

# Cement Test Certificate

Final

**Product Certified:** Type LH Low Heat Cement  
**Test Certificate Number:** 190231  
**Produced At:** Northern Cement, Darwin Plant, NT  
**Sample Code:** B06c017  
**Sample Date:** 26/02/2019

| Nominal Blend                             | Requirements | Result |
|---|--------------|--------|
| Clinker                                   |              | 30%    |
| Ground Granulated Iron Blast-Furnace Slag |              | 65%    |
| Mineral Addition                          | Max 7.5 %    | Nil    |
| Calcium Sulphate                          |              | <5 %   |
| Minor Additional Constituents             | Max 5 %      | Nil    |

| Reportable Property                           | Test Method | Requirements of AS3972 | Result   |
|---|-------------|------------------------|----------|
| 3 Day Strength                                | AS2350.11   | N/R                    | 13.5 MPa |
| 7 Day Strength                                | AS2350.11   | Min 10.0 MPa           | 31.7 MPa |
| 28 Day Strength                               | AS2350.11   | Min 30.0 MPa           | 50.7 MPa |
| Initial Set Time                              | AS2350.4    | Min 45 min             | 195 min  |
| Final Set Time                                | AS2350.4    | Max 600 min            | 270 min  |
| Soundness                                     | AS2350.5    | Max 5 mm               | 1 mm     |
| Sulfuric Anhydride content (SO <sub>3</sub> ) | AS3583.8    | Max 3.5 %              | 2.6 %    |
| Chloride Ion                                  | AS3583.13   | Max 0.10 %             | 0.004 %  |
| Peak Temp Rise                                | AS2350.7    | Max 23 °C              | 22.3 °C  |

## Other Properties

|                                |          |     |                        |
|--------------------------------|----------|-----|------------------------|
| SiO <sub>2</sub>               | AS2350.2 | N/R | 28.6 %                 |
| Al <sub>2</sub> O <sub>3</sub> | AS2350.2 | N/R | 10.8 %                 |
| Fe <sub>2</sub> O <sub>3</sub> | AS2350.2 | N/R | 1.3 %                  |
| CaO                            | AS2350.2 | N/R | 48.9 %                 |
| MgO                            | AS2350.2 | N/R | 4.6 %                  |
| Na <sub>2</sub> O Equivalent   | AS2350.2 | N/R | 0.5 %                  |
| Loss on Ignition               | AS2350.2 | N/R | 0.9 %                  |
| Fineness Index                 | AS2350.8 | N/R | 355 m <sup>2</sup> /kg |
| Normal Consistency             | AS2350.3 | N/R | 32.3 %                 |

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## REMARKS

These test result apply specifically to the sample as received at the Adelaide Brighton Cement Birkenhead Laboratory (Accreditation number: 252), 62 Elder Rd Birkenhead SA 5015.

This despatch grab sample complies to the requirements of AS3972:2010, Type LH Cement.

N/R = No Requirement



Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.



Approved Signatory

F. Pope

Issue Date: 20/05/2019