Certificate of Conformity

Certification Body:

SAI GLOBAL

SAI Global Certification Services Pty Limited

(ACN 108 716 669) Trading as "SAI Global"

JAS-ANZ Accreditation No. Z1440295AS

Address: 680 George St, Sydney, NSW 2000

Website: www.saiglobal.com

Certificate Holder:

Kingspan

Kingspan Insulated Panels Pty Ltd

38 - 52 Dunheved Circuit, St. Marys, NSW, 2760, Australia

tel: +61 2 8889 3000

fax: +61 2 8889 3099

web:www.kingspanpanels.com.au

Certificate number: CM20113

THIS TO CERTIFY THAT

Kingspan Insulated Wall Panels - Architectural Wall Panels (AWP) and Benchmark Evolution (EVO)

Type and/or use of product:

These insulated wall panels are for use on Residential, Commercial & Industrial Buildings (including areas for communal use), as an external façade installed in either horizontal or vertical orientation.

For models covered by this certification refer to A3 in appendix A below.

Description of product:

The Kingspan KS600/900/1000 AWP and KS600/900/1000 EVO insulated wall panels consists of Zincalume sheets that contain a PIR core. The exterior sheet liner is 0.5mm (or greater) thick Zincalume G300S AZ150/AZ200 or AM100/AM150 coated sheet. The core is polyisocyanurate (PIR). The internal sheet liner is 0.4mm (or greater) Zincalume G300S AZ150/AZ200 or AM100/AM150 coated steel.

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

BCA 2019

			Volume One	Volume Two
Performance Requirement(s)	**BP1.1(a) limited to (b)(i)(ii)(iii)**	**Structural Provisions –** Structural Reliability	**N/A**	**N/A**
	CP2	**Fire Resistance –** Spread of Fire		
	FP1.4	**Damp & Weatherproofing** – External Wall		
Deemed-to-Satisfy Provision(s):	**Spec C1.10 clause 4 Clause 7**	**Fire hazard properties** Wall & Ceiling Linings Other Materials	**N/A**	**N/A**
	G5.1 & G5.2	**Construction in Bushfire Prone Areas**		
	J1.2(a), (e)(ii)	**Building Fabric -** Thermal construction – general (must be used in conjunction with other building elements to achieve a total R value outlined in clause J1.5 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

ABCB JAS-ANZ

State or territory variation(s):	**NSW Spec C1.10 NSW 7**	**Fire Hazard Properties –** Other materials	**N/A**	**N/A**
	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: • 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 Products 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. The products achieved a fire rating of -/90/90 when installed in accordance with the relevant installation Guides and as described in the Warringtonfire report #22473 R2.0. The products may be used where the required FRL does not exceed FRL -/90/90, as specified in the NCC 2019 BCA Volume One specification C1.1.
4. To comply with CP2, CV1 and CV2 must also be addressed as a fire engineering solution on a case by case basis.
5. The products have been tested in accordance with AS5113-2016 and achieve an **'EW'** classification. All other building design specific requirements of CV3 including parts (c) & (d) must also be adhered to for compliance to CP2
6. The products are suitable for use on buildings that are have a Bushfire Fire Attack Level up to **BAL 40**.
7. This product achieves a **Group Number 2** as determined in accordance with AS 5637.1:2015

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.

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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

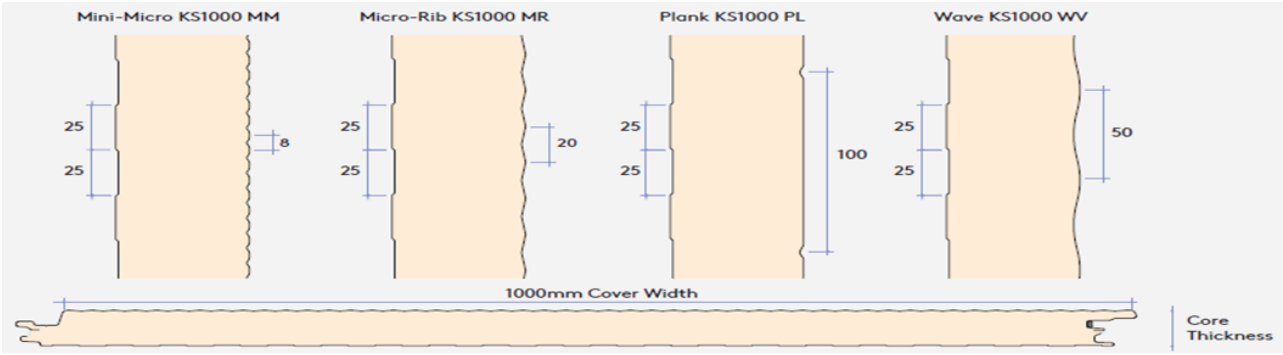
Kingspan Insulated Wall Panels KS600/900/1000 Architectural Wall Panels (AWP) and KS600/900/1000 Benchmark Evolution (EVO) Achieve an "EW" Classification ONLY in accordance with AS5113:2016

Detailed specification provided in:

- KS1000 AWP – PDS – Jul2020 Rev 1 (Product Data Sheet).
- KS1000 EVO – PDS – Jul2020 Rev 1 (Product Data Sheet).

Panel Properties - AWP

Nominal Panel Thickness Core Thickness (mm)	50	80	100	140
Weight Kg/m2 – 0.5/0.4 steel External steel sheet liner 0.5mm Internal steel sheet liner 0.4mm	11.2	12.4	13.2	14.8
Declared Material R-Value m^2K/W at 23^0C	2.24	3.68	4.61	6.47
Declared material U-Value W/m^2K	0.45	0.27	0.22	0.15
Declared Thermal Conductivity (λ-value)	0.022 W/m.K at 23°C			
Spread of Flame Index	0			
Smoke Development	2			



Thermal Performance – AWP (wall panel) (Total R-Value - m^2K/W)

Nominal Panel Thickness (mm)	50	80	100	140
Heat Flow Out - Winter (m^2K/W)	2.50	4.01	4.98	6.92
Heat Flow in – Summer (m^2K/W)	2.31	3.70	4.59	6.38

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. AWP is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

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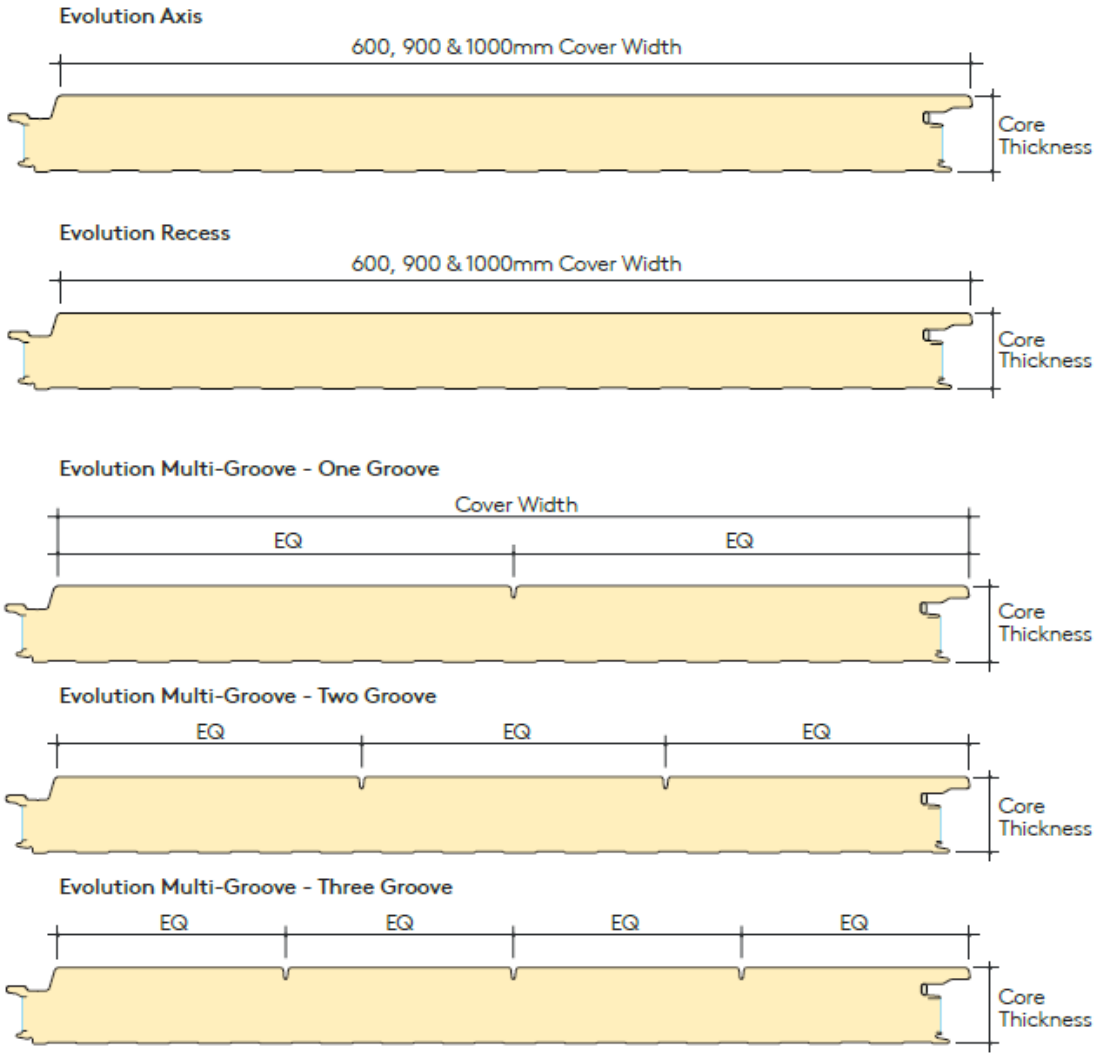
Panel Properties - EVO

Nominal Panel Thickness Core Thickness (mm)	50	80	100	140
Weight Kg/m2 – 0.7/0.4 steel External steel sheet liner 0.7mm Internal steel sheet liner 0.4mm	12.7	13.9	14.7	16.3
Declared Material R-Value m^2K/W at 23^0C	2.24	3.68	4.61	6.47
Declared material U-Value W/m^2K	0.45	0.27	0.22	0.15
Declared Thermal Conductivity (λ-value)	0.022 W/m.K at 23°C			
Spread of Flame Index	0			
Smoke Development	2			

Thermal Performance – EVO (wall panel) (Total R-Value - m^2K/W)

Nominal Panel Thickness (mm)	50	80	100	140
Heat Flow Out - Winter (m^2K/W)	2.50	4.01	4.98	6.92
Heat Flow in – Summer (m^2K/W)	2.31	3.70	4.59	6.38

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. EVO 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 2 of this certificate and the following;

1. The Products must be installed in accordance with the relevant Kingspan Insulated Panels Product Data Sheets, Installation Guides & Drawings as listed below.
   - KS1000 AWP – PDS – Jul2020 Rev 1 (Product Data Sheet)
   - KS1000 AWP Installation Guide – Horizontally Laid – Dated January 2020.
   - KS1000 AWP Installation Guide – Vertically Laid – Dated January 2020.
   - KS1000 EVO – PDS – Jul2020 Rev 1 (Product Data Sheet)
   - BM Evolution Installation Guide – Horizontally laid – Dated January 2020.
   - BM Evolution Installation Guide – Vertically laid – Dated January 2020.

A6 Other relevant technical data

- Architectural Wall Panel Range (Vertically Laid) – Drawings – AWP_HS_00 to AWP_HS_21 – Revision D – Dated 05/09/2012
- Architectural Wall Panel Range (Horizontally laid) – Drawings – AWP_HS_00 to AWP_HS_37 – Revision D – Dated 05/09/2012
- Benchmark Evolution Axis (Vertically laid) – Drawings – EVO_VT_00 to EVO_VT_21 – Revision B – Dated 05/09/2012
- Benchmark Evolution Axis (Horizontally laid) – Drawings – EVO_HZ_00 to EVO_HZ_34 – Revision B – Dated 05/09/2012
- Benchmark Evolution Recess +SFS (Vertically laid) – Drawings – BM_EVO_VT_Q2_001 to BM_EVO_VT_Q2_021 – Revision 0 – Dated 29/10/2013
- Benchmark Evolution Recess + SFS (Horizontally laid) – Drawings – EVO_RC + SFS_HZ_01 to EVO_RC + SFS_HZ_55 – Revision A – Dated 25/07/2017

APPENDIX B – EVALUATION STATEMENTS

B1 Evaluation methods

The 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 Guides, 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;**
   - A2.2(2)(a) / A5.2(1)(d) – *A report issued by an Accredited testing Laboratory* – Warringtonfire (NATA accreditation No. 3277)
   - A2.2(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person* – Aurecon & RED Fire Engineers

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) & CSIRO (NATA accreditation No. 3632)
   - A2.3(2)(a) / A5.2(1)(e) - *A report from a professional engineer or other appropriately qualified person* – RED Fire Engineers

4. **Weatherproofing assessment**;
   - A2.2(2)(a) / A5.2(1)(d) – *A report issued by an Accredited testing Laboratory* – VINCI Technology Centre UK Limited (*formally Taylor Woodrow Technology*) (UKAS accreditation No. 0057)

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

1. **Costin Roe Consulting – Kingspan Insulated Wall/Roof Panels – KS1000AWP & Benchmark Evolution Axis Load-Span Tables for Non-Cyclonic Areas Structural Analysis Report – CO12519.00-04.rpt (19 November 2015).** *The load-span tables have been prepared for 50mm, 80mm, 100mm and 140mm 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" using applicable structural actions of AS/NZS 1170.*
2. **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.*
3. **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.*

4. **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.*
5. **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.*
6. **Aurecon – Kingspan Panels Advice on Panel Performance during Fire. Report No. 222879.001 Rev 0 (dated 24th 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.*
7. **Red Fire Engineering – Assessment of Kingspan 140mm KS1000AWP Vertically Laid Test results in accordance with BS 8414-2:2015 + A1:2017 and AS5113:2016, report # JV18-00218, Rev 4 (dated 22 November 2019).** *This report provides expert judgement as to whether the test conducted to BS8414-2:2015 + A1:2017 and concludes that the test meets all of the requirements of AS5113:2016 for an "EW" Classification.*
8. **Warringtonfire – Fire resistance performance of Kingspan Architectural Panels (AWP) 80mm to 140mm thick in conjunction with plasterboard lined walls if tested in accordance with AS 1530.4:2014, report #22473 R2.0, (dated 16th October 2019) NATA accreditation No. 3277.** *This report provides the test results to testing in accordance with AS1530.4:2014 and returns a result of -/90/90 when used in construction with 16mm fibre cement sheeting in accordance with manufacturers specifications. This report is also used as part of the Bushfire resistance assessment.*
9. **Warringtonfire – Regulatory Information Report - Fire resistance performance of Kingspan Architectural Panels (AWP) 80mm to 140mm thick in conjunction with plasterboard lined walls if tested in accordance with AS 1530.4:2014, report #22473 RIR 2.0, (dated 16th October 2019) NATA accreditation No. 3277.** *This report provides information about the requirements of fire rating and a summary of the findings the full report provided by Warringtonfire report #22472 R2.0, and states that the product achieves a fire rating of -/90/90. This report is also used as part of the Bushfire resistance assessment.*
10. **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).*
11. **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 2019.*
12. **Costin Roe Consulting – KS1000RW Roof Panel Hydraulic Capacity. CO12519.03-02.ltr (dated 15 June 2015).** *This report is a hydraulic analysis of the KS1000RW panels to determine the maximum roof lengths for effective drainage during differing rainfall intensities.*
13. **Taylor Woodrow Technology – Weathertightness testing of a sample of Kingspan KS1000RW 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.*

14. **Technology Centre, VINCI Construction UK Ltd – Weathertightness Testing of a sample of Kingspan AWP panels. Report No. N950/08/14195 (dated 10th September 2009) UKAS accreditation No. 0057.** *This report provides the results of weathertightness testing to the CWCT Standard Test methods for building envelopes 2005 for a horizontal joint installation. The following properties were testing, and all received a pass result; Air permeability, Watertightness – static, Watertightness – dynamic, Watertightness – hose, Wind resistance – serviceability, Wind resistance – safety.*
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 AS1530.8.1-2007 and concludes the product is suitable to for in areas up to and including BAL40*
16. **CSIRO – Thermal Value Summary Report for KS1100 CS50 Coldstore Panels, Report #: XC3678/R5 (dated 14 May 2020) NATA accreditation No. 165.** *This report presents the total R value of KS1100 CS50 (same core of KS1000 AWP & EVO) when calculated in accordance with AS/NZS4859.1*
17. **CSIRO – Thermal value summary report for KS1100 CS Series Coldstore Panels, Report #: XC3678/R6 (dated 14 May 2020) NATA accreditation No. 165.** *This report presents the total R value of KS1100 CS series of various thicknesses (same core of KS1000 AWP & EVO) when calculated in accordance with AS/NZS4859.1*
18. **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 AWP panels*
19. **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.*
20. **Cyclone Testing Station, James Cook University, Test Summary Sheet – TS885 - dated 18 April 2013** (NATA accreditation No. 14937). *This report provides a summary of Cyclone Testing Station Report No. TS885 dated 18th April 2013, for testing of various spans of KS1000AWP 80mm and 140mm to AS4040.3 for cyclonic wind regions.*
21. **Cyclone Testing Station, James Cook University, Test Summary Sheet – TS1042a - dated 30 June 2016** (NATA accreditation No. 14937). *This report provides a summary of Cyclone Testing Station Report No. TS1042 dated 28 June 2016, for testing of various spans of KS1000AWP 80mm to AS4040.3 for cyclonic wind regions.*
22. **Cyclone Testing Station, James Cook University, Test Summary Sheet – TS1042b - dated 30 June 2016** (NATA accreditation No. 14937). *This report provides a summary of Cyclone Testing Station Report No. TS1042 dated 28 June 2016, for testing of various spans of KS1000AWP 100mm to AS4040.3 for cyclonic wind regions.*