

# STANDARD FLY ASH CERTIFICATE



FINAL  
Prior Reports: None

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Certificate Number: CERT210312  
Issued: 17 February 2021

**Product being certified:** Mt Piper Monthly Grab Fly Ash  
**Product sample date:** 01-Feb-2021  
**Sample Identification:** Sample Code: 21020157  
**Source Power Station:** Mount Piper Power Station  
**Sample Condition:** Tested as Received. Testing Commenced on 03-Feb-2021  
**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         | 83                                  | 1.3                      | 0.1                        | n/a                      | < 0.001              | 93.5                         |
| 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      | 2.15                | 94                                 | 100                               | Identification:: 21020205<br>Source: Goliath GP |
| Test Method | AS3583.5            | AS3583.6                           | AS3583.6                          | Product Type: Type GP                           |
| AS 3582.1   | -                   | -                                  | 75% Minimum                       | Sample Date: 04-Feb-21                          |

## 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      | 1.0                | 65.4                            | 24.4  | 3.7   | 0.1                            | 0.3                | 0.38                             |
| 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      | 2.56                            | <0.1               | 0.9                             | 0.3  | < 0.1   | 2.06                        |
| 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. 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

ACCREDITED FOR  
**TECHNICAL  
COMPETENCE**

Notes:

