



TEST REPORT

CLIENT: XYPEX AUSTRALIA
190, Toongabbie Road Girraween NSW 2145.

FILE No.: 256/15

PROJECT: Testing of Silica fume sample for month of February' 2015.

REQUEST No.: 60957

**TEST PROCEDURE: Boral Chemical Method 2 – Determination of metal oxides by
Lithium Meta Borate Fusion and analysed using ICP**

Laboratory Sample No.: 162845
Date Sampled: February '2015.
Date Received: 10/02/2015
Sample Description: Ecotec Silica
Fume Feb' 2015.
Field No.: 1

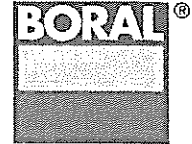
TEST RESULTS

Silicon as SiO₂ (%) 86.4

Sample submitted by the Client.

A handwritten signature in black ink, appearing to read "Nanthini S".

Nanthini S
Analytical Chemist
18th February 2015.
M.Hanlon, Mat. File, File.



**Boral Construction Materials
Materials Technical Services**

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www.boral.com.au

TEST REPORT

CLIENT: XYPEX AUSTRALIA

FILE NO: 256/15

ADDRESS: 190 Toongabbie road, Girraween, NSW 2145

REQUEST NO: 60957

LAB SAMPLE NO: 162845

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for Feb. 2015

IDENTIFICATION OF CEMENT USED: Boral Cement SL Berrima – ID # 203-301-004-Jan.2013

TEST METHOD: ASTM C-1240 Use of Silica Fume as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar & Grout

Accelerated Pozzolanic Strength Activity Index With Portland Cement - ASTM C1240

Date Cast: 10-02-15

Date Crushed: 17-02-15 @ 7 Days

Results:	Accelerated Pozzolanic Strength Activity Index:	120% @ 7 Days
	Control Mix Strength:	39.2 MPa
	Test Mix Strength:	46.9 MPa

Note:

Test mix used 242 mls of water and 2.3 grams of Dry Water Reducer (Rheobuild 1000 from BASF) to obtain a flow of 103%.

Mark Hanlon, Mat. File, File

Muans Abdulnebe



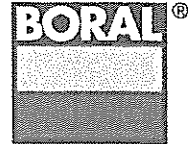
Approved Signatory _____

Date 23-03-15 Serial No. 134659

Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory

Number: 547



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TEST REPORT

CLIENT: XYPEX AUSTRALIA

Address: 190 Toongabbie Road Girraween, NSW 2145

FILE NO: 256/15

REQUEST NO: 60957

LAB. SAMPLE NO: 162845

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for Feb. 2015.

TEST METHOD: AS3583: Methods of test for supplementary cementitious materials for use with Portland Cement

PROPERTY	DATE TESTED	RESULT	TEST METHOD	AS3582 SPEC.
Moisture content	16-02-15	0.8%	AS3583.2	Max. 3.0%
Loss on ignition	16-02-15	2.4%	AS3583.3	Max. 6.0%
Relative Density	09-02-15	2.25	AS3583.5	

Sample submitted by the client.

Mark Hanlon, Mat. File, File

Safwan Fawal



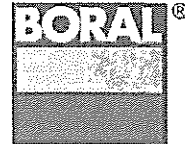
Approved Signatory *Safwan Fawal*

Date 21/03/2015 Serial No. 134660

Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory

Number: 547



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Test Report

CLIENT: XYPEX AUSTRALIA
190 Toongabbie Road, Girraween, NSW 2145.

FILE No.:256/15

PROJECT: Testing of Silica Fume Sample for month of February 2015.

REQUEST No.: 60957

TEST PROCEDURE:

AS3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 162845
Date Sampled: 10/02/2015
Date Received: 10/02/2015.
Sample Description: Ecotec Silica Fume-
Testing – Monthly Sample
for February 2015.
Field No.: 1

TEST RESULTS

Sodium as Na₂O (%) 0.30
Potassium as K₂O (%) 0.14
Available Alkali (%) 0.4

Available Alkali (%) = Na₂O (%) + (0.658 x K₂O %)

Samples submitted by the Client.

M.Hanlon, Mat. File, File.

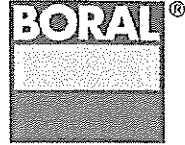


Approved Signatory N.S. Nanthini.Selvadurai
Date 23-03-15 Serial No. 134661

Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory

Number: 9968



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TEST REPORT

CLIENT: XYPEX AUSTRALIA
190 Toongabbie Road Girraween NSW 2145.

FILE No.:256/15

PROJECT: Testing of Silica Fume sample for month of February' 2015.

REQUEST No.: 60957

TEST PROCEDURE: AS 3583.13 – Determination of Chloride Ion content
AS 3583.8 – Determination of Sulfuric Anhydride content

Laboratory Sample No.: 162845
Date Sampled: 10/02/15
Date Received: 10/02/2015
Sample Description: Ecotec Silica Fume
Testing monthly sample
for February 2015.
Field No.: 1

TEST RESULTS

Chloride as Cl⁻ (%) 0.194
Sulphate as SO₃ (%) 0.6

Samples submitted by the Client.

M.Hanlon, M.File, File.

Nanthini Selvadurai



Approved Signatory N S

Date 23-03-15 Serial No. 134662

Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory

Number: 9968

Boral
Construction
Materials



MATERIALS TECHNICAL SERVICES
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TEST REPORT

CLIENT: XYPEX AUSTRALIA

FILE NO: 256/15

ADDRESS: 190 Toongabbie Road, Girraween, NSW 2145

REQUEST NO: 60957

LAB. SAMPLE NO: 162845

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for Feb. 2015

Bulk Density - AS3582.3.6.5

Result: 638 Kg/m³

Mark Hanlon, Mat. File, File

A handwritten signature in black ink, appearing to read "Xiaole Cui".

Xiaole Cui

27-02-2015



Particle & Surface Sciences Pty. Limited

PO Box 1926, Gosford, NSW, Australia 2250. Tel: (61) 02 43 237822 Fax: (61) 02 43 237629 Email: info@pss.aus.net

DataMaster V4.03 U

Unit 0

Serial #: 909

Page 1

Sample ID: Ecotec-Monthly Sample-February2015-LSN-162845
Setup ID: None
Converted from:: L:/GEMINI/DATA/L192/4940/162845.MGD
File: L:\...4940\162845.DMT

Started: 13/03/2015 10:28:56AM	Analysis Adsorptive: N2
Completed: 13/03/2015 11:52:11AM	Analysis Bath Temp.: 77.150 K
Report Time: 13/03/2015 1:12:18PM	Thermal Correction: No
Sample Mass: 0.7955 g	Warm Free Space: -1.3460 cm ³ Measured
Equilibration Interval: 10 s	Low Pressure Dose: None
Sample Density: 1.000 g/cm ³	Automatic Degas: No

Summary Report

Surface Area

Single point surface area at $p/p^0 = 0.200825575$: 19.8772 m²/g

BET Surface Area: 20.6126 m²/g

Langmuir Surface Area: 28.0755 m²/g

Sample ID: Ecotec-Monthly Sample-February2015-LSN-162845
 Setup ID: None
 Converted from:: L:\GEMINI\DATA\L192\4940\162845.MGD
 File: L:\...4940\162845.DMT

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Equilibration Interval: 10 s	Low Pressure Dose: None
Sample Density: 1.000 g/cm ³	Automatic Degas: No

BET Surface Area Report

BET Surface Area: 20.6126 ± 0.0640 m²/g
 Slope: 4.694640 ± 0.014564 g/mmol
 Y-Intercept: 0.039024 ± 0.001962 g/mmol
 C: 121.300693
 Qm: 0.21125 mmol/g
 Correlation Coefficient: 0.9999663
 Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (p/p ⁰)	Quantity Adsorbed (mmol/g)	1/[Q(p ⁰ /p - 1)]
0.050217457	0.19196	0.27543
0.069150144	0.20352	0.36502
0.088006977	0.21294	0.45318
0.106535093	0.22135	0.53869
0.125752242	0.22920	0.62758
0.144615403	0.23628	0.71551
0.163307872	0.24274	0.80407
0.182189987	0.24928	0.89368
0.200825575	0.25491	0.98581



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Unit 0

Serial #: 909

Page 6

Sample ID: Ecotec-Monthly Sample-February2015-LSN-162845

Setup ID: None

Converted from:: L:/GEMINI/DATA/L192/4940/162845.MGD

File: L:\...4940\162845.DMT

Started: 13/03/2015 10:28:56AM	Analysis Adsorptive: N2
Completed: 13/03/2015 11:52:11AM	Analysis Bath Temp.: 77.150 K
Report Time: 13/03/2015 1:12:18PM	Thermal Correction: No
Sample Mass: 0.7955 g	Warm Free Space: -1.3460 cm ³ Measured
Equilibration Interval: 10 s	Low Pressure Dose: None
Sample Density: 1.000 g/cm ³	Automatic Degas: No

Langmuir Surface Area Report

Langmuir Surface Area: 28.0755 ± 0.5393 m²/g

Slope: 3.475378 ± 0.066764 g/mmol

Y-Intercept: 10.766376 ± 0.948415 kPa·g/mmol

b: 0.322799 1/kPa

Qm: 0.28774 mmol/g

Correlation Coefficient: 0.998711

Molecular Cross-Sectional Area: 0.1620 nm²

Pressure (kPa)	Quantity Adsorbed (mmol/g)	p/Q (kPa·g/mmol)
5.2955659	0.19196	27.586
7.2920686	0.20352	35.831
9.2805723	0.21294	43.584
11.2344120	0.22135	50.755
13.2609120	0.22920	57.858
15.2500830	0.23628	64.541
17.2212542	0.24274	70.944
19.2124239	0.24928	77.071
21.1775968	0.25491	83.079