

Cement Test Certificate

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Final

ABN 50 006 673 470

| | | >86.5 % |
|--------------------------|------------------------------------|----------|
| Nominal Blend | Requirements | Result |
| Sample Date: | 5/01/2018 | |
| Sample Code: | B060be0 | |
| Produced At: | Cockburn Cement, Kwinana Plant, WA | |
| Test Certificate Number: | 180115 | |
| Product Certified: | Type GP General Purpose Cement | rncement |
| | | |

| Minor Additional Constituents | Max 5 % | Nil |
|---|-----------|---------|
| Calcium Sulphate | | <5 % |
| Mineral Addition | Max 7.5 % | <7.5 % |
| Ground Granulated Iron Blast-Furnace Slag | | Nil |
| Clinker | | >86.5 % |

| Reportable Property | | Requirements of | Result |
|---|-------------|------------------------|-----------|
| | Test Method | AS3972 | |
| 3 Day Strength | AS2350.11 | N/R | 40.9 MPa |
| 7 Day Strength | AS2350.11 | Min 35.0 MPa | 51.9 MPa |
| 28 Day Strength | AS2350.11 | Min 45.0 MPa | 61.5 MPa |
| Initial Set Time | AS2350.4 | Min 45 min | 120 min |
| Final Set Time | AS2350.4 | Max 360 min | 180 min |
| Soundness | AS2350.5 | Max 5 mm | 2 mm |
| Sulfuric Anhydride content (SO ₃) | AS2350.2 | Max 3.5 % | 3.2 % |
| Chloride Ion | BH-TM-0507 | Max 0.10 % | 0.011 % |
| Other Properties | | | |
| SiO ₂ | AS2350.2 | N/R | 20.7 % |
| Al ₂ O ₃ | AS2350.2 | N/R | 5.8 % |
| Fe ₂ O ₃ | AS2350.2 | N/R | 2.9 % |
| CaO | AS2350.2 | N/R | 62.9 % |
| MgO | AS2350.2 | N/R | 1.7 % |
| Na ₂ O Equivalent | AS2350.2 | N/R | 0.6 % |
| Loss on Ignition | AS2350.2 | N/R | 1.8 % |
| Fineness Index | AS2350.8 | N/R | 415 m²/kg |
| Normal Consistency | AS2350.3 | N/R | 30.7 % |

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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 5015.

This despatch grab sample complies to the requirements of AS3972:2010, Type GP 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:

5/03/2018