



Boral Construction Materials

Materials Technical Services

Unit 4, 3-5 Gibbon Road
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PO Box 400,
Winston Hills NSW 2153

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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.: 44848

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

Laboratory Sample No.: 120621
Date Sampled: Unknown
Date Received: 12/09/11
Sample Description: Ecotec Silica
Fume - Monthly
September'11.

Field No.: 1

TEST RESULTS

Silicon as SiO₂ (%) 93.6

Sample submitted by the client.

Nanthini Selvadurai
Analytical Chemist
21st October 2011
D. Rowley, 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: 120621

REQUEST NO: 44848

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

IDENTIFICATION OF CEMENT USED: Boral Cement SL Berrima – ID # 64514

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

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

Date Cast: 19-09-11

Date Crushed: 26-09-11 @ 7 Days

Results:	Accelerated Pozzolan Strength Activity Index:	106% @ 7 Days
	Control Mix Strength:	38.5 MPa
	Test Mix Strength:	40.7 MPa

Note:

Test mix used 242 mls of water and 5.9 grams of Water Reducer (Rheobuild 1000 from BASF) to obtain a flow of 108%.

Daniel Rowley, Mat. File, File

Muans Abdulnebe



Approved Signatory _____
Date 25-10-11 Serial No. 100167

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TEST REPORT

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Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/11

REQUEST NO: 44848

LAB. SAMPLE NO: 120621

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume –Monthly Sample for September 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	19-09-11	0.7%	AS3583.2	Max. 3.0%
Loss on ignition	19-09-11	2.9 %	AS3583.3	Max. 6.0%
Relative Density	19-09-11	2.23	AS3583.5	

Sample submitted by the client.

Daniel Rowley, Mat. File, File

Safwan Fawal



Approved Signatory _____
Date 4/10/2011 Serial No. 100168

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MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
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Unit 4, 3-5 Gibbon Road
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PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
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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.: 44848

TEST PROCEDURE:

AS3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 120621
Date Sampled: Unknown
Date Received: 12/09/11
Sample Description: Ecotec Silica Fume -
Monthly September '11.

Field No.: 1

TEST RESULTS

Sodium as Na₂O (%) 0.18
Potassium as K₂O (%) 0.22
Available Alkali (%) 0.3

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

Samples submitted by the Client.

D. Rowley, File



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Approved Signatory Nanthini Selvadurai
Date 25-10-11 Serial No. 100165

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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.: 44848

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

Laboratory Sample No.: 120621
Date Sampled: Unknown
Date Received: 12/09/11
Sample Description: Ecotec Silica Fume -
Monthly September '11

Field No.: 1

TEST RESULTS

Chloride as Cl⁻ (%) 0.120
Sulphate as SO₃ (%) 0.6

Samples submitted by the Client.

D. Rowley, File



ACCREDITED FOR
TECHNICAL
COMPETENCE

Approved Signatory Nanithi Selvadurai
Date 25-10-11 Serial No. 100166

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TEST REPORT

CLIENT: XYPEX AUSTRALIA

Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/11

REQUEST NO: 44848

LAB. SAMPLE NO: 120621

SOURCE OF SAMPLE: Unknown

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

Bulk Density - AS3582.3.6.5

Result: 645 Kg/m³


Oscar Perez
30-09-2011

Daniel Rowley, Mat. File, File



Sample ID: LSN:120621
Setup ID: None
Converted from:: L:/GEMINI/DATA/L192/4154/120621.MGD
File: L:\...4154\120621.DMT

Started: 4/10/2011 1:18:54PM	Analysis Adsorptive: N2
Completed: 4/10/2011 2:42:33PM	Analysis Bath Temp.: 77.150 K
Report Time: 5/10/2011 12:34:32PM	Thermal Correction: No
Sample Mass: 0.5302 g	Warm Free Space: -0.9345 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 $p/p^{\circ} = 0.200918100$: 19.2346 m²/g

BET Surface Area: 19.9287 m²/g

Langmuir Surface Area: 27.1470 m²/g



Sample ID: LSN:120621
Setup ID: None
Converted from:: L:/GEMINI/DATA/L192/4154/120621.MGD
File: L:\...\4154\120621.DMT

Started: 4/10/2011 1:18:54PM	Analysis Adsorptive: N2
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Report Time: 5/10/2011 12:34:32PM	Thermal Correction: No
Sample Mass: 0.5302 g	Warm Free Space: -0.9345 cm ³ Measured
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: 19.9287 ± 0.0444 m²/g
Slope: 0.216623 ± 0.000482 g/cm³ STP
Y-Intercept: 0.001816 ± 0.000065 g/cm³ STP
C: 120.283542
Qm: 4.5779 cm³/g STP
Correlation Coefficient: 0.9999826
Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (p/p ⁰)	Quantity Adsorbed (cm ³ /g STP)	1/[Q(p ⁰ /p - 1)]
0.050183364	4.1570	0.012710
0.069105587	4.4105	0.016831
0.087951407	4.6142	0.020899
0.106676260	4.7949	0.024904
0.125502975	4.9583	0.028944
0.144450672	5.1094	0.033045
0.163296496	5.2584	0.037115
0.182135948	5.3981	0.041255
0.200918100	5.5295	0.045472



Sample ID: LSN:120621
Setup ID: None
Converted from: L:/GEMINI/DATA/L192/4154/120621.MGD
File: L:\...4154\120621.DMT

Started: 4/10/2011 1:18:54PM
Completed: 4/10/2011 2:42:33PM
Report Time: 5/10/2011 12:34:32PM
Sample Mass: 0.5302 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: -0.9345 cm³ Measured
Low Pressure Dose: None
Automatic Degas: No

Langmuir Surface Area Report

Langmuir Surface Area: 27.1470 ± 0.5410 m²/g
Slope: 0.160357 ± 0.003196 g/cm³ STP
Y-Intercept: 3.710583 ± 0.337983 mmHg·g/cm³ STP
b: 0.043216 1/mmHg
Qm: 6.2361 cm³/g STP
Correlation Coefficient: 0.998613
Molecular Cross-Sectional Area: 0.1620 nm²

Table with 3 columns: Pressure (mmHg), Quantity Adsorbed (cm³/g STP), p/Q (mmHg·g/cm³ STP). Rows contain numerical data points for the Langmuir fit.