

Cement Test Certificate

Lot 242 Russell Road East, Munster WA 6166 PO Box 38, Hamilton Hill WA 6963 T: +61 8 9411 1000 F: +61 8 9411 1150

Final

ABN 50 006 673 470

| Dawantahla | Duranta Trat | | Requirements of | Desult | |
|---------------------------------|--------------------------|------------------------------------|---|---------|--|
| Minor Additional Constituents | | | Max 5 % | Nil | |
| Calcium Sulphate | | | | <5 % | |
| Mineral Addition | | | Max 7.5 % | <7.5 % | |
| Ground Granulated Iron Blast-Fu | rnace Slag | | n Cement, Kwinana Plant, WA 3 18 <u>Requirements</u> Max 7.5 % Max 5 % Requirements of | Nil | |
| Clinker | | | | >86.5 % | |
| Nomina | l Blend | | Requirements | Result | |
| | Sample Date: | 8/02/2018 | | | |
| | Sample Code: | B061753 | | | |
| | Produced At: | Cockburn Cement, Kwinana Plant, WA | | | |
| | Test Certificate Number: | | | | |
| | Product Certified: | Type GP General Purpose Cement | | | |
| ABN 50 006 673 470 | | r. +01 8 9411 1 | | | |

| Reportable Property | Test Method | AS3972 | Result |
|---|-------------|--------------|-----------|
| 3 Day Strength | A\$2350.11 | N/R | 39.5 MPa |
| 7 Day Strength | A\$2350.11 | Min 35.0 MPa | 52.1 MPa |
| 28 Day Strength | AS2350.11 | Min 45.0 MPa | 62.3 MPa |
| Initial Set Time | AS2350.4 | Min 45 min | 135 min |
| Final Set Time | AS2350.4 | Max 360 min | 195 min |
| Soundness | AS2350.5 | Max 5 mm | 0 mm |
| Sulfuric Anhydride content (SO ₃) | AS2350.2 | Max 3.5 % | 3.0 % |
| Chloride Ion | BH-TM-0507 | Max 0.10 % | 0.011 % |
| Other Properties | | | |
| SiO ₂ | AS2350.2 | N/R | 20.6 % |
| Al ₂ O ₃ | AS2350.2 | N/R | 5.6 % |
| Fe ₂ O ₃ | AS2350.2 | N/R | 2.7 % |
| CaO | AS2350.2 | N/R | 63.1 % |
| MgO | AS2350.2 | N/R | 1.7 % |
| Na ₂ O Equivalent | AS2350.2 | N/R | 0.5 % |
| Loss on Ignition | AS2350.2 | N/R | 1.5 % |
| Fineness Index | AS2350.8 | N/R | 390 m²/kg |
| Normal Consistency | AS2350.3 | N/R | 31.3 % |

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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 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:

26/03/2018