

STANDARD FLY ASH CERTIFICATE



**MILLMERRAN
FLYASH**
SUSTAINABLE STRENGTH

FINAL
Prior Reports: None

Certificate Number: CERT210229
Issued: 04 February 2021

Independent Flyash Brokers Pty Ltd
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Product being certified: Independent Flyash Broker Monthly Grab Fly Ash
Product sample date: 14-Jan-2021
Sample Identification: Sample Code: 21010505
Source Power Station: Millmerran Power Station
Sample Condition: Tested as Received. Testing Commenced on 19-Jan-2021
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 | 86 | 0.2 | 0.1 | Not Tested | < 0.001 | 95.6 |
| 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 | 1.91 | 93 | 96 | Identification:: 21010609 Source: Goliath GP |
| Test Method | AS3583.5 | AS3583.6 | AS3583.6 | Product Type: Type GP |
| AS 3582.1 | - | - | 75% Minimum | Sample Date: 21-Jan-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 | 0.8 | 57.0 | 36.4 | 2.2 | 0.1 | 0.7 | 0.31 |
| 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 | 0.69 | <0.1 | 1.8 | 0.2 | < 0.1 | 0.76 |
| 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.



ACCREDITED FOR
**TECHNICAL
COMPETENCE**

Cement Australia - Darra Laboratory
NATA Accredited Laboratory Numbers
187 188

Notes:

