



Test Report

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

FILE No.: 256/12

PROJECT: Testing of Silica Fume Sample for November 2012.

REQUEST No.: 50349

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

Laboratory Sample No.: 135361
Date Sampled: Unknown
Date Received: 12/11/12
Sample Description: Ecotec Silica
Fume Sample for
November 2012.

Field No.: 1

TEST RESULTS

Silicon as SiO₂ (%) 88.1

Sample submitted by the client.

A handwritten signature in black ink, appearing to read "N.S.", is written above the printed name.

Nanthini Selvadurai
Analytical Chemist
19th December 2012.
D. Rowley, File



**Boral Construction Materials
Materials Technical Services**
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TEST REPORT

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

FILE NO: 256/12

REQUEST NO: 50349

LAB SAMPLE NO: 135361

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for November 2012.

IDENTIFICATION OF CEMENT USED: Boral Cement SL Berrima – ID # 87223

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: 12-11-12

Date Crushed: 19-11-12 @ 7 Days

Results:	Accelerated Pozzolanic Strength Activity Index:	107% @ 7 Days
	Control Mix Strength:	39.4 MPa
	Test Mix Strength:	42.0 MPa

Note:

Test mix used 242 mls of water and 6.0 grams of Water Reducer (Rheobuild 1000 from BASF) to obtain a flow of 104%.

Daniel Rowley, Mat. File, File



Approved Signatory _____
Date 20-11-12 Serial No. 111771

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Muans Abdulnebe

NATA Accredited Laboratory
Number: 547



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LAB. SAMPLE NO: 135361

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for November 2012.

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	12-11-12	1.2%	AS3583.2	Max. 3.0%
Loss on ignition	12-11-12	2.4 %	AS3583.3	Max. 6.0%
Relative Density	12-11-12	2.28	AS3583.5	

Sample submitted by the client.

Daniel Rowley, Mat. File, File

Safwan Fawal



Approved Signatory *[Signature]*
Date 21/11/2012 Serial No. 111772

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MATERIALS TECHNICAL SERVICES
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ABN 51 000 756 507

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Test Report

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FILE No.:256/12

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 50349

TEST PROCEDURE:

AS3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 135361
Date Sampled: Unknown
Date Received: 12/11/12
Sample Description: Ecotec Silica Fume sample
for November 2012.

Field No.: 1

TEST RESULTS

Sodium as Na₂O (%) 0.06
Potassium as K₂O (%) 0.06
Available Alkali (%) 0.1

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

Samples submitted by the Client.

D. Rowley, File



Approved Signatory

N.S.

Nanthini Selvadurai

Date 17-12-12

Serial No. 111773

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Test Report

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FILE No.:256/12

PROJECT: Testing of Silica Fume Sample for November 2012.

REQUEST No.: 50349

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

Laboratory Sample No.: 135361
Date Sampled: Unknown
Date Received: 12/11/12
Sample Description: Ecotec Silica Fume
Sample for November
2012

Field No.: 1

TEST RESULTS

Chloride as Cl⁻ (%) 0.102
Sulphate as SO₃ (%) 0.8

Samples submitted by the Client.

D. Rowley , File



Approved Signatory Nanthini Selvadurai
Date 17-12-12 Serial No. 111774

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TEST REPORT

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Address: 9/177 Arthur Street Homebush West NSW 2140

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REQUEST NO: 50349

LAB. SAMPLE NO: 135361

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for November 2012

Bulk Density - AS3582.3.6.5

Result: 622 Kg/m³

Daniel Rowley, Mat. File, File

A handwritten signature in black ink, appearing to read "S. Abdulrazzag", with a horizontal line drawn through it.

Sam Abdulrazzag
21-11-2012



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: Silica Fume Ecotec Monthly November2012 LSN:135361

Setup ID: None

Converted from:: L:/GEMINI/DATA/L192/4453/135361.MGD

File: L:\...\4453\135361.DMT

Started: 30/11/2012 10:38:21AM

Completed: 30/11/2012 12:03:52PM

Report Time: 30/11/2012 2:23:49PM

Sample Mass: 0.5519 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: -0.9043 cm³ Measured

Low Pressure Dose: None

Automatic Degas: No

Summary Report

Surface Area

Single point surface area at $p/p^0 = 0.200827319$: 23.5096 m²/g

BET Surface Area: 24.3401 m²/g

Langmuir Surface Area: 33.1351 m²/g



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Unit 0

Serial #: 909

Page 4

Sample ID: Silica Fume Ecotec Monthly November2012 LSN:135361
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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: -0.9043 cm³ Measured
Low Pressure Dose: None
Automatic Degas: No

BET Surface Area Report

BET Surface Area: 24.3401 ± 0.0617 m²/g
Slope: 0.177408 ± 0.000449 g/cm³ STP
Y-Intercept: 0.001441 ± 0.000060 g/cm³ STP
C: 124.112767
Qm: 5.5913 cm³/g STP
Correlation Coefficient: 0.9999776
Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (p/p ^o)	Quantity Adsorbed (cm ³ /g STP)	1/[Q(p ^o p - 1)]
0.050240814	5.0976	0.010377
0.069052796	5.3981	0.013741
0.087897148	5.6490	0.017059
0.106735029	5.8700	0.020356
0.125631170	6.0703	0.023670
0.144313674	6.2523	0.026974
0.163158026	6.4297	0.030323
0.182170694	6.5984	0.033758
0.200827319	6.7577	0.037187

Sample ID: Silica Fume Ecotec Monthly November2012 LSN:135361
 Setup ID: None
 Converted from:: L:/GEMINI/DATA/L192/4453/135361.MGD
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Started: 30/11/2012 10:38:21AM	Analysis Adsorptive: N2
Completed: 30/11/2012 12:03:52PM	Analysis Bath Temp.: 77.150 K
Report Time: 30/11/2012 2:23:49PM	Thermal Correction: No
Sample Mass: 0.5519 g	Warm Free Space: -0.9043 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: 33.1351 ± 0.6476 m²/g
 Slope: 0.131377 ± 0.002568 g/cm³ STP
 Y-Intercept: 2.953128 ± 0.267020 mmHg·g/cm³ STP
 b: 0.044488 1/mmHg
 Qm: 7.6117 cm³/g STP
 Correlation Coefficient: 0.998666
 Molecular Cross-Sectional Area: 0.1620 nm²

Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	p/Q (mmHg·g/cm ³ STP)
38.805000	5.0976	7.612
53.334999	5.3981	9.880
67.889999	5.6490	12.018
82.440002	5.8700	14.044
97.035004	6.0703	15.985
111.464996	6.2523	17.828
126.019997	6.4297	19.600
140.705002	6.5984	21.324
155.115005	6.7577	22.954