
<b>Wet Density:</b>	1880kg/m <sup>3</sup> (AS1012.2)
<b>Compressive Strength:</b>	5MPa @ 2 hours (AS2350.11) 30MPa @ 4 hours 40MPa @ 24 hours 45MPa @ 7 days 50MPa @ 28 days
<b>Tensile Strength:</b>	3MPa @ 28 days (AS1012.10)
<b>Flexural Strength:</b>	6.5MPa @ 28 days (ASTM C 348)
<b>Elastic Modulus:</b>	25GPa @ 28 days (AS1012.17)
<b>Shrinkage:</b>	<190µstrain @ 28 days (AS2350.13)
<b>Coefficient of Thermal Expansion:</b>	15µstrain/°C
<b>Chloride Ion Penetrability:</b>	Low (ASTM C1202)
<b>Sulphate Resistance:</b>	<50µstrain @ 16 weeks (AS2350.14)
<b>Chloride Content:</b>	<0.01% (AS1012.20)
<b>Clean Up:</b>	Clean tools and surfaces using water prior to curing
<b>Storage:</b>	Store in cool dry conditions Shelf life is 12 months

### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this publication is based on the present state of our best knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, their representative or the contractor is responsible for checking the suitability of products for their intended use.

Product properties are dependent upon seasonal and geographical criteria. Product properties and performance may vary between countries and locations within. We recommend that you clarify your specific requirements with your local Bluey representative to ensure that all specific project requirements are met.

### NOTE

Field service where provided, does not constitute supervisory responsibility. Suggestions made by Bluey Technologies Pty Ltd either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Bluey Technologies Pty Ltd are responsible for carrying out procedures appropriate to a specific application.

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Product Code BC-15-00-000

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