



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

**CLIENT:** XYPEX AUSTRALIA

**FILE NO:** 256/17

**ADDRESS:** 190 Toongabbie Road, Girraween, NSW 2145

**REQUEST NO:** 75422

**LAB SAMPLE NO:** 197480

**SOURCE OF SAMPLE:** Unknown

**SAMPLE IDENTIFICATION:** Ecotec Silica Fume – Monthly Sample for October 2017.

**IDENTIFICATION OF CEMENT USED:** Boral Cement SL Berrima – Ref. 2016

**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:** 07-11-2017

**Date Crushed:** 14-11-2017 @ 7 Days

<b>Results:</b>	<b>Accelerated Pozzolanic Strength Activity Index:</b>	<b>103 % @ 7 Days</b>
	<b>Control Mix Strength:</b>	<b>32.0 MPa</b>
	<b>Test Mix Strength:</b>	<b>33.0 MPa</b>

**Note:**

Test mix used 242 mls of water and 1.7 grams of Dry Water Reducer (1000 NT from BASF) to obtain a flow of 100 %.

Shaun Guthridge, Mat. File, File



ACCREDITED FOR  
TECHNICAL  
COMPETENCE

Approved Signatory \_\_\_\_\_

**Sharjeel Mahmood**

Date 20-11-2017 Serial No. \_\_\_\_\_

163617

NATA Accredited Laboratory

Accredited for compliance with ISO/IEC 17025

Number: 547



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

**CLIENT:** XYPEX AUSTRALIA

**Address:** 190 Toongabbie Road Girraween, NSW 2145

**FILE NO:** 256/17

**LAB SAMPLE NO:** 197480

**REQUEST No:** 75422

**SAMPLE IDENTIFICATION:** Ecotec Silica Fume – Monthly Sample for October 2017

**IDENTIFICATION OF CEMENT USED:** Boral Cement SL Berrima Ref. No. 203-608-001-Aug 2016

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

PROPERTY	DATE TESTED	RESULT	TEST METHOD
Relative density	18/10/2017	2.25	AS3583.5
Relative water requirement	19/10/2017	112 %	AS3583.6
Relative strength 7days (accelerated)	26/10/2017	100 %	AS3583.6
Relative strength 28days (standard)	16/11/2017	91 %	AS3583.6

Shaun Guthridge, Mat. File, File



Approved Signatory

**Sharjeel Mahmood**

Date 20-11-2017 Serial No. 163618

163618

NATA Accredited Laboratory

Accredited for compliance with ISO/IEC 17025

Number: 547



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

**CLIENT: XYPEX AUSTRALIA**

Address: 190 Toongabbie Road Girraween, NSW 2145

**FILE NO: 256/17**

**REQUEST NO: 75422**

**LAB. SAMPLE NO: 197480**

**SOURCE OF SAMPLE: Unknown**

**SAMPLE IDENTIFICATION: Ecotec Silica Fume – Monthly Sample for October 2017.**

**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	16/11/2017	0.6 %	AS3583.2	Max. 3.0%
Loss on ignition	16/11/2017	3.0 %	AS3583.3	Max. 6.0%
Relative Density	18/10/2017	2.25	AS3583.5	

Sample submitted by the client.

Shaun Guthridge, Mat. File, File



Approved Signatory \_\_\_\_\_

*Signature*

**Sharjeel Mahmood**

Date 20-11-2017 Serial No. 163619

NATA Accredited Laboratory

Accredited for compliance with ISO/IEC 17025

Number: 547



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

**CLIENT:** XYPEX AUSTRALIA

**FILE NO:** 256/17

**ADDRESS:** 190 Toongabbie Road, Girraween, NSW 2145

**REQUEST NO:** 75422

**LAB. SAMPLE NO:** 197480

**SOURCE OF SAMPLE:** Unknown

**SAMPLE IDENTIFICATION:** Ecotec Silica Fume – Monthly Sample for October 2017

**Bulk Density - AS3582.3 – Clause 7.1.7**

**Result:** 687 Kg/m<sup>3</sup>

Shaun Guthridge, Mat. File, File

A handwritten signature in black ink, appearing to read "Julius Alvaro".  
Julius Alvaro  
47/11/2017



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

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

FILE No.: 256/16

PROJECT: Testing of Silica fume sample for month of October' 2017.

REQUEST No.: 75422

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

Laboratory Sample No.: 197480  
Date Sampled: October '2017.  
Date Received: 16/10/17  
Sample Description: Ecotec Silica  
Fume October '  
2017.  
Field No.: 1

**TEST RESULTS**

Silicon as SiO<sub>2</sub> (%) 91.0

Sample submitted by the Client.

Nanthini S  
Analytical Chemist  
21<sup>st</sup> November 2017.  
M.Hanlon, Mat. File, File.



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900

F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

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

FILE No.:256/17

PROJECT: Testing of Silica Fume sample for October.2017.

REQUEST No.: 75422

**TEST PROCEDURE:**

AS 3583.12 – 1991 – Determination of Available Alkali

Laboratory Sample No.: 197480  
Date Sampled: October' 2017  
Date Received: 16/10/17  
Sample Description: Ecotec Silca Fume –  
Monthly Sample for  
October 2017.  
Field No.: 1

**TEST RESULTS:**

Sodium as Na <sub>2</sub> O (%)	0.27
Potassium as K <sub>2</sub> O (%)	0.10
Available Alkali (%)	0.3

Available Alkali (%) = Na<sub>2</sub>O (%) + (0.658 x K<sub>2</sub>O %)

Samples submitted by the Client.

S.Guthridge, Mat. File, File.



Approved Signatory

Nanthini Selvadurai

Date 21-11-17

Serial No.

163620

NATA Accredited Laboratory



**Boral Construction Materials  
Materials Technical Services**

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

T: +61 (02) 9624 9900  
F: +61 (02) 9624 9999

www.boral.com.au

**TEST REPORT**

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

FILE No.:256/17

PROJECT: Testing of Silica Fume sample for month of October' 2017

REQUEST No.: 75422

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

Laboratory Sample No.: 197480  
Date Sampled: October'2017  
Date Received: 16/10/17  
Sample Description: Ecotec Silca Fume  
monthly sample for  
October' 2017.  
Field No.: 1

**TEST RESULTS:**

Chloride as Cl<sup>-</sup> (%) 0.226  
Sulphate as SO<sub>3</sub> (%) < 0.1

Samples submitted by the Client.

M.Hanlon, Mat. File, File.



Approved Signatory: N.S. Nanthini Selvadurai  
Date: 21-11-17 Serial No. 163671

NATA Accredited Laboratory

Sample: 197480  
Operator: Kayla Wells  
Submitter:  
File: L:\Customers\L192 - Bora\5437\3000 - T...\000-406.SMP

Started: 7/11/2017 4:34:56 PM  
Completed: 7/11/2017 7:02:24 PM  
Report time: 9/11/2017 2:46:34 PM  
Sample mass: 0.6675 g  
Cold free space: 32.1927 cm<sup>3</sup>  
Low pressure dose: None  
Automatic degas: No

Analysis adsorptive: N2  
Analysis bath temp.: 77.300 K  
Thermal correction: No  
Warm free space: 12.4403 cm<sup>3</sup> Measured  
Equilibration interval: 15 s  
Sample density: 1.000 g/cm<sup>3</sup>

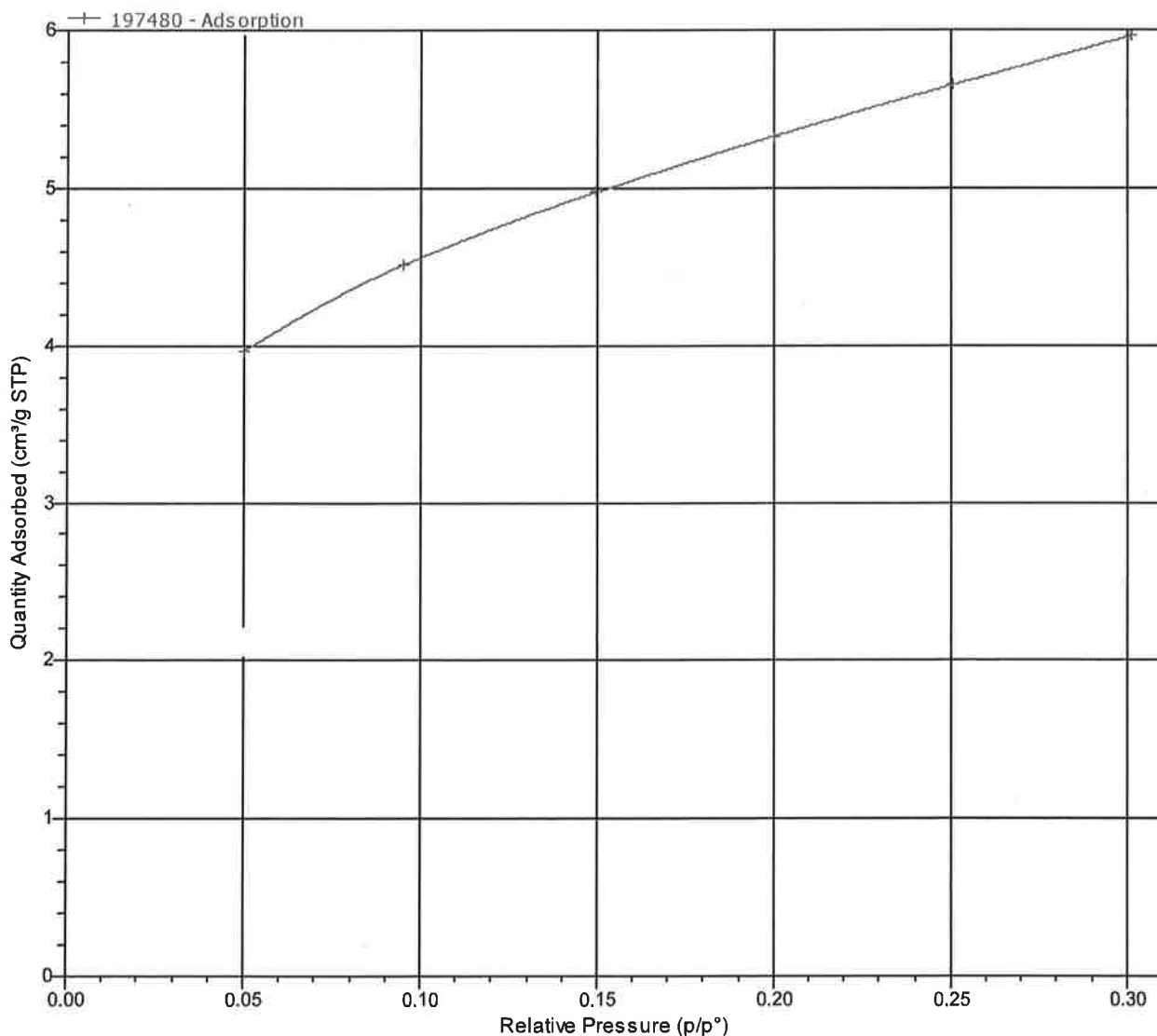
**Isotherm Tabular Report**

Relative Pressure (p/p°)	Absolute Pressure (mmHg)	Quantity Adsorbed (cm <sup>3</sup> /g STP)	Elapsed Time (h:min)	Saturation Pressure (mmHg)
			01:51	762.219360
0.050105246	38.191189	3.9669	02:02	
0.095119027	72.501564	4.5097	02:06	
0.149332256	113.823936	4.9705	02:10	
0.199837855	152.320282	5.3261	02:13	
0.250395673	190.856430	5.6507	02:16	
0.301101452	229.505356	5.9625	02:20	

Sample: 197480  
Operator: Kayla Wells  
Submitter:  
File: L:\Customers\L192 - Boral\5437\3000 - T...\000-406.SMP

Started: 7/11/2017 4:34:56 PM	Analysis adsorptive: N2
Completed: 7/11/2017 7:02:24 PM	Analysis bath temp.: 77.300 K
Report time: 9/11/2017 2:46:34 PM	Thermal correction: No
Sample mass: 0.6675 g	Warm free space: 12.4403 cm <sup>3</sup> Measured
Cold free space: 32.1927 cm <sup>3</sup>	Equilibration interval: 15 s
Low pressure dose: None	Sample density: 1.000 g/cm <sup>3</sup>
Automatic degas: No	

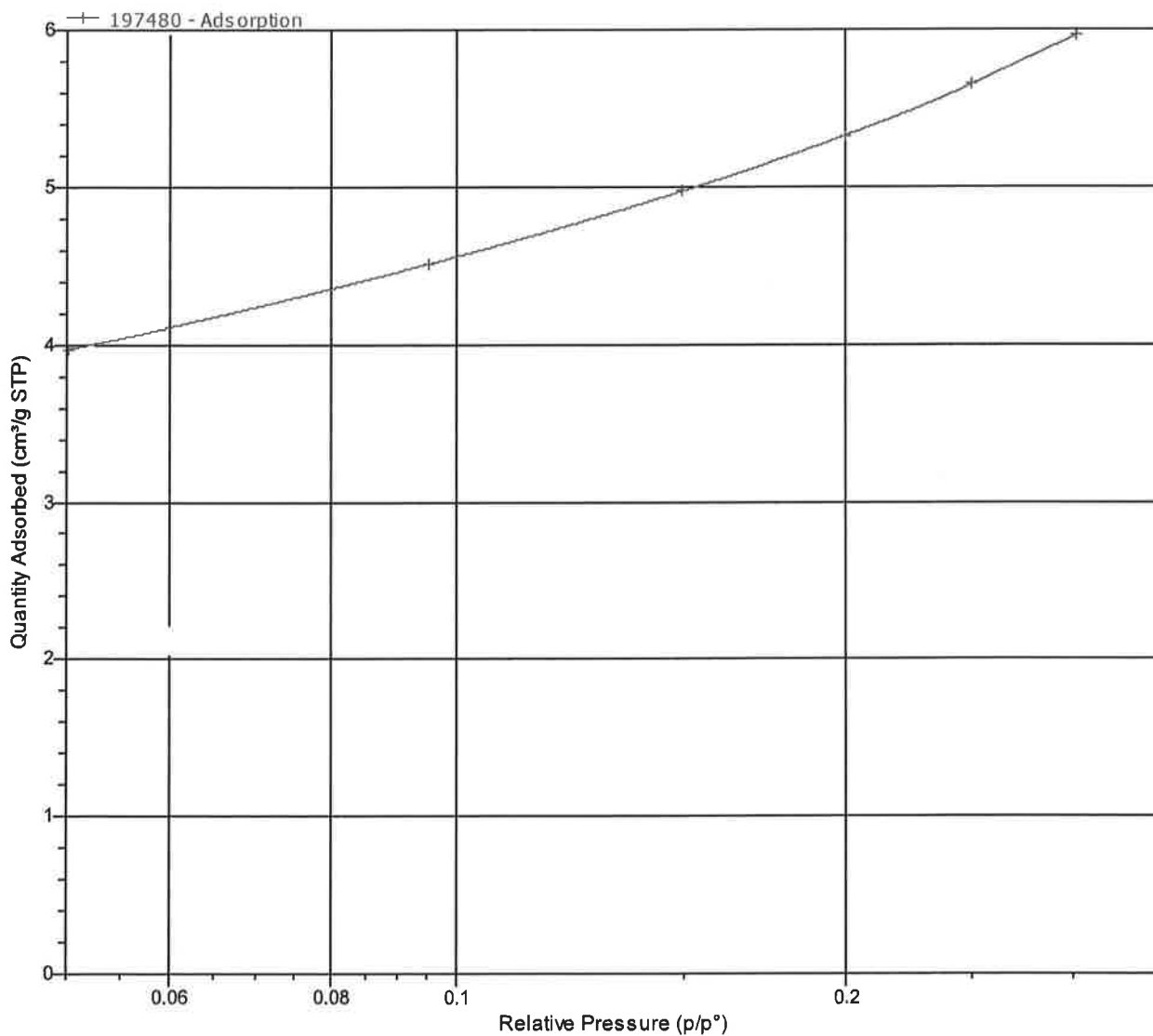
Isotherm Linear Plot



Sample: 197480  
Operator: Kayla Wells  
Submitter:  
File: L:\Customers\L192 - Boral\5437\3000 - T...000-406.SMP

Started: 7/11/2017 4:34:56 PM	Analysis adsorptive: N2
Completed: 7/11/2017 7:02:24 PM	Analysis bath temp.: 77.300 K
Report time: 9/11/2017 2:46:34 PM	Thermal correction: No
Sample mass: 0.6675 g	Warm free space: 12.4403 cm <sup>3</sup> Measured
Cold free space: 32.1927 cm <sup>3</sup>	Equilibration interval: 15 s
Low pressure dose: None	Sample density: 1.000 g/cm <sup>3</sup>
Automatic degas: No	

Isotherm Log Plot



Sample: 197480  
Operator: Kayla Wells  
Submitter:  
File: L:\Customers\L192 - Boral\5437\3000 - T...\000-406.SMP

Started: 7/11/2017 4:34:56 PM      Analysis adsorptive: N2  
Completed: 7/11/2017 7:02:24 PM      Analysis bath temp.: 77.300 K  
Report time: 9/11/2017 2:46:34 PM      Thermal correction: No  
Sample mass: 0.6675 g      Warm free space: 12.4403 cm<sup>3</sup> Measured  
Cold free space: 32.1927 cm<sup>3</sup>      Equilibration interval: 15 s  
Low pressure dose: None      Sample density: 1.000 g/cm<sup>3</sup>  
Automatic degas: No

**BET Report**

BET surface area: 18.5535 ± 0.2878 m<sup>2</sup>/g  
Slope: 0.233622 ± 0.003572 g/cm<sup>3</sup> STP  
Y-intercept: 0.000974 ± 0.000695 g/cm<sup>3</sup> STP  
C: 240.940665  
Qm: 4.2626 cm<sup>3</sup>/g STP  
Correlation coefficient: 0.9995329  
Molecular cross-sectional area: 0.1620 nm<sup>2</sup>

Relative Pressure (p/p°)	Quantity Adsorbed (cm <sup>3</sup> /g STP)	1/[Q(p°/p - 1)]
0.050105246	3.9669	0.013297
0.095119027	4.5097	0.023309
0.149332256	4.9705	0.035318
0.199837855	5.3261	0.046891
0.250395673	5.6507	0.059114
0.301101452	5.9625	0.072256

Sample: 197480  
Operator: Kayla Wells  
Submitter:  
File: L:\Customers\L192 - Bora\5437\3000 - T...\000-406.SMP

Started: 7/11/2017 4:34:56 PM	Analysis adsorptive: N2
Completed: 7/11/2017 7:02:24 PM	Analysis bath temp.: 77.300 K
Report time: 9/11/2017 2:46:34 PM	Thermal correction: No
Sample mass: 0.6675 g	Warm free space: 12.4403 cm <sup>3</sup> Measured
Cold free space: 32.1927 cm <sup>3</sup>	Equilibration interval: 15 s
Low pressure dose: None	Sample density: 1.000 g/cm <sup>3</sup>
Automatic degas: No	

BET Surface Area Plot

