

CERTIFICATE OF ANALYSIS

CERTIFICATE No. 2407-18

TEST CERTIFICATE FOR: Type Grade 1 Fly Ash

PRODUCED AT: Sunstate Cement Ltd, Port of Brisbane

SAMPLE IDENTIFICATION: Monthly Composite for the month of November '18

MATERIAL SOURCE: Tarong Power station

POINT OF SAMPLING: Final product air slide, Sunstate Cement Ltd, Port of Brisbane

SAMPLE TESTED AT: Sunstate Cement Ltd, Port of Brisbane

SAMPLE IDENTIFICATION: U6M-000141



NATA accredited laboratory
 Laboratory Number: 2191
 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. This document shall not
 be reproduced except in full.

| SPECIFIED PROPERTY | TEST METHOD | AS3582.1 REQUIREMENTS | | RESULT |
|--|-------------|-----------------------|-------|-----------------------|
| Fineness | AS 3583.1 | Minimum | 75 % | 85 % |
| Loss on ignition | AS 3583.3 | Maximum | 4 % | 1.2 % |
| Moisture content | AS 3583.2 | Maximum | 0.5 % | 0.2 % |
| SO ₃ | Inhouse | Maximum | 3 % | 0.2 % |
| Total Alkali | AS 2350.2 | | | 0.4 % |
| Available Alkali | AS 3583.12 | | | 0.1 % |
| Chloride | AS 3583.13 | Maximum | 0.1 % | 0.027 % |
| SiO ₂ + Al ₂ O ₃ + Fe ₂ O ₃ | AS 2350.2 | Minimum | 70 % | 93 % |
| Relative Density | AS 3583.5 | | | 2.3 g/cm ³ |
| Relative Water | AS 3583.6 | | | 100 % |
| Relative Strength | AS 3583.6 | Minimum | 75 % | 99.0 % |

SAMPLING PROCEDURE: Fly ash samples obtained according to the requirements of AS2350.1

REMARKS:

- The results of the above tests relate only to the sample as described above.
- Total Alkali determined at Australian Laboratory Services by ICP -AES using ME -ICP 91, Corporate Accreditation No 825, Corporate Site 818.
- XRF Analytical results determined at Australian Laboratory Services by XRF using ME -XRF 26, Corporate Accreditation No 825, Corporate Site 818.
- Available alkali determined by: Boral Material Technical Services Accreditation No 547.



G Santaguiliana
Approved Signatory
24-Jan-2019