STANDARD FLY ASH CERTIFICATE



FINAL

Prior Reports: None

Certificate Number: CERT210926 Issued: 05 May 2021

Product being certified: Product sample date: Sample Identification: Source Power Station: Sample Condition: Certifying Laboratory: Muja Power Station Monthly Grab Fly Ash 06-Apr-2021 Sample Code: 21040537 Muja Power Station Tested as Received. Testing Commenced on 20-Apr-2021 Cement Australia - Darra Laboratory, 18 Station Avenue, Darra Queensland 4076 Australia.

Test Results

| Test | Moisture | Fineness @ 45 micron | Loss on Ignition | Sulfuric Anhydride | Available Alkali | Chloride Ion | Chemical Composition |
|-------------|---------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-------------------------|
| | % | % Passed | % | % | % | % | % |
| Result | 0.1 | 77 | 1.4 | 0.2 | n/a | 0.002 | 94.1 |
| Test Method | AS3583.2 | AS3583.1 | AS3583.3 | AS2350.2 | AS3583.12 | AS3583.13 | AS2350.2 |
| AS 3582.1 | 0.5 % Maximum | 75% Minimum | 4.0 % Maximum | 3.0 % Maximum | - | 0.1 % Maximum | 70% Minimum |

| Test | Relative Density | Relative Water Requirement | Strength Index 7 Day Acc. | Reference Cement Details | |
|-------------|---------------------|-------------------------------|------------------------------|---------------------------|--|
| | | % | % | Identification:: 21040572 | |
| Result | 2.41 | 95 | 97 | Source: Goliath GP | |
| Test Method | AS3583.5 | AS3583.6 | AS3583.6 | Product Type: Type GP | |
| AS 3582.1 | - | - | 75% Minimum | Sample Date: 21-Apr-21 | |

Additional Testing - Oxides

| Test | CaO by XRF | SiO ₂ by XRF | Al ₂ O ₃ by XRF | Fe ₂ O ₃ by XRF | SO ₃ by XRF | MgO by XRF | Na ₂ O by XRF | |
|-------------|---------------|----------------------------|--|--|---------------------------|---------------|-----------------------------|--|
| | % | % | % | % | % | % | % | |
| Result | 1.4 | 58.7 | 25.0 | 10.4 | 0.2 | 0.7 | 0.23 | |
| Test Method | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | |

| Test | K₂O by XRF | SrO by XRF | TiO2 by XRF | P₂O₅ by XRF | Mn ₂ O ₃ by XRF | Total Alkali (NaEQ) |
|-------------|---------------|---------------|----------------|----------------|--|------------------------|
| | % | % | % | % | % | % |
| Result | 0.49 | <0.1 | 1.5 | 0.5 | < 0.1 | 0.55 |
| Test Method | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 |

This sample grade conforms to the following requirements of AS 3582.1:2016

Special Grade 1 Grade 2 X



Signatory - Cement Australia Chemical Testing Construction Materials Testing

Notes:

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.

Cement Australia - Darra Laboratory NATA Accredited Laboratory Numbers 187 188



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