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CERTIFICATE NO: CM20104 Rev 1

PRODUCT CERTIFICATE



Kingspan – KS1000 RW – Trapezoidal Roof & Wall Panels

Date of issue: 04/12/2020

Review Date: 05/06/2022

1 CERTIFICATE HOLDER DETAILS

Kingspan Insulated Panels Pty Limited

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New Zealand
PO Box 39136 Harewood, Christchurch 8545
New Zealand

www.kingspanpanels.co.nz

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2 PRODUCT CERTIFICATION BODY



SAI Global Certification Services Pty Limited

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

JAS-ANZ Accreditation No. Z1440295AS

680 George St, Sydney, NSW 2000

www.saiglobal.com

KEY INFORMATION

3 SUMMARY OF DESCRIPTION OF BUILDING METHOD OR PRODUCT

KS1000 RW roof and wall panels consist of an external & internal steel sheet liner with a Polyisocyanurate (PIR) core. The exterior weather sheet liner is 0.5mm thick Zinalume G300S AZ150/200 or AM100/150 coated steel sheet. The internal steel sheet liner is 0.4mm thick Zinalume G300S AZ100 coated steel sheet.

Continuation of description can be found in item 9. Supporting Information about Description of Building Product or Method.

Matters that should be taken into account in the use or application of the building method or product can be found in item 6. Conditions and Limitations of Use

Catalogue or model identification numbers: *KS1000 RW*

4 SUMMARY OF INTENDED USE OF BUILDING METHOD OR 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.

KS1000 RW is a through fixed system which can be used for building applications with roof slopes of 4° and above and in both vertical and horizontal wall façade applications.

Continuation of intended use can be found in item 10. Supporting Information about Intended use of Building Product or Method.

5 BUILDING CODE PROVISIONS – New Zealand Building Code (NZBC) as at JAN 2017

B1 Structure - B1.3.1; B1.3.2; B1.3.3(a, f, g, h, j); B1.3.4

B2 Durability - B2.3.1(b)

C3 Fire Affecting Areas Beyond the Fire Source – C3.4(a); C3.5; C3.7

E2 External Moisture - E2.3.1; E2.3.2; E2.3.7

E3 Internal Moisture – E3.3.5

F2 Hazardous Building materials - F2.3.1

H1 Energy Efficiency – H1.3.1

If designed, used, installed & maintained in accordance with the scope of this Certificate, the above-mentioned product will meet the following provisions of the NZBC.

How the building method or product complies or contributes can be found in item 12. Basis for Certification.

Any qualifications on the extent of that compliance can be found in item 6. Conditions and limitations of use.



The certificate holder must maintain compliance with the conditions set out in section 15 of the Building (Product Certification) Regulations 2008.

This certificate is issued by SAI Global, an independent certification body accredited by the product certification accreditation body appointed by the Chief Executive of Ministry Business, Innovation and Employment (MBIE) under the Building Act 2004. MBIE does not in any way warrant, guarantee or represent that the building method or product, the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. MBIE disclaims 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 building method(s) or product(s) referred to in this certificate.

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6 CONDITIONS AND LIMITATIONS OF USE

1. Kingspan KS1000 RW, must be installed in accordance with the manufacture's Installation Guides as per below;
 - a. KS1000 RW Trapezoidal Wall Panel Installation Guide – Vertically Laid – January 2020
 - b. KS1000 RW Trapezoidal Wall Panel Installation Guide – Horizontally Laid – January 2020
 - c. Trapezoidal Roof KS1000 RW Installation Guide – 150mm End Lap – January 2020
 - d. Trapezoidal Roof KS1000 RW Installation Guide – 75mm End Lap – November 2019
 - e. Kingspan Trapezoidal RW Product Data Sheet – KS1000 RW Trapezoidal Roof and Wall Panel – Q4 2020
2. Panel spans must not exceed the manufacturer's specification for design wind speeds, where the design wind speed is to be either as determined by NZS3604 Table 5.4 (for buildings within the scope of NZS3604:2011 para 1.1.2), or as specifically calculated in accordance with AS/NZS 1170 by a chartered professional engineer (CPENG).
3. Fixing/fastening (including number of fasteners) of the panels to the supporting structure is not covered by this certification and shall be specifically designed by chartered professional engineer (CPENG). Contact Kingspan Technical Services via their website for project specific advice for fastener requirements.
4. The product is suitable for use within 1 m of the boundary.
5. The product is suitable for use where the inner face of the panel is exposed as the internal lining, in:
 - a. any building or use where protected by an automatic fire sprinkler system, or
 - b. any un-sprinklered building except:
 - i. where care/protection is provided or
 - ii. in exit ways or
 - iii. in occupied spaces in Importance Level 4 buildings or
 - iv. in crowd and sleeping uses (except household units)
6. The product is suitable for exposure zones B, C and D as defined by NZS3604:2011.
7. Certification does not include accessories used with the product.

Reference Documents:

- KS1000 RW Trapezoidal Wall Panel Installation Guide – Vertically Laid – January 2020
- KS1000 RW Trapezoidal Wall Panel Installation Guide – Horizontally Laid – January 2020
- Trapezoidal Roof KS1000 RW Installation Guide – 150mm End Lap – January 2020
- Trapezoidal Roof KS1000 RW Installation Guide – 75mm End Lap – November 2019
- Kingspan Trapezoidal RW Product Data Sheet – KS1000 RW Trapezoidal Roof and Wall Panel – Q4 2020

7 HEALTH AND SAFETY INFORMATION

- Kingspan Trapezoidal RW Product Data Sheet – KS1000 RW Trapezoidal Roof and Wall Panel – Q4 2020



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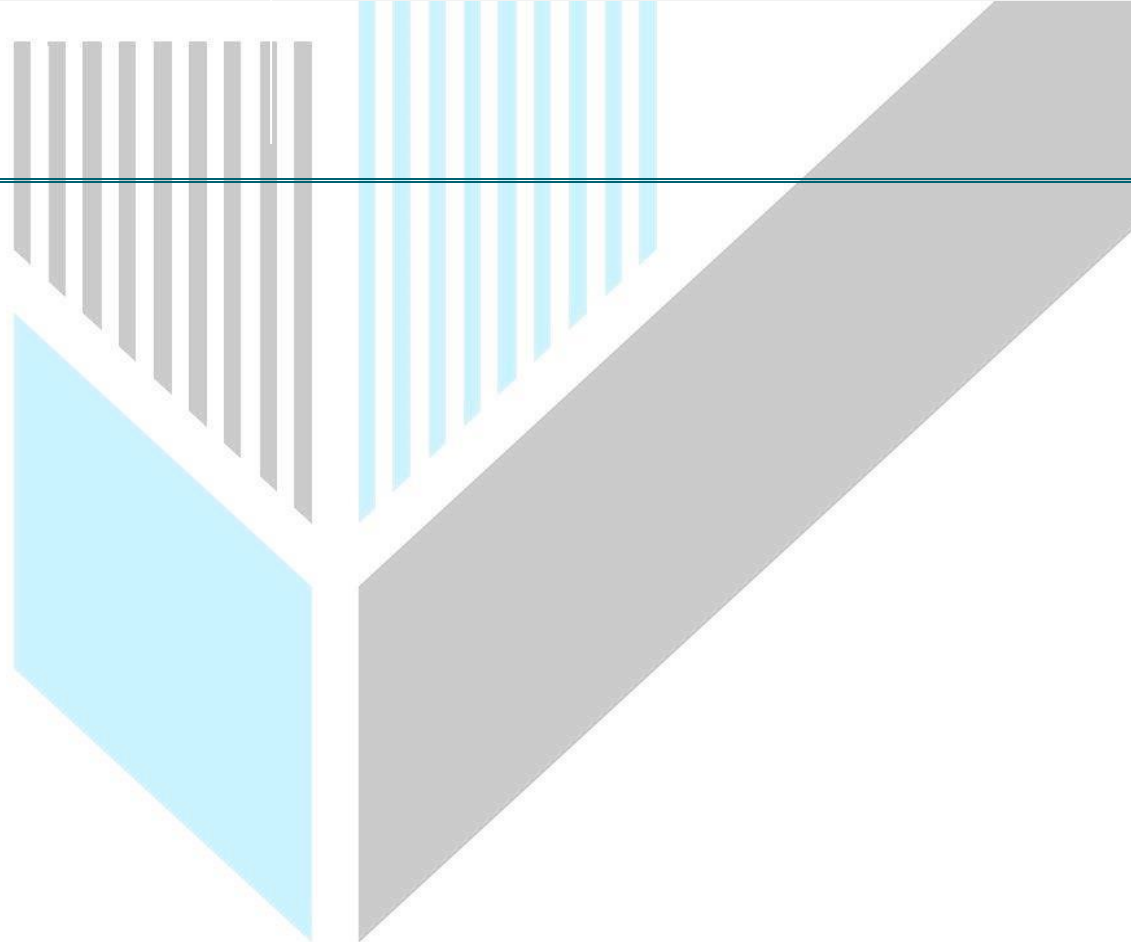
Kingspan – KS1000 RW – Trapezoidal Roof & Wall Panels

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SIGNATURES

Name and Signature of the Product Certification Body's (PCB) authorised representative and, where different, the person assigned by the PCB to make the certification decision

Heather Mahon
Global Head of Technical Services
SAI Global Assurance



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SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION

9 SUPPORTING INFORMATION ABOUT DESCRIPTION

KS1000 RW roof and wall panels consist of a rigid thermoset insulation core sandwiched between an external & internal steel sheet liner.

The exterior weather sheet liner is 0.5mm thick Zinalume G300S AZ150/200 or AM100/150 coated steel sheet.

The core is polyisocyanurate (PIR).

The internal steel sheet liner is 0.4mm thick Zinalume G300S AZ100 coated steel sheet.

Standard lengths are from 2.0m to 11.8m including end lap / gutter cut back. Panel core thickness range from 40mm to 120mm. Factory cut backs are available in 75mm or 150mm

Components:

The components are detailed in the manufacture's Installations Guides and consist of;

- KS1000 RW Trapezoidal Panel
- Fasteners
- Butyl tape sealant – 6mm x 4mm
- Profiled ridge filler
- Fire Rated canister foam
- Gun grade sealant

10 SUPPORTING INFORMATION ABOUT INTENDED USE

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.

KS1000 RW is a through fixed system which can be used for building applications with roof slopes of 4° and above and in both vertical and horizontal wall façade applications.

Reference Documents:

- KS1000 RW Trapezoidal Wall Panel Installation Guide – Vertically Laid – January 2020
- KS1000 RW Trapezoidal Wall Panel Installation Guide – Horizontally Laid – January 2020
- Trapezoidal Roof KS1000 RW Installation Guide – 150mm End Lap – January 2020
- Trapezoidal Roof KS1000 RW Installation Guide – 75mm End Lap – November 2019
- Kingspan Trapezoidal RW Product Data Sheet – KS1000 RW Trapezoidal Roof and Wall Panel – Q4 2020
- Kingspan KS1000 RW CodeMark Wall Details Version Q4 2020 – Technical Drawings
- Kingspan KS1000 RW CodeMark Roof Details Version Q4 2020 -Technical Drawings

11 SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE

All conditions and limitations are as stated above in item 6. Conditions and Limitations of Use



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12 BASIS FOR CERTIFICATION

- **B1 Structure** – by testing and comparison with provisions of Verification Method B1/VM1
- **B2 Durability** – by testing and comparison with provisions of Verification Method B2/VM1
- **C3 Fire affecting areas beyond the fire** - by testing and comparison with the provisions of Verification Method C/VM2 and Acceptable Solutions C/AS1 and C/AS2
- **E2 External Moisture** – Comparison with Verification Method E2/VM1 and referenced standard AS/NZS4284
- **E3 Internal Moisture** – By comparison with Acceptable Solution E3/AS1
- **F2 Hazardous building materials** – by testing and comparison with the performance requirements of cl F2.3.1
- **H1 Energy Efficiency** – by testing and comparison with Verification Method H1/VM1

13 SUPPORTING DOCUMENTATION FOR CERTIFICATION

1. Building regulations 1992 (SR 1992/150) – Reprinted as at 1 January 2017.
2. Acceptable Solutions and Verification Methods For New Zealand Building Code Clause B1 Structure. Amendment 19 (28 November 2019).
3. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause B2 Durability. Amendment 12 (28 November 2019).
4. Verification Method: Framework for Fire Safety Design For New Zealand Building Code Clauses C1-C6 Protection from Fire – C/VM2. Amendment 5 (24 November 2017).
5. Acceptable Solution for Building with Sleeping (residential) and Outbuildings (Risk Group SH) For New Zealand Building Code Clauses C1-C6 Protection from Fire – C/AS1. Amendment 4 (1 January 2017).
6. Acceptable Solutions and Verification Methods For New Zealand Building Code Clauses C1-C6 Protection from Fire – C/AS2. (27 June 2019).
7. Verification Methods E2/VM1 and Acceptable Solutions E2/AS1, E2/AS2 and E2/AS3 For New Zealand Building Code Clauses E2 External Moisture. Amendment 9 (27 June 2019).
8. Acceptable Solutions and Verification Methods For New Zealand Building Code Clause E3 Internal Moisture. Amendment 6 (1 January 2017).
9. Acceptable Solutions and Verification Methods for New Zealand Building Code Clause F2 Hazardous Building Materials. Amendment 3 (1 January 2017).
10. Acceptable Solutions and Verification Methods For New Zealand Building Code Clause H1 Energy Efficiency. Amendment 4 (28 November 2019).
11. **CostinRoe Consulting - Kingspan KS1000RW & KS1000DLTR 1.6 Roof and Wall Panel Opinion on Weathertightness Report (13 February 2015).** *This report provides an opinion on the panel performance to the Australian National Construction Code performance requirement FP1.4 and draws upon testing to AS/NZS 4284 Testing of Building Facades and EN14509 Self-supporting double skin metal faced insulating panels.*
12. **Technology Centre, Taylor Woodrow Technology – Weathertightness Testing of a sample of Kingspan KS1000RW Roof Panels. Report No. N950/07/13893 (dated 22 August 2007).** *This report provides the results of weathertightness testing undertaken generally to the CWCT Standard Test methods for building envelopes 2005. The following properties were tested, and all received a pass result: Air permeability, Watertightness – static, Watertightness – dynamic, Watertightness – hose, Wind resistance – serviceability, Wind resistance – safety.*
13. **CSIRO Report No. DTF824 Determination of Dynamic Weather Resistance of Kingspan Insulated Metal Roofing Tile to AS4069.9-2002 June 2007.** *This report presents the results of dynamic weather resistance tests.*
14. **James M Fricker – Thermal Performance of Insulated Building System for Kingspan Panels Pty Ltd. Report No. i231 (dated 1 November 2017).** *This report provides the R-Values of roofs and walls incorporating Kingspan KS1000RW panels as determined in accordance with AS/NZS 4859.1:2002.*
15. **University of Salford, Thermal Measurement Laboratory – Thermal Conductivity of HCFC free PIR Type A. Reference No. TT04/166 (dated 29th October 2004).** *This report provides the results of testing to ISO 8302:1991 and specifies the thermal resistance of the material.*



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16. **CSIRO – Thermal transmission properties of metal faced polyurethane (PE) foam board. Reference No. XC3377/R1 (dated 14th November 2016).** *This report provides the measurements performed by CSIRO to determine the thermal properties of Kingspan KS1100RW panels.*
17. **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.*
18. **OPUS International Consultants Note 18 September 2013.** *This note presents an opinion regarding the performance in regard to the fire safety requirements of the New Zealand Building Code. This opinion is based on an extensive review of available documentation and specifically the Exova Warrington test reports below.*
19. **Exova Warrington Report 319966, Heat release rate (Cone Calorimeter Method) & Smoke Production Rate (Dynamic Measurement) (dated 27 July 2012).** *This report presents the results of testing KS1000 CS to ISO 5660 - 1 & ISO 5660 – 2*
20. **Exova Warrington Report 2690001.1, Fire test of a small room constructed from KS1000RW panels, tested in accordance with ISO 13784-1 2002(E) (dated 1 March 2013)**
21. **Exova Warrington Report 2690002.1, Fire test of a small room constructed from KS1000RW IPN panels, tested in accordance with ISO 13784-1 2002(E) (dated 1 March 2013)**
22. **BRANZ – ISO 9705 Fire Test on Kingspan PIR Cored Sandwich Panel System. Report No. FT3824 (dated 27th August 2007).** *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).*
23. **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.*
24. **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.*
25. **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.*
26. **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.*
27. **CostinRoe Consulting – Kingspan Insulated Wall/Roof Panels – KS1000RW Load-Span Tables for Non-Cyclonic Areas Structural Analysis Report (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”.*
28. **CostinRoe Consulting – Kingspan Insulated Roof Panels – KS1000RW Panel Compliance with AS1562.1-1992 (Non-cyclonic Areas) 30 June 2015 November 2015).** *This report reviews the structural performance of KS1000RW roof panels.*
29. **Letter 25 January 2019 from Dr M G Tatam, Building Technology Director, Kingspan Insulated Panels Pty Ltd .** *Confirming chemical core composition of specimens and ISO5660 testing.*



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14 CONDITIONS RELATING TO NOTIFICATION

- (a) the certificate holder notifies the product certification body in writing of any intended change to any of the following particulars:
- (i) the name, address, or contact details of the certificate holder;
 - (ii) any address of a location where a certified product is produced or manufactured;
- (b) the certificate holder notifies the product certification body in writing of any intended change, modification, or alteration to any of the following:
- (i) the certified building method or product;
 - (ii) the method of its production or manufacture;
 - (iii) the product quality plan prepared in respect of the certified building method or product;
 - (iv) the application or installation instructions for the certified building method or product;
 - (v) any documentation relating to the use and maintenance of the certified building method or product;
- (c) if the certificate holder has any reason to suspect that the certified building method or product does not comply with the Building Code, the certificate holder notifies the product certification body in writing of the reason for that suspicion:
- (d) if the certificate holder or the product certification body finds that a certified building method or product that has been released on the market does not comply with the Building Code, the certificate holder discloses that fact in disclosure statements published in a form that is acceptable to the product certification body and to the chief executive:
- (e) if the certificate is suspended or revoked, the certificate holder—
- (i) notifies all customers to whom the building method or product is regularly supplied; and
 - (ii) immediately ceases using the certificate, the mark of conformity, and any reference to the number of the certificate.



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