



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-23-307-S-A-UK
BDA Agrément®
Intex 4-in-1 Masonry Support
System
Masonry Support System for Walls



ACS Stainless Steel Fixings Ltd.
 Innovation Way
 Cross Green
 Leeds, West Yorkshire
 LS9 0DR
 +44 (0)113 391 8200
 info@acsstainless.co.uk
 www.acsstainless.co.uk

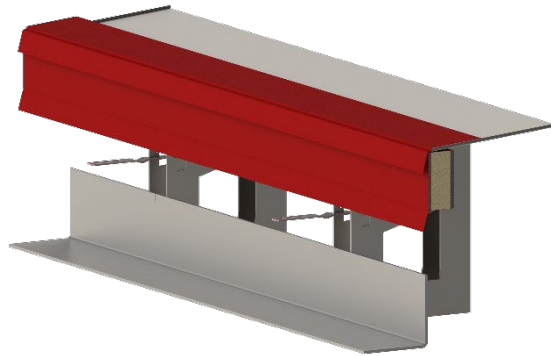
SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to Intex 4-in-1 Masonry Support System (hereinafter the 'System'). The System comprises a masonry support element (itself comprising of factory-welded brackets, angles and sloping tray units), an open state cavity barrier and wall ties. The angle unit and sloping tray are acting as a cavity tray to discharge water from the cavity to the outer leaf of the external wall. The System is for use in external cavity walls with masonry outer leaf in existing and new residential and non-residential buildings.

DESCRIPTION

The System comprises a stainless-steel angle factory-welded to the masonry support bracket; a stainless-steel sloping tray is clipped into the top of the masonry support bracket, and the open state cavity barrier (made of mineral wool (hereinafter 'MW') combined with strips of graphite intumescent material) which is factory-fixed to the stainless-steel sloping tray. Stainless-steel wall ties are clipped into the masonry support brackets, before being embedded into brickwork mortar joint of the external wall.

ILLUSTRATION



THIRD-PARTY ACCEPTANCE

See Section 3.3 (Third-Party Acceptance).

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
 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 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 angle unit, including lap joints, provides an effective barrier to the passage of water in the form of precipitation.

Strength - see Section 2.2.8 - the System has adequate performance in respect of:

- resistance to shear of angle lap joints;
- tensile and compressive load capacity of wall ties.

Fire performance - see Section 2.2.9:

- the System components, excluding the intumescent material, are classified as European Classification A1, in accordance with BS EN 13501-1;
- fire resistance, of typical wall constructions (outside the scope of this Agrément) incorporating the System, is tested in accordance with BS EN 1363-1 and BS EN 1366-4.

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, UKNI 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.

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 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 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.

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

System component	Description	Specifications	
ACS masonry support element ¹	factory-welded stainless-steel brackets of grades 1.4301, 1.4307, 1.4401 or 1.4404 (304, 304L, 316 or 316L)	3 mm to 6 mm thick	
	stainless-steel angle of grades 1.4301, 1.4307, 1.4401 or 1.4404 (304, 304L, 316 or 316L) jointed together with double sided and single sided butyl tapes	3 mm to 10 mm thick	
	stainless-steel sloping tray of grades 1.4301, 1.4307, 1.4401 or 1.4404 (304, 304L, 316 or 316L)	0.5 mm thick	
open state cavity barrier ¹	MW insulation of 110 kg/m ³ density, with strips of graphite intumescent materials of 630 kg/m ³ density, wrapped around with 50 µm red-coloured scrim foil; pre-assembled with stainless-steel rivets on the top and front of a stainless-steel sloping tray, and used in cavities with a maximum width of 350 mm	MW	30 mm thick
		intumescent strip	top and front strips 4 mm thick, rear strip 6 mm thick
Intex Wall Tie	a stainless-steel wall tie of grades 1.4301, 1.4307, 1.4401 or 1.4404 (304, 304L, 316 or 316L), clipped to the bracket of the ACS masonry support element and embedded into the brickwork mortar joint.	2 mm thick by 19 mm wide by 125 mm long	

¹ bespoke dimensions are available on request from Agrément holder

2.1.2 Ancillary items used with the System

Table 2 - Ancillary items used in conjunction with the System

Ancillary item	Description	Specifications
Intex joining piece	L-shaped unit made from stainless steel ² , used for sealing the angle joints	0.5 mm thick by 125 mm wide
double-sided tape	black-coloured, double sided butyl tape used for bonding the angle joints	50 mm wide by 10 m long
single-sided tape	white-coloured singled sided butyl tape used for bonding the angle joints	100 mm wide by 20 m long
weep vent ¹	made from stainless-steel ² , used to discharge water from the System	55 mm height
other profiles ¹	stainless-steel ² profiles including stop-ends, internal and external corner units	-

¹ bespoke dimensions are available on request from Agrément holder

² grades 1.4301 or 1.4307, also known as 304 or 304L

2.1.3 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:

- mechanical fixings for substrate;
- horizontal brickwork movement joint;
- MW thermal insulation slabs;
- tape applicator tool.

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 System.

2.2.1.3 General design considerations

Masonry supporting walls incorporating the System shall be designed in accordance with BS EN 1996-1-1 / I.S. EN 1996-1-1, BS EN 1996-1-2 / I.S. EN 1996-1-2, BS EN 1996-2 / I.S. EN 1996-2, BS EN 1996-3 / I.S. EN 1996-3, PD 6697 and national Building Regulations.

The external leaf of the cavity walls shall be built from standard brickwork with a minimum thickness of 102.5 mm.

Installation of the cavity trays shall be in accordance with the principles and guidance detailed in PD 6697 and BS 8000-3.

The angle shall:

- be installed with 100 mm minimum lapped joints (by a minimum of 50 mm on each angle);
- be provided immediately where the cavity insulation is not installed throughout the full vertical height of the cavity (e.g. up to eaves level in gable ends).

In buildings over 12 m high with insulated cavity walls, cavity trays shall generally be used to subdivide the cavity at a maximum of 12 m above ground level and at a maximum spacing of 7 m thereafter, in accordance with PD 6697.

Due to the design of the System, the angle is positioned/placed on a horizontal brickwork movement joint and not subject to lateral forces. The ACS masonry support element restrains the lateral forces; therefore, the angle does not act as a homogeneous unit with the brickwork.

The wall ties:

- have a design embedment length of 62.5 mm, incorporating a drip to prevent water transfer across the tie;
- shall be installed with a maximum horizontal spacing of 450 mm and a maximum vertical spacing of 300 mm from the angle.

The open state cavity barrier will activate upon contact with heat or flames and expand to fully seal the air gap, with a maximum cavity size of 350 mm.

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 2.2.10.

No pre-installation survey is required.

The Specifier shall ensure that the requirements of cavity trays are met by providing additional cavity trays over all openings (including small openings for ducts, services, etc.), unless they are well protected by a roof or balcony overhang. The cavity tray shall step down or slope across the cavity not less than 150 mm towards the external leaf. Stop ends should be fitted when cavity trays are isolated/discontinuous.

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

2.2.5 Delivery, storage and site handling

The System components are 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

The System, including sealed joints and associated ancillaries such as corner units and joint supports, acts as a barrier to the passage of water in the form of precipitation. Water is typically discharged from the cavity through weep vents or evaporates from the outer skin.

2.2.8 Strength

The supporting wall shall have sufficient strength to withstand all wind, dead and imposed loads. The strength of the supporting wall shall be verified by a Specifier.

The ACS masonry support bracket and angle have adequate strength and stiffness to withstand the wind, dead and imposed loads; and limits deflection.

The angle has adequate resistance to shear of joints, in accordance with BS EN 12317-2.

Wall ties have adequate tensile and compressive load capacities in accordance with BS EN 846-6 and BS EN 846-5.

2.2.9 Fire performance

The System components, excluding the intumescent material, are classified as European Classification A1 in accordance with BS EN 13501-1, without the need for further testing (CWFT), in line with the recommendations of European Commission Decision 96/603/EC.

The System can be used on buildings without any restrictions on building height or proximity to boundaries, in accordance with the national Building Regulations.

The System, when incorporating various wall components, has been tested in accordance with BS EN 1363-1 and BS EN 1366-4 for fire resistance and is capable of achieving classifications as detailed in Section 2.5.3.

Walls shall be designed and constructed so that:

- the passage and penetration of fire is adequately resisted;
- the unseen spread of fire and smoke within concealed spaces in the wall is inhibited.

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 used in the overall wall construction, Specifiers shall refer to the relevant 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.

The aging performance of the open state cavity barrier has been approved for 60 years for normal temperatures in the range -5 °C to +30 °C or intermittent extremes in the range -20 °C to +50 °C.

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

2.2.11 UKCA, UKNI and CE marking

There is no relevant Product standard for the System.

2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - ACS masonry support element

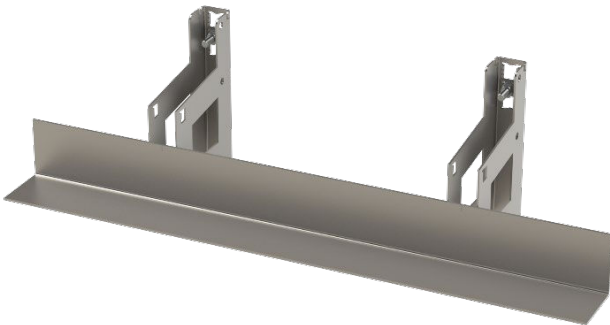


Diagram 2 - Cavity barrier detail

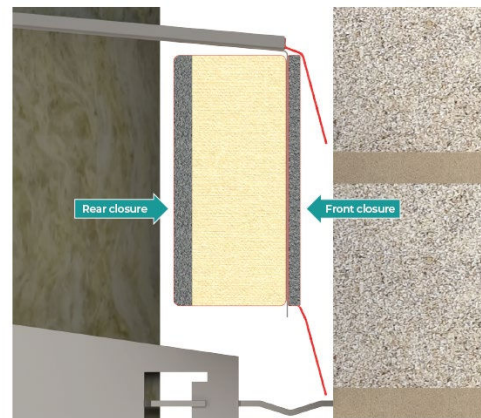


Diagram 3 - Angle joint with double-sided tape

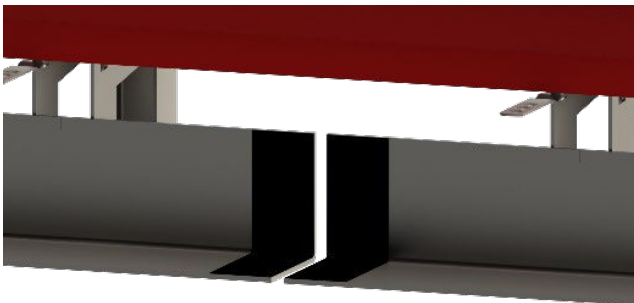


Diagram 4 - Fully sealed angle joint with joining piece and single-sided tape (double-sided tape underneath the joining piece not visible)



Diagram 5 - Wall tie detail



Diagram 6 - Detail of installed wall tie and bracket

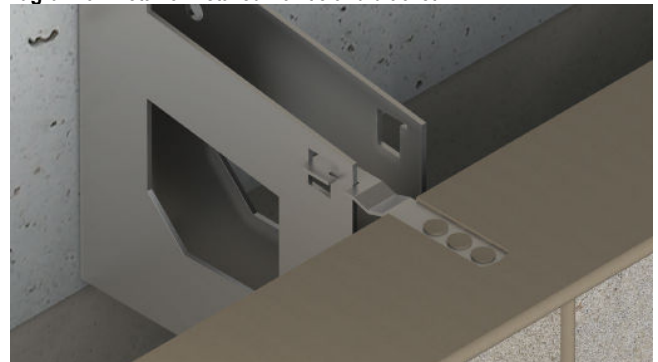


Diagram 7 - Typical installation of ACS masonry support element



Diagram 8 - Cross-section of a typical Intex System



Diagram 8 - Installation prior to filling the MW insulation (outside the scope)



Diagram 9 - Installation with the MW insulation in place (outside the scope)

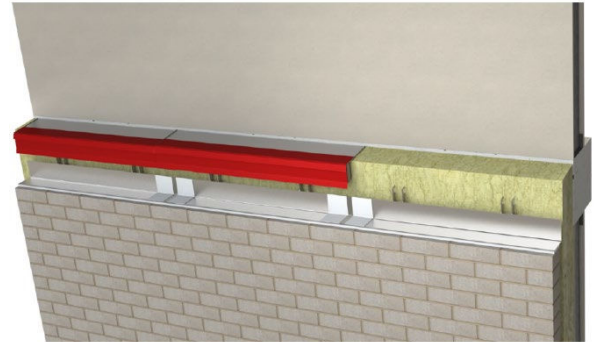


Diagram 10 - Detail of a typical external corner profile

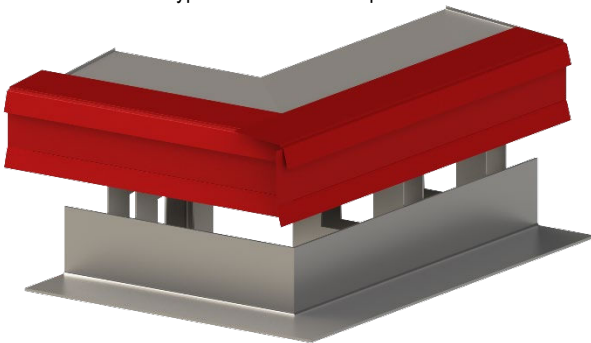


Diagram 11 - Detail of a typical internal corner profile

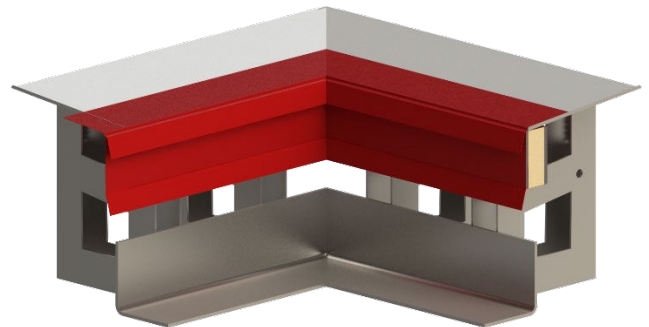
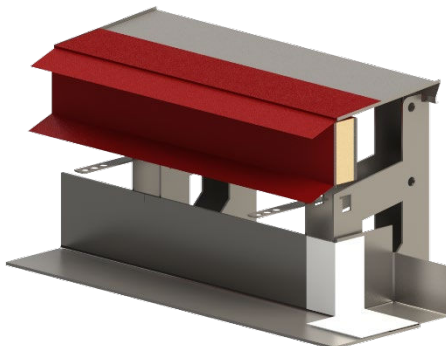


Diagram 12 - Detail of a typical reveal profile



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

No pre-installation survey is required.

2.4.2 Preparation

The following considerations apply before starting the work:

- masonry supporting walls shall be constructed in accordance with the relevant Standards and national Building Regulations - see Section 2.2.1;
- location of openings and all other installation positions.

No specific works need to be undertaken before the installation of the System.

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:

ACS masonry support element

- place the ACS masonry support element onto the brickwork as per the project-specific design;
- fix the bracket into the structure using appropriate fixings; tighten the fixings with a relevant torque wrench once the correct position is achieved;
- continue the installation of subsequent ACS masonry support elements, maintaining a 10 mm gap between the units;
- fill the cavity with MW thermal insulation slabs (outside the scope of this Agrément) between the brickwork (up to the edge of the bracket) and masonry wall, as well as within the brackets.

Jointing method

- place the double-sided tape onto the edges of each angle, ensuring it is fully adhered to each angle;
- adhere the Intex joining piece directly onto the double-sided tape, ensuring it is at the centre of the gap and overlapping each angle by a minimum of 50 mm;
- place the single-sided tape on each side of the Intex joining piece, ensuring it is sitting half onto the Intex joining piece and half onto the angle below;
- apply pressure by hand, ensuring appropriate adhesion is achieved;
- follow the same procedure to join the gaps between each angle in the same manner.

Open state cavity barrier

- line up the rear section of the first open state cavity barrier with the slots in the top of the brackets, ensuring it is in the specific position in line with the specific angle beneath it;
- tilt the top of the open state cavity barrier towards the vertical to allow the formed section to sit into the bracket notches (at top);
- push the bottom lip of the open state cavity barrier fully into the bracket notch to its rearmost face;
- rotate the open state cavity barrier to meet the top of the bracket notch;
- hold the front face of the open state cavity barrier in place ensuring it is parallel to the structure;
- insert the open state cavity barrier in the same manner into all brackets along its the length, ensuring it is fully fixed in place;
- install the next open state cavity barrier on top, with at least 80 mm overlap. The rear barrier only will need to be cut at this point to allow the stainless-steel sloping trays to overlap;
- push together (top and bottom units) until they are fully butted together, providing a continuous stop;
- once in place, cut tight the lower wing of the top intumescent strip, ensuring it can move freely in the case of fire and expand into the brickwork to assist with intumescent expansion;
- install subsequent open state cavity barriers in the same manner throughout the full length of the masonry support wall.

Wall tie

- clip the wall tie into the brackets' designated notches (slots) with the tie drip pointing downwards;
- lower the wall tie down the bracket notch into the lower section;
- push the wall tie into the mortar of the brickwork, in the centre of the joint with an embedment depth of between 50 mm and 75 mm;
- place further mortar on top of the wall tie ensuring a sufficient restraint against pull out is achieved;
- place the next layer of bricks on top of the mortar to complete the brickwork.

Weep vents (outside the scope of this Agrément)

- install stainless-steel weepholes at designated positions into brickwork;
- place mortar on top and continue with the brickwork.

2.4.4 Finishing

No finishing is required on completion of the installation.

2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.5.1 Moisture control

Test	Standard	Result
Ability to collect and discharge water (1 hr sprayed directly on the angle)	Internal method ¹	No leakage of water from tray

¹ Internal method based on EAD 360005-00-0604

2.5.2 Strength

Test	Standard	Result	
Load capacity of wall tie (couplet test) - Embedment end	Tensile	Mean load	2520 N
		Lowest individual load	2380 N
	Compressive	Mean load	2430 N
		Lowest individual load	2160 N
Load capacity of wall tie (single end test) - Bracket end	Tensile	Mean load	3340 N
		Lowest individual load	3200 N
	Compressive	Mean load	1960 N
		Lowest individual load	1710 N
Shear strength of joints (angle)	Control	133.3 N/50mm	
	Aged	Stored at 60 °C for 56 days	151.2 N/50mm
		Immersed in water at 60 °C for 30 days	153.3 N/50mm

2.5.3 Fire performance

Test	Standard	Result	
Fire resistance	BS EN 1363-1 and BS EN 1366-4	15 mm front closure and no rear closure	E120 and I90 ¹
		10 mm front closure and 34.5mm rear closure	E90 and I60 ²
		10 mm front closure and 39.5mm rear closure	E60 and I30 ³
		20 mm front closure and no rear closure	E90 and I60 ⁴
Reaction to fire	BS EN 13501-1	A1 ⁵	

¹ tested configuration comprising the System in a 350 mm wide ventilated cavity, filled with 295 mm thick Rainscreen Duo Slab MW insulation, Thermalite concrete blockwork on the external face and substrate wall, 12.5 mm GTEC Weather Defence sheathing board, 0.5 mm thick steel C-studs positioned at 400 mm centres and two layers of 12.5 mm Gyproc Handi-Board Type A plasterboard

² tested configuration comprising the System in a 344.5 mm wide ventilated cavity, filled with 260 mm thick Rainscreen Duo Slab MW insulation, Thermalite concrete blockwork on the external face and substrate wall, 12.5 mm GTEC Weather Defence sheathing board, 0.5 mm thick steel C-studs positioned at 400 mm centres and two layers of 12.5 mm Gyproc Handi-Board Type A plasterboard

³ tested configuration comprising the System in a 345 mm wide ventilated cavity, filled with 255 mm thick Rainscreen Duo Slab MW insulation, Thermalite concrete blockwork on the external face and substrate wall, 12.5 mm GTEC Weather Defence sheathing board, Rockwool RWA45 mineral fibre wool insulation between 0.5 mm thick steel C-studs positioned at 400 mm centres, and two layers of 12.5 mm Gyproc Handi-Board Type A plasterboard

⁴ tested configuration comprising the System in a 355 mm wide ventilated cavity, filled with 295 mm thick Rainscreen Duo Slab MW insulation, Thermalite concrete blockwork on the external face and substrate wall, 12.5 mm GTEC Weather Defence sheathing board, Rockwool RWA45 mineral fibre wool insulation between 0.5 mm thick steel C-studs positioned at 400 mm centres, and two layers of 12.5 mm Gyproc Handi-Board Type A plasterboard

⁵ excluding the intumescent materials

2.5.4 Durability

Test	Standard	Result
Natural ageing (over a 16-year period at room temperature) of the open state cavity barrier	-	No deterioration
Durability testing for intended use at conditions exposed to free weathering	EOTA TR024	Type X
Accelerated ageing (over 1 year period at 80 °C) of the open state cavity barrier	Arrhenius equation	No deterioration
Longevity assessment of firestop material using differential scanning calorimetry	ASTM E2923-14	60 years

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

- A1(1) Loading - the System can sustain and transmit combined dead, imposed and wind loads normally encountered in the UK to the supporting wall
- B3(4) Internal fire spread (structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C2(b) Resistance to moisture - a wall incorporating the System can resist precipitation and satisfy this Requirement
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance
- Regulation 7(2) Materials and workmanship - System components which are part of the external wall or specified attachment, shall achieve European classification of A2-s1, d0 or A1 (with the exemption of intumescent material)

3.2.2 Wales

The Building Regulations 2010 and subsequent amendments

- A1(1) Loading - the System can sustain and transmit combined dead, imposed and wind loads normally encountered in the UK to the supporting wall
- B3(4) Internal fire spread (structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C2(b) Resistance to moisture - a wall incorporating the System can resist precipitation and satisfy this Requirement
- Regulation 7(1) Materials and workmanship - the System is manufactured from suitably safe and durable materials for the application and can be installed to give a satisfactory performance
- Regulation 7(2) Materials and workmanship - System components which are part of the external wall or specified attachment, shall achieve European classification of A2-s1, d0 or A1 (with the exemption of intumescent material)

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

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

- All System components which are part of the external wall or specified attachment, shall achieve European classification of A2-s1, d0 or A1 (with the exemption of intumescent material)

3.2.3.3 Regulation 9 Building Standards - Construction

- 1.1(a)(b) Structure - the System can sustain and transmit combined dead, imposed and wind loads normally encountered in the UK to the supporting wall
- 2.4 Cavities - the System can inhibit the unseen spread of fire and smoke within cavities
- 3.10 Precipitation - the System will adequately resist moisture from precipitation penetrating to the inner face of a building

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, and 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)(iii) Fitness of materials and workmanship - the System is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance
- 23(2) Fitness of materials and workmanship - System components which are part of the external wall or specified attachment, shall achieve European classification of A2-s1, d0 or A1 (with the exemption of intumescent material)
- 28(b) Resistance to moisture and weather - a wall incorporating the System can contribute to adequately protecting a building from the passage of moisture from the weather
- 30 Stability - the System can sustain and transmit combined dead, imposed and wind loads normally encountered in the UK to the supporting wall
- 35(4) Internal fire spread (structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces

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.

- A1(1) Loading - the System can sustain and transmit combined dead, imposed and wind loads normally encountered in Ireland to the supporting wall
- B3(3) Internal fire spread (structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- B8(3) Internal fire spread (structure) - the System can inhibit the unseen spread of fire and smoke within concealed spaces
- C4 Resistance to weather and ground moisture - a wall incorporating the System can contribute to adequately protecting a building from the passage of moisture from precipitation
- 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

3.3 THIRD-PARTY ACCEPTANCE

In the opinion of Kiwa Ltd. if installed, used, and maintained in accordance with this Agrément, this System can satisfy the appropriate structural, fire, moisture and durability requirements of a Structural Warranty provider. Please contact the relevant Structural Warranty provider to ascertain their project specific design requirements and to confirm their acceptance on a case-by-case basis.

4 SOURCES

- BS EN ISO 9001:2015 Quality management systems. Requirements
- BS EN 846-5:2012 Methods of test for ancillary components for masonry. Determination of tensile and compressive load capacity and load displacement characteristics of wall ties (couplet test)
- BS EN 846-6:2012 Methods of test for ancillary components for masonry. Determination of tensile and compressive load capacity and load displacement characteristics of wall ties (single end test)
- BS EN 1363-1:2020 Fire resistance tests. General requirements
- BS EN 1366-4:2021 Fire resistance tests for service installations. Linear joint seals
- BS EN 1996-1-1:2005+A1:2012 Eurocode 6. Design of masonry structures. General rules for reinforced and unreinforced masonry structures
- NA to BS EN 1996-1-1:2005+A1:2012 UK National Annex to Eurocode 6. Design of masonry structures - General rules for reinforced and unreinforced masonry structures
- BS EN 1996-1-2:2005 Eurocode 6. Design of masonry structures. General rules. Structural fire design
- NA to BS EN 1996-1-2:2005 UK National Annex to Eurocode 6. Design of masonry structures. General rules. Structural fire design
- BS EN 1996-2:2006 Eurocode 6. Design of masonry structures - Design considerations, selection of materials and execution of masonry
- NA to BS EN 1996-2:2006 UK National Annex to Eurocode 6. Design of masonry structures - Design considerations, selection of materials and execution of masonry
- BS EN 1996-3:2006 Eurocode 6. Design of masonry structures. Simplified calculation methods for unreinforced masonry structures
- NA+A1:2014 to BS EN 1996-3:2006 UK National Annex to Eurocode 6. Design of masonry structures. Simplified calculation methods for unreinforced masonry structures
- BS EN 12317-2:2010 Flexible sheets for waterproofing. Determination of shear resistance of joints. Plastic and rubber sheets for roof waterproofing
- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS 8000-0:2014+A1:2024 Workmanship on construction sites. Introduction and general principles
- BS 8000-3:2020 Workmanship on construction sites. Masonry. Code of practice
- ASTM E2923-14:2019 Standard practice for longevity assessment of firestop materials using differential scanning calorimetry
- EOTA TR024:2019 Technical description and assessment of reactive products effective in case of fire
- European Commission Decision 96/603/EC: Commission Decision of 4 October 1996 establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products
- I.S. EN 1996-1-1:2005+A1:2012 Eurocode 6: Design of masonry structures. Part 1-1: General rules for reinforced and unreinforced masonry structures
- I.S. EN 1996-1-1+A1:2012/NA:2010+A1:2014 Irish National Annex to Eurocode 6: Design of masonry structures. Part 1-1: General rules for reinforced and unreinforced masonry structures
- I.S. EN 1996-1-2:2005 Eurocode 6: Design of masonry structures. Part 1-2: General rules. Structural fire design
- I.S. EN 1996-1-2/NA:2005 Irish National Annex to Eurocode 6: Design of masonry structures. Part 1-2: General rules. Structural fire design
- I.S. EN 1996-2:2006 Eurocode 6: Design of masonry structures. Part 2: Design considerations, selection of materials and execution of masonry
- I.S. EN 1996-2/NA:2006 Irish National Annex to Eurocode 6: Design of masonry structures. Part 2: Design considerations, selection of materials and execution of masonry
- I.S. EN 1996-3:2006 Eurocode 6: Design of masonry structures. Part 3: Simplified calculation methods for unreinforced masonry structures
- I.S. EN 1996-3/NA:2006 Irish National Annex to Eurocode 6: Design of masonry structures. Part 3: Simplified calculation methods for unreinforced masonry structures
- 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	June 2024

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.