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BDA Agrément®
Premium System and Safeguard System
Internal Wall Insulation System

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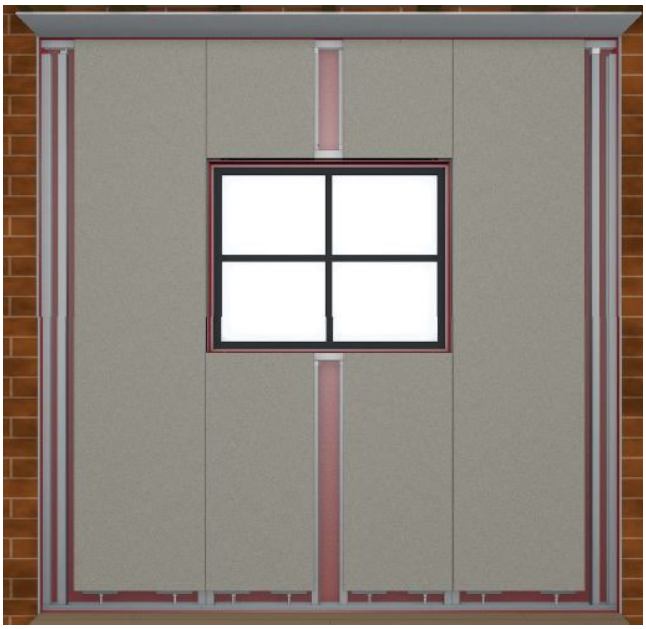
SCOPE OF AGRÉMENT

This BDA Agrément® (hereinafter 'Agrément') relates to Premium System and Safeguard System (hereinafter the 'System'). The System is a mechanically fixed internal wall insulation (IWI) panel System, incorporating expanded polystyrene (hereinafter 'EPS') or stone wool (hereinafter 'SW') insulation. The System is for use on the internal face of external walls, for installation above damp-proof course (hereinafter 'DPC') level. The System is for existing residential, and non-residential buildings.

DESCRIPTION

The System comprises an EPS (for Premium System) or SW (for Safeguard System) insulation core, sandwiched factory bonded between two gypsum fibre boards and fixed using vertical compression legs and horizontal compression spreaders into a light gauge steel framed (hereinafter 'LGSF') system, mechanically fixed to the floor and ceiling on the internal face of existing supporting walls lined with a breather membrane. The compression joints at the sides and base are filled with SW infill batts and covered with gypsum closure strips. All joints between the composite panels are filled with Comfort Frame joint filler.

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
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 System can contribute to limiting the risk of interstitial and surface condensation.

Strength - see Section 2.2.8 - a correctly designed and installed System will have sufficient strength and rigidity to sustain and transmit both dead and anchorage loads to the supporting wall.

Fire performance - see Section 2.2.9 - the Premium System is classified as European Classification B-s1, d0, and the Safeguard System is classified as European Classification A2-s1, d0, in accordance with BS EN 13501-1.

Thermal performance - see Section 2.2.10 - the System improves the thermal performance of external walls and can contribute to satisfying the requirements of the national Building Regulations.

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 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 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.

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	Dimensions
Premium System panel	10 mm thick gypsum fibre board with a nominal density of 1200 kg/m^3 and thermal conductivity of 0.20 W/mK, manufactured in accordance with BS EN 15283-2	3,000 mm by 600 mm
	50 mm thick EPS150 white insulation with a nominal density of 25 kg/m^3, thermal conductivity of 0.034 W/mK and compressive stress (10 % deformation) levels of CS(10)150, manufactured in accordance with BS EN 13163	
	single-component, moisture-curing, polyurethane adhesive, with a nominal weight of 120 g/m^2	
Safeguard System panel	10 mm thick gypsum fibre board with a nominal density of 1200 kg/m^3 and thermal conductivity of 0.20 W/mK, manufactured in accordance with BS EN 15283-2	3,000 mm by 600 mm
	52 mm thick stonewool insulation core with a nominal density of 120 kg/m^3 and thermal conductivity of 0.038 W/mK, manufactured in accordance with BS EN 13162	
	single-component, moisture-curing, polyurethane adhesive, with a nominal weight of 120 g/m^2	
breather membrane	vapour permeable and airtight self-adhesive membrane, with nominal mass per unit area 292 g/m^2, manufactured in accordance with BS EN 13859-2	0.65 mm thick
mechanical fixings	bugle head low carbon steel AISI C1022 grade self-drill drywall screw	38 mm long by 3.5 mm diameter, at maximum 400 mm centres
LGSF	galvanised mild steel U-channels and C-channels, manufactured in accordance with BS EN 14195	50 or 52 mm by 0.55 or 0.60 mm thick
compression spreader	M10 threaded rod with a steel tube and two flat zinc copper titanium alloy (zintek) square foot assemblies	150 mm long spreader with M10 nut and two 2 mm thick 50 mm by 50 mm foot assemblies
leg	M10 threaded rod with a steel tube and two zinc copper titanium alloy (zintek) assemblies, one C-channel hat and one a flat square foot	160 mm long spreader with M10 nut and a 0.9 mm thick 150 mm by 50 mm C-channel hat assembly and a 2 mm thick 50 mm by 50 mm foot assembly

The following components may be used in conjunction with the System:

- back fill insulation - SW insulation infill with a density of 45 kg/m^3 and thermal conductivity of 0.035 W/mK, manufactured in accordance with BS EN 13162;
- closure strips - 10 mm thick gypsum fibre board with a nominal density of 1200 kg/m^3 and thermal conductivity of 0.20 W/mK, manufactured in accordance with BS EN 15283-2;
- Comfort Frame joint filler - manufactured in accordance with BS EN 13963;
- metal stud connector (hereinafter 'MSC') - 2 mm thick zinc copper titanium alloy (zintek), also used as transom brackets;
- fixings for MSC and for LGSF - wafer head carbon steel AISI C1022 coated fixings, size 4.2 mm by 13.0 mm, at maximum 500 mm centres.

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:

- supporting ceiling and floors;
- external walls;
- mechanical fixings;
- finishes.

2.2 POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 Design

2.2.1.1 Design responsibility

A Specifier may not undertake a project-specific design; they shall co-operate closely with the Agrément holder to agree a project-specific design. The Agrément holder retains full design responsibility unless the design is subsequently modified by others.

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

A project-specific design is required. This shall be developed in close co-operation with the Agrément holder.

The Specifier shall determine the suitability of the System to be used on walls in the specific exposure zone detailed in PD 6697 on a project-specific basis, with the appropriate local wind-driven rain index, in accordance with BS 8104.

Detailing shall be carried out to a high standard to avoid the ingress of water into the wall construction. The risk of water penetration will cause substantial damage to a wall construction incorporating the System and the thermal benefit of the insulation will be reduced.

The System shall be installed above DPC level and a minimum of 150 mm above ground level.

Assessment of the structural performance of the supporting structures (floors and ceilings) and the System shall be carried out by the Agrément holder to confirm that the System can:
- resist the design impact loads, dead and anchorage loads;
- safely transfer loads to the existing building;
- accommodate all anticipated thermal movements without damage.

Deflection shall be limited to prevent damage to the System.

Buildings incorporating the System shall be designed and constructed to prevent moisture penetration and air infiltration, in accordance with the relevant Codes and Standards.

Care is needed for design detailing of joints around openings, penetrations, and movement joints, in accordance with BS 6093.

The System shall be secured to the floor and ceiling on the internal face of an existing wall with mechanical fixings specified during pre-installation survey.

2.2.1.4 Project-specific design considerations
The project-specific design shall:
- be determined by the Agrément holder;
- 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.

The Agrement holder shall ensure that the following considerations are included in the development of a project-specific design:
- structural adequacy of supporting structures (floors and ceilings);
- thermal transmittance (hereinafter 'U-value') requirements;
- thermal expansion effects of the supporting structures and the System;
- likely local impact resistance;
- pull-out of fixings from the substrate;
- accommodation of structural movement.

Supporting walls shall be vapour permeable to ensure that moisture can escape from inside the building.

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).

The checks shall include:
- moisture factors;
- breathability of existing walls;
- existing damp issues;
- ventilation.

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 an Approved Installer, trained and approved by the Agrément holder.

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.

Where required, particular care shall be taken to:
- avoid exposure to direct sunlight for extended periods of time;
- avoid exposure to high or low temperatures for extended periods of time;
- store System components in a well-ventilated covered area to protect them from rain, frost and humidity;
- store System components away from sources of ignition.

For storage of powder and liquid components, minimum and maximum temperatures shall be observed, including limitations of the shelf life, in accordance with the manufacturer's recommendations.

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.

The maintenance schedule for the external wall and supporting structures (floors and ceilings) shall include regular visual inspection checks for:

- signs of damaged areas;
- signs of deterioration and cracks in the pointing mortar or render of the external walls and in the supporting structures;
- integrity of the sealant around openings and service entry points.
- leaks from external plumbing and fittings, guttering and drainpipes.

Any damaged areas during installation shall be repaired immediately, in accordance with the Agrément holder's Maintenance Guide.

Maintenance shall include the regular replacement and resealing of joints at window and door frames to prevent failure. Failed elements, such as sealants, joint seals and corroded materials, shall be replaced to ensure that water ingress does not occur.

Performance factors in relation to the Major Points of Assessment

2.2.7 Moisture control

Condensation risk

External walls incorporating the System can adequately limit the risk of surface and interstitial condensation when designed in accordance with BS 5250 and BRE Report 262.

Moisture risk to the building incorporating the System shall be assessed using hygrothermal modelling tools, in accordance with BS 5250 and BS EN 15026.

A condensation risk analysis shall be completed at the project-specific design stage for all elements of the construction, including at junctions, openings and penetrations, to minimise the risk of surface and interstitial condensation.

Resistance to precipitation including wind-driven rain on external walls

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

2.2.8 Strength

The supporting structures (ceilings and floors) shall have sufficient strength to withstand all loads that could be applied during installation of the System and shall be verified by a suitably qualified engineer.

The System shall be designed to withstand impact and dead loads in accordance with BS EN 1991-1-1 / I.S. EN 1991-1-1.

The project-specific design shall ensure that the System has adequate fixings strength for the attachment to the supporting structures (ceilings and floors).

The System has been tested for lightweight and heavy loads in accordance with BS 5234-2 - see Section 2.5.2.

2.2.9 Fire performance

The reaction to fire of each System in accordance with BS EN 13501-1 is:

- Premium System is classified as European Classification B-s1, d0;
- Safeguard System is classified as European Classification A2-s1,d0.

For buildings incorporating the Premium System (i.e. European Classification B-s1, d0), the following applies in accordance with the national Building Regulations:

- as it is installed in an internal cavity, the System is restricted to buildings with no floor more than 18 m above ground level for England, Wales, Scotland and Northern Ireland, or 15 m above ground level for Ireland. Refer to the national Building Regulations for types of buildings and any exclusions that may apply;
- boundary restrictions will apply dependent on the outermost surface materials of the completed external wall, facing the boundary.

For buildings incorporating the Safeguard System (i.e. European Classification A2-s1,d0) in England, Wales, Scotland, Northern Ireland and Ireland:

- the System can be used on buildings without any height and boundary restrictions; however, height or boundary restrictions will apply dependent on the outermost surface materials of the completed external wall, facing the boundary, in accordance with the national Building Regulations;
- construction materials, components and associated attachments used in the overall wall construction shall satisfy the requirements of Regulations 7(2) and 7(3) for England and Wales, Regulations 8(3) and 8(4) for Scotland and Regulations 23(2) and 23(3) for Northern Ireland. Designers shall refer to the national Building Regulations for further details.

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

Walls shall be designed and constructed to adequately resist the passage and penetration of fire.

For detailed conditions of use regarding requirements for supporting wall fire performance, 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.

Proximity of flues and appliances

The insulation in the Premium System shall be adequately separated from any chimney, heat-producing appliance or incinerator flue pipe passing through a wall. Recommended means of separation are detailed in the Approved Documents supporting the national Building Regulations.

2.2.10 Thermal performance

The System can assist in reducing the U-value of external walls. It is essential that detailing is carried out to a high standard to avoid the ingress of water into the insulation boards and to obtain the full thermal benefit from the installation of the System. Any moisture penetration will affect the thermal conductivity. The System is designed to minimise moisture penetration to the insulation boards.

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-value requirement given in the national Building Regulations.

The U-value of a completed wall construction will depend on the insulation boards, fixing method, type of mechanical fixing, and insulating value of the supporting wall and its internal and external finishes.

For the purposes of U-value calculations and to determine if the requirements of national Building Regulations are met, the thermal resistance and U-value of the walls incorporating the System shall be calculated according to BS EN ISO 10211 (taking into consideration BS EN ISO 6946, BS EN ISO 10456 and BRE Report 443), using the declared thermal conductivity (λ_D) of the gypsum fibre board and the insulation boards - see Section 2.5.4.

Back fill insulation is used to maintain the thermal performance:

- of the System within the studs;
- at any areas where there is a gap due to the compression joints;
- around windows and doors.

Thermal bridging at junctions and around openings

Care shall be taken in the overall design and construction of junctions with other elements and openings, to minimise cold bridging and air infiltration.

Guidance on linear thermal transmittance, heat flows and surface temperatures can be found in the documents supporting the national Building Regulations and BS EN ISO 10211, BRE Information Paper 1/06, BRE Report 262, BRE Report 497, PAS 2030 and PAS 2035.

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.

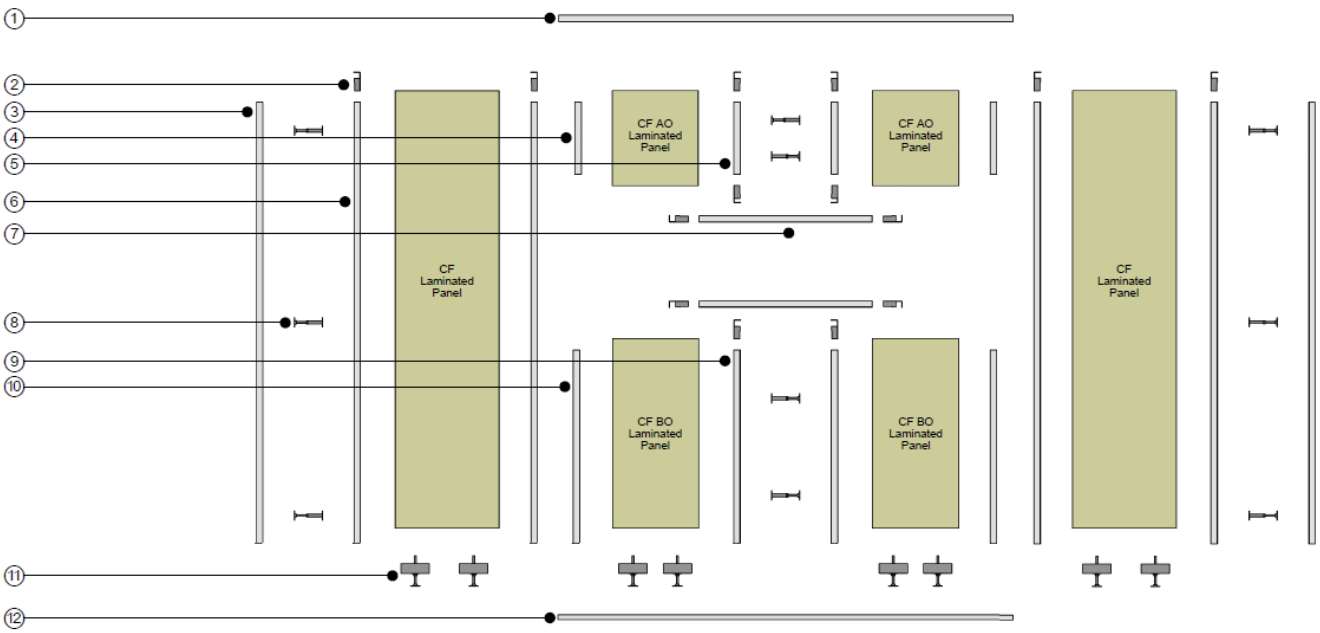
Once installed, the System is not susceptible to damage from environmental conditions normally encountered in the UK. The System has a maintenance regime in accordance with Section 2.2.6.

2.2.12 UKCA, UKNI and CE marking

There is no relevant Product standard for the System.

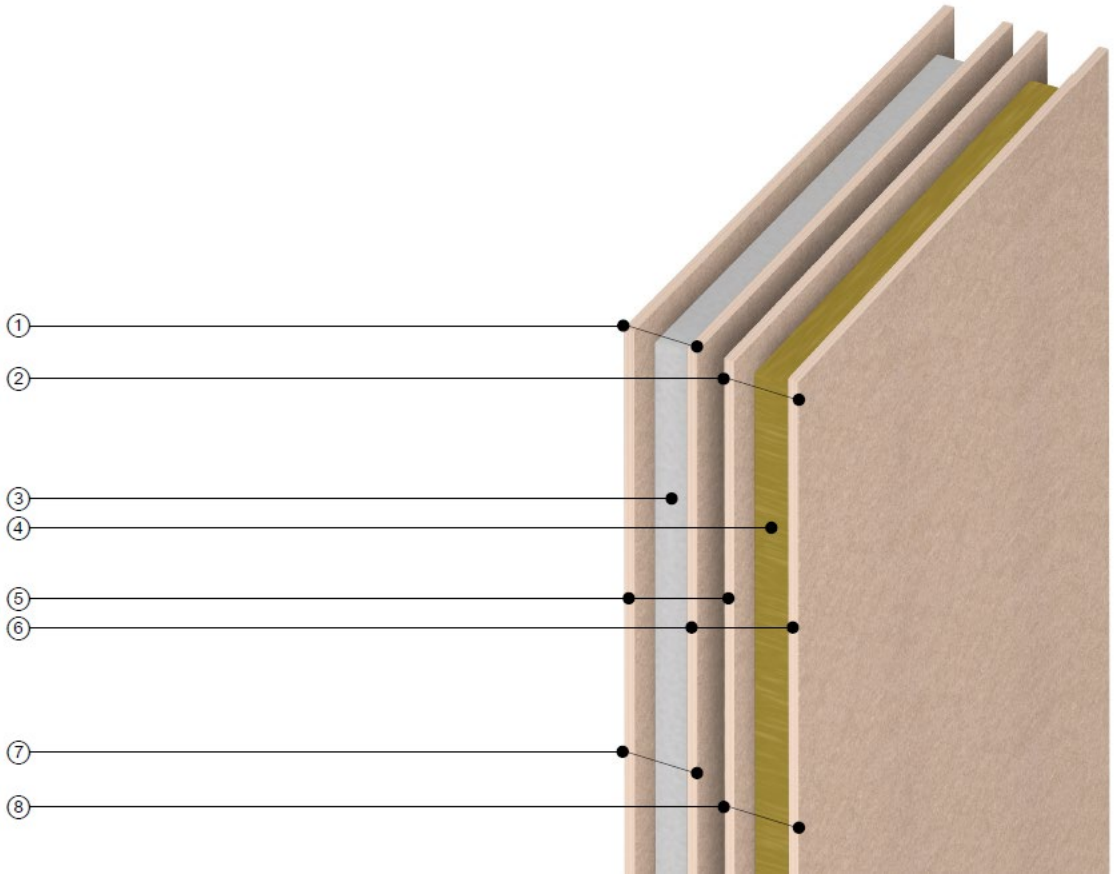
2.3 EXAMPLES OF TYPICAL DETAILS

Diagram 1 - Typical LGSF and System's components detail



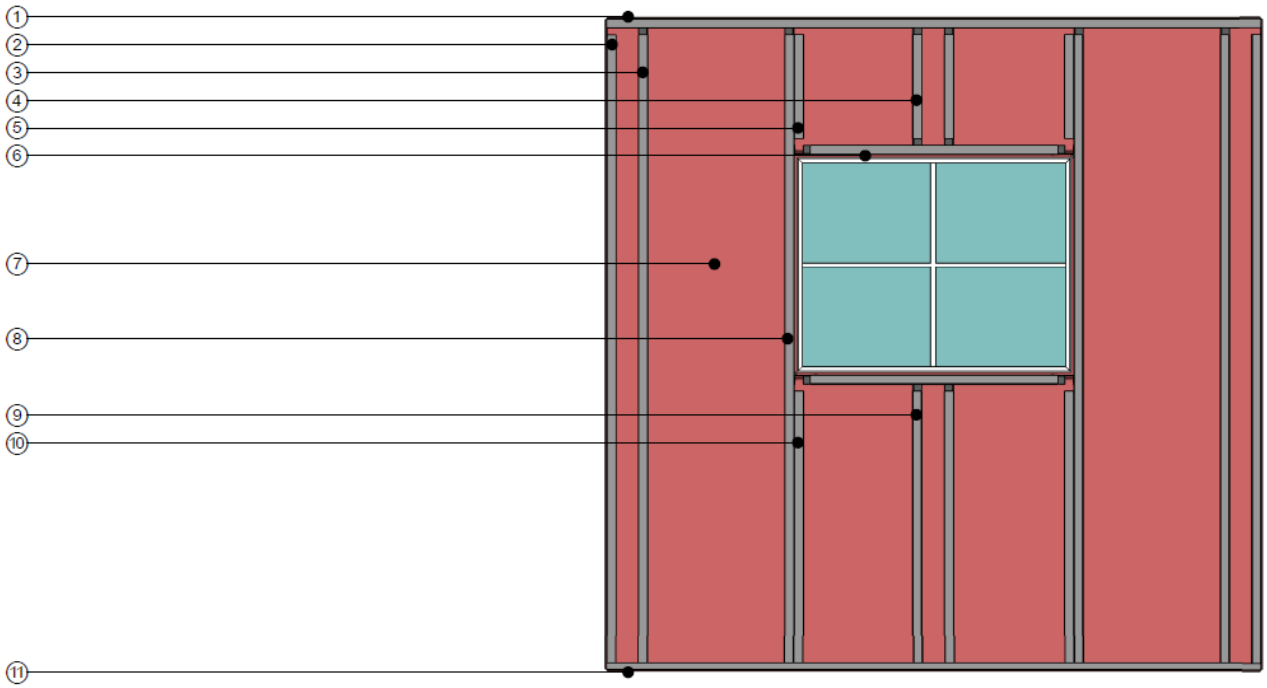
1. CF HT (head track)
2. MSC (metal stud connector component)
3. CF SC (starter channel)
4. CF AOGS (above opening guide stud)
5. CF AOSS (above opening spreader stud)
6. CF FHS (full height stud)
7. CF TS (transom stud)
8. NC21-S (spreader component)
9. CF BOSS (below opening spreader stud)
10. CF BOGS (below opening guide stud)
11. NC21-L (leg component)
12. CF BT (base track)

Diagram 2 - Typical composite panels detail



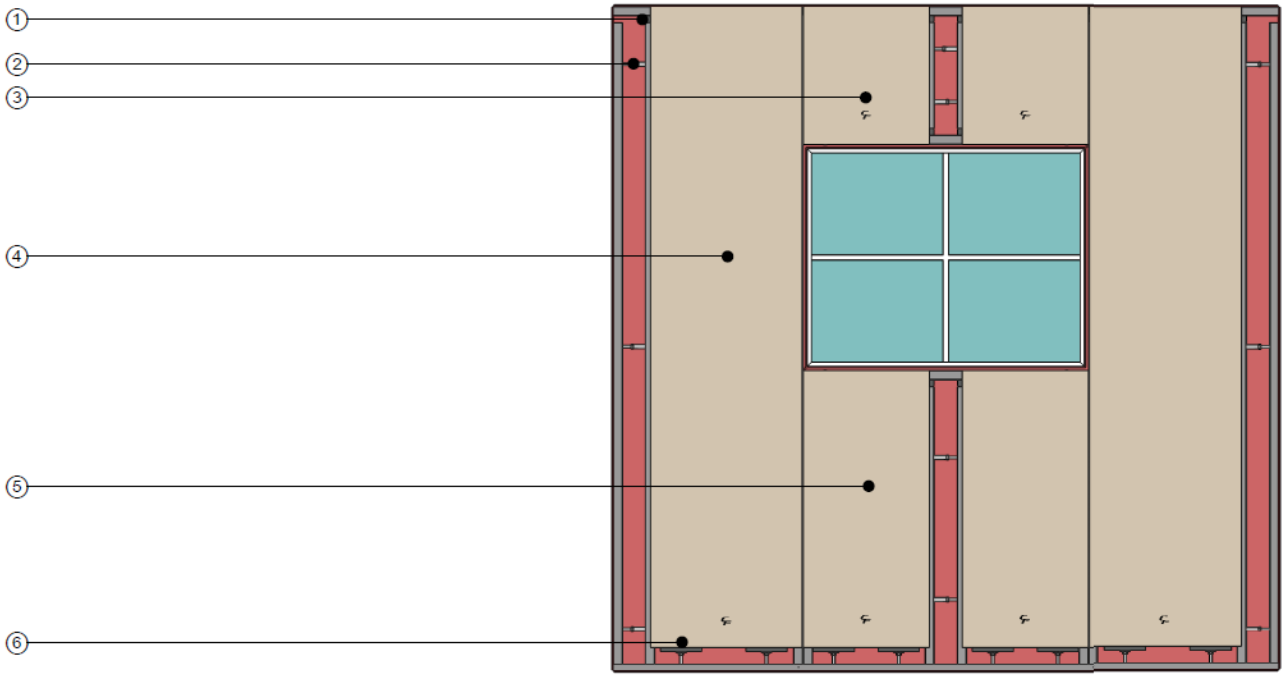
1. CF laminated panel Premium (70 mm)
2. CF laminated panel Safeguard (70 mm)
3. EPS core (50 mm)
4. Stonewool core (50 mm)
5. CF gypsum fibreboard (10 mm)
6. CF gypsum fibreboard (10 mm)
7. Performance B-s1, d0
8. Performance A2-s1, d0

Diagram 3 - Typical LGSF elevation detail



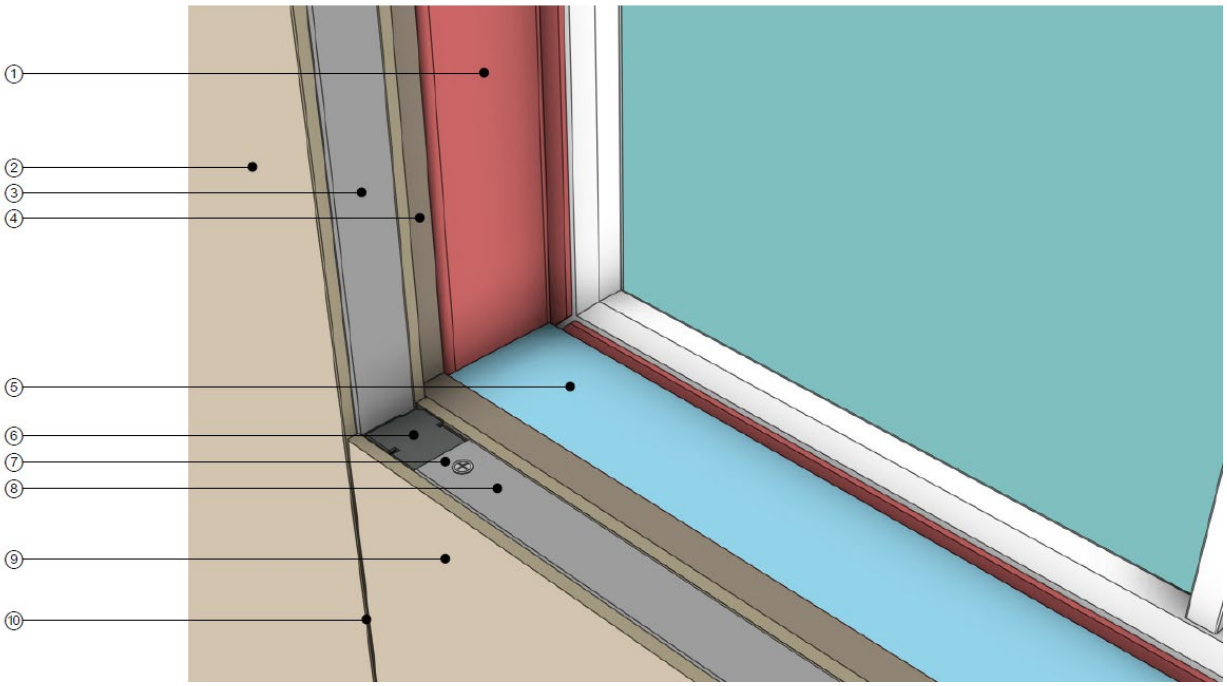
1. CF HT (head track)
2. CF SC (starter channel)
3. CF FHS (full height stud)
4. CF AOSS (above opening spreader stud)
5. CF AOGS (above opening guide stud)
6. CF TS (transom stud)
7. Self-adhesive breather membrane
8. CF FHOS (full height opening stud)
9. CF BOSS (below opening spreader stud)
10. CF BOGS (below opening guide stud)
11. CF BT (base track)

Diagram 4 - Typical composite panel detail



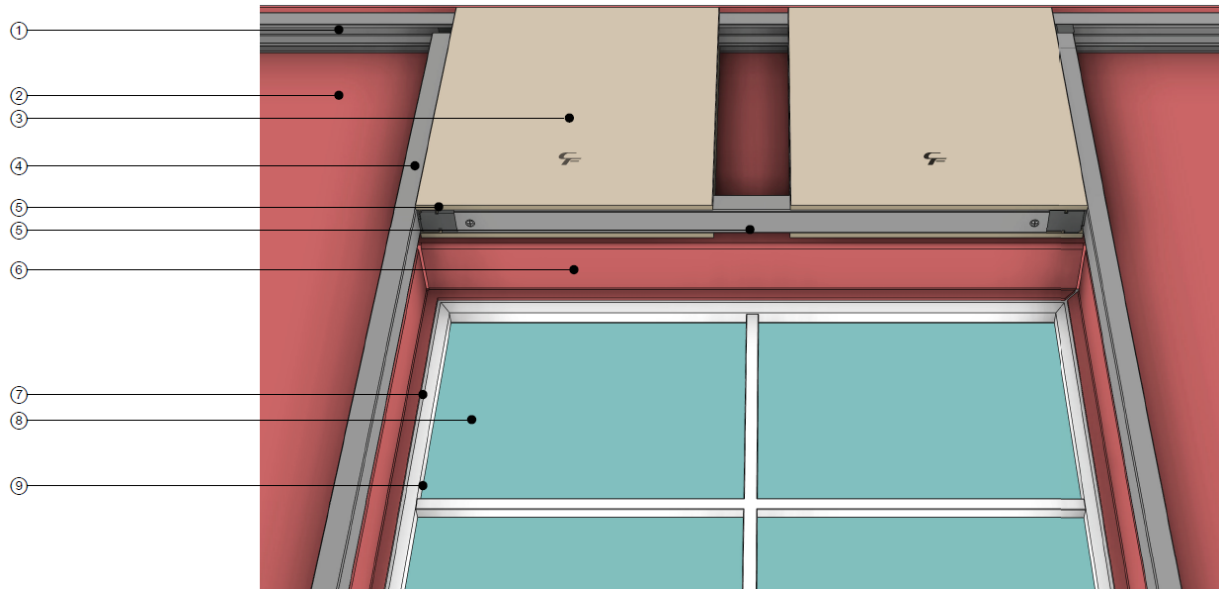
1. MSC (metal stud connector component)
2. NC21-S (spreader component)
3. CF AO laminated panel
4. CF laminated panel
5. CF BO laminated panel
6. NC21-L (leg component)

Diagram 5 - Typical window detail



1. Self-adhesive breather membrane
2. CF laminated panel
3. CF FHOS (full height opening stud)
4. Stonewool infill
5. High performance insulation
6. MSC (metal stud connector component)
7. Fixing
8. CF TS (transom stud)
9. CF BO laminated panel
10. CF BOGS (below opening guide stud)
11. 3 mm joint for CF Joint Filler

Diagram 6 - Typical above window detail



1. Self-adhesive breather membrane
2. CF laminated panel
3. CF FHOS (full height opening stud)
4. Stonewool infill
5. High performance insulation
6. MSC (metal stud connector component)
7. Fixing
8. CF TS (transom stud)
9. CF BO laminated panel
10. CF BOGS (below opening guide stud)
11. 3 mm joint for CF Joint Filler

Diagram 7 - Typical leg detail

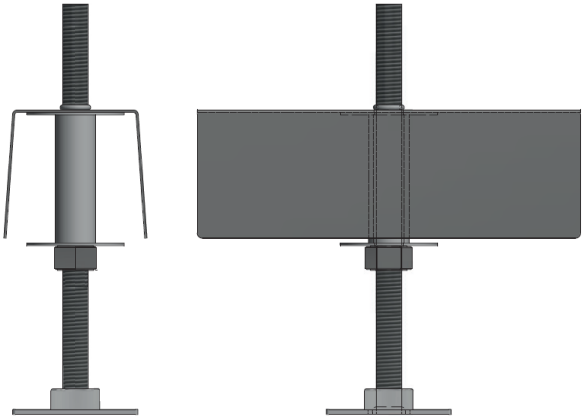


Diagram 8 - Typical compression spreader detail

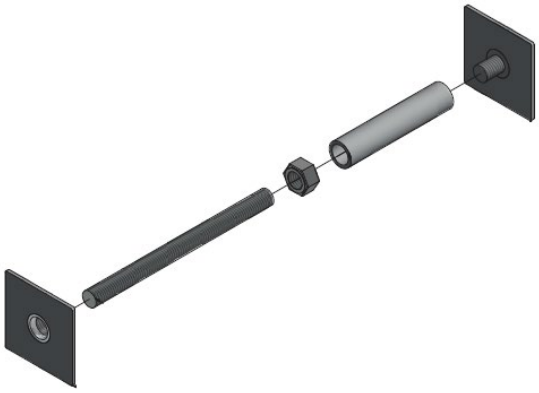
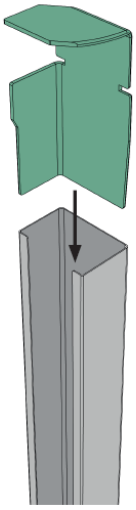


Diagram 9 - Typical MSC detail



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 primary requirement of the pre-installation survey is to determine the following:

- there is no existing rising damp and there are no signs of damp on the inner face of the supporting wall;
- there is no sign of mould, cracks and airgaps;
- existing walls are:
  - structurally sound, in a good state of repair and show no evidence of rain or frost damage;
  - watertight, clean and meet the requirements of the relevant national Building Regulations.

2.4.2 Preparation

The following works shall be undertaken before installing the System:

- remove all existing loose and flaking wallpaper, and all vinyl based wallpaper irrespective of condition; avoid using steam to reduce excessive moisture;
- carefully remove all existing furniture and features such as plasterboards;
- reroute electrical services away from the wall or make good services to receive the System;
- remove floor coverings, carpet, and all furnishings to ensure workspace is clear of obstructions;
- ensure that all System components are stacked in installation order and free of damage.

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:

- apply breather membrane to the elevation avoiding creases and air bubbles;
- draw a line from the elevation down to the depth of the cavity required, typically 85 mm, as an alignment for the front face of perimeter LGSF;
- install the perimeter channels forming the LGSF and mechanically fix them to the floor and ceiling of the existing wall; for elevations including openings, additional framework is required prior to installation of the composite panels;
- fit the composite panels above openings into the vertical studs;
- fit the full-height composite panels into the horizontal studs of the LGSF using the legs to allow application of vertical compression to the composite panel;
- if the elevation includes openings, fit the composite panels below openings into the horizontal studs of the LGSF using the legs and fit the compression spreader studs using MSCs;
- fit the compression spreader assemblies within the compression void to apply horizontal compression to the two full-height composite panels.

2.4.4 Finishing

The following finishing is required on completion of the installation:

- ensure that all joints and screws heads are filled;
- ensure that vertical compression legs area at base, horizontal compression spreaders areas around openings, and perimeters around openings are filled with SW infill batts;
- mechanically fix closure strips at the exposed voids and openings reveals;
- ensure that excess breather membrane is trimmed.

Post-installation inspection checks shall be carried out to ensure that the installation has been successfully completed and that the building has not been damaged. These shall be conducted as soon as possible after completion of the work and any defects shall be reported immediately.

2.5 INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.5.1 Moisture control

Test	Component	Standard	Result
Long term water absorption by immersion WL(T)	EPS insulation	BS EN 12087	2.5
Water vapour diffusion - resistance factor (μ)		BS EN 13163	30-70
Water vapour permeability			0.009-0.020
Equivalent air layer thickness (S_d)	breather membrane	BS EN ISO 12572	0.039 m
Watertightness (Class)		BS EN 1928 Method A	W1
Water vapour resistance factor (μ)	SW insulation	BS EN 13162	1
Water vapour resistance factor (μ)	Gypsum fibre board	BS EN ISO 12572	19

2.5.2 Strength

Test	Component	Standard	Result
Compressive strength at 10 % deformation	EPS insulation	BS EN 826	150 kPa
Test	**System**	**Standard**	**Result**
Small hard-body impact	Premium System	BS 5234-2 Annex D	30 Nm
	Safeguard System		
Multiple large soft-body impact	Premium System	BS 5234-2 Annex E	60 Nm
	Safeguard System		

Test	System	Standard	Result			
			Fischer Duo	Timco Stella	T-bolt	Bullfix
Lightweight pull out failure load	Premium System	BS 5234-2 Annex H	123.3 kg	89.7 kg	92.7 kg	87.7 kg
	Safeguard System		107.7 kg	55.4 kg	115.3 kg	80.2 kg
Lightweight pull down failure load	Premium System	BS 5234-2 Annex J	208.7 kg	210.0 kg	210.6 kg	206.7 kg
	Safeguard System		181.7 kg	159.7 kg	200.0 kg	210.9 kg
Heavyweight eccentric downward failure load	Premium System	BS 5234-2 Annex L	407.7 kg	388.0 kg	408.3 kg	< 400.0 kg
	Safeguard System		455.3 kg	456.0 kg	452.8 kg	335.2 kg

2.5.3 Fire performance

Test	System	Standard	Result
Reaction to fire	Premium System	BS EN 13501-1	B-s1, d0
	Safeguard System		A2-s1, d0

2.5.4 Thermal performance

Test	Component	Standard	Result
Thermal conductivity (λ_D)	EPS insulation	BS EN 12667	0.034 W/mK
	SW insulation		0.038 W/mK
	Gypsum fibre board	BS EN 12664	0.20 W/mK

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

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 Loading - the System can sustain impact loads and transmit dead loads to the supporting structure
- B2 Internal fire spread (linings) - the System can contribute to satisfying this Requirement
- C2(c) Resistance to moisture - the System can adequately protect the building from interstitial and surface condensation
- 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 23 Requirements relating to thermal elements - the System can contribute to walls complying with the requirements of L1(a)(i)

3.2.2 Wales

The Building Regulations 2010 and subsequent amendments

- A1 Loading - the System can sustain impact loads and transmit dead loads to the supporting structure
- B2 Internal fire spread (linings) - the System can contribute to satisfying this Requirement
- C2(c) Resistance to moisture - the System can adequately protect the building from interstitial and surface condensation
- 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 23 Requirements relating to thermal elements - the System can contribute to walls complying with the requirements of L1(a)(i)

3.2.3 Scotland

The Building (Scotland) Regulations 2004 and subsequent amendments

3.2.3.1 Regulation 8 (1)(2) 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 9 Building Standards - Construction

- 1.1 Structure - the System can sustain impact loads and transmit dead loads to the supporting structure
- 2.5 Internal linings - the System can contribute to satisfying this Requirement
- 3.15 Condensation - the System can be designed and constructed to inhibit surface or interstitial condensation
- 6.1(b) Carbon dioxide emissions - the System can contribute to satisfying this Requirement
- 6.2 Buildings 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

3.2.3.3 Regulation 12 Building Standards - Conversions

- All comments given under Regulation 9 also apply to this Regulation, with reference to Schedule 6 of The Building (Scotland) Regulations 2004 and subsequent amendments, clause 0.12 of the Technical Handbook (Domestic) 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)(b) 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
- 29 Condensation - the System can contribute to satisfying this Requirement
- 30 Stability - the System can sustain impact loads and transmit dead loads to the supporting structure
- 34 Internal fire spread - Linings - the System can contribute to satisfying this Requirement
- 39(a)(i) Conservation measures - the System can contribute to satisfying this Requirement
- 40(2) Target carbon dioxide emission rate - the System can contribute to satisfying this Requirement
- 43 Renovation of thermal elements - the System can contribute to satisfying this Requirement

3.2.5 Ireland

Building Regulations 1997 (Ireland) 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 Loading - the System can sustain impact loads and transmit dead loads to the supporting structure
- B2 Internal fire spread (linings, buildings other than dwelling houses) - the System can contribute to satisfying this Requirement
- B7 Internal fire spread (linings, dwelling houses) - the System can contribute to satisfying this Requirement
- C4 Resistance to moisture - a wall incorporating the System can adequately prevent the passage of moisture from condensation
- D1 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
- L1 Conservation of fuel and energy - the System can contribute to limiting heat gains and losses through walls
- L2(a) Conservation of fuel and energy (in existing dwellings) - the System can contribute to limiting heat gains and losses through walls
- L4(a) Conservation of fuel and energy (in existing buildings other than dwellings) - the System can contribute to limiting heat gains and losses through walls
- Regulation 7 Conservation of fuel and energy in existing dwellings - the System can contribute to satisfying this Requirement

3.3 THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

4 SOURCES

- BS EN ISO 6946:2017 Building components and building elements. Thermal resistance and thermal transmittance. Calculation methods
- BS EN ISO 9001:2015 Quality management systems. Requirements
- BS EN ISO 10211:2017 Thermal bridges in building construction. Heat flows and surface temperatures. Detailed calculations
- BS EN ISO 10456:2007 Building materials and products. Hygrothermal properties. Tabulated design values and procedures for determining declared and design thermal values
- BS EN ISO 12572:2016 Hygrothermal performance of building materials and products. Determination of water vapour transmission properties. Cup method
- BS EN 826:2013 Thermal insulating products for building applications. Determination of compression behaviour
- BS EN 1928:2000 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of watertightness
- BS EN 1991-1-1:2002 Eurocode 1. Actions on structures. General actions. Densities, self-weight, imposed loads for buildings
- NA to BS EN 1991-1-1:2002 UK National Annex to Eurocode 1. Actions on structures. General actions. Densities, self-weight, imposed loads for buildings
- BS EN 12087:2013 Thermal insulating products for building applications. Determination of long term water absorption by immersion
- BS EN 12664:2001 Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Dry and moist products of medium and low thermal resistance
- 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 13162:2012+A1:2015 Thermal insulation products for buildings. Factory made mineral wool (MW) products. Specification
- BS EN 13163:2012+A2:2016 Thermal insulation products for buildings. Factory made expanded polystyrene (EPS) products. Specification
- BS EN 13501-1:2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests
- BS EN 13859-2:2014 Flexible sheets for waterproofing. Definitions and characteristics of underlays. Underlays for walls
- BS EN 13963:2014 Jointing materials for gypsum boards. Definitions, requirements and test methods
- BS EN 14195:2014 Metal framing components for gypsum board systems. Definitions, requirements and test methods
- BS EN 15026:2023 Hygrothermal performance of building components and building elements. Assessment of moisture transfer by numerical simulation
- BS EN 15283-2:2008+A1:2009 Gypsum boards with fibrous reinforcement. Definitions, requirements and test methods. Gypsum fibre boards
- BS 5234-2:1992 Partitions (including matching linings). Specification for performance requirements for strength and robustness including methods of test
- 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
- 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 443:2019 Conventions for U-value calculations
- BRE Report 497:2016 Conventions for calculating linear thermal transmittance and temperature factors
- I.S. EN 1991-1-1:2002 Eurocode 1: Actions on structures. Part 1-1: General actions. Densities, self-weight, imposed loads for buildings
- I.S. EN 1991-1-1:2002/NA:2013 Irish National Annex to Eurocode 1: Actions on structures. Part 1-1: General actions. Densities, self-weight, imposed loads for buildings
- PAS 2030:2023 Installation of energy efficiency measures in existing dwellings. Specification
- PAS 2035:2023 Retrofitting dwellings for improved energy efficiency. Specification and guidance
- PD 6697:2019 Recommendations for the design of masonry structures to BS 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	December 2023
A	Addition of Ireland into geographic scope; update to address and contact details	A Chapman	C Devine	March 2025

6 CONDITIONS OF USE

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

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

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