

STANDARD FLY ASH CERTIFICATE



FINAL
Prior Reports: None

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Certificate Number: CERT230118
Issued: 12 January 2023

Product being certified: Mt Piper Monthly Grab Fly Ash
Product sample date: 01-Dec-2022
Sample Identification: Sample Code: 22120552
Source Power Station: Mount Piper Power Station
Sample Condition: Tested as Received. Testing Commenced on 15-Dec-2022
Certifying Laboratory: Cement Australia - Darra Laboratory,
18 Station Avenue, Darra Queensland 4076 Australia.

Test Results

| Test | Moisture % | Fineness @ 45 micron % Passed | Loss on Ignition % | Sulfuric Anhydride % | Available Alkali % | Chloride Ion % | Chemical Composition % |
|-------------|---------------|-------------------------------------|--------------------------|----------------------------|--------------------------|----------------------|------------------------------|
| Result | 0.1 | 82 | 0.9 | 0.1 | n/a | < 0.002 | 94.8 |
| 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 |
|-------------|---------------------|------------------------------------|-----------------------------------|---|
| Result | 2.10 | 95 | 96 | Identification:: 22120647 Source: Goliath GP |
| Test Method | AS3583.5 | AS3583.6 | AS3583.6 | Product Type: Type GP |
| AS 3582.1 | - | - | 75% Minimum | Sample Date: 19-Dec-22 |

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 | 0.2 | 68.2 | 23.8 | 2.8 | 0.1 | 0.2 | 0.32 |
| Test Method | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 | AS2350.2 |

| Test | K ₂ O by XRF % | SrO by XRF % | TiO ₂ by XRF % | P ₂ O ₅ by XRF % | Mn ₂ O ₃ by XRF % | Total Alkali (NaEQ) % |
|-------------|---------------------------------|--------------------|---------------------------------|--|---|-----------------------------|
| Result | 2.23 | <0.1 | 0.8 | 0.2 | < 0.1 | 1.79 |
| 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 | |

Approved Signatory



A Prem
Signatory - Cement Australia
Chemical Testing
Construction Materials Testing

Accredited for compliance with ISO/IEC 17025 - Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.



Laboratory accreditation number: 188
Laboratory accreditation number: 187

WORLD RECOGNISED
ACCREDITATION

Notes:

