

Safety and Ordering

SAFETY

Avoid direct skin contact with both wet and dry cement. Avoid breathing cement dust by wearing a P1 or P2 dust mask suitable for airborne dust. Wear appropriate protective clothing and footwear.

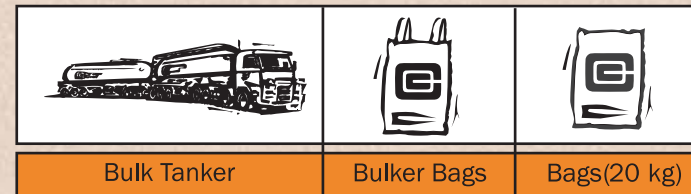
Additional information is available in our Material Safety Data Sheets on request. Phone 1300-138-996.



FIRST AID

In the event of skin contact wash with clean water to minimise possible irritation. If material gets into eyes wash immediately and repeatedly with eye wash solution or clean water.

Low Heat Cement is available in



NEED TECHNICAL HELP?

For more information contact Technical Support on our **free-call-help-line 1300-138-996** or visit our website www.cockburncement.com.au

SALES AND ORDERING

Customer Service Centre:
(08) 9411 1166



ABN 50 008 673 470

Lot 242 Russell Road East,
Munster Western Australia 6166
P O Box 38, Hamilton Hill WA 6163
Telephone: (08) 9411 1111
Facsimile: (08) 9411 1120

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Low Heat Cement



PRODUCT INFORMATION



PRODUCT INFORMATION AND PROPERTIES

Cockburn LH Cement is a blend of Cockburn General Purpose Portland Cement and ground, granulated blast furnace slag in the ratio 35:65 cement to slag. This combination has been carefully selected to yield a cement that fully complies with the Type LH requirements of AS3792 in every respect. Additionally, it also fully complies with the requirements for type SR, (sulfate resisting) cement.



Its specific attribute of low heat evolution means that it is ideally suited for large concrete pours, such as dams and foundations, where peak temperatures and temperature differentials must be controlled to ensure structural integrity by minimising thermal cracking. Its performance in this respect has been proven over a number of years in several major construction projects.

This cement also offers excellent resistance to the penetration of both chloride and sulfate ions and as such is particularly suited to the production of concrete that is designed to survive a harsh marine environment. The penetration of chlorides to reinforcement steel is by far the most serious durability threat to concrete subjected to the ravages of aggressive sea salts. The combined low heat and long term hydration of Cockburn LH cement results in lower thermal expansion and



smaller concrete pore size, respectively, thereby significantly decreasing concrete permeability.

The chemical binding of chlorides within the concrete exhibited by proven reactions between higher C3A Cockburn General Purpose Portland, and the high Al₂O₃ content slag - further prevents deeper penetration of chlorides to the location of the reinforcement steel.

Massive structures such as dams and wharfs therefore benefit from the decreases in both thermal expansion and permeability of concretes produced with Cockburn LH cement.

Although exhibiting slightly lower 28 day strengths Cockburn LH cement will, with continued curing, produce concrete with excellent strength gains at extended ages.



Chemical Properties

Parameter	CCL Typical	AS3792 Limits	Test Method
SiO ₂	29.2%	3.5% Max	XRF
Al ₂ O ₃	11.1%		XRF
Fe ₂ O ₃	1.2%		XRF
CaO	50.4%		XRF
MgO	4.6%		XRF
SO ₃	2.2%		XRF
LOI	0.7%		AS2350.2
Chloride	0.01%		ASTM C114
Na ₂ O	0.4%		ASTM C114
Equivalent			

Concrete Guide

Mix	Concrete Use		
A	High strength structural mixes: precast concrete and heavy duty floors.		
B	General structural concrete: paths, driveways, garage floors.		
Parts by Volume			
Mix	Cement	Concrete Sand	Aggregate
A	1	1.5	3
B	1	2.0	4
Quantities To Make One Cubic Metre of Concrete (1m ³)			
Mix	Cement (20 kg bags)	Concrete Sand (m ³ estimate)	Aggregate (m ³ estimate)
A	18	0.4	0.8
B	14	0.4	0.8

General Notes:

- Use only recommended concrete sands free from clay and organic contamination.
- Use a 50/50 blended 20mm + 10mm stone for concrete aggregate.
- Keep water content to the minimum required for placing. The more water, the lower the strength.
- Use standard sized vessel e.g., a bucket, to measure all materials.
- Any admixtures used should only be added according to the manufacturers instructions.
- Quantities are typical industry usage and will vary according to excavation accuracy and individual waste patterns.
- For additional DIY information please refer to www.concrete.net.au.



Low Heat Cement

Premix	Site Mix	Brickwork	Moulded Products	Renders

Physical Properties

Parameter	CCL Typical	AS3792 Limits	Test Method
Fineness Index	400 m ² /kg	n/a	AS2350.8
Normal Consistency	30.8%	n/a	AS2350.3
Initial Set Time	3:30 hour:min	0:45 hour:min Min	AS2350.4
Final Set Time	5:00 hour:min	10:00 hour:min Max	AS2350.4
Soundness	1mm	5mm Max	AS2350.5
Heat of Hydration Peak T°C	20°C	23°C	AS2350.7
Sulfate Expansion	330 μ strain	900 μ strain	AS2350.14
ISOCEN Mortar Bar Strengths			
3 day	18 MPa	n/a	AS2350.11
7 day	33 MPa	10 MPa Min	AS2350.11
28 day	54 MPa	30 MPa Min	AS2350.11
56 day	64 MPa	n/a	AS2350.11