Safety and Ordering

SAFETY

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

Additional information in the form of material safety data sheets is available 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.

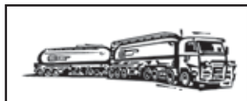
NEED TECHNICAL HELP?

For more information contact
Technical Support on our
help-line 1300-138-996.

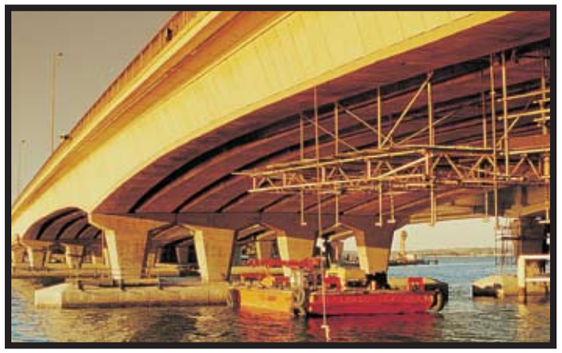
SALES AND ORDERING:

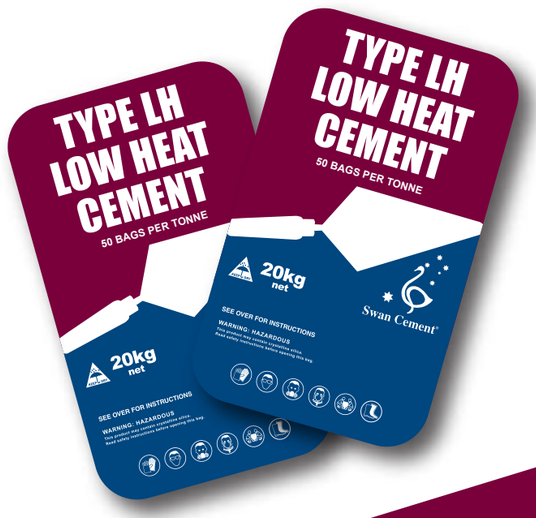
Customer Service Centre:
(08) 9411 1166

Low Heat is available in:

		
Bulk Tanker	Bulker Bags*	20kg Bags

* Contact Swan Cement for availability and sizes

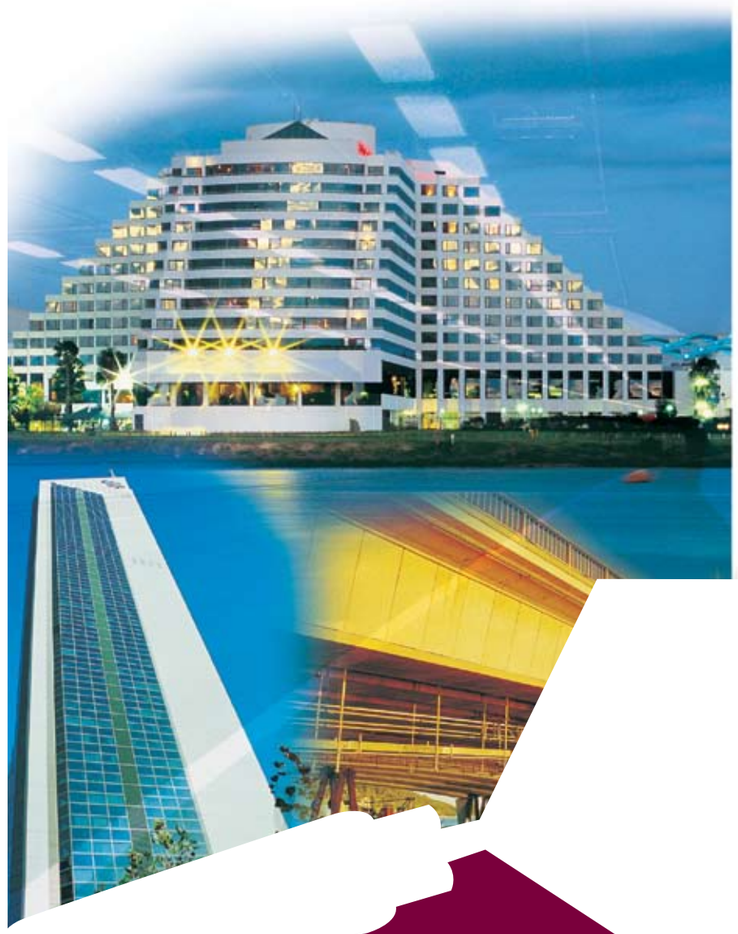




ABN: 50 008 673 470
Leath Road
Kwinana WA 6167
Admin Fax: (08) 9411 1120
Orders Fax: 1300 138 995
Tel: (08) 9411 1000

Swan Cement®

TYPE LH
LOW HEAT CEMENT



PRODUCT INFORMATION

Swan Cement®

PRODUCT INFORMATION AND PROPERTIES

Swan Cement Type LH Low Heat Cement is a blend of Swan Cement Type GP General Purpose 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 AS3972 in every respect. Additionally, it also fully complies with the requirements for Type SR, Sulfate Resistance Cement.

Low Heat Cement's 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. Low Heat Cement's performance in this respect, has been proven over a number of years in several major construction projects.

Low Heat Cement also offers 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 Type LH Low Heat Cement results in lower thermal expansion and smaller concrete pore size, respectively, thereby significantly decreasing concrete permeability.

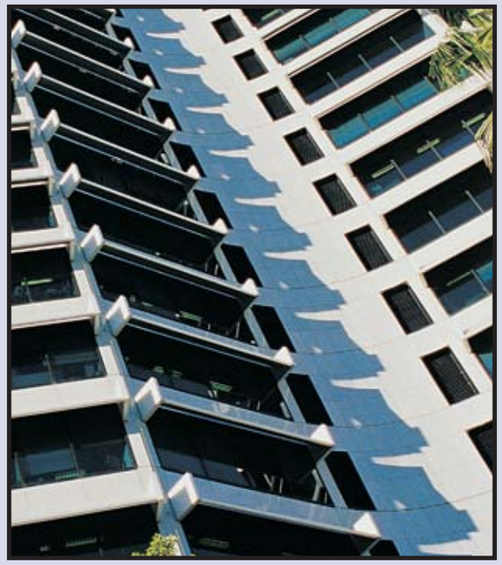
The chemical binding of chlorides within the concrete, exhibited by proven reactions between higher C_3A Swan Cement Type GP General Purpose Cement, and the high Al_2O_3 content slag - further prevents deeper penetration of chlorides to the location of the reinforcement steel.

Massive structures such as dams and wharfs therefore benefit from the decreases in both thermal expansion and permeability of concretes produced with Type LH Low Heat Cement.

Although exhibiting slightly lower 28 day strengths Type LH Low Heat Cement will, with continued curing, produce concrete with excellent strength gains at extended ages.

Chemical Properties

Parameter	Swan Typical	AS3972 Limits	Test Method
SiO_2	28.5%		XRF
Al_2O_3	10.6%		XRF
Fe_2O_3	1.5%		XRF
CaO	49.8%		XRF
MgO	3.8%		XRF
SO_3	2.6%	3.5% Max	XRF
LOI	0.8%		AS2350.2
Chloride	0.01%		ASTM C114
Na_2O Equivalent	0.4%		XRF



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	Type LH 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	Type LH Cement (20 kg bags)	Concrete Sand (m^3 estimate)	Aggregate (m^3 estimate)
A	18	0.5	10
B	14	0.5	10

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 eg, 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.

Premix	SiteMix	Brickwork	Moulded Products	Renders

Physical Properties

Parameter	Swan Typical	AS3972-1997 Limits	Test Method
Fineness Index	395 m^2/kg	n/a	AS2350.8
Normal Consistency	32.1%	n/a	AS2350.3
Initial Set Time	210 min	0:45 hour:min Min	AS2350.4
Final Set Time	285 min	10:00 hour:min Max	AS2350.4
Soundness	1 mm	5mm Max	AS2350.5
Heat of Hydration Peak Temp °C	20°C	23°C	AS2350.7
ISOCEN Mortar Bar Strengths			
3 day	17 MPa	n/a	AS2350.11
7 day	30 MPa	10 MPa Min	AS2350.11
28 day	53 MPa	30 MPa Min	AS2350.11
56 day	68 MPa	n/a	AS2350.11