



Boral Construction Materials

Materials Technical Services
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www.boral.com.au

Test Report

CLIENT: XYPEX AUSTRALIA
9/177 Arthur Street, Homebush west, NSW 2140.

FILE No.:256/11

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 43021

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

Laboratory Sample No.: 115841
Date Sampled: Unknown
Date Received: 06/05/11
Sample Description: Ecotec Silica
Fume - Monthly
April'11.

Field No.: 1

TEST RESULTS

Silicon as SiO₂ (%) 89.4

Sample submitted by the client.

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

Nanthini Selvadurai
Analytical Chemist

8th June 2011

D. Rowley, M. Hanlon, File



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TEST REPORT

CLIENT: XYPEX AUSTRALIA
Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/11

SOURCE OF SAMPLE: Unknown

LAB SAMPLE NO: 115841

REQUEST NO.: 43021

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for April. 2011

IDENTIFICATION OF CEMENT USED: BCSC GP Cement – ID # 64514

TEST METHOD: ASTM C-1240-04 Use of Silica Fume as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar & Grout

Accelerated Pozzolanic Strength Activity Index With Portland Cement - ASTM C1240-04

Date Cast: 12-05-11

Date Crushed: 19-05-11 @ 7 Days

Results:	Accelerated Pozzolanic Strength Activity Index:	114% @ 7 Days
	Control Mix Strength:	39.5 MPa
	Test Mix Strength:	45.2 MPa

Note:

Test mix used 242 mls of water and 6.2 grams of Water Reducer (Rheobuild 1000 from BASF) to obtain a flow of 114%.

Daniel Rowley, Mark Hanlon, Mat. File, File

Muans Abdulnebe



Approved Signatory _____
Date 14-06-11 Serial No. 96334

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Number: 547



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TEST REPORT

CLIENT: XYPEX AUSTRALIA
Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/11

REQUEST NO.: 43021

LAB. SAMPLE NO: 115841

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume –Monthly Sample for April 2011

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	12-05-11	0.8%	AS3583.2	Max. 3.0%
Loss on ignition	12-05-11	2.4 %	AS3583.3	Max. 6.0%
Relative Density	12-05-11	2.30	AS3583.5	

Sample submitted by the client.

Daniel Rowley, Mark Hanlon, Mat. File, File



Approved Signatory _____
Date 14.06.11 Serial No. 96333

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MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
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PO Box 400, Winston Hills NSW 2153
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Test Report

CLIENT: XYPEX AUSTRALIA
9/177 Arthur Street, Homebush west, NSW 2140.

FILE No.:256/11

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 43021

TEST PROCEDURE:

AS3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 115841
Date Sampled: Unknown
Date Received: 06/05/11
Sample Description: Ecotec Silica Fume -
Monthly April'11.

Field No.: 1

TEST RESULTS

Sodium as Na₂O (%) 0.28
Potassium as K₂O (%) 0.30
Available Alkali (%) 0.5

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

Samples submitted by the Client.

D. Rowley, M. Hanlon, File



Approved Signatory Nanthini Selvadurai
Date 08-06-11 Serial No. 96332

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Number: 9968



MATERIALS TECHNICAL SERVICES
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PO Box 400, Winston Hills NSW 2153
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Test Report

CLIENT: XYPEX AUSTRALIA
9/177 Arthur Street, Homebush west, NSW 2140.

FILE No.:256/11

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 43021

TEST PROCEDURE: AS3583.13 – Determination of Chloride Ion Content
AS3583.8 – Determination of Sulfuric Anhydride content

Laboratory Sample No.: 115841
Date Sampled: Unknown
Date Received: 06/05/11
Sample Description: Ecotec Silica Fume -
Monthly April '11
Field No.: 1

TEST RESULTS

Chloride as Cl⁻ (%) 0.221
Sulphate as SO₃ (%) 0.8

Samples submitted by the Client.

D. Rowley, M. Hanlon, File



Approved Signatory Nall. S Nanthini Selvadurai
Date 08-06-11 Serial No. 96331

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NATA Accredited Laboratory
Number: 9968



TEST REPORT

CLIENT: XYPEX AUSTRALIA

Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/11

REQUEST NO.: 43021

LAB. SAMPLE NO: 115841

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume -Monthly Sample for April.2011

Bulk Density - AS3582.3.6.5

Result: 606 Kg/m³

BORAL

A handwritten signature in black ink, appearing to read "Oscar Perez", is written over a horizontal line. Below the signature, the name "Oscar Perez" and the date "15-05-2011" are printed in a standard font.

Oscar Perez
15-05-2011

Daniel Rowley, Mark Hanlon, Mat. File, File



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 V4.03.01

Unit 0

Serial #: 909

Page 1

Sample ID: 115841
Setup ID: None
Converted from:: L:/GEMINI/DATA/L192/4062/1158Y1.MGD
File: L:\...4062\1158Y1.DMT

Started: 31/05/2011 12:01:06PM	Analysis Adsorptive: N2
Completed: 31/05/2011 1:25:33PM	Analysis Bath Temp.: 77.150 K
Report Time: 31/05/2011 3:25:59PM	Thermal Correction: No
Sample Mass: 0.3966 g	Warm Free Space: -0.8002 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 $p/p^0 = 0.201021807$: 18.8225 m²/g

BET Surface Area: 19.4829 m²/g

Langmuir Surface Area: 26.5197 m²/g



Sample ID: 115841
Setup ID: None
Converted from:: L:/GEMINI/DATA/L192/4062/1158Y1.MGD
File: L:\...4062\1158Y1.DMT

Started: 31/05/2011 12:01:06PM
Completed: 31/05/2011 1:25:33PM
Report Time: 31/05/2011 3:26:00PM
Sample Mass: 0.3966 g
Equilibration Interval: 10 s
Sample Density: 1.000 g/cm³
Analysis Adsorptive: N2
Analysis Bath Temp.: 77.150 K
Thermal Correction: No
Warm Free Space: -0.8002 cm³ Measured
Low Pressure Dose: None
Automatic Degas: No

BET Surface Area Report

BET Surface Area: 19.4829 ± 0.0569 m²/g
Slope: 0.221675 ± 0.000646 g/cm³ STP
Y-Intercept: 0.001762 ± 0.000087 g/cm³ STP
C: 126.828835
Qm: 4.4755 cm³/g STP
Correlation Coefficient: 0.9999702
Molecular Cross-Sectional Area: 0.1620 nm²

Table with 3 columns: Relative Pressure (p/p°), Quantity Adsorbed (cm³/g STP), and 1/[Q(p°/p - 1)]. It contains 8 rows of data points.

Sample ID: 115841
 Setup ID: None
 Converted from:: L:/GEMINI/DATA/L192/4062/1158Y1.MGD
 File: L:\...4062\1158Y1.DMT

Started: 31/05/2011 12:01:06PM	Analysis Adsorptive: N2
Completed: 31/05/2011 1:25:33PM	Analysis Bath Temp.: 77.150 K
Report Time: 31/05/2011 3:26:00PM	Thermal Correction: No
Sample Mass: 0.3966 g	Warm Free Space: -0.8002 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: 26.5197 ± 0.5046 m²/g
 Slope: 0.164150 ± 0.003123 g/cm³ STP
 Y-Intercept: 3.677310 ± 0.326130 mmHg·g/cm³ STP
 b: 0.044639 1/mmHg
 Qm: 6.0920 cm³/g STP
 Correlation Coefficient: 0.998735
 Molecular Cross-Sectional Area: 0.1620 nm²

Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	p/Q (mmHg·g/cm ³ STP)
39.000000	4.0867	9.543
53.549999	4.3294	12.369
68.165001	4.5307	15.045
82.790001	4.7072	17.588
97.360001	4.8670	20.004
112.004997	5.0132	22.342
126.535004	5.1522	24.559
141.130005	5.2846	26.706
155.809998	5.4117	28.791