

Certificate number: CM20117

Certification Body:



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THIS TO CERTIFY THAT

75 mm E-PANEL – External and Internal Wall System

Type and/or use of product:

The 75 mm E-PANEL is a non-loadbearing reinforced autoclaved aerated concrete (AAC) panel for use as:

1. External wall system for high-rise buildings; and
2. Internal walls in high-rise and multi-residential buildings including internal walls between and bounding sole-occupancy-units.

Description of product:

The 75mm E-PANEL is a lightweight steel reinforced autoclaved aerated concrete (AAC) panel wall system with a single layer of steel reinforcement protected with anti-corrosion coating. Refer to A2 below for other components of the wall system.

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


BCA 2016 Amdt 1

	Volume One	Volume Two
Performance Requirement(s)	BP1.1(a), (b)(iii) BP1.2 FP1.4 FP5.2 & FP5.5 JP1	STRUCTURAL RELIABILITY STRUCTURAL RESISTANCE WEATHERPROOFING SOUND TRANSMISSION AND INSULATION ENERGY EFFICIENCY
Deemed-to-Satisfy Provision(s):	Specification C1.1	FIRE-RESISTING CONSTRUCTION
State or territory variation(s):	NT Part F5 NSW Section J, NT	SOUND TRANSMISSION AND INSULATION ENERGY EFFICIENCY

N/A N/A

N/A N/A

N/A N/A



Nicole Grantham – General Manager SAI Global Certification Services



Brian Cameron – Unrestricted Building Certifier

Date of issue: 25/05/2018

Date of expiry: 25/05/2021



Certificate of Conformity

**Section J,
and QLD
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:

1. The panel wall system achieved a Fire Resistance Level (FRL) of -/90/90 for a single wall and a Fire Resistance Level (FRL) of -/180/180 within a double wall system based on a wall configuration requiring installation of at least a 13mm grade plasterboard on either the fire or non-fire side of the panel.
2. The 13mm standard grade plasterboard shall be fixed to the AAC panel in accordance with the plasterboard manufacturer's recommendations ensuring that:
 - i. The vertical joints in plasterboard sheets that are parallel to the vertical joints of the AAC panels are located a distance of at least 100mm away from each other; and
 - ii. The intersection of a joint in the plasterboard sheets and a joint in the AAC panels shall be orientated such that the two joints are perpendicular from each other.
3. Fire rating requirements of the walls and floors, when required by the BCA, is to be assessed by the authority having jurisdiction.
4. Performance requirement FP1.4 for weatherproofing can only be achieved if installed in accordance with the technical manual.
5. Performance requirement FP5.2 for sound transmission and insulation only applies to a Class 2 or 3 building and for FP5.5 only to a Class 9c building.
6. Performance requirement JP1 for energy efficiency can only be achieved if installed in accordance with the technical manual. R-values vary with installation configurations. For further information refer to technical manual.
7. Each wall system is to be constructed in accordance with the relevant design guide listed below:
 - EBlock 75mm E-Panel Reinforced AAC Panel (Internal Wall System for High-rise building applications) Technical Manual Version 4 dated 4 April 2018.
 - EBlock 75mm E-Panel Reinforced AAC Panel (External Wall System for High-rise building applications) Technical Manual Version 4 dated 4 April 2018.
8. The timber framing of the walls is to be in accordance with the AS 1684 series as applicable and AS 4100 for Steel structures or AS/NZS 4600:2005 for Cold-formed steel structures, as applicable.
9. The footing system is to comply with AS 2870:2011 or AS 3600:2009, as applicable.

Building classification/s:

Class 2 to Class 9 buildings



Certificate of Conformity

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.

APPENDIX A – PRODUCT TECHNICAL DATA

A1 Type and intended use of product

See type and/or use of product on page 1.

A2 Description of product

The 75mm E-PANEL is a lightweight steel reinforced autoclaved aerated concrete (AAC) panel consisting of the following:

- Panel size 3000mm (length) x 600mm (width) x 75mm (thickness)
- Single layer of reinforcement mesh consisting of longitudinal bars with welded transverse bars embedded mid-height of the 75mm thickness protected with anti-corrosion coating.
- The panel has straight edges (not tongue and groove edges).
- The raw ingredients of AAC are fine sands, cement, lime, water and an expanding agent.
- Wall system components include:
 - 24-mm deep steel tophat batten of grade G550 with AZ150 coating.
 - 14-10x65 Type 17 hex head screws in accordance with AS 3566.1 for fixing the 75mm E-PANEL to the tophat batten. Corrosion class shall be in accordance with AS 3566.2.
 - 10-16x16 self-drilling hex head screws in accordance with AS 3566 parts 1 & 2 for fixing the steel tophat battens to the steel stud framing.
 - Pliable membrane fixed to the stud framing to be in accordance with AS/NZS 4200.1 with water barrier classification.
 - 13-mm fire-rated grade plasterboard (min. 10.4 kg/m²).
 - 75 or 90-mm glasswool wall insulation consisting of an R-Value that is suitable for the required thermal performance.
 - Cement based tile adhesive for all 75-mm E-PANEL joints excluding control joints.
 - External grade sealant for all control joints and fire-rated sealant for walls requiring fire resistance.
 - Backing rod in joints to maintain the correct thickness of sealant.

A3 Product specification

Listed below are some of the structural properties of the 75mm E-Panel:

Dry Density	530kg/m ³
Characteristic compressive strength	2.5MPa

Freeze-thaw	Relative change in dry density of 3.6% Relative change in compressive strength of 6.6%
Reinforcement weld strength	Weld shear strength 3.52K
Bending Capacity	Ultimate bending capacity 1.39kNm/m width
Reinforcement bar size	5mm \emptyset
Number of longitudinal bars	4

A4 Manufacturer and manufacturing plant(s)

NEW ERA BLOCK TILE JSC. (E-BLOCK JSC.), Lot E3-E4-E5-E6, Str. No.5, Tinh Phat IZ, Luong Binh, Ben Luc, Long An province, Vietnam.

A5 Installation requirements

Refer to Page 2 of this certificate and the following:

1. EBlock 75mm E-Panel Reinforced AAC Panel (Internal Wall System for High-rise building applications) Technical Manual Version dated 4 April 2018
This document contains information, technical specification, construction details and design consideration for E-Panel used as an internal wall system for High-rise building applications.
2. EBlock 75mm E-Panel Reinforced AAC Panel (External Wall System for High-rise building applications) Technical Manual Version dated 4 April 2018
This document contains information, technical specification, construction details and design consideration for E-Panel used as an external wall system for High-rise building applications

A6 Other relevant technical data

- N/A

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

The system has been assessed as complying with the identified Performance Requirements of the BCA 2016. This involved a review of product specifications, test reports, installation manuals, and associated documentation.

1. Structural assessment – A0.5(a) / A2.2(a)(v) – Reports from a professional engineer.
2. FRL assessment – A0.5(a) / A2.2(a)(iv)&(v) – Report from an accredited testing laboratory (NATA Accreditation No.: 165) and report from a professional engineer.
3. Weatherproofing assessment – A0.5(a) / A2.2(a)(iv) – Report from an accredited testing laboratory (NATA Accreditation No.: 2371).
4. Energy efficiency assessment – A0.5(a) / A2.2(a)(iv) – Report from an accredited testing laboratory (NATA Accreditation No.: 165).
5. Acoustic assessment – A0.5(a) / A2.2(a)(v) – Reports from a professional engineer.

B2 Reports

1. James M Fricker Pty Ltd – “Total R” Thermal Performance Calculations to AS/NZS 5859.1 (2002) Amdt 1 (December 2006) (Date: 28 May 2017)
This document contains the testing results and thermal performance calculations to AZ/NZS 4859.1 (2002) Amdt 1 (December 2006)
2. PKA Acoustic Consulting – Acoustic performance Assessment New Era Block Tile JSC Internal & External Wall Systems No: PKA-A194 (Date: 21 September 2017)
This document contains the information of the assessment carried out for the acoustic performance of the E-Panel autoclaved concrete (AAC) panel in various wall system combinations for compliance with the Building Code of Australia (BCA) Part F5 Sound Transmission and insulation requirements as well as other government acoustic code.
3. PKA Acoustic Consulting – E-Panel Acoustic Assessment No: PKA-A188 (Date: 9 August 2017)
This document contains the information of the assessment carried out for the acoustic performance of the E-Panel autoclaved concrete (AAC) panel in various wall system combinations for compliance with the Building Code of Australia (BCA) Part F5 Sound Transmission and insulation requirements for walls separating sole-occupancy units (SOUs).
4. Ian Bennie & Associates Pty Ltd. Building Performance Testing (NATA registered Laboratory No: 2371) – Test Report No: 2017-027-S1 (Date: 22 -3 1 May 2017)
This report contains information for the Structural SLS, Air Filtration, Water Penetration, and Structural ULS test procedures and performance requirements in accordance with Australian Standard AS/NZS 4284 (2008) – Testing of building facades.
5. Building Products Certification Pty Ltd – Structural Test Analysis Report 75mm E-Panel Reinforced Autoclaved Aerated Concrete (AAC) Panel No: 0335B-R2B (Date: 27 September 2017)
This document contains information on the test results against the requirements of AS 5146 (2015) Reinforced Aerated Concrete against the following applications:
 - a. External walls in houses and low rise multi-residential buildings;
 - b. Internal intertenancy walls in low- rise multi-residential buildings; and
 - c. High-rise facades

6. CSIRO – Fire Resistance test on a Non-load bearing vertical separating element Report No: FSV 1782 (Date: 9 December 2016) – NATA registered Laboratory No: 165
This document contains information on the test results for fire performance of the 75mm thick autoclaved Aerated Concrete (AAC) E-Panel wall system.
7. Ignis Solutions – Ignis Advisory Note E-Panel Evaluation No: IGN-5242 Issue 01 Revision 01 (Date: 21 September 2017)
This document contains information of a review by a professional engineer in accordance with Clause A2.2 (a)(iii) of the National Construction Code Volume 1 (BCA) 2016 of the fire test report provided by CSIRO test report No: FSV 1782 dated 9 December 2016 and the joint details.
8. CSIRO - Acoustic Measurement Reports (Date: 3 May 2017)
This document contains the information of five (5) acoustic measurement reports carried out in March 22 2017.
9. Clearsafe Environmental Solutions (NATA Accredited Laboratory No: 18542) – Certificate of Asbestos Analysis Report No: 20-1040-516-ID (Date: 27 March 2017)
This document contains information on the test results for identification of asbestos within the E-block Panels based on the samples provided by New Era Block Tile Joint Stock Company.
10. Bemac Laboratories – Compressive Strength of 75mm thick AAC Panels (Date: 18 May 2017)
This document provides information of the test results carried out by Bemac Laboratories for the compressive strength of the 75mm thick AAC Panels in accordance with AS 5146.2 Appendix D.
11. Bemac Laboratories – Corrosion Protection to Reinforcement (Cover Determination) of 75mm thick AAC Panels (Date: 13 June 2017)
This document provides information of the test results carried out by Bemac Laboratories for the corrosion properties of the reinforcement in the 75mm thick AAC Panels in accordance with AS 5146.2 :2015 Appendix L.
12. Bemac Laboratories – Corrosion Protection to Reinforcement (Cover Determination) of 75mm thick AAC Panels (Date: 24 April 2017)
This document provides information of the test results carried out by Bemac Laboratories for the corrosion properties of the reinforcement in the 75mm thick AAC Panels in accordance with AS 5146.2:2015 Appendix M.
13. Bemac Laboratories – Freeze Thaw Test of 75mm thick AAC. Panels (Date: 20 June 2017)
This document provides information of the test results carried out by Bemac Laboratories for the Freeze Thaw test of the 75mm thick AAC Panels in accordance with AS 5146.2:2015 Appendix J.
14. Bemac Laboratories – Full Panel Bending of 75mm thick AAC. Panels (Date: 27 June 2017)
This document provides information of the test results carried out by Bemac Laboratories for the full panel bending qualities of the 75mm thick AAC Panels in accordance with AS 5146.2:2015.
15. ALS Mechanical Testing Report – To determine tensile strength of properties of submitted steel reinforcing material samples as per client’s instruction. (Date: 119 May 2017)
This document provides information of the test results carried out by ALS for the tensile strength of the steel reinforcement material used in the 75mm thick E-block AAC Panels in accordance with AS/NZS 4671:2001.

16. Bemac Laboratories – Weld Strength of 75mm thick AAC. (Date: 10 May 2017)

This document provides information of the test results carried out by Bemac Laboratories for the weld strength of the 75mm thick AAC Panels in accordance with AS 5146.2:2015 Appendix N.

17. CSIRO – Thermal Transmission Properties of Aerated Autoclaved Concrete (AAC) Report No: XC3397/R1a (Date: 21 March 2017)

This document provides information of the test results for the thermal performance of the New Era Block Tile 75mm thick E-Panel AAC in accordance with AS/NZS 4859.1:2002.