## STANDARD FLY ASH CERTIFICATE



FINAL

Prior Reports: None

Certificate Number: CERT210692 Issued: 29 March 2021 Flyash Australia Pty Ltd ABN 68 002 840 271 Head Office C/- Lindfield Corporate Centre Suite 18, 12 Tryon Road Lindfield NSW 2070 Tel : (02) 9413 8422 Fax: (02) 9413 84.32 www.flyashaustralia.com.au

Product being certified: Product sample date: Sample Identification: Source Power Station: Sample Condition: Certifying Laboratory: Mt Piper Monthly Grab Fly Ash 08-Mar-2021 Sample Code: 21030346 Mount Piper Power Station Tested as Received. Testing Commenced on 08-Mar-2021 Cement Australia - Darra Laboratory, 18 Station Avenue, Darra Queensland 4076 Australia.

## **Test Results**

| Test        | Moisture      | Fineness @<br>45 micron | Loss on<br>Ignition | Sulfuric<br>Anhydride | Available<br>Alkali | Chloride<br>Ion | Chemical<br>Composition |
|-------------|---------------|-------------------------|---------------------|-----------------------|---------------------|-----------------|-------------------------|
|             | %             | % Passed                | %                   | %                     | %                   | %               | %                       |
| Result      | 0.1           | 91                      | 1.3                 | 0.1                   | n/a                 | < 0.001         | 93.9                    |
| Test Method | AS3583.2      | AS3583.1                | AS3583.3            | AS2350.2              | AS3583.12           | AS3583.13       | AS2350.2                |
| AS 3582.1   | 0.5 % Maximum | 85% Minimum             | 3.0 % Maximum       | 3.0 % Maximum         | -                   | 0.1 % Maximum   | 70% Minimum             |

| Test        | Relative<br>Density | Relative Water<br>Requirement | Strength Index<br>7 Day Acc. | Reference Cement Details  |  |
|-------------|---------------------|-------------------------------|------------------------------|---------------------------|--|
|             |                     | %                             | %                            | Identification:: 21030538 |  |
| Result      | 2.18                | 94                            | 106                          | Source: Goliath GP        |  |
| Test Method | AS3583.5            | AS3583.6                      | AS3583.6                     | Product Type: Type GP     |  |
| AS 3582.1   | -                   | -                             | Exceeds 105%                 | Sample Date: 11-Mar-21    |  |

## **Additional Testing - Oxides**

| Test        | CaO<br>by XRF | SiO <sub>2</sub><br>by XRF | Al <sub>2</sub> O <sub>3</sub><br>by XRF | Fe <sub>2</sub> O <sub>3</sub><br>by XRF | SO <sub>3</sub><br>by XRF | MgO<br>by XRF | Na₂O<br>by XRF |  |
|-------------|---------------|----------------------------|--|--|---------------------------|---------------|----------------|--|
|             | %             | %                          | %  | %  | %                         | %             | %              |  |
| Result      | 0.4           | 65.9                       | 24.4                                     | 3.6                                      | 0.1                       | 0.3           | 0.35           |  |
| Test Method | AS2350.2      | AS2350.2                   | AS2350.2                                 | AS2350.2                                 | AS2350.2                  | AS2350.2      | AS2350.2       |  |

| Test        | K₂O<br>by XRF | SrO<br>by XRF | TiO2<br>by XRF | P₂O₅<br>by XRF | Mn <sub>2</sub> O <sub>3</sub><br>by XRF | Total Alkali<br>(NaEQ) |
|-------------|---------------|---------------|----------------|----------------|--|------------------------|
|             | %             | %             | %              | %              | %  | %                      |
| Result      | 2.58          | <0.1          | 0.9            | 0.3            | < 0.1                                    | 2.05                   |
| 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 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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