

SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to SIG CWI 34 (hereinafter the 'System'), a granulated mineral wool fibre material injected in a loose form, for use in external cavity walls with masonry inner and outer leaves (where masonry includes clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks). The System is for use in existing and new dwellings and buildings other than dwellings up to and including 12 m in height with a minimum cavity width of 50 mm. The System may also be used in buildings over 12 m in height where a height restriction waiver has been issued by the Agrément holder.

DESCRIPTION

The System consists of granulated glass mineral wool fibres, treated with an inert water repellent during manufacture, in accordance with the requirements of BS EN 14064-1. The System is injected into a wall cavity through a series of holes through the masonry leaf, drilled in a predetermined pattern, until the cavity is fully filled.

ILLUSTRATION



THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

STATEMENT

It is the opinion of Kiwa Ltd. that the System 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
Head of Operations, 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 System. This Agrément covers the following:

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

MAJOR POINTS OF ASSESSMENT

The System described in this Agrément meets the requirements defined in Kiwa Technical Requirement KTR-08.

Moisture control - see Section 2.2.7 - the System will contribute to limiting the risk of condensation and resisting the transfer of water across a cavity.

Fire performance - see Section 2.2.8 - the System is classified as European Classification A1, in accordance with BS EN 13501-1.

Thermal performance - see Section 2.2.9 - the System improves the thermal performance of walls, can enable the walls to meet the design U-value requirements and has a declared thermal conductivity of 0.034 W/mK.

Durability - see Section 2.2.10 - the System shall have a service life durability equivalent to that of the building into which it is incorporated.

UKCA and CE marking - see Section 2.2.11 - the manufacturers of the constituent products used within the System have 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 Kiwa Technical Requirement KTR-08. 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 System relates to its use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment

Kiwa Ltd. has assessed the System 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 an Approved Installer.

The System 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 and Northern 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 System 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 System.

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 System 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 System. It is intended only as an assessment of safety and fitness for purpose.

2.1 SYSTEM 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 System:

Table 1 - Integral components

| Component | Description |
|------------|---|
| SIG CWI 34 | cavity-blown granulated glass mineral wool fibres, manufactured in accordance with BS EN 14064-1, λ_D of 0.034 W/mK |

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 System, but fall outside the scope of this Agrément:

- drilling machine used to create the holes according to the predetermined drilling pattern;
- blowing machine and application equipment;
- mortar of similar colour, for filling drill holes made in the wall.

2.2 POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 Design

2.2.1.1 Design responsibility

Project-specific design is the responsibility of an Approved Installer, trained and approved by the Agrément holder.

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 System.

2.2.1.3 General design considerations

The System is suitable for use in existing and new dwellings and buildings other than dwellings up to and including 12 m in height. The Agrément holder has a detailed procedure for the assessment of buildings over 12 m in height and each installation shall be individually assessed and documented by the Agrément holder; upon satisfactory assessment, the Agrément holder shall grant approval for installation to commence.

The target mean density of the installed System is 25 kg/m³.

Individual areas within the wall must not have a density variation of more than ± 5 kg/m³ from the target mean density when measured over an area of 0.5 m².

The System:

- can be injected into the cavity from the inner leaf for new and existing buildings, and from the external leaf for new and existing buildings;
- can fully fill cavities (with no gaps and a consistent density) in areas which are typically hard to treat;
- remains stable within a cavity and has adequate resistance to settlement;
- shall be specified to comply with the resistance to moisture requirements given within either the relevant national Building Regulations or BRE Report 262.

The minimum cavity width to be filled with the System shall be 90 mm for new buildings and 50 mm for existing buildings.

Consideration shall be given to the local wind-driven rain index and the site exposure zone to prevent moisture ingress and air infiltration, according to BS 8104, PD 6697.

External masonry cavity walls shall be constructed in accordance with the national Building Regulations. Ensure the activities that form part of the pre-installation survey (Section 2.4.1) have been fulfilled.

2.2.1.4 Project-specific design considerations

The project-specific design shall:

- be determined by the Specifier;
- consider the exposure zones where the System is installed;
- 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 2.2.10).

A pre-installation survey is required to allow determination of the project-specific design (see Section 2.4.1). A tape measure and borescope shall be used to assess the width of a cavity and to ensure a clear void exists. The findings of the survey shall be recorded in the Approved Assessor's report.

Selection of an appropriate drilling pattern shall take into consideration the nature of the building and its construction.

In some circumstances, access for externally drilling injection holes and filling with insulation may be limited by features such as carports, conservatories, cladding, tiling or other obstructions. In such circumstances, drilling from inside the dwelling through the inner leaf into the cavity is permitted as long as the drilling pattern is adhered to. Additional care shall be taken, not only in regard to internal decorations etc., but the need to identify services which may be buried within the inner leaf and avoided whilst drilling.

2.2.2 Applied building physics (heat, air, moisture)

A Specialist shall check the hygrothermal behaviour of a project-specific design incorporating the System 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.

The System shall be specified to comply with the requirements of the national Building Regulations.

2.2.4 Installer competence level

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

Installation shall be by employees trained and approved by the Agrément holder and subject to 1 % inspections by Kiwa Ltd. under a Kiwa Installation Assessment & Surveillance Scheme.

2.2.5 Delivery, storage and site handling

The System is delivered in suitable packaging bearing relevant identification information (such as the System 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 System components shall be stored in accordance with the Agrément holder's requirements. Good housekeeping protocols shall be followed to avoid damage.

2.2.6 Maintenance and repair

Once installed, the System 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

Condensation risk

External walls incorporating the System will adequately limit the risk of surface and interstitial condensation when designed in accordance with BS 5250.

A condensation risk analysis is required and shall be completed at design stage for each application of the System. Walls shall adequately limit the risk of surface and interstitial condensation in accordance with the national Building Regulations.

Water absorption

When installed in accordance with this Agrément, the System does not allow water to bridge the cavity from the outer leaf to the inner leaf.

The System can be used where it bridges the damp-proof course (hereinafter 'DPC') in walls, and moisture from the ground will not pass through to the inner leaf, providing that the wall is correctly detailed in accordance with the requirements of the national Building Regulations.

2.2.8 Fire performance

The System is classified as European Classification A1, in accordance with BS EN 13501-1.

There are no height or boundary restrictions for the use of the System.

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

Designers shall refer to the relevant national Building Regulations and guidance for detailed conditions of use. This is particularly relevant to requirements for supporting wall fire performance, cavity closers and fire stopping of service penetrations, and combustibility limitations for other materials and components used in the overall wall construction.

2.2.9 Thermal performance

For the purpose of U-value calculations and to determine if the requirements of national Building (or other statutory) Regulations are met, the thermal resistance of the cavity walls incorporating the System shall be calculated in accordance with BS EN ISO 10211 (taking into consideration BS EN ISO 6946, BS 5250 and BRE Report 443), using the System's declared thermal conductivity (λ_D).

Care shall be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration. Due consideration shall be given to the Government Accredited Construction Details.

Guidance on linear thermal transmittance, heat flows and surface temperature factors can be found in the documents supporting the national Building Regulations and in BS EN ISO 10211, BRE Information Paper 1/06, BRE Report 262, BRE Report 497 and PAS 2030. If required, further information can be provided by the Agrément holder.

The requirement for limiting heat loss through the building fabric, including the effect of thermal bridging, can be satisfied if the U-value of a wall incorporating the System does not exceed the maximum U-values given in the national Building Regulations.

2.2.10 Durability

The System 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 System is not susceptible to damage from the environmental conditions normally encountered in the UK.

2.2.11 UKCA and CE marking

The British and European standard for the System is BS EN 14064-1.

2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - typical drilling pattern - front elevation

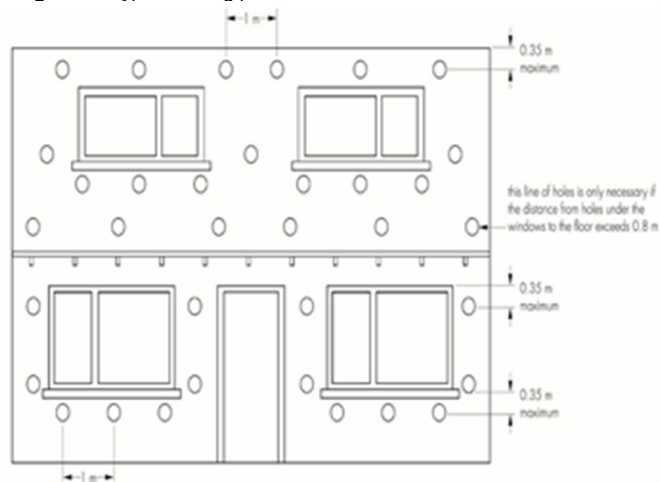
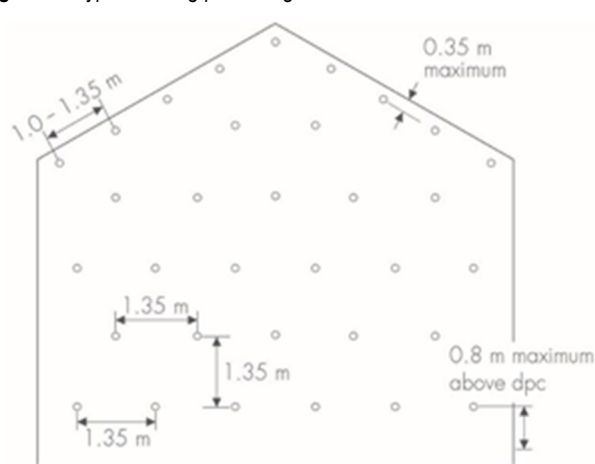


Diagram 2 - typical drilling pattern - gable end elevation



2.4 INSTALLATION

The System 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

The project-specific design shall be determined from a pre-installation survey.

The pre-installation survey shall be undertaken by a competent surveyor. The primary requirement of the pre-installation survey is to ensure that:

- there is no existing rain ingress and no signs of damp on the inner face of the cavity wall, other than that caused by condensation;
- walls are in a good state of repair and show no evidence of frost damage;
- the cavity is free from blockages such as debris or mortar droppings;
- the width of the cavity and any variations are verified;
- the cavity is free from moisture, cracks and any defects;
- the cavity is not being used as a source of combustion air or as a flue for ventilation purposes;
- the presence of any penetrations in the walls, such as chimneys, stoves and flues, is checked;
- DPC positions at window and door heads are checked;
- mortar joints show no evidence of exceeding anything more than hairline cracking. Raked or recessed mortar joints shall be avoided in very severe exposure areas;
- positions of steel structural supports and ring beams (if any) are checked.

2.4.2 Preparation

The following considerations apply before starting the work:

- injection of the System shall not take place until the cavity is weathertight;
- prior to committing to any internal drilling, the Agrément Holder shall be consulted and co-operate with the Approved Installer;
- for new build applications, injection of the System from the inner leaf shall preferably take place before the walls are plastered;
- installation is carried out to the highest level on each wall, or the top edge if the System is protected by a cavity tray;
- any problems encountered during installation which prevent compliance with this Agrément shall be referred to the Installer before proceeding;
- essential ventilation openings, such as those providing combustion air to underfloor ventilation, and all flues in the cavity wall shall be checked. If adequate sleeving or other cavity closures are not present, installation shall not proceed until these openings have been sleeved or otherwise modified to prevent blockage by the System.

Pre-installation checks shall be carried out by the Installer to ensure the building is suitable and to familiarise themselves with the building details. A survey report form checklist shall be completed as part of the check.

The following works shall be undertaken before the installation of the System:

- the cavity width shall be measured in at least ten locations for every 100 m² wall area;
- at least three borescope holes per elevation shall be drilled, including one just above the DPC level;
- where the cavity is found to be compartmentalised, additional borescope inspections shall be carried out at each cavity centre.

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:

Drilling

- wherever possible, a diamond pattern shall be used when drilling the injection holes so that an injection hole in one row is equally spaced between two holes in the rows immediately above and below;
- the top row of injection holes shall not be more than 0.35 m below the roofline. The rows of drill holes shall be spaced 1.0 m apart;
- beneath horizontal boundaries (e.g. the tops of walls under cavity trays, eaves, windows, lintels and under gables), the uppermost injection holes shall not be more than 0.35 m below the upper edge of the cavity to be filled. Additionally, the centres between the injection holes shall not exceed 1.0 m;
- the bottom row of injection holes shall be no more than 0.8 m above the horizontal DPC level and no more than 1.35 m horizontally from one hole to the next;
- the second row of drill holes shall be no more than 1.35 m above the bottom row;
- the drill pattern shall be repeated at first floor and each successive floor level. Floor-zone depth shall be noted when calculating vertical centres (maximum 1.35 m);
- where the drill pattern extends around a corner, the maximum dimension between drill holes shall be 1.35 m;
- where the standard diamond drilling pattern cannot be used, additional injection holes will be required to ensure completeness of fill around building features. Where lintels project beyond vertical cavity closures, the 0.35 m rule shall apply;
- it is essential that all drilling in each elevation and at least 2 m of adjacent elevations is completed before injection of the next elevation commences.

Quality check

- Prior to the filling procedure commencing, quality checks according to the Agrément holder's procedures, as outlined in the Installation Manual, shall be carried out to determine whether the blowing machine settings are optimised for the System being installed. These include:
 - pressure switch test, which ensures that the blowing machine pressure switch is operating correctly;
 - fibre density check, which ensures that the System will be blown into the cavity at the desired density.

Filling procedures

- filling shall proceed from the bottom row of holes to the top of the walls, from the most restricted to the least restricted areas, injecting each hole in turn;
- the injection nozzle shall be located in the pre-drilled hole; it is not necessary to rotate the nozzle;
- the System shall be injected at the lowest row at one end of an elevation and then injection work shall work across from one side to the other. Filling in this sequence ensures a more even distribution of the System;
- once the blowing machine is started, the System will continue to flow at a steady rate until that part of the cavity adjacent to the injection hole is filled within the required density range;
- once the cavity is filled, the System flow is temporarily halted by back pressure and the nozzle shall be turned off;
- as soon as the nozzle has been moved to the next injection hole, it shall be turned back on and injection can continue immediately.

2.4.4 Finishing

The following finishing is required on completion of the installation:

- after injection of the System, ensure the drill holes are fully filled with appropriate mortar of a similar type, colour, texture and weathertightness to that of the existing wall. Where a wall requires a high degree of colour-matching, the level of finish matching shall be agreed in writing during the site survey.

2.4.5 Post-installation checks

Post-installation checks, as outlined in the Installation Manual, shall be carried out to ensure that:

- the installation has been completed and that no damage has occurred to the building;
- the full cavity of the wall has been insulated;
- all the injection holes have been sealed;
- all chimney flues, combustion air ducts, air vents and trunked air vents have been checked (e.g. smoke tests for combustion appliances) to verify that they are clear and unobstructed;
- all heating appliances and ventilators have been checked for safe operation.

It is necessary to drill inspection holes to carry out the checks within the cavity, as described in CIGAs 'Installing Cavity Wall Insulation' manual.

2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.5.1 Moisture control

| Characteristic | Standard | Result |
|----------------------------|------------|-----------------------|
| Water absorption (W_s) | BS EN 1609 | < 1 kg/m ² |

2.5.2 Fire performance

| Characteristic | Standard | Result |
|------------------|---------------|--------|
| Reaction to fire | BS EN 13501-1 | A1 |

2.5.3 Thermal performance

| Characteristic | Standard | Result |
|-----------------------------------|-------------|------------|
| Thermal conductivity, λ_D | BS EN 12667 | 0.034 W/mK |

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 System, 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**

- B3(4) Internal fire spread (Structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C2(a) Resistance to moisture - the System does not absorb water by capillary action and may therefore be used in situations where it bridges the damp-proof course of the inner and outer leaf
- C2(b) Resistance to moisture - a wall incorporating the System can resist precipitation and satisfy this Requirement
- C2(c) Resistance to moisture - the System can contribute to satisfying this Requirement
- L1(a)(i) Conservation of fuel and power - the System can contribute to limiting heat gains and losses through walls
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application, and can be installed to give a satisfactory performance
- Regulation 7(2) Materials and workmanship - the System can contribute to satisfying this Requirement
- Regulation 23(1) Requirements relating to thermal elements - the System can contribute to a wall complying with the requirements of L1(a)(i)
- Regulation 26 CO₂ emission rates for new buildings - the System can contribute to satisfying this Regulation
- Regulation 26A Fabric energy efficiency rates for new dwellings - the System can contribute to satisfying this Regulation
- Regulation 26C Target primary energy rates for new buildings - the System can contribute to satisfying this Regulation

3.2.2 Wales**The Building Regulations 2010 and subsequent amendments**

- B3(4) Internal fire spread (Structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C2(a) Resistance to moisture - the System does not absorb water by capillary action and may therefore be used in situations where it bridges the damp-proof course of the inner and outer leaf
- C2(b) Resistance to moisture - a wall incorporating the System can resist precipitation and satisfy this Requirement
- C2(c) Resistance to moisture - the System can contribute to satisfying this Requirement
- L1(a)(i) Conservation of fuel and power - the System can contribute to limiting heat gains and losses through walls
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for their application, and can be installed to give a satisfactory performance
- Regulation 7(2) Materials and workmanship - the System can contribute to satisfying this Requirement
- Regulation 23(1) Requirements relating to thermal elements - the System can contribute to a wall complying with the requirements of L1(a)(i)
- Regulation 26 CO₂ emission rates for new buildings - the System can contribute to satisfying this Regulation
- Regulation 26A Primary energy rates for new buildings - the System can contribute to satisfying this Regulation
- Regulation 26B Fabric performance values for new dwellings - the System can contribute to satisfying this Regulation

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 System is manufactured from acceptable materials and is adequately resistant to deterioration and wear under normal service conditions, provided it is installed in accordance with the requirements of this Agrément

3.2.3.2 Regulation 8 (3) Durability, workmanship and fitness of materials

- The System can contribute to satisfying this Requirement

3.2.3.3 Regulation 9 Building Standards - Construction

- 2.4 Cavities - the System can inhibit the unseen spread of fire and smoke within cavities
- 3.4 Moisture from the ground - the System can be used in situations where it bridges the damp-proof course of the inner and outer leaf
- 3.10 Precipitation - the System can resist precipitation penetrating to the inner face of the building
- 3.15 Condensation - the System can contribute to satisfying this Requirement
- 6.1(b) Carbon dioxide emissions - the System can contribute to satisfying this Requirement
- 6.2 Building insulation envelope - the System can contribute to satisfying this Requirement
- 7.1(a)(b) Statement of sustainability - the System 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

3.2.3.4 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) and clause 0.12 of the Technical Handbook (Non-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 System is manufactured from materials which are suitably safe and acceptable as described in this Agrément
- 23(2) Fitness of materials and workmanship - the System can contribute to satisfying this Requirement
- 28 Resistance to moisture and weather - the System can be constructed to prevent the passage of moisture
- 29 Condensation - the System can be designed and constructed to prevent interstitial condensation
- 35(4) Internal fire spread (Structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- 39(a)(i) Conservation measures - the System can contribute to limiting heat gains and losses through walls
- 40(2) Target carbon dioxide emission rate - a wall incorporating the System shall be designed and constructed not to exceed its target carbon dioxide emission rate
- 43 Renovation of thermal elements - renovation work shall be carried out to ensure a wall complies with Requirement 39(a)(i)

3.3 THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

4 SOURCES

- Kiwa Technical Requirement KTR-08 (provisional)
- 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 1609:2013 Thermal insulating products for building applications. Determination of short term water absorption by partial immersion
- 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 - Part 1: Classification using data from reaction to fire tests
- BS EN 14064-1:2018 Thermal insulation products for buildings - In-situ formed loose-fill mineral wool (MW) products, Part 1: Specification for the loose-fill products before installation
- BS 5250:2021 Management of moisture in buildings. Code of practice
- BS 8000-0:2014 Workmanship on construction sites. Introduction and general principles
- BS 8104:1992 Code of practice for assessing exposure of walls to wind-driven rain
- Accredited Construction details, Scotland:2019
- BRE Information Paper 1/06:2006 Assessing the effects of thermal bridging at junctions and around openings
- BRE Report 262:2002 Thermal insulation: avoiding risks, BRE Scotland
- BRE Report 443:2006 Conventions for U-value calculations, BRE Scotland
- BRE Report 497:2016 Conventions for calculating linear thermal transmittance and temperature factors
- CIGA:2002 'Installing Cavity Wall Insulation'
- Government Accredited Construction details for Part L:2019
- PAS 2030:2019+A1:2022 Specification for the installation of energy efficiency measures in existing buildings
- PAS 2035:2019+A1:2022 Retrofitting buildings for improved energy efficiency - Specification and guidance
- 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 System 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 | A Chapman | C Devine | April 2023 |
| | | | | |
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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.

Kiwa Ltd. has used due skill, care and attention in the preparation of this BDA Agrément®.

Whilst all due diligence has been used, no liability or warranty is extended by Kiwa Ltd.

The Agrément holder is responsible for advising Kiwa Ltd. immediately if there is a variation to the System specification or constituent elements/components after initial publication of this BDA Agrément®.

For full terms and conditions, refer to Kiwa Ltd.