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BAE-18-035-P-A-UK
BDA Agrément®
Kingspan Optim-R®
Vacuum Insulation Panel (VIP)



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SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to Kingspan Optim-R® (hereinafter the 'Product'). The Product is a rectangular-shaped vacuum insulation panel (hereinafter 'VIP'). The Product is for installation in the building envelope i.e. walls, flat roofs and floors of existing and new residential buildings.

DESCRIPTION

The Product is a rectangular-shaped VIP containing a micro-porous (fumed silica based) core material in a multi-layer laminate envelope. The internal pressure within the envelope is much lower than the ambient air pressure.

ILLUSTRATION



THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

STATEMENT

It is the opinion of Kiwa Ltd. that the Product is safe and fit for its intended use, provided it is specified, installed and used in accordance with this Agrément.

Craig Devine
Operations Manager, Building Products

Alpheo Mlotha CEng FIMMM MBA
Business Unit Manager, Building Products

SUMMARY OF AGRÉMENT

This document provides independent information to specifiers, specialists, engineers, building control personnel, contractors, installers and other construction industry professionals who are considering the safety and fitness for purpose of the Product. This Agrément covers the following:

- Conditions of use;
- Production Control, Quality Management System and the Annual Verification Procedure;
- Product components and ancillary items, points of attention for the Specifier and examples of details;
- Installation;
- Independently assessed Product characteristics and other information;
- Compliance with national Building Regulations, other regulatory requirements and Third-Party Acceptance, as appropriate;
- Sources.

MAJOR POINTS OF ASSESSMENT

Moisture control - see Section 2.2.7 - the performance of the Product with regard to interstitial condensation, surface condensation and water (vapour) infiltration has been considered.

Strength - see Section 2.2.8 - the Product has sufficient strength to sustain and transmit the applied loads.

Fire performance - see Section 2.2.9 - the Product is classified as European Classification E / E_{fl} / E_L, in accordance with BS EN 13501-1.

Thermal performance - see Section 2.2.10 - the Product improves the thermal performance of the building envelope and can contribute to satisfying the requirements of the national Building Regulations.

Durability - see Section 2.2.12 - the Product shall have a service life durability equivalent to that of the building into which it is incorporated.

UKCA, UKNI and CE marking - see Section 2.2.13 - the Agrément holder has responsibility for conformity marking, in accordance with all relevant British and European Product Standards.

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1 GENERAL CONSIDERATIONS

1.1 CONDITIONS OF USE

1.1.1 Limitations

This Agrément has been prepared in accordance with the mandatory requirements defined in the relevant Kiwa Technical Requirement. Some information in this Agrément is provided for guidance or reference purposes only; this information falls outside the scope of the Technical Requirement.

1.1.2 Application

The assessment of the Product relates to its use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment

Kiwa Ltd. has assessed the Product in combination with relevant test reports, technical literature, the Agrément holder's quality plan, DoPs and site visit, as appropriate.

1.1.4 Installation supervision

The quality of installation and workmanship shall be controlled by a competent person who shall be an employee of the installation company (hereinafter 'Installer').

The Product shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

1.1.5 Geographical scope

The validity of this document is limited to England, Wales, Scotland, Northern Ireland and Ireland, with due regard to Section 3 of this Agrément (CDM, national Building Regulations and Third-Party Acceptance).

1.1.6 Validity

The purpose of this Agrément is to provide well-founded confidence to apply the Product within the scope described. The validity of this Agrément is as published on www.kiwa.co.uk/bda.

1.2 PRODUCTION CONTROL AND QUALITY MANAGEMENT SYSTEM

Kiwa Ltd. has conducted an audit of the Agrément holder and determined that they fulfil all their obligations in relation to this Agrément in respect of the Product.

The initial audit demonstrated that the Agrément holder has a satisfactory Quality Management System (QMS) and is committed to continuously improving their quality plan. Document control and record-keeping procedures were deemed satisfactory. A detailed Production Quality Specification (PQS) has been compiled to ensure traceability and compliance under the terms of this Agrément.

1.3 ANNUAL VERIFICATION PROCEDURE - CONTINUOUS SURVEILLANCE

To demonstrate that the Product conforms with the requirements of the technical specification described in this Agrément, an Annual Verification Procedure has been agreed with the Agrément holder in respect of continuous surveillance and assessment, and auditing of the Agrément holder's QMS.

2 TECHNICAL ASSESSMENT

This Agrément does not constitute a design guide for the Product. It is intended only as an assessment of safety and fitness for purpose.

2.1 PRODUCT COMPONENTS AND ANCILLARY ITEMS

2.1.1 Components included within the scope of this Agrément

The components listed in Table 1 below are integral to the Product.

Table 1 - Integral components

Component	Description	Dimensions
Kingspan Optim-R®	rectangular-shaped VIP containing a micro-porous (fumed silica based) core material in a multi-layer laminate envelope. The internal pressure within the envelope is much lower than the ambient air pressure	300 to 1,200 mm long by 300 to 600 mm wide by 20 to 50 mm thick; density 180 to 210 kg/m ³

2.1.2 Ancillary items falling outside the scope of this Agrément

The following ancillary items detailed in this Section may be used in conjunction with the Product, but fall outside the scope of this Agrément:

- Kingspan Optim-R® flex;
- Kingspan Optim-R® fix;
- Kingspan Thermaroom® TR24, TR26 and TR27;
- Kingspan Thermapaper® TT44, TT46 and TT47;
- Kingspan GreenGuard®;
- Klasse Group, KlasseFOIL™ (aluminium) tape, 32 µm thick.

2.2 POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 Design

2.2.1.1 Design responsibility

A Specifier may undertake a project-specific design, in which case it is recommended that the Specifier co-operates closely with the Agrément holder. The Specifier or Installer is responsible for the final as-built design.

2.2.1.2 Basis of design

The characteristics detailed in the section titled 'Major Points of Assessment' shall be considered during the use of the Product.

2.2.1.3 General design considerations

Masonry external walls shall be designed and constructed in accordance with PD 6697.

Flat roofs shall be designed and constructed in accordance with BS 6229 and BS 8217.

Ground floor systems shall be designed and constructed in accordance with BS 8102 and BS 8215.

The Product shall not be exposed to organic solvents or plasticisers.

In wall applications:

- special attention shall be given to the airtightness of the internal lining, being the most important measure to avoid excessive condensation in the space behind the insulation;
- a vapour control layer (hereinafter 'VCL') may be considered between the internal lining and the brick wall;
- the Product shall be closely butted at all joints in accordance with the Agrément holder's instructions;
- for proprietary external render systems over the Product, the render system shall have its own third-party accreditation as a render system coating.

In flat roof applications:

- special attention shall be given to the detailing of the perimeter connections, avoiding any non-rectangular corners; the Agrément holder's instructions shall be followed;
- the substrate of the finished roof shall be installed with a minimum slope of 1:80 or greater; this slope can either be achieved in the deck or in the overlay (e.g. tapered) insulation system;
- the Product shall be closely butted at all joints in accordance with the Agrément holder's instructions.

In floor applications:

- unlike roofs, walls and intermediate floors, U-values for ground floors cannot be calculated with reference to the construction detail alone. Heat loss from ground floors depends upon the ratio of the exposed floor perimeter to the total floor area, the thickness of any basement wall and the depth of any basement;
- calculations of the U-value of floor constructions should be carried out in accordance with BS EN ISO 6946, BRE Report 443, BS EN ISO 10211 and BS EN ISO 13370, as appropriate;
- the Product is not recommended for use in direct contact with subsoil and shall be positioned above the damp-proof membrane;
- the Product shall be closely butted at all joints in accordance with the Agrément holder's instructions;
- the Product may also be used beneath a floating floor system with appropriate protection and substrate.

2.2.1.4 Project-specific design considerations

The project-specific design shall:

- be determined by the Specifier;
- take into account the requirements of the relevant national Building Regulations - see Section 3.2;
- take into account the service life durability required - see Section 2.2.12.

No pre-installation survey is required.

2.2.2 Applied building physics (heat, air, moisture)

A Specialist shall check the hygrothermal behaviour of a project-specific design incorporating the Product and, if necessary, offer advice on improvements to achieve the final specification. The Specialist can be either a qualified employee of the Agrément holder or a suitably qualified consultant (in which case it is recommended that the Specialist co-operates closely with the Agrément holder).

2.2.3 Permitted applications

Only applications designed according to the specifications given in this Agrément are permitted. In each case, the Specifier and Installer shall co-operate closely with the Agrément holder.

2.2.4 Installer competence level

The Product shall be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

Installation can be undertaken by competent persons experienced in this type of work.

2.2.5 Delivery, storage and site handling

The Product is delivered in suitable packaging bearing relevant identification information (such as the Product name, production identification date or batch number, the Agrément holder's name, etc.) and, where applicable, the BDA Agrément® logo incorporating the number of this Agrément.

Prior to installation, the Product shall be stored in accordance with the Agrément holder's requirements. Good housekeeping protocols shall be followed to avoid damage. In particular:

- the Product is delivered to site in special protective sealed packaging; handling advice sheets and system literature are provided for each project;
- the Product is not suitable for storage outside; it shall be stored inside a building and raised off the floor;
- the Product shall be protected from being dropped or crushed by objects; storing large quantities on site shall be avoided;
- to ensure maximum performance of the Product when installed, on site precautions shall be taken to protect from mud and dirt.

2.2.6 Maintenance and repair

Once installed, the Product does not require regular maintenance. For advice in respect of repair, consult the Agrément holder.

Performance factors in relation to the Major Points of Assessment

2.2.7 Moisture control

External walls, flat roofs and ground floors incorporating the Product will adequately limit the risk of interstitial condensation when designed in accordance with BS 5250; a condensation risk analysis shall be completed at design stage.

Unsealed butt joints between the VIPs do not prevent the passage of moisture to an inner leaf; solutions to prevent this are: tape the butt joints adequately or maintain a proper residual cavity (air gap).

Where adopted on the inside of external walls, adequate vapour control measures and permanent ventilation shall be provided to avoid possible problems of formation of interstitial condensation in the internal wall leaf.

2.2.8 Strength

The Product has adequate:

- compressive strength, in accordance with BS EN 826 - see section 2.5.2;
- tensile strength perpendicular to faces, in accordance with BS EN 1607 - see section 2.5.2.

2.2.9 Fire performance

The Product is classified as European Classification E / E_{fl} / E_L, in accordance with BS EN 13501-1.

The Product cannot be classified as 'non-combustible' and shall be protected from naked flames and other ignition sources during and after application.

Wall applications

For all buildings in Wales and Northern Ireland, and non-residential buildings in England, the following applies in accordance with the national Building Regulations:

- the Product shall not be used on buildings with a storey of 18 m or more above ground level. Refer to the relevant national Building Regulations for types of buildings and any exclusions that may apply;
- boundary restrictions will apply, dependent on the outermost surface materials of the external wall incorporating the Product, facing the boundary.

For residential buildings in England, the following applies in accordance with the national Building Regulations:

- the Product is restricted to buildings with no floor more than 11 m above ground level. Refer to the national Building Regulations for types of buildings and any exclusions that may apply;
- boundary restrictions will apply, dependent on the outermost surface materials of the external wall incorporating the Product, facing the boundary.

For all buildings in Scotland, the Product is not classified as 'non-combustible' and is restricted to buildings with no floor more than 11 m above ground level and not less than 1 m from the boundary. In such cases, the Product may be excluded from the unprotected area calculation, regardless of openings. Refer to the national Building Regulations for types of buildings and any exclusions that may apply.

For dwellings in Ireland, the Product shall not be used on buildings with a storey of 15 m or more above ground level; the Product can be used without any boundary restrictions. Refer to the relevant national Building Regulations for types of buildings and any exclusions that may apply.

For buildings other than dwellings in Ireland, the Product shall not be used on buildings with a storey of 18 m or more above ground level. The Product can be used without any boundary restrictions. Refer to the national Building Regulations for types of buildings and any exclusions that may apply.

The restrictions outlined above in terms of height above ground level and proximity to boundary do not apply, provided the Product is installed in a cavity construction comprising two masonry leaves, each at least 75 mm thick, and with cavities closed around openings in a wall and at the top of a wall head.

The fire resistance of walls is based on the occupancy, size and use of a building and shall be a minimum of 30 minutes. It is then specified in 60-minute intervals thereafter.

Walls shall be designed and constructed:

- to adequately resist the passage and penetration of fire;
- so that the unseen spread of fire and smoke with concealed spaces in a wall is inhibited.

In all completed wall constructions, cavity fire barriers shall be provided to comply with the relevant provisions of the national Building Regulations.

For detailed conditions of use regarding requirements for supporting wall fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials and components used in the overall wall construction, Specifiers shall refer to the relevant national Building Regulations.

The Product shall not be applied over junctions between floors and compartment walls or external walls that are required to provide a minimum period of fire resistance. Care shall be taken to ensure continuity of fire resistance at junctions with fire-resisting elements, in accordance with the national Building Regulations.

Proximity of flues and appliances

The installed Product shall be adequately separated from any heat-producing appliance, fixed combustion appliance, chimney or incinerator flue pipes passing through a wall. Recommended means of separation are detailed in the Approved Documents supporting the national Building Regulations.

Flat roof applications

The fire rating of any roof containing the Product will depend on the type of top deck finish and the nature of the waterproof covering. Boundary restrictions will depend on the external surface fire rating of the roof materials in accordance with the national Building Regulations.

A flat or zero fall roof is not required to have any specific fire resistance, except when it forms part of a means of escape, when it performs the function of a floor, or where part of it is near a boundary.

When a flat or zero fall roof forms part of a means of escape, or performs the function of a floor, provisions for fire resistance apply; resistance to fire shall also be considered in respect of the underside of the means of escape or floor.

2.2.10 Thermal performance

For the purpose of U-value calculations to determine if the requirements of the national Building (or other statutory) Regulations are met, the thermal resistances of the constructions are to be calculated according to BS EN ISO 13788, BS EN ISO 6946, BRE Report 443 and BS EN ISO 10211 as appropriate.

The requirement for limiting the heat loss through the building fabric, including the effect of thermal bridging, can be satisfied if the U-values of the building elements do not exceed the maximum values in the relevant guidance documents.

Wall applications

Accredited Construction Details (England & Wales/Scotland/Northern Ireland) and Acceptable Construction Details (Republic of Ireland), feature details for walls with reveals insulated with a material of minimum thermal resistance (R-value) of 0.60 m²K/W. These constructions have the following ψ -values:

- 0.50 W/mK for a steel lintel with a perforated steel base;
- 0.30 W/mK for other lintels (including steel lintels);
- 0.04 W/mK for a cill;
- 0.05 W/mK for a jamb;

Accredited Construction Details and Acceptable Construction Details are specifically targeted at new build constructions, however, where applicable they are also considered best practice for refurbishment.

Flat roof applications

Reasonable provision shall be made to limit the effects of thermal bridging. The design shall ensure that rooflight or ventilator kerbs etc. are insulated with a 25 mm thick insulation board of Kingspan Thermaroom® TR26 or TR27, Kingspan Thermaroom® TR24 or 30 mm Kingspan GreenGuard®.

Where upstands exist, a minimum 25 mm thickness of Kingspan Thermaroom® TR26 or TR27, Kingspan Thermaroom® TR24 or 30 mm Kingspan GreenGuard® shall also be used around the perimeter of the balcony or the terrace on the internal façade of the parapets.

A minimum distance of 300 mm shall be maintained between the top of the insulation upstand and the bottom of the horizontal balcony or terrace insulation; wall insulation shall also be carried up into parapets as high as the flat roof insulation upstand.

Floor applications

Around the perimeter of the floor slab, measures shall be taken in order to reduce thermal bridging; these measures concern for instance the application of Kingspan Optim-R® flex.

The top of infill panels shall be level with the top of the floor screed and the bottom shall be level with the bottom of the horizontal floor insulation and closely butted up to it.

2.2.11 Durability

The Product shall have a service life durability equivalent to that of the building into which it is incorporated. The expected lifespan of the building itself shall be at least 60 years.

Once installed, the Product is not susceptible to damage from environmental conditions normally encountered in the UK and Ireland.

The Product is stable, rot-proof and durable; there is no risk for moth or beetle infestation.

2.2.12 UKCA, UKNI and CE marking

There is no relevant harmonised standard for the Product.

2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - External wall insulation systems

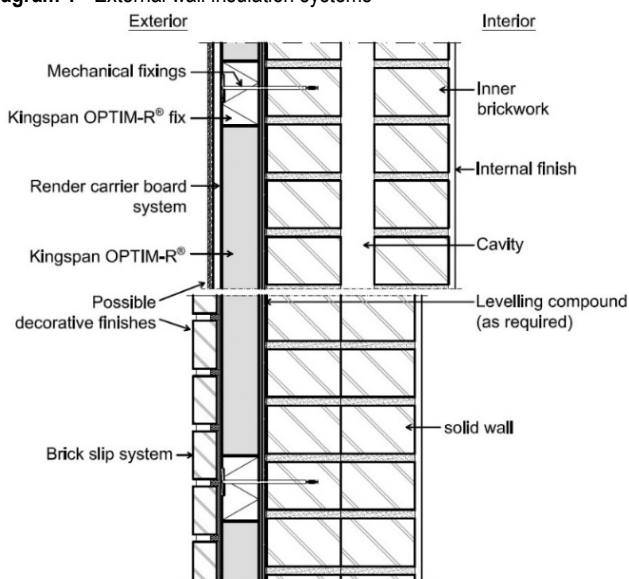


Diagram 2 - Typical reveal detail

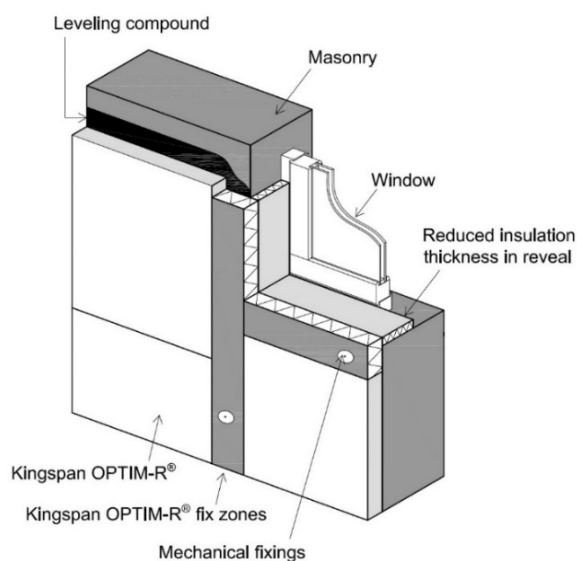


Diagram 3 - Adhered flat or tapered roof system

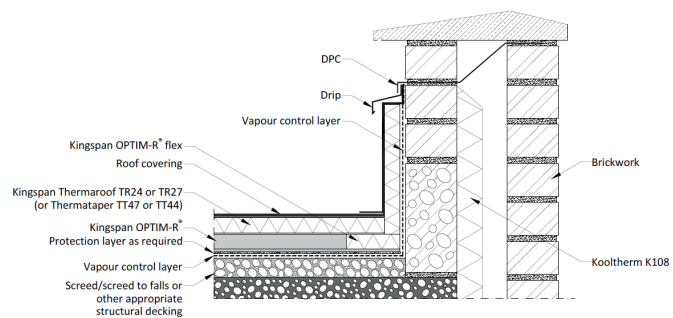


Diagram 4 - Ballasted flat or tapered roof system

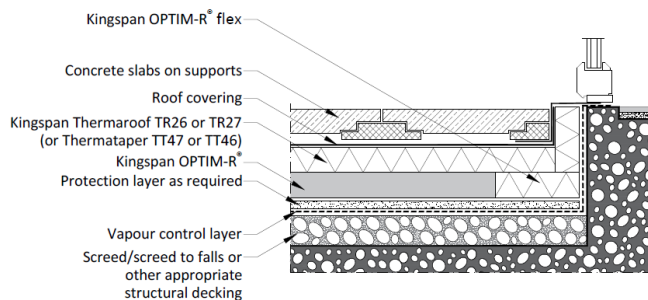


Diagram 5 - Dormer roof and cheek construction

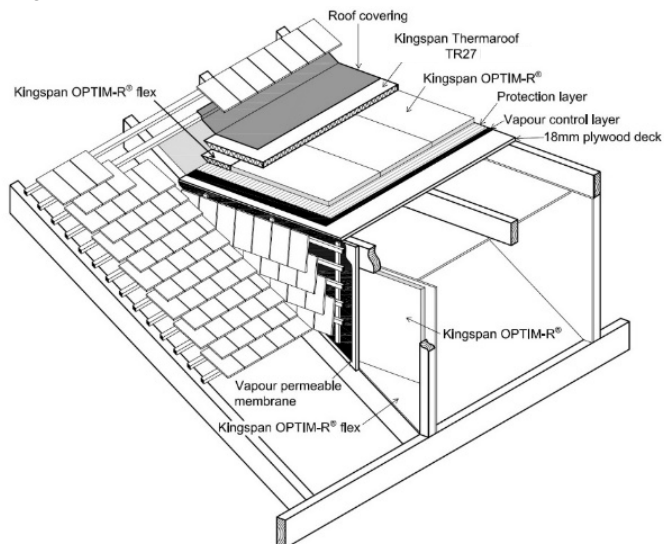
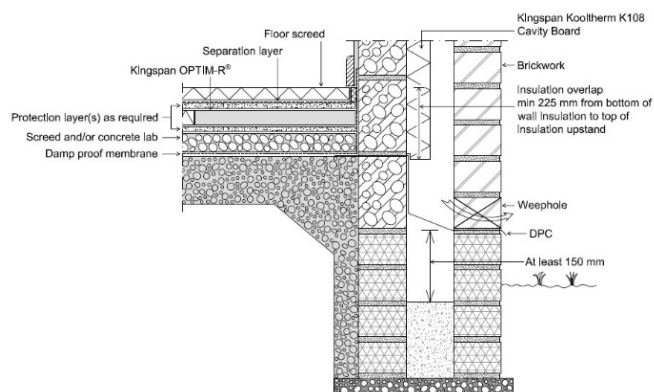


Diagram 6 - Solid concrete ground based floors



2.4 INSTALLATION

The Product shall be installed strictly in accordance with the instructions (hereinafter 'Installation Manual') of the Agrément holder, the requirements of this Agrément and the requirements of BS 8000-0.

2.4.1 Project-specific installation considerations

No pre-installation survey is required.

2.4.2 Preparation

The following considerations apply before starting the work:

- installation of the Product and ancillary products shall be in accordance with the Agrément holder's instructions, PD 6697 (wall applications), BS 6229 and BS 8217 (flat roof applications), BS 8102, BS 8215 (wall and floor applications) and current good building practice;
- during installation, extreme care shall be taken to avoid damaging the Product; should damage occur, the damaged panel shall be replaced by a new panel;
- the Product shall not be used in association with solvent-based adhesive systems;
- the Product shall not be cut or penetrated;
- the Product shall not be exposed to naked flames or excessive heat ($> 80^{\circ}\text{C}$).

The following works shall be undertaken before installing the Product:

- the substrate shall be clean, dry and level, and free of sharp objects or edges.

2.4.3 Outline installation procedure

Detailed installation procedures can be found in the Agrément holder's Installation Manual.

The outline procedure is as follows:

- if required, apply a levelling compound;
- present the Product to the supporting substrate;
- the Product shall be closely butted at all joints in accordance with the Agrément holder's instructions;
- cutting of ancillary items such as Kingspan Optim-R® fix and Kingspan Optim-R® flex shall be carried out either by using a fine toothed saw, or by scoring with a sharp knife, snapping the board over a straight edge and then cutting the facing on the other side; accurate trimming of the ancillary items shall be ensured to achieve close-butting joints and continuity of insulation; cutting of ancillary items should not be carried out over the Product or in close proximity in case of damage;
- after every phase of the installation, the newly installed Product shall be carefully inspected.

2.4.4 Finishing

The following finishing is required on completion of the installation:

- for proprietary external render systems over the Product, the render system shall have its own third-party accreditation as a render system coating.

2.5 INDEPENDENTLY ASSESSED PRODUCT CHARACTERISTICS

2.5.1 Moisture control

Test	Standard	Result
Water absorption after 28 days	EN 12087	0.07 kg/m ²

2.5.2 Strength

Test	Standard	Result
Compressive stress at 10 % deformation	BS EN 826	CS(10)150
Tensile strength perpendicular to faces	BS EN 1607	TR80
Dimensional stability at specified conditions	23 ± 2 °C and 50 ± 5 % RH	BS EN 1603
	70 ± 2 °C and 90 ± 5 % RH	BS EN 1604
	40 kPa and 70 ± 1 °C	BS EN 1605
Soft-body impact (50 kg impactor)	ISO 7892	500 J no loss of vacuum, no break in foil, surface indentation
Hard-body impact (0.5 kg and 1 kg impactor)		10 J no loss of vacuum, no break in foil, slight indentation no damage

2.5.3 Fire performance

Test	Standard	Result
Reaction to fire classification	BS EN 13501-1	E / E _f / E _L

2.5.4 Thermal performance

Test	Standard	Result
Declared aged thermal conductivity λ_D	Of the panel	0.007 W/mK
	Of the core at ambient pressure	0.023 W/mK
Design thermal resistance (R-values) per panel thickness	20 mm thick	2.85 m ² K/W
	25 mm thick	3.55 m ² K/W
	30 mm thick	4.25 m ² K/W
	40 mm thick	5.70 m ² K/W
	50 mm thick	7.10 m ² K/W

3.1 THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 AND THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS (NORTHERN IRELAND) 2016

Information in this Agrément may assist the client, principal designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

3.2 THE NATIONAL BUILDING REGULATIONS

In the opinion of Kiwa Ltd., the Product, if installed and used in accordance with Section 2 of this Agrément, can satisfy or contribute to satisfying the relevant requirements of the following national Building Regulations.

This Agrément shall not be construed to confer the compliance of any project-specific design with the national Building Regulations.

3.2.1 England

The Building Regulations 2010 and subsequent amendments

- C2(c) Resistance to moisture - the Product can contribute to limiting the risk of surface and interstitial condensation
- L1(a)(i) Conservation of fuel and power - the Product can contribute to limiting heat gains and losses through the building envelope
- Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for their application, and can be installed to give a satisfactory performance
- Regulation 23 Requirements relating to thermal elements - the Product can contribute to the building envelope complying with the requirements of L1(a)(i)
- Regulation 26 CO₂ emission rates for new buildings - the Product can contribute to satisfying this Requirement
- Regulation 26A Fabric energy efficiency rates for new dwellings - the Product can contribute to satisfying this Requirement
- Regulation 26C Target primary energy rates for new buildings - the Product can contribute to satisfying this Requirement

3.2.2 Wales

The Building Regulations 2010 and subsequent amendments

- C2(c) Resistance to moisture - the Product can contribute to limiting the risk of surface and interstitial condensation
- L1(a)(i) Conservation of fuel and power - the Product can contribute to limiting heat gains and losses through the building envelope
- Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for their application, and can be installed to give a satisfactory performance
- Regulation 23 Requirements relating to thermal elements - the Product can contribute to the building envelope complying with the requirements of L1(a)(i)
- Regulation 26 CO₂ emission rates for new buildings - the Product can contribute to satisfying this Requirement
- Regulation 26A Primary energy rates for new buildings - the Product can contribute to satisfying this Requirement
- Regulation 26B Fabric performance values for new dwellings - the Product can contribute to satisfying this Requirement
- Regulation 26C Energy efficiency rating - the Product can contribute to satisfying this Requirement

3.2.3 Scotland

The Building (Scotland) Regulations 2004 and subsequent amendments

3.2.3.1 Regulation 8(1) Durability, workmanship and fitness of materials

- The Product is manufactured from acceptable materials and is adequately resistant to deterioration and wear under normal service conditions

3.2.3.2 Regulation 9 Building standards - Construction

- 3.15 Condensation - the Product can contribute to limiting the risk of surface and interstitial condensation
- 6.2 Buildings insulation envelope - the Product can contribute to satisfying this Requirement
- 7.1(a)(b) Statement of sustainability - the Product can contribute to meeting the relevant Requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. In addition, the System can contribute to a construction meeting a higher level of sustainability, as defined in this Standard

3.2.3.3 Regulation 12 Building standards - Conversions

- All comments given under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of The Building (Scotland) Regulations 2004 and subsequent amendments, clause 0.12 of the Technical Handbook (Domestic)

3.2.4 Northern Ireland

The Building Regulations (Northern Ireland) 2012 and subsequent amendments

- 23(1)(a)(i)(ii)(iii)(b) Fitness of materials and workmanship - the Product is manufactured from materials which are suitably safe and acceptable as described in this Agrément
- 29 Condensation - the Product can contribute to limiting the risk of surface and interstitial condensation
- 39(a)(i) Conservation measures - the Product can contribute to limiting heat gains and losses through the building envelope
- 40(2) Target CO₂ emission rate - the Product can contribute to satisfying this Requirement
- 43 Renovation of thermal elements - the Product can contribute to the building envelope complying with the requirements of 39(a)(i)

3.2.5 Ireland

Building Regulations 1997 and subsequent amendments

In order to demonstrate compliance with Irish Building Regulations, this BDA Agrément® certifies that the System complies with the requirements of a recognised document and indicates it is suitable for its intended purpose and use.

- C4 Resistance to weather and ground moisture - the Product can contribute to limiting the risk of surface and interstitial condensation
- D1 Materials and workmanship - the Product is manufactured from suitably safe and durable materials for their application, and can be installed to give a satisfactory performance
- L1 Conservation of fuel and energy - the Product can contribute to limiting heat gains and losses through the building envelope
- L2(a) Conservation of fuel and energy (in existing dwellings) - the Product can contribute to limiting heat gains and losses through the building envelope
- Regulation 7 Conservation of fuel and energy in existing dwellings - the Product can contribute to satisfying this Requirement
- Regulation 8(c) Conservation of fuel and energy in new dwellings - the Product can contribute to satisfying this Requirement

3.3 THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

4 SOURCES

- BS EN ISO 6946:2017 Building components and building elements. Thermal resistance and thermal transmittance. Calculation methods
- BS EN ISO 9001:2015 Quality management systems. Requirements
- BS EN ISO 10211:2017 Thermal bridges in building construction. Heat flows and surface temperatures. Detailed calculations
- BS EN ISO 13370:2017 Thermal performance of buildings. Heat transfer via the ground. Calculation methods
- BS EN ISO 13788:2012 Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation methods
- BS EN 826:2013 Thermal insulating products for building applications. Determination of compression behaviour
- BS EN 1603:2013 Thermal insulating products for building applications. Determination of dimensional stability under constant normal laboratory conditions (23°C/50% relative humidity)
- BS EN 1604:2013. Thermal insulating products for building applications. Determination of dimensional stability under specified temperature and humidity conditions
- BS EN 1605:2013. Thermal insulating products for building applications. Determination of deformation under specified compression load and temperature conditions
- BS EN 1607:2013 Thermal insulating products for building applications. Determination of tensile strength perpendicular to faces
- BS EN 12667:2001. Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance
- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS 5250:2021 Management of moisture in buildings. Code of practice
- BS 6229:2003 Flat roofs with continuously supported coverings. Code of practice
- BS 8000-0:2014 Workmanship on construction sites. Introduction and general principles
- BS 8102:2022 Code of practice for protection of below ground structures against water from the ground
- BS 8215:1991 Code of practice for design and installation of damp-proof courses in masonry construction
- BS 8217:2005 Reinforced bitumen membranes for roofing. Code of practice
- BRE Report 443:2019 Conventions for U-value calculations
- ISO 7892:1988 Vertical Building Elements - Impact Resistance Tests - Impact Bodies and General Test Procedures
- PD 6697:2019 Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2

Remark - Apart from these sources, technical information and confidential reports have been assessed; any relevant documents are in the possession of Kiwa Ltd. and are kept in the Technical Assessment File of this Agrément. The Installation Manual for the Product may be subject to change; contact the Agrément holder for the clarification of revisions.

5 AMENDMENT HISTORY

Revision	Amendment description	Author	Approver	Date
-	First issue (as replacement of BAE-18-035/02/A)	N Hendriks	C van der Meijden	January 2021
A	Reissued following successful 3 year renewal	C Devine	C Vurley	June 2021
B	Migration to current UK format and successful completion of 3 year renewal	C Hewer	C Devine	May 2025

6 CONDITIONS OF USE

This Agrément may only be reproduced and distributed in its entirety.

Where a National Annex exists in respect of a BS EN (or other) standard, its use is deemed mandatory wherever the original standard is referenced.

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