



Kiwa Ltd.  
 Unit 5 Prime Park Way  
 Prime Enterprise Park  
 Derby  
 DE1 3QB  
 +44 (0)1332 383333  
 uk.bpenquiries@kiwa.com  
 www.kiwa.co.uk/bda

**BAW-21-227-S-A-UK**  
**BDA Agrément®**  
**FIRETITE**  
**Cavity Wall Insulation (Injected Foam)**

ECON Polyurethane Ltd.  
 Letraset Building, Wotton Road  
 Kingsnorth Industrial Estate  
 Ashford, Kent  
 TN23 6LN  
 +44 (0)1233 229500  
 info@econ-pu.com  
 www.econ-pu.com

**SCOPE OF AGRÉMENT**

This BDA Agrément® (hereinafter 'Agrément') relates to FIRETITE (hereinafter the 'System'), an in-situ injected thermal insulation system which contributes to the airtightness and watertightness of external masonry cavity walls (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 cavity widths between 40 mm and 150 mm. The System may also be used in walls above 12 m in height, where the building has been assessed as suitable by the Agrément holder.

**DESCRIPTION**

The System consists of three aqueous components (see Section 2.1.1) that are mixed to a defined ratio with pressurised air to create a grey, mineral-based foam, in accordance with the requirements of EAD 041561-00-1201. To form a thermal insulation layer, this foam is injected into a cavity wall through a series of holes, 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

**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 A2-s1, d0, in accordance with BS EN 13501-1.

**Thermal performance** - see Section 2.2.9 - the System improves the thermal performance of walls and can enable the walls to meet the design U-value requirements.

**Adequacy of fill** - see Section 2.2.10 - the System can fully fill a cavity (with no voids/gaps and a consistent density) including under cills and at the eaves.

**Durability** - see Section 2.2.11 - the System shall have a service life durability equivalent to that of the building into which it is incorporated.

**UKCA, UKNI and CE marking** - see Section 2.2.12 - the manufacturer has taken responsibility for CE marking the System under ETA 19/0240, in accordance with EAD 041561-00-1201.

## CONTENTS

### Section 1 - General considerations

- 1.1 - Conditions of use
- 1.2 - Production Control and Quality Management System
- 1.3 - Annual Verification Procedure - continuous surveillance

### Section 2 - Technical assessment

- 2.1 - System components and ancillary items
- 2.2 - Points of attention to the Specifier
- 2.3 - Examples of typical details
- 2.4 - Installation
- 2.5 - Independently assessed System characteristics

### Section 3 - CDM, national Building Regulations and Third-Party Acceptance

- 3.1 - The Construction (Design and Management) Regulations 2015 and The Construction (Design and Management) Regulations (Northern Ireland) 2016
- 3.2 - The national Building Regulations
- 3.3 - Third-Party Acceptance

### Section 4 - Sources

### Section 5 - Amendment history

### Section 6 - Conditions of use

## 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 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, ETAs 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, 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 System within the scope described. The validity of this Agrément is as published on [www.kiwa.co.uk/bda](http://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 use of the System.

Table 1 - Integral components

Component	Description
FIRETITE T0	template comprising ionic and non-ionic surfactants, silico-organic compounds and water
FIRETITE F0	filler comprising mineral particles, polymeric binder and water
FIRETITE X0	hardener comprising crosslinker and water

#### 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:

- survey equipment;
- cavity brushes;
- drilling machine used to create the holes according to the predetermined drilling pattern;
- injection machinery including a handgun with suitable injection nozzle;
- mortar of similar colour.

### 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 the System.

##### 2.2.1.3 General design considerations

The System:

- is suitable for use in existing and new dwellings, and buildings other than dwellings;
- shall be used in cavity walls up to and including 12 m in height;
- can fully fill cavities (with no gaps and a consistent density) in areas which are typically hard to treat, including around details and corners;
- 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 System may also be used in walls above 12 m in height, where the building has been assessed as suitable by the Agrément holder.

It is critical to regularly check the density of the System prior to every application within the appropriate timeframe, as per the instructions (hereinafter 'Installation Manual') of the Agrément holder.

The cavity wall construction shall be diffusion-opened to allow the System to dry.

In preparation of the work, a detailed assessment of the building shall be carried out by a competent inspector, to evaluate and approve the building's suitability for installation of the System.

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 and PD 6697.

The minimum cavity width to be filled shall not be less than 40 mm.

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.

The System shall not be applied over electrical cables. Cables shall be re-routed or re-laid in suitable conduit or trunking, or electrical cables shall be de-rated.

##### 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 2.2.11.

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 dimensions and condition of the cavity during the survey.

The drilling pattern spacing is regulated by the cavity width. The detailed drilling pattern instructions can be found in full in the Agrément holder's Installation Manual.

### **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.

### **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 mixed on-site and is ready for use immediately.

The System components are delivered to site in suitable containers bearing relevant identification information (such as the System name, production identification date or batch number, the Agrément holder's name, the hazard label where applicable, 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**

The performance of the System, in relation to water vapour permeability, is in accordance with BS EN 12086 Method A, and is detailed in Section 2.5.1.

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

When required by the project-specific design stage, a condensation risk analysis or hygrothermal analysis shall be carried out by the Agrément holder to minimise the risk of surface and interstitial condensation, in accordance with BS EN ISO 13788 or BS EN 15026 respectively.

#### **Water absorption**

Care shall be taken to ensure that the supporting walls are adequately weathertight prior to installation of the System.

The project-specific design shall include detailing around openings, penetrations and movement joints to minimise the risk of wind-driven rainwater ingress, in accordance with BS 6093.

The guidelines given in BRE Report 262 shall be followed in connection with the weathertightness of wall constructions. The Agrément holder shall select a construction appropriate to the local wind-driven rain index, paying due regard to the design detailing, workmanship and materials to be used.

### **2.2.8 Fire performance**

The System is classified as European Classification A2-s1, d0, in accordance with BS EN 13501-1.

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

For detailed conditions of use, particularly in respect of 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, designers shall refer to the relevant national Building Regulations and guidance.

### **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 EN ISO 10456 and BRE Report 443), using the System's declared thermal conductivity ( $\lambda_D$ ).

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 Adequacy of fill

A cavity can be fully filled (with no voids/gaps and a consistent density) with the System, including around details.

Care shall be taken at difficult-to-fill areas of a cavity wall, e.g. corners, to ensure that the cavity is sufficiently filled with the System.

#### 2.2.11 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 environmental conditions normally encountered in the UK and Ireland.

#### 2.2.12 UKCA, UKNI and CE marking

There is no relevant Product standard for the System. The System has been assessed in accordance with EAD 041561-00-1201 and CE marked under ETA-19/0240.

### 2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - typical drilling pattern - front elevation

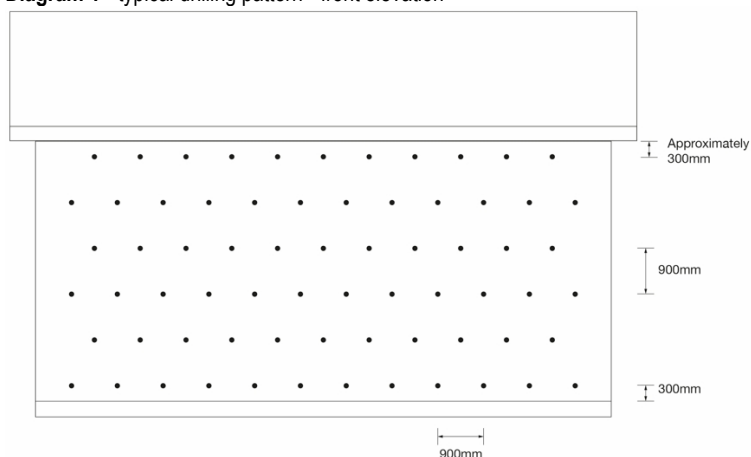
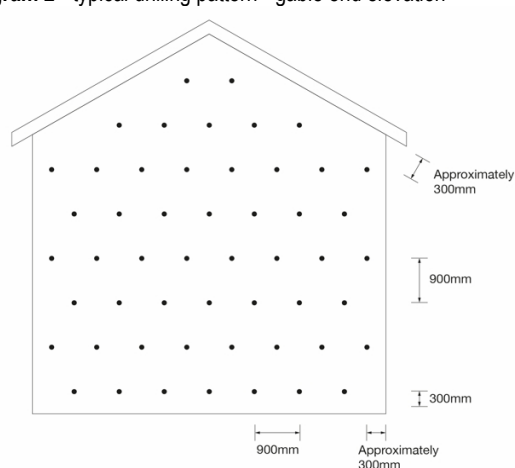


Diagram 2 - typical drilling pattern - gable end elevation



### 2.4 INSTALLATION

The System shall be installed strictly in accordance with the 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 primary requirement of the pre-installation survey is to ensure that:

- there is no existing rain ingress and no signs of dampness, staining or condensation on the internal face of the cavity wall;
- 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 drilling pattern shall depend on the width of the cavity and the construction details of the building;
- 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;
- damp-proof course positions at window and door heads are checked;
- positions of steel structural supports and ring beams (if any) are checked.

#### 2.4.2 Preparation

The following works shall be undertaken before installing the System:

- the respective survey sheet shall be checked;
- any necessary repairs, such as replacing damp or rotten door/window frames, shall be made prior to injection;
- any damaged or dislodged flashings shall be repaired;
- ensure the cavity wall is watertight before injection of the System;
- services e.g. electrical cables may need re-routing or trunking;
- all vents within the cavity wall shall be sleeved prior to installation to prevent being blocked by the System;
- window and door openings shall be sealed as necessary.

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 sheet shall be completed as part of the check.

### 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

- drill the injection holes as per the drilling plan, using percussion drills with rotary cutting action. The drilling pattern shall be strictly in accordance with the Agrément holder's instructions;
- to enable sufficient filling, allow 300 mm from ground level to the lowest row of drill holes;
- it is essential that all drilling in each elevation and at least the first metre of adjacent elevations is completed before injection of that elevation is commenced;
- create sight holes at desired areas, to check the adequacy of fill at a later stage, using an inspection stick and/or a borescope.

#### Filling procedure

Filling shall be undertaken according to the Agrément holder's instructions, using the correct injection gun nozzle for the area of application:

- check pre-filling Quality Control (which shall be strictly in accordance with the System's specification);
- mix the System components in the mass ratio of one part template, four parts filler, 0.6 parts crosslinker;
- the foamed mixture is flowable and ready for application; the System remains flowable for approximately 60 seconds, after which the System will begin to set;
- check the density of the fresh foam before each application to be  $110 \text{ kg/m}^3 \pm 7\%$ , to ensure it is within the target limit of  $29 \text{ kg/m}^3$  to  $35 \text{ kg/m}^3$  for the dried foam;
- begin the injection from the corner of the lowest row of drilling holes. In the presence of a window or door, the first hole shall be approximately 300 mm away from the sealed stop-end;
- inspect movements of the foam in certain areas, using the indicator sticks through the sight holes and/or a borescope;
- to ensure that the foam is set, and so that excess foam does not flow out from the drill hole, allow a few seconds before removing the nozzle.

### 2.4.4 Finishing

After injection of the System, ensure the drill holes are filled with appropriate mortar of a similar type, colour, texture and weathertightness to that of the existing wall.

### 2.4.5 Post-installation checks

Post-installation external and internal checks are 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 by the foam.

## 2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

### 2.5.1 Moisture control

Test		Standard	Result
Water vapour transmission	Water vapour resistance ( $\mu$ )	BS EN 12086 Method A	2.5
	Water vapour diffusion equivalent air layer thickness ( $S_d$ )		0.1 m
Water absorption	Short-term water absorption ( $W_{ip}$ )	BS EN ISO 29767	0.66 kg/m <sup>2</sup>
	Long-term water absorption ( $W_{lp}$ )	BS EN 12087 Method 1A	0.97 kg/m <sup>2</sup>

### 2.5.2 Fire performance

Test	Standard	Result
Reaction to fire	BS EN 13501-1	A2-s1, d0

### 2.5.3 Thermal performance

Test	Standard	Result
Thermal conductivity, $\lambda_D$	BS EN 12667	0.035 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 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
- 3.10 Precipitation - the System can resist precipitation penetrating to the inner face of the building
- 3.15 Condensation - the System will contribute to limiting the risk of surface and interstitial condensation
- 6.1(b) Carbon dioxide emissions - the System will contribute to reducing carbon dioxide emissions of a building
- 6.2 Building insulation envelope - the System will contribute to the insulation envelope to resist thermal transfer
- 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 contribute to protecting the building from ground moisture and passage of moisture from the weather to the inner face
- 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)

### 3.2.5 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.

- B3(3) Internal fire spread (structure) - a wall incorporating the System can inhibit the unseen spread of fire and smoke within concealed spaces
- B8(3) Internal fire spread (structure) - a wall incorporating the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C4 Resistance to weather and ground moisture - a cavity wall incorporating the System can prevent the passage of moisture to the inside of the building
- D1 Materials and workmanship - the System is manufactured from acceptable materials and is considered to be adequately resistant to deterioration and wear under normal service conditions, provided it is installed in accordance with the requirements of this Agrément
- J3 Protection of building - the System can be separated from heat-producing appliances, flue pipes, fireplaces or chimneys to prevent a building from catching fire
- L1 Conservation of fuel and energy - the System will contribute to a building not exceeding its target CO<sub>2</sub> emission rate

## 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 10211:2017 Thermal bridges in building construction. Heat flows and surface temperatures. Detailed calculations
- BS EN ISO 10456:2007 Building materials and products. Hygrothermal properties. Tabulated design values and procedures for determining declared and design thermal values
- 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 ISO 29767:2019 Thermal insulating products for building applications. Determination of short-term water absorption by partial immersion
- BS EN 12086:2013 Thermal insulating products for building applications. Determination of water vapour transmission properties
- BS EN 12087:2013 Thermal insulation products for building applications. Determination of long 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. Classification using data from reaction to fire tests
- BS EN 15026:2007 Hygrothermal performance of building components and building elements. Assessment of moisture transfer by numerical simulation
- BS 5250:2021 Management of moisture in buildings. Code of practice
- BS 6093:2006+A1:2013 Design of joints and jointing in building construction. Guide
- 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 Report 443:2006 Conventions for U-value calculations
- BRE Report 497:2016 Conventions for calculating linear thermal transmittance and temperature factors
- EAD 041561-00-1201:2020 In-situ formed thermal insulation made of mineral-based foam
- 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	May 2023

## 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.