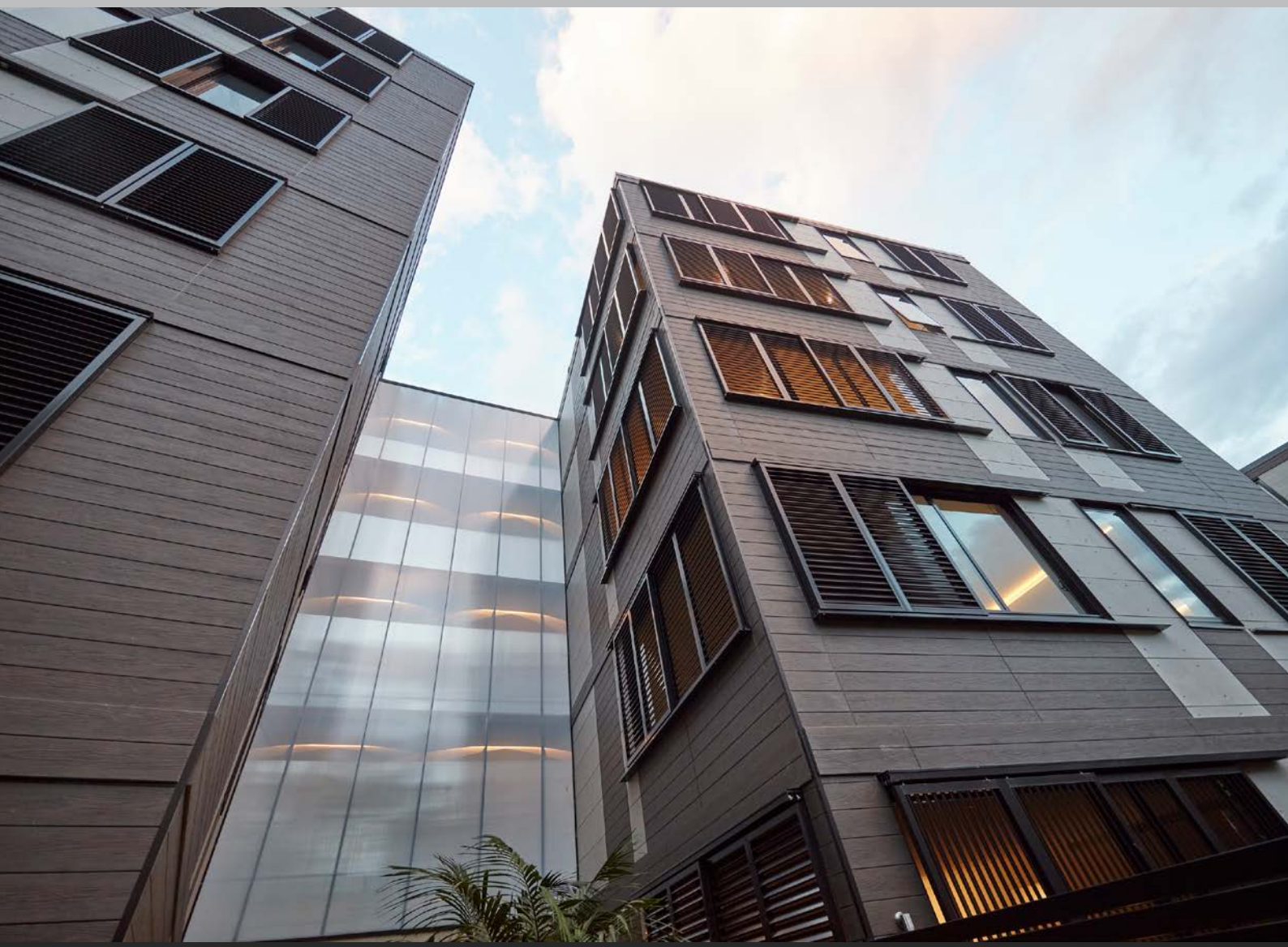
CEMINTEL®

Fire Performance of Cemintel Territory™ Panels



CSR

CEMINTEL®

COMPLIANCE FOR NON-COMBUSTIBLE MATERIALS

TERRITORY™ – MAY 2018

Cemintel Territory has been tested to 'AS5113: 2016 – Fire propagation testing and classification of external walls of buildings', and subject to Opinion Report EWFA 54309700.4, has a positive result across the range.

Cemintel® is an Australian owned company and part of the iconic CSR Building Products Pty Ltd, manufacturing and supplying cement panels and building systems used for external facades, internal linings, ceilings and flooring in commercial and residential applications.

The following information is provided in regards to Cemintel Territory™ and its non-combustible attributes:

- Cemintel Territory are cement bonded, fibrous wood particle panels.
- Cemintel Territory is a pressed cladding product.
- Cemintel Territory is manufactured in Japan to Japanese Industrial Standard JIS A 5422 (fibre reinforced cement sidings) and has been tested in accordance with Australian and New Zealand Standard for cellulose-cement flat sheet product AS/NZS 2908.2
- In accordance with the standard characteristic type tests required by AS/NZS 2908.2:2000, Cemintel Territory has a classification of Type A Category 3 (fibre cement) sheet.
- Cemintel Territory may be used where non-combustible materials are required by the Building Code of Australia (BCA) according to the National Construction Code (NCC) Volume 1 Section C1.9 and Volume 2 Section 3.7.1.2.
- Cemintel fibre cement products have been assessed by Exova (WFRA 45759) in accordance with AS/NZS 3837 ('Method test for heat and smoke release for materials and products using an oxygen consumption calorimeter') and have been classified to conform to Group 1 (highest and best result possible) with an average specific extinction area far lower than the permissible 250m²/kg, as referenced in specification C1.10 of the BCA Test Report FNK 10457.

For further information on Cemintel Territory, please refer to Compliance Certificate, Certificate of Physical Properties and Codemark Certificate attached.

*Awaiting update of Codemark Certificate to reflect new status.

CEMINTEL®

COMPLIANCE CERTIFICATE
TERRITORY™ – MAY 2018

Territory panels are manufactured in Japan to the Japanese Industrial Standard JIS A 5422 (fibre reinforced cement sidings) and have been classified as Type A Category 3 (fibre cement) sheet under AS/NZS 2908.2:2000.

Characteristic Type Tests have been conducted for Territory in accordance with AS/NZS 2908.2:2000 including:

- Bending Strength
- Water Permeability
- Frost Resistance (Freeze – Thaw test)
- Warm Water
- Heat – Rain
- Soak – Dry
- Dimensional and Geometrical Characteristics
- Apparent Density

These tests have been conducted by Cemintel's Research & Development Technical Team. Detailed Technical Specifications for Territory panels can be downloaded at **www.cemintel.com.au/technical/technical-data-sheets/**

CERTIFICATE OF PHYSICAL PROPERTIES
– TERRITORY™ – JANUARY 2018

PANEL – STRENGTH & MOISTURE RELATED PROPERTIES		
Physical Property	Result	Relevant Standard
Modulus of Rupture (Wet)	> 7 Mpa	ASTM C 1186
Modulus of Elasticity (Wet)	2.2 - 3.35 Gpa	EN 12467
Density (Oven Dry)	1191Kg/m3 (average)	ASTM C 1186
WATER VAPOR DIFFUSION		
Water Tightness (24hrs)	No water droplet	ASTM C 1186
Water Absorption (Saturated – 48hrs)	13.9% (average)	ASTM C 1186
Moisture Content (EMC)	7-9%	ASTM C 1186
Moisture Movement	0.07% (average)	ASTM C 1186

NB/ The above test results relate to coated panels unless otherwise specified (ie edges are sealed for testing to reflect the characteristic of sheets as delivered & in accordance with installation instructions). In-house testing as per ASTM C 1186.

CEMINTEL®

CERTIFICATE OF PHYSICAL PROPERTIES

TERRITORY™ – MAY 2018

PANEL – OTHER DURABILITY/WEATHER RESISTANCE INDICATORS		
Test	Result	Relevant Standard
Heat Rain	PASSED (25 Cycles)	ASTM C 1186
Freeze Thaw	PASSED (50 Cycles)	ASTM C 1186
Warm Water Resistance	PASSED (56 days)	ASTM C 1186
Soak Dry	PASSED (50 Cycles)	EN 12467

PANEL – FIRE RESISTANCE, THERMAL & ACOUSTIC PROPERTIES		
Characteristic	Result	Relevant Standard
FIRE RESISTANCE		
Combustibility	Assessed as suitable for use in applications where non-combustible materials are specified by the Deemed to Satisfy Provisions. Assessment report 2013/277.3R1.0	
Group Number	1	AS/NZ 3837
Average Specific Extinction Area	<250	AS/NZ 3837
E.F.H.I	Flame spread index = 0 Smoke developed = 0	ASTM E84
THERMAL CONDUCTIVITY		
Thermal Conductivity (λ-Factor)	0.26 W/mk (average)	JIS A 1412
Thermal Expansion Co-efficient		N/A

Certificate of Conformity

global-mark
Global-Mark Pty Ltd,
Suite 4.07, 32 Delhi Road, North Ryde NSW 2113, Australia

Tel: +61 (0)2 9886 0222 - www.Global-Mark.com.au

Certificate Holder:

CSR Building Products Pty Ltd
Triniti 3
39 Delhi Road
North Ryde NSW 2113
Australia
Tel: + 61 2 9235 8000
www.csr.com.au

Certificate number: CM30048 Rev4

THIS TO CERTIFY THAT

CSR Cemintel Territory Series Wall Cladding System

Type and/or use of product:

CSR Cemintel Territory Series is an external wall cladding system designed for use with all building types, subject to limitations detailed within this certificate and system / project specific limitations.

Description of product:

- CSR Cemintel Territory Series panels are 455 mm wide, 3,030 mm long and 16 mm nominal thickness.
- CSR Cemintel Territory Series panels are available in differing textures and colours.
- Panels may be installed in horizontal or vertical orientation.
- The construction system components are described in:
  - Cemintel Territory Series Design and Installation Guide for External Horizontal Installation, dated 06/2017
  - Cemintel Territory Series Design and Installation Guide for External Vertical Installation, dated 06/2017

COMPLIES WITH THE FOLLOWING BCA PROVISIONS AND STATE OR TERRITORY VARIATION(S) — **BCA 2016**

	Volume One		Volume Two	
Performance Requirement(s)	**BP1.1**	Structural Provisions	**P2.1.1**	Structural stability and resistance to actions
	FP1.4	Damp and Weatherproofing	**P2.2.2**	Weatherproofing
	GP5.1	Construction in Bushfire Prone Areas	**P2.3.4**	Bushfire areas

Scope of certification: The CodeMark Scheme is a building product certification scheme. The rules of the Scheme are available at the ABCB website www.abcb.gov.au. This Certificate of Conformity is to confirm that the relevant requirements of the Building Code of Australia (BCA) as claimed against have been met. The responsibility for the product performance and its fitness for the intended use remain with the certificate holder. The certification is not transferrable to a manufacturer not listed on Appendix A of this certificate.

Disclaimer: The Scheme Owner, Scheme Administrator and Scheme Accreditation Body do not make any representations, warranties or guarantees, and accept no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of any material contained within this certificate; and the Scheme Owner, Scheme Administrator and Scheme Accreditation Body disclaim to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the use of the product(s) referred to in this certificate.

The purpose of Global-Mark **construction site audits** is to confirm the practicability of installing the product; and to confirm the appropriateness and accuracy of installation instructions

In placing **the CodeMark mark** on the product/system, the certificate holder makes a declaration of compliance with the certification standard(s) and confirms that the product is identical to the product certified herein. In issuing this Certificate of Approval Global-Mark has relied on the **expertise of external bodies** (laboratories, and technical experts).

Herve Michoux, H. Michoux **Global-Mark Managing Director**	**Peter Gardner,** P. Gardner **Unrestricted Building Certifier**	**Date of issue:**	14/09/2014
		Date of expiry:	14/09/2020

		JP1	Energy Use	**P2.6.1**	Building Fabric
	Deemed-to-Satisfy Provision(s):	**Spec A2.3**	Fire Resistance of Building Elements		
		Spec A2.4	Fire Hazard Properties – Group 1 Material		
		Spec C1.1	Fire-Resisting Construction	**3.7.1.5**	Fire Safety – Construction of External Walls
		C1.12	Non-Combustible Material		
	State or territory variation(s):	**NSW GP5.1**	Construction in Bushfire Prone Areas	**TAS P2.3.4**	Construction in Bushfire Prone Areas
		QLD GP5.1	Construction in Bushfire Prone Areas	**NSW P2.6.1**	Building Fabric
		TAS GP5.1	Construction in Bushfire Prone Areas	**NT Part 2.6**	Replaced by BCA2009 Part 2.6
		NSW JP1	Energy Use	**VIC P2.6.1**	Building Fabric
		NT & QLD Section J	Replaced by BCA2009 Section J		

SUBJECT TO THE FOLLOWING LIMITATIONS AND CONDITIONS AND THE PRODUCT TECHNICAL DATA IN APPENDIX A AND EVALUATION STATEMENTS IN APPENDIX B

Limitations and conditions:	**Building classification/s:**
Vol 1 BP1.1 The wall system as described has maximum design wind load limits documented within the relevant Design & Installation Guides. For both horizontal and vertical panel orientation, wind load limits, construction detail and fixing must follow the relevant details contained within the engineering detail sections of the relevant Design & Installation Guides.	**2, 3, 4, 5, 6, 7, 8 & 9**
Vol 2 P2.1.1 When panels are installed in a vertical orientation, the wall system is limited to applications in non-cyclonic regions. For both horizontal and vertical panel orientation, wind load limits, construction detail and fixing must follow the relevant details contained within the engineering detail sections of the relevant Design & Installation Guides.	**1 & 10**
Vol 1 BP1.1 (b) (v) (vi) and (ix) & Vol 2 P2.1.1 (b) (v) (vi) and (ix) Snow, liquid pressure and earth pressure actions are excluded.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol 1 BP1.4 & Vol 2 P2.1.2 Compliance for flood hazard areas is excluded.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol 1 FP1.4 & Vol 2 P2.2.2 The system is capable of remaining weatherproof up to a serviceability wind load of ±3.72kPa with a rigid air barrier or ±1.5kPa with a flexible wall membrane.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**

Vol 1 FP1.7 & Vol 2 P2.4.1 Compliance for use in wet areas is excluded.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol 1 GP5.1 & Vol 2 P2.3.4 Including respective NSW, QLD & TAS variations: – Construction in Bushfire Prone Areas, up to BAL40.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol 1 JP1 & Vol 2 P2.6.1 Insulation in accordance with energy efficiency & building fabric requirements.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol 1 Spec C1.1 & Vol 2 Part 3.7.1 Fyrchek MR required beneath cladding material to achieve external wall FRLs as outlined in tables 6.16, 6.17, 6.18 & 6.19 in: CSR Cemintel Design & Installation Guide – Territory Series – External Horizontal installation, dated 06/2017, and/or Fyrchek MR required beneath cladding material to achieve external wall FRLs as outlined in tables 6.13, 6.14, 6.15 & 6.16 in: CSR Cemintel Design & Installation Guide – Territory Series – External Vertical installation, dated 06/2017.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
Vol1 C1.12 Non-combustibility relates to cladding material only.	**2, 3, 4, 5, 6, 7, 8 & 9**
Vol 1 NSW JP1 & Vol 2 NSW P2.6.1 Insulation in accordance with NSW BASIX.	**1, 2, 4 & 10**
Vol 1 NSW JP1 Insulation in accordance with energy efficiency requirements.	**3, 5, 6, 7, 8 & 9**
Vol 1 NT & QLD Section J Insulation in accordance with energy efficiency requirements of BCA 2009 Section J.	**2, 3, 4, 5, 6, 7, 8 & 9**
Vol 2 NT Part 2.6 Insulation in accordance with building fabric requirements of BCA 2009 Part 2.6.	**1 & 10**
Vol 2 VIC P2.6.1 Insulation in accordance with building fabric requirements.	**1 & 10**
General Compliance, where panels are exposed to temperature over 50 °C, is excluded, for example around chimneys and fireplaces.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
General Internal linings to be designed and specified in accordance with internal linings manufacturer's guidelines or by a suitably qualified building professional.	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**
General The wall system shall be designed and specified by a suitably qualified design professional and installed by suitably qualified and trained building professionals. The design and installation of the wall system shall be conducted in accordance with either:	**1, 2, 3, 4, 5, 6, 7, 8, 9 & 10**

	○ CSR Cemintel Design & Installation Guide – Territory Series – External Horizontal installation, dated 06/2017, and/or ○ CSR Cemintel Design & Installation Guide – Territory Series – External Vertical installation, dated 06/2017	

APPENDIX A – PRODUCT TECHNICAL DATA

A1 Type and intended use of product

CSR Cemintel Territory Series is an external wall cladding system designed for use with all building types.

A2 Description of product

CSR Cemintel Territory Series is an external wall cladding system consisting of cement-bonded fibrous wood particle panels for attachment to structural framing of timber or steel or to a masonry wall.

A3 Product specification

Refer to items 1 & 2 listed in B2:

- CSR Cemintel Design and Installation Guide – Territory Series – External Horizontal Installation, dated 06/2017
- CSR Cemintel Design and Installation Guide – Territory Series – External Vertical Installation, dated 06/2017

A4 Manufacturer and manufacturing plant(s)

CSR Cemintel
376 Victoria Street
Wetherill Park NSW 2164

A5 Installation requirements

Refer to items 1 & 2 listed in B2:

- CSR Cemintel Design and Installation Guide – Territory Series – External Horizontal Installation, dated 06/2017
- CSR Cemintel Design and Installation Guide – Territory Series – External Vertical Installation, dated 06/2017

A6 Other relevant technical data

Refer to items 1 & 2 listed in B2:

- CSR Cemintel Design and Installation Guide – Territory Series – External Horizontal Installation, dated 06/2017
- CSR Cemintel Design and Installation Guide – Territory Series – External Vertical Installation, dated 06/2017

And any referenced documents within the above.

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

The following assessment methods have been used to determine compliance with NCC 2016:

Code Clause	Assessment Method(s)	Evidence of suitability	Evidence reference in B2
NCC Volume One BP1.1	Combination of A0.5 (a)(b) and (c)	Combination of A2.2 a(i) a(vi) and b(i) – Test report, expert judgement & certificate	Items 3, 4, 5, 6, 7 & 8
NCC Volume Two: P2.1.1	Combination of 1.0.5((a)(b) and (c)	Combination of 1.2.2 a(i) a(vi) b(i) – Test report, expert judgement & certificate	Items 3, 4, 5, 6, 7 & 8
NCC Volume One FP1.4	Combination of A0.5 (a)(b) and (c)	Combination of A2.2 a(i) and a(vi) – Test report & expert judgement	Items 15, 16, 17, 18 & 19
NCC Volume Two: P2.2.2	Combination of 1.0.5 (a)(b) and (c)	Combination of 1.2. 2 a(i) and a(vi) – Test report & expert judgement	Items 15, 16, 17, 18 & 19
NCC Volume One GP5.1	Combination of A0.5(a) and (c)	Combination of A2.2 a(i) and a(iii) – Test report & certificate	Items 9 & 14
NCC Volume Two: P2.3.4	Combination of 1.0.5(a) and (c)	Combination of 1.2.2a(i) and a(iii) – Test report & certificate	Items 9 & 14
NCC Volume One JP1	Combination of A0.5(a) and (b)	Combination of A2.2 a(i) a(vi) and A2.2b (ii) – Test report, certificate & calculation	Items 20, 21, 22, 23 & 24
NCC Volume Two: P2.6.1	Combination of 1.0.5(a) and (b)	Combination of 1.2.2 a(i) a(vi) and 1.2.2b(ii) – Test report, certificate & calculation	Items 20, 21, 22, 23 & 24
NCC Volume One Spec A2.4	A0.5 (b)	A2.2 a(i) – Test report	Items 12 & 13
NCC Volume One C1.12	A0.5 (c)	Combination of A2.2 a(vi) and a(i) – Expert judgement & test report	Items 10 & 11

B2 Reports / Evidence

The following reports have been used as evidence to determine compliance with NCC 2016:

	Author	Reference	Date	Description	Type of Evidence
1.	CSR	-	Jun-17	Cemintel Territory Series D&I Guide Horizontal install	Referenced
2.	CSR	-	Jun-17	Cemintel Territory Series D&I Guide Vertical install	Referenced
3.	David Beneke	2012-32-LO126	Feb-17	Structural engineer's certificate	A2.2 (a) (iii) & 1.2.2 (a) (iii)
4.	James Cook Uni	TS1044	Aug-17	Structural test report	A2.2 (a) (i) & 1.2.2 (a) (i)
5.	Ian Bennie & Assoc	2016-066-S2	Nov-16	Weathertightness test report	A2.2 (a) (i) & 1.2.2 (a) (i)
6.	Ian Bennie & Assoc	2016-066-S3	Nov-16	Weathertightness test report	A2.2 (a) (i) & 1.2.2 (a) (i)
7.	Quasar	Q09102702-12	Jul-12	Structural analysis report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
8.	Quasar	Q11091701-0	Sep-11	Structural analysis report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
9.	BRANZ	FAR4628	Oct-16	Fire Assessment Report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
10.	SGA	277.3 R1.1	Jun-17	Combustibility assessment report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
11.	CSIRO	FNK10457	Mar-12	Fire Test Report	A2.2 (a) (i) & 1.2.2 (a) (i)
12.	BRANZ	FAR2303	Dec-15	Fire Assessment Report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
13.	BRANZ	FAR2357	Jul-17	Fire Assessment Report	A2.2 (a) (iii) & 1.2.2 (a) (iii)
14.	EXOVA	2593800	Feb-12	Fire Assessment Report	A2.2 (a) (i) & 1.2.2 (a) (i)
15.	Ian Bennie & Assoc	2016-066-S1	Nov-16	Weather proofing test report	A2.2 (a) (i) & 1.2.2 (a) (i)

Appendix B2, cont'd

	Author	Reference	Date	Description	Type of Evidence
16.	AECOMM	-	Jul-16	Weather proofing assessment	A2.2 (a) (vi) & 1.2.2 (a) (vi)
17.	BRANZ	DC2314-DU01	Nov-12	Weather proofing test report	A2.2 (a) (i) & 1.2.2 (a) (i)
18.	BRANZ	DC2568	May-15	Weather proofing test report	A2.2 (a) (i) & 1.2.2 (a) (i)
19.	CSIRO	DTF1045	Feb-16	Weather proofing test report	A2.2 (a) (i) & 1.2.2 (a) (i)
20.	CSR	TC906	Mar-13	Thermal test report	A2.2 (a) (i) & 1.2.2 (a) (i)
21.	CSR	-	Jul-13	Thermal assessment calculations	A2.2 (b) (ii) & 1.2.2 (b) (ii)
22.	CSR	-	Jul-13	Thermal assessment calculations	A2.2 (b) (ii) & 1.2.2 (b) (ii)
23.	CSR	-	Jul-13	Thermal assessment calculations	A2.2 (b) (ii) & 1.2.2 (b) (ii)
24.	CSR	-	Jul-13	Thermal assessment calculations	A2.2 (b) (ii) & 1.2.2 (b) (ii)

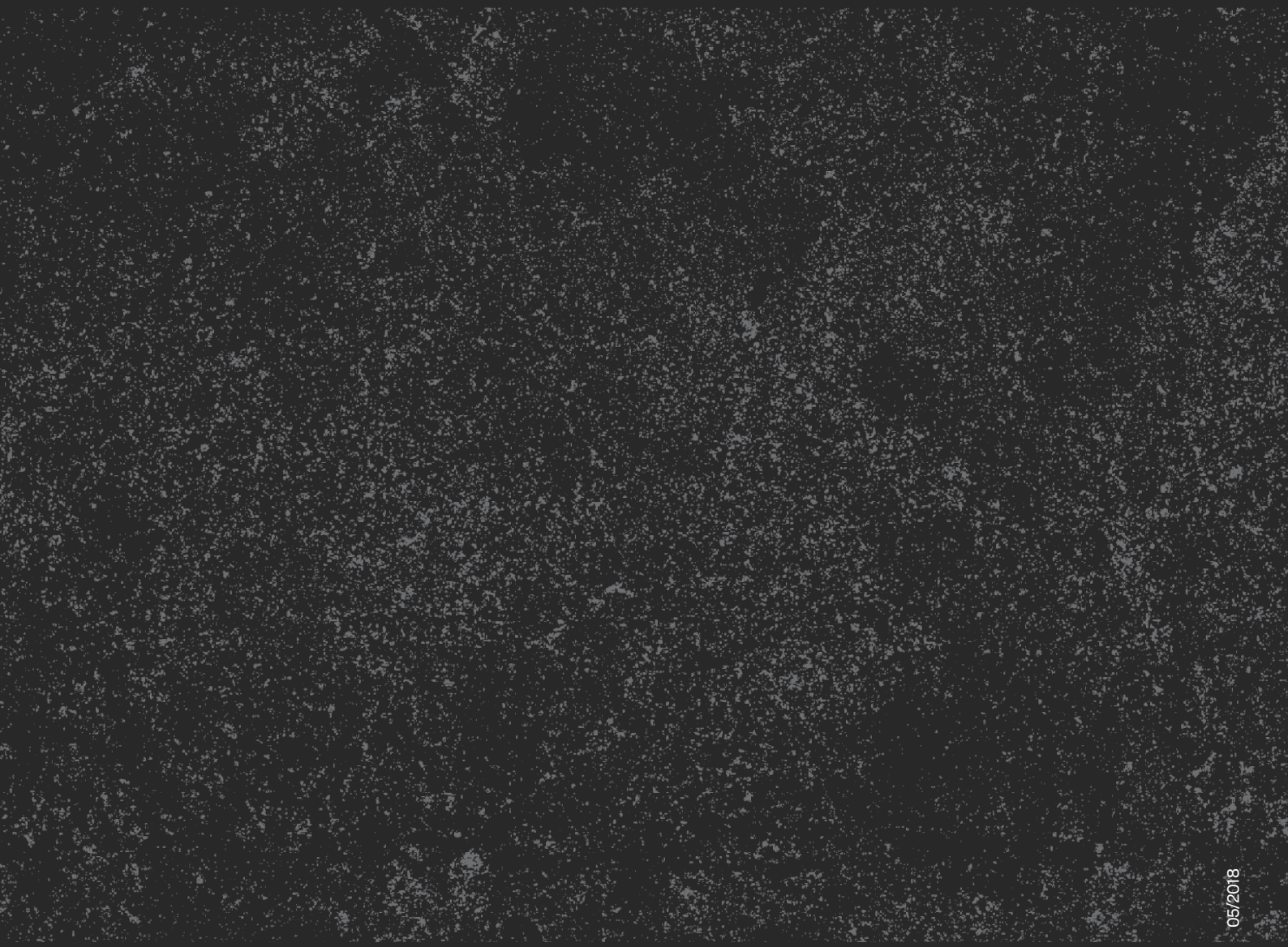
End of Certificate

CEMINTEL®

376 Victoria St
Wetherill Park NSW 2164

1300 236 468
info@cemintel.com.au

cemintel.com.au



05/2018

CSR