

# STANDARD FLY ASH CERTIFICATE



FINAL  
Prior Reports: None

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Certificate Number: CERT230684  
Issued: 06 March 2023

**Product being certified:** Muja Power Station Monthly Grab Fly Ash  
**Product sample date:** 07-Feb-2023  
**Sample Identification:** Sample Code: 23020497  
**Source Power Station:** Muja Power Station  
**Sample Condition:** Tested as Received. Testing Commenced on 15-Feb-2023  
**Certifying Laboratory:** Cement Australia - Darra Laboratory,  
18 Station Avenue, Darra Queensland 4076 Australia.

## Test Results

| Test        | Moisture<br>% | Fineness @<br>45 micron<br>% Passed | Loss on<br>Ignition<br>% | Sulfuric<br>Anhydride<br>% | Available<br>Alkali<br>% | Chloride<br>Ion<br>% | Chemical<br>Composition<br>% |
|-------------|---------------|-------------------------------------|--------------------------|----------------------------|--------------------------|----------------------|------------------------------|
| Result      | 0.1           | 76                                  | 2.5                      | 0.1                        | n/a                      | < 0.002              | 93.8                         |
| 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<br>Density | Relative Water<br>Requirement<br>% | Strength Index<br>7 Day Acc.<br>% | Reference Cement Details                        |
|-------------|---------------------|------------------------------------|-----------------------------------|---|
| Result      | 2.38                | 99                                 | 95                                | Identification:: 23020641<br>Source: Goliath GP |
| Test Method | AS3583.5            | AS3583.6                           | AS3583.6                          | Product Type: Type GP                           |
| AS 3582.1   | -                   | -                                  | 75% Minimum                       | Sample Date: 20-Feb-23                          |

## Additional Testing - Oxides


| Test        | CaO<br>by XRF<br>% | SiO <sub>2</sub><br>by XRF<br>% | Al <sub>2</sub> O <sub>3</sub><br>by XRF<br>% | Fe <sub>2</sub> O <sub>3</sub><br>by XRF<br>% | SO <sub>3</sub><br>by XRF<br>% | MgO<br>by XRF<br>% | Na <sub>2</sub> O<br>by XRF<br>% |
|-------------|--------------------|---------------------------------|---|---|--------------------------------|--------------------|----------------------------------|
| Result      | 0.4                | 64.0                            | 21.2  | 8.6   | 0.1                            | 0.6                | 0.23                             |
| Test Method | AS2350.2           | AS2350.2                        | AS2350.2                                      | AS2350.2                                      | AS2350.2                       | AS2350.2           | AS2350.2                         |

| Test        | K <sub>2</sub> O<br>by XRF<br>% | SrO<br>by XRF<br>% | TiO <sub>2</sub><br>by XRF<br>% | P <sub>2</sub> O <sub>5</sub><br>by XRF<br>% | Mn <sub>2</sub> O <sub>3</sub><br>by XRF<br>% | Total Alkali<br>(NaEQ)<br>% |
|-------------|---------------------------------|--------------------|---------------------------------|--|---|-----------------------------|
| Result      | 0.41                            | <0.1               | 1.4                             | 0.5  | < 0.1   | 0.50                        |
| 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:

