

Cement Test CertificateFinal

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

Product Certified: Type GP General Purpose Cement Type GP General Purpose Cement

Test Certificate Number: 180384

Despatched From: Cockburn Cement, Port Hedland Plant, WA

 Sample Code:
 B0624a6

 Sample Date:
 15/03/2018

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

| Reportable Property Test | Test Method | Requirements of | Result |
|---|---------------|-----------------|-----------|
| | rest iviethou | AS3972 | Nesuit |
| 3 Day Strength | AS2350.11 | N/R | 39.0 MPa |
| 7 Day Strength | AS2350.11 | Min 35.0 MPa | 55.7 MPa |
| 28 Day Strength | AS2350.11 | Min 45.0 MPa | 56.4 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 % | 3.0 % |
| Chloride Ion | BH-TM-0507 | Max 0.10 % | 0.008 % |
| Other Properties | | | |
| SiO ₂ | AS2350.2 | N/R | 19.2 % |
| Al_2O_3 | AS2350.2 | N/R | 5.4 % |
| Fe_2O_3 | AS2350.2 | N/R | 3.1 % |
| CaO | AS2350.2 | N/R | 64.6 % |
| MgO | AS2350.2 | N/R | 1.7 % |
| Na₂O Equivalent | AS2350.2 | N/R | 0.6 % |
| Loss on Ignition | AS2350.2 | N/R | 2.0 % |
| Fineness Index | AS2350.8 | N/R | 335 m²/kg |
| Normal Consistency | AS2350.3 | N/R | 28.2 % |

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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. $\mbox{N/R} = \mbox{No Requirement}$



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

Issue Date: 14/05/2018