



MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
ABN 51 000 756 607
Unit 4, 3-5 Gibbon Road
Baulkham Hills NSW 2153 Australia
PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
Facsimile 61 2 9624 9999

TEST REPORT

CLIENT: XYPEX AUSTRALIA

Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/10

SOURCE OF SAMPLE: Unknown

LAB SAMPLE NO: 109662

REQUEST NO.: 40689

SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for September 2010

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: 01-11-10

Date Crushed: 08-11-10 @ 7 Days

Results:	Accelerated Pozzolanic Strength Activity Index:	111 % @ 7 Days
	Control Mix Strength:	40.0 MPa
	Test Mix Strength:	44.2 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 105%.

Daniel Rowley, Mat. File, File

Muans Abdulnebe



Approved Signatory

Date 17-11-10 Serial No. 91836

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory
Number: 547



MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
ABN 51 000 756 507
Unit 4, 3-5 Gibbon Road
Baulkham Hills NSW 2153 Australia
PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
Facsimile 61 2 9624 9999

TEST REPORT**CLIENT:** XYPEX AUSTRALIA

Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/10**REQUEST NO.:** 40689**LAB. SAMPLE NO:** 109662**SOURCE OF SAMPLE:** Unknown**SAMPLE IDENTIFICATION:** Ecotec Silica Fume –Monthly Sample for September 2010**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	01-11-10	1.2 %	AS3583.2	Max. 3.0%
Loss on ignition	01-11-10	3.1 %	AS3583.3	Max. 6.0%
Relative Density	01-11-10	2.24	AS3583.5	

- Sample submitted by the client and tested as received

Daniel Rowley, Mat. File, File

Safwan Fawal



Approved Signatory

Date 17/11/2010 Serial No. 91835

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory
Number: **547**



TEST REPORT

CLIENT: XYPEX AUSTRALIA

Address: 9/177 Arthur Street Homebush West NSW 2140

FILE NO: 256/10

REQUEST NO.: 40689

LAB. SAMPLE NO: 109662

SOURCE OF SAMPLE: Unknown

SAMPLE IDENTIFICATION: Ecotec Silica Fume -Monthly Sample for September 2010

Bulk Density - AS3582.3.6.5

Result: 555 Kg/m³

Fineness by 45 µm sieve (Retained) - ASTM C430

Result: 42 %

A handwritten signature in black ink, appearing to read "Tatiana Lysova".

Tatiana Lysova
16-11-2010

Daniel Rowley, 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 U

Unit 0

Serial #: 909

Page 8

Sample ID: 109662
Setup ID: None
Converted from: L:/GEMINI/DATA/L192/3917/109662.MGD
File: L:\...3917\109662.DMT

Started: 6/12/2010 8:38:12AM	Analysis Adsorptive: N2
Completed: 6/12/2010 10:03:22AM	Analysis Bath Temp.: 77.150 K
Report Time: 6/12/2010 3:35:29PM	Thermal Correction: No
Sample Mass: 0.2410 g	Warm Free Space: -0.6684 cm ³ Measured
Equilibration Interval: 10 s	Low Pressure Dose: None
Sample Density: 1.000 g/cm ³	Automatic Degas: No

Options Report

Analysis Conditions

Preparation

Fast evacuation: No
Evacuation rate: 5.0 mmHg/s
Unrestricted evacuation from: 5.0 mmHg
Evacuation time: 10.00 h
Leak test: No

Free Space

Free-space type: Measured
Lower dewar for evacuation: Yes
Evacuation time: 0.10 h
Outgas test: No

p° and Temperature

p° and T type: Enter p° below. Enter the Analysis Bath Temperature below.
p°: 781.840 mmHg
Temperature: 77.150 K

Dosing

Use first pressure fixed dose: No
Use maximum volume increment: No
Target tolerance: 5.0% or 5.000 mmHg
Low pressure dosing: No

Equilibration

Equilibration time (p/p° = 1.000000000): 10 s
Minimum equilibration delay at p/p° >= 0.995: 600 s

Sample Backfill

Backfill at start of analysis: Yes
Backfill at end of analysis: Yes
Backfill gas: N2

Adsorptive Properties

Adsorptive: Nitrogen
Maximum manifold pressure: 1050.00 mmHg
Non-ideality factor: 0.0000658
Density conversion factor: 0.0015468
Molecular cross-sectional area: 0.162 nm²
Inside diameter of sample tube: 9.53 mm



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 6

Sample ID: 109662
Setup ID: None
Converted from: L:/GEMINI/DATA/L192/3917/109662.MGD
File: L:/.../3917/109662.DMT

Started: 6/12/2010 8:38:12AM	Analysis Adsorptive: N2
Completed: 6/12/2010 10:03:22AM	Analysis Bath Temp.: 77.150 K
Report Time: 6/12/2010 3:35:29PM	Thermal Correction: No
Sample Mass: 0.2410 g	Warm Free Space: -0.6684 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: 30.9675 ± 0.6550 m²/g
Slope: 0.140573 ± 0.002973 g/cm³ STP
Y-Intercept: 3.488976 ± 0.312918 mmHg·g/cm³ STP
b: 0.040291 1/mmHg
Qm: 7.1137 cm³/g STP
Correlation Coefficient: 0.998438
Molecular Cross-Sectional Area: 0.1620 nm²

Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	p/Q (mmHg·g/cm ³ STP)
39.235001	4.6211	8.490
54.000000	4.9150	10.987
68.764999	5.1610	13.324
83.449997	5.3749	15.526
98.165001	5.5684	17.629
112.800003	5.7527	19.608
127.565002	5.9284	21.518
142.294998	6.0880	23.373
157.035004	6.2524	25.116



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 4

Sample ID: 109662
Setup ID: None
Converted from: L:/GEMINI/DA/L192/3917/109662.MGD
File: L:/3917/109662.DMT

Started: 6/12/2010 8:38:12AM	Analysis Adsorptive: N2
Completed: 6/12/2010 10:03:22AM	Analysis Bath Temp.: 77.150 K
Report Time: 6/12/2010 3:35:29PM	Thermal Correction: No
Sample Mass: 0.2410 g	Warm Free Space: -0.6684 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: 22.6517 ± 0.0401 m²/g
Slope: 0.190268 ± 0.000337 g/cm³ STP
Y-Intercept: 0.001912 ± 0.000045 g/cm³ STP
C: 100.511522
Qm: 5.2035 cm³/g STP
Correlation Coefficient: 0.9999890
Molecular Cross-Sectional Area: 0.1620 nm²

Relative Pressure (p/p ^o)	Quantity Adsorbed (cm ³ /g STP)	1/[Q(p ^o p - 1)]
0.050182901	4.6211	0.011433
0.069067838	4.9150	0.015095
0.087952774	5.1610	0.018685
0.106735386	5.3749	0.022231
0.125556377	5.5684	0.025785
0.144275042	5.7527	0.029308
0.163159979	5.9284	0.032888
0.182000145	6.0880	0.036546
0.200853114	6.2524	0.040198



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 2

Sample ID: 109662

Setup ID: None

Converted from:: L:/GEMINI/DATA/L192/3917/109662.MGD

File: L:\...3917\109662.DMT

Started: 6/12/2010 8:38:12AM

Completed: 6/12/2010 10:03:22AM

Report Time: 6/12/2010 3:35:28PM

Sample Mass: 0.2410 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: -0.6684 cm³ Measured

Low Pressure Dose: None

Automatic Degas: No

Isotherm Tabular Report

Relative Pressure (p/p ^o)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm ³ /g STP)	Elapsed Time (h:min)	Saturation Pressure (mmHg)
				781.840027
0.050182901	39.235001	4.6211	00:48	
0.069067838	54.000000	4.9150	00:53	
0.087952774	68.764999	5.1610	00:58	
0.106735386	83.449997	5.3749	01:03	
0.125556377	98.165001	5.5684	01:07	
0.144275042	112.800003	5.7527	01:11	
0.163159979	127.565002	5.9284	01:15	
0.182000145	142.294998	6.0880	01:20	
0.200853114	157.035004	6.2524	01:24	



MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
ABN 51 000 756 507
Unit 4, 3-5 Gibben Road
Baulkham Hills NSW 2153 Australia
PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
Facsimile 61 2 9624 9999

Test Report

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

FILE No.: 256/10

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 40689

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

Laboratory Sample No.: 109662
Date Sampled: Unknown
Date Received: 29/10/10
Sample Description: Ecotec Silica
Fume - Monthly
Sept'10.

Field No.: 1

TEST RESULTS

Silicon as SiO₂ (%) 89.7

Sample submitted by the client.

A handwritten signature in black ink, appearing to read "Nanthini S".
Nanthini. Selvadurai
Analytical Chemist
3rd December 2010
D.Rowley, File.



MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
ABN 51 000 758 507
Unit 4, 3-5 Gibbon Road
Baulkham Hills NSW 2153 Australia
PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
Facsimile 61 2 9624 9999

Test Report

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

FILE No.:256/10

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 40689

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

Laboratory Sample No.: 109662
Date Sampled: Unknown
Date Received: 29/10/10
Sample Description: Ecotec Silica Fume -
Monthly Sept'10

Field No.: 1

TEST RESULTS

Chloride as Cl^- (%) 0.219
Sulphate as SO_3 (%) 0.5

Samples submitted by the Client.

D.Rowley,File.



Approved Signatory

Nanthini. Selvadurai

Nanthini. Selvadurai

Date 03-12-10

Serial No. 91833

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory
Number: 9968



MATERIALS TECHNICAL SERVICES
BORAL RESOURCES (NSW) PTY LTD
ABN 51 000 756 597
Unit 4, 3-5 Gibbon Road
Baulkham Hills NSW 2153 Australia
PO Box 400, Winston Hills NSW 2153
Telephone 61 2 9624 9900
Facsimile 61 2 9624 9999

Test Report

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

FILE No.: 256/10

PROJECT: Testing of Silica Fume Sample.

REQUEST No.: 40689

TEST PROCEDURE:

AS3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 109662
Date Sampled: Unknown
Date Received: 29/10/10
Sample Description: Ecotec Silica Fume -
Monthly Sept'10.

Field No.: 1

TEST RESULTS

Sodium as Na₂O (%) 0.24
Potassium as K₂O (%) 0.22
Available Alkali (%) 0.4

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

Samples submitted by the Client.

D.Rowley, File



Approved Signatory

Nanthini.Selvadurai

Nanthini.Selvadurai

Date 03-12-10

Serial No. 91034

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

NATA Accredited Laboratory
Number: 9968