



Certificate of Conformity

Certification Body:



SAI Global Certification Services Pty Limited
 (ACN 108 716 669) Trading as "SAI Global"
 JAS-ANZ Accreditation No. Z1440295AS
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Certificate Holder:



Kingspan Insulated Panels Pty Ltd
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Certificate number: CM20103

THIS TO CERTIFY THAT

Kingspan – KS1000 RW – Trapezoidal Roof & Wall Panels

Type and/or use of product:

KS1000 RW is an insulated core roof and wall panel. It is suitable for new & refurbishment building applications as a roofing element and as an external wall façade. Suitable for horizontal or vertical applications as a façade.

Description of product:

KS1000 RW roof and wall panels consist of an external & internal steel sheet liner with a PIR core.
 The exterior weather sheet liner is 0.5mm thick Zinalume AM100/150 coated steel sheet.
 The core is polyisocyanurate (PIR).
 The internal steel sheet liner is 0.4mm thick steel sheet.

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

BCA 2019

Performance Requirement(s)	Volume One		Volume Two	
	BP1.1(a) limited to (b)(i), (ii), (iii), (viii)	Structural Provisions – Structural Reliability	N/A	N/A
	FP1.4	Damp & Weatherproofing – Roof & External Wall		
Deemed-to-Satisfy Provision(s):	Spec C1.1 clause 5	Fire-Resisting Construction – Type C Fire-Resisting Construction (Walls applications - FRL -/120/-)	N/A	N/A
	Spec. C1.10 clause 4 & clause 7	Fire Hazard Properties Wall & Ceiling Linings Other Materials		
	G5.1 & G5.2	Construction in Bushfire Prone Areas		
	J1.2(a), (e)(i)(ii)	Building Fabric - Thermal construction – general (must be used in conjunction with other building elements to achieve a total R value outlined in clause J1.3 'Roof & Ceiling construction & J1.5 Walls) subject to state and territory variations		

SAI Global Certification Services



Heather Mahon
 Global Head of Technical Services
 SAI Global Assurance



Quintin Kleyn – Unrestricted Building Certifier

Date of issue: 17/07/2020

Date of expiry: 17/07/2023



State or territory variation(s):	NSW Spec C1.10	Fire Hazard Properties – Other materials	N/A	N/A
	NSW 7			
	NSW G5.1	Construction in Bushfire Prone Areas – Application of Part		
	NSW G5.2	Construction in Bushfire Prone Areas – Protection.		
	QLD G5.1	Construction in Bushfire Prone Areas – Construction Requirements		
	NSW Section J	Section J is replaced with NSW Section J which consists of two (2) subsections: <ul style="list-style-type: none"> • J(A) Energy Efficiency – Class 2 buildings & Class 4 part (BASIX) • J(B) Energy Efficiency – Class 3 & Class 5 to 9 buildings 		
	NT Section J	For a Class2 building and a Class4 part of a building, Section J is replaced with Section J of BCA 2009. Section J does not apply to Class 3 and 5-9 buildings.		
	QLD Section J	In Queensland, for a Class 2 building, Section J is replaced with Section J of BCA 2009.		

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 Product must be installed in accordance with the relevant Kingspan Insulated Panels Product Data Sheets, Installation Guides & Drawings as listed in section A5 & A6 of this certificate.
2. Fixing/fastening (including number of fasteners) of the panels to the supporting structure is not covered by this certification and needs to be designed on a project specific basis in accordance with the relevant design standard. Contact Kingspan Technical Services via their website for project specific advice for fastener requirements.
3. This product is certified to **Type C Construction** where the required FRL for wall applications does not exceed FRL-/120/-, as specified in the NCC 2019 BCA Volume One clause C1.1 and specification C1.1 table 5. *In accordance with the NCC 2019 BCA Volume One clause C1.1 and specification C1.1 table 5, there are no FRL requirements for Roof applications*
4. This product achieves a **Group Number 2** as determined in accordance with AS 5637.1.
5. The products are suitable for use on buildings that are have a Bushfire Fire Attack Level up to and including **BAL 40**

Building classification/s:

Volume 1 – Class 2 to Class 9 buildings

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

Refer to Page 1 of this certificate.

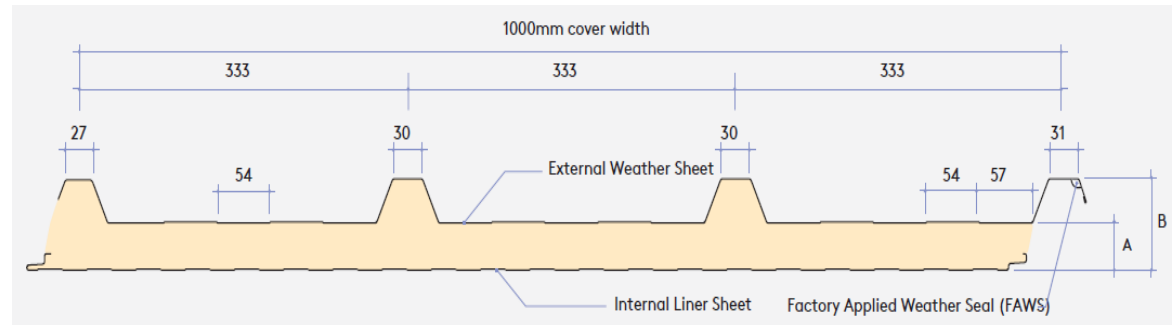
A2 Description of product

Refer to Page 1 of this certificate.

A3 Product specification

Panel Properties

Nominal Panel Thickness	40	60	70	100	120
Core Thickness (mm) – A					
Overall Dimension (mm) – B	75	95	105	135	155
Weight Kg/m ² – 0.5/0.4 steel	9.9	10.7	11.1	12.3	13.1
External steel sheet 0.5mm					
Internal steel sheet 0.4mm					
Declared Material R-Value m ² K/W at 23°C	1.91	2.81	3.36	4.79	5.73
Declared material U-Value W/m ² K	0.52	0.35	0.30	0.21	0.17
Declared Thermal Conductivity (λ-value)	0.023 W/m.K at 23°C (insulant Thickness 40mm)				
	0.022 W/m.K at 23°C (insulant Thickness ≤ 60mm)				
Spread of Flame Index	0				
Smoke Development	2				



Thermal Performance – Roof Panel (Total R-Value - m²K/W)

Nominal Panel Thickness (mm)	40	60	70	100	120
Heat Flow Out - Winter (m ² K/W)	2.15	3.15	3.67	5.16	6.23
Heat Flow in – Summer (m ² K/W)	2.03	2.96	3.43	4.81	5.71

The R-Values shown are Total R-Values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/ NZS 4859.2 2018. KS1000 RW is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

Detailed specification provided in:

- KS1000 RW Roof – PDS – Jul2020 Rev 2 (Product Data Sheet)
- KS1000 RW Wall – PDS – Jul2020 Rev 2 (Product Data Sheet)

Thermal Performance – Wall Panel (Total R-Value - m²K/W)

Nominal Panel Thickness (mm)	40	60	70	100	120
Heat Flow Out - Winter (m ² K/W)	2.16	3.16	3.68	5.17	6.14
Heat Flow in – Summer (m ² K/W)	1.99	2.92	3.39	4.77	5.67

The R-Values shown are Total R-Values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/ NZS 4859.2 2018. KS1000 RW is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

A4 Manufacturer and manufacturing plant(s)

Kingspan Insulated Panels Pty Ltd – Manufactured in
38 - 52 Dunheved Circuit, St. Marys, NSW, 2760, Australia

A5 Installation requirements

Refer to Page 3 of this certificate and the following;

- KS1000 RW Roof – PDS – Jul2020 Rev 2 (Product Data Sheet)
- KS1000 RW Wall – PDS – Jul2020 Rev 2 (Product Data Sheet)
- KS1000 RW Roof Panel 75mm Prime Lap Installation Guide - November 2019
- KS1000 RW Roof Panel 150mm End Lap Installation Guide - January 2020
- KS1000 RW Wall Panel - Installation Guide - Horizontally Laid - January 2020
- KS1000 RW Wall Panel - Installation Guide - Vertically Laid - January 2020

A6 Other relevant technical data

- Trapezoidal Roof Panel (KS1000RW) - Drawings – 11/09/2012
- Trapezoidal Wall Panel (KS1000RW) Vertically Laid - Drawings – 12/09/2012
- Trapezoidal Wall Panel (KS1000RW) Horizontally Laid - Drawings – 8/10/2012
- Kingspan trapezoidal Roof Panel (KS1000RW) Roof Penetration – Drawings - 29/10/2012

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

This product has been assessed as complying with the identified Performance Requirements of the BCA 2019. This involved a review of product specifications, test reports, installation manuals, and associated documentation.

1. Structural Assessment;

- A2.2(2)(a) / A5.2(1)(d) – *A report issued by an Accredited testing Laboratory – James Cook University (NATA accreditation No. 14937)*
- A2.2(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person - Costin Roe and Buildex*

2. Fire Resistance Assessment

- A2.3(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person – Aurecon*

3. Fire Hazard Properties assessment;

- A2.3(2)(a) / A5.2(1)(d) – *A report issued by an Accredited testing Laboratory – BRANZ (IANZ accreditation No. 37), Exova (UKAS accreditation No. 0249) & CSIRO (NATA accreditation No. 3632)*
- A2.3(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person – AWTA & RED Fire Engineers*

4. Weatherproofing assessment;

- A2.2(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person - Costin Roe, CSIRO & Taylor Woodrow Technology.*

5. Energy Efficiency Assessment:

- A2.3(2)(a) / A5.2(1)(d) – A report issued by an Accredited testing Laboratory – CSIRO (NATA accreditation No. 165)
- A2.3(2)(a) / A5.2(1)(e) - A report from a professional engineer or other appropriately qualified person - James M Fricker

6. Bushfire Resistance Assessment:

- A2.3(2)(a) / A5.2(1)(d) – A report issued by an Accredited testing Laboratory - Warringtonfire (NATA accreditation No. 3277)

B2 Reports

Evaluation methods	Related Reports
Structural Assessment	8, 9, 10, 11, 12, 13, 14, 21, 22
Fire Resistance Assessment	7
Fire Hazard Properties assessment	4, 5, 6, 16, 20
Weatherproofing Assessment	1, 2, 3
Energy Efficiency Assessment	17, 18, 19
Bushfire Resistance Assessment	15

1. **Costin Roe Consulting – KS1000 RW & KS1000DLTR 1.6 Roof and Wall Panel Opinion on Weathertightness. Report # CO12613.00-02.ltr (dated 13 February 2015).** This report is a review of water permeability test reports for conformance with BCA Volume One Performance Requirement FP1.4. The report concludes that the KS1000 RW & KS1000DLTR 1.6 Roof and Wall Panel comply with Performance Requirement FP1.4.
2. **Taylor Woodrow Technology – Weathertightness testing of a sample of Kingspan KS1000 RW roof panels. Project No. N950/07/13893 (dated 22 August 2007).** This report contains the results of tests carried out on roof panel installation to determine the weathertightness of the system. The system passed all aspects of the testing.
3. **CSIRO – Determination of Dynamic Weather resistance of Kingspan Insulated Panel Metal Roofing Tile to AS 4046.9-2002. Report No. DTF824 (dated June 2007).** This report contains the results of series of dynamic weather performance tests of the roof panel installation.
4. **AWTA Test Report 14-001849 (1 January 2015).** This report provides the results of testing PIR foam to AS2122.1-1993 Determination of Flame Propagation – Surface Ignition of Vertically Oriented Specimens of Cellular Plastics and presents the results in compliance with AS 1366-1992.
5. **BRANZ – ISO 9705 Fire Test on Kingspan PIR Cored Sandwich Panel System. Project No. FT3824 (dated 22 August 2007) IANZ accreditation No. 37.** This report provides the results of testing to AS/ISO 9705:2003 and concludes that 50mm to 200mm thick Kingspan PIR cored sandwich panels achieve at least a classification of Material Group 2. The smoke growth rate index for the tested sample was 21.4(m²/s² x 1000).
6. **Exova Warrington Report 319966, Heat release rate (Cone Calorimeter Method) & Smoke Production Rate (Dynamic Measurement) (dated 27 July 2012) UKAS accreditation No. 0249.** This report presents the results of testing KS1000 CS to ISO 5660 - 1 & ISO 5660 – 2
7. **Aurecon – Kingspan Panels Advice on Panel Performance during Fire. Report No. 222879.001 Rev 0 (dated 22nd August 2011).** This report compares various test result of the Kingspan panels to the requirements of the BCA. The report concludes for Kingspan panels used as non-loadbearing wall and non-loadbearing ceiling systems, BS 476 Parts 20 and 22 is of equivalent severity to that of AS 1530.4. Consequently, it is considered that the resultant fire performance of the test should be equivalent.
8. **Buildex Engineering Test Lab – Test for pull through testing using Kingspan composite panels. Report No. ELTR 1537 (dated 23rd March 2011).** This report provides the results of mechanical testing to QCM-020 of 14-20 x 65 TEK Screw with and without 25mm aluminium washers.

9. **Buildex Engineering Test Lab – Test for pull through testing using Kingspan composite panels. Report No. ELTR 1579, Issue 2 (dated 3rd September 2012).** *This report provides the results of mechanical testing to Bx QCM-020 of 14-14 and 14-10 Hex Washer TEK Screws into purlins F100, F150 and F200 sections.*
10. **Buildex Engineering Test Lab – Test for pull through testing using Kingspan composite panels. Report No. ELTR 1590 (dated 1st February 2013).** *This report provides the results of mechanical testing to Bx QCM-020 of 14-14 x 110 Hex Washer TEKs from G450 studs and purlins.*
11. **Costin Roe Consulting – Kingspan Insulated Wall/Roof Panels – KS1000 RW Load-Span Tables for Non-Cyclonic Areas Structural Analysis Report – CO12519.00-02.rpt (5 June 2015).** *The load-span tables have been prepared for 40mm, 60mm and 100mm core thickness panels for both single and double span conditions. The Assessment was carried out using the method of analysis recommended in the European Standards EN14509: 2006 “Self-Supporting Double Skin Metal Faced Insulating Panels – Factory made Products – Specifications”.*
12. **Costin Roe Consulting – Kingspan Insulated Roof Panels – KS1000 RW Panel Compliance with AS1562.1-1992 (Non-cyclonic Areas) CO12519.03-03.rpt (dated 30 June 2015).** *This report reviews the structural performance of KS1000 RW roof panels.*
13. **Costin Roe Consulting – KS1000 RW Roof Panel Hydraulic Capacity. CO12519.03-02.ltr (dated 15 June 2015).** *This report is a hydraulic analysis of the KS1000 RW panels to determine the maximum roof lengths for effective drainage during differing rainfall intensities.*
14. **Costin Roe Consulting – KS1000 Panel Compliance with AS1562.1-1992. CO12519.03-05.ltr (dated 13 April 2016).** *This report is a review of the KS600/900/1000 AWP & KS600/900/1000 EVO (Benchmark Evolution Axis) wall panels for use in non-cyclonic areas and confirms the panels meet the design requirements of AS1562.1-1992.*
15. **Warringtonfire – Full scale bushfire roof test in accordance with AS1530.8.1-2007, FRT 180387-R2.0 (dated 7 January 2019) NATA accreditation No. 3277.** *This report contains the results of testing of Kingspan KW1000RW panels to AS1530.8.1 and concludes the product is suitable for use in areas up to and including BAL40*
16. **RED Fire Engineers – Kingspan Insulated Panel Group Number Assessment to AS 5637.1-2015. Reference - 190201_JN19_00025_Kingspan_Insulated_Panels_CertMark_letter_Final (dated 1 February 2019).** *This assessment is to determine whether the BRANZ – ISO 9705 Fire Test on Kingspan PIR Cored Sandwich Panel System. Project No. FT3824 meets the requirements of AS5637.1-2015. The opinion of this report is that the above noted BRANZ test & Group Number classification of Group 2 is in accordance with AS 5637.1-2015 & the requirements of BCA 2016.1.*
17. **James M Fricker Pty Ltd – Overall “Total R” (Thermally Bridged) Thermal Performance Calculations to AS/NZS 4859 Parts 1 & 2:2018, Project No. i231h (dated 29 April 2020).** *This report determines the Total R-Values of roof and wall systems incorporating Kingspan KS1000 RW panels.*
18. **CSIRO – Thermal Value Summary Report for KS1100 CS50 Coldstore Panels, Report #: XC3678/R5 (dated 14 May 2020).** *This report presents the total R value of KS1100 CS50 (same core of KS1000 RW) when calculated in accordance with AS/NZS4859.1*
19. **CSIRO – Thermal value summary report for KS1100 CS Series Coldstore Panels, Report #: XC3678/R6 (dated 14 May 2020).** *This report presents the total R value of KS1100 CS series of various thicknesses (same core of KS1000 RW) when calculated in accordance with AS/NZS4859.1*
20. **CSIRO – Methods for Fire Tests on Building Materials, Components and Structures – Part 3: Simultaneous Determination of Ignitability, Flame Propagation, Heat Release and Smoke Release, Report No. FNE8218 (dated 20 July 2003) NATA accreditation No. 3632.** *This test report provides the results of testing to AS/NZS 1530.3-1999 for KS1200 CS (which consists of the same core material as KS1000 AWP & EVO) and returns results for Spread of Flame index of 0 and Smoke Development Index of 2.*
21. **Cyclone Testing Station, James Cook University, Test Summary Sheet – TS883 - dated 19 April 2013 (NATA accreditation No. 14937).** *This report provides a summary of Cyclone Testing Station Report No. TS883 dated 19th April 2013, for testing of various spans of KS1000 RW 60mm to AS4040.3 for cyclonic wind regions.*
22. **Cyclone Testing Station, James Cook University, Test Summary Sheet – TS884 - dated 19 April 2013 (NATA accreditation No. 14937).** *This report provides a summary of Cyclone Testing Station Report No. TS884 dated 19th April 2013, for testing of various spans of KS1000 RW 60mm and 100mm to AS4040.3 for cyclonic wind regions.*