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BAW-18-052-S-A-UK
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FASSAREND A96
FASSABORTOLO

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SCOPE

This Agrément relates to Fassarend A96 (hereinafter the 'System'). The System acts as a rainscreen for installation to external timber framed or solid masonry supporting walls. The System can be used on new and existing residential and commercial buildings up to 18 m in height.

DESCRIPTION

The System is comprised of render boards, wood screws, a polymer modified cement render, a glass fibre reinforcement mesh, a primer and an acryl-siloxane finish. The finish is available in various grain sizes and colours for decorative effect. The System has a 6 mm - 8 mm thick base coat applied onto a choice of three different cement-based render boards, subject to the project specific design. The render boards are secured to vertical timber battens, with fixings supplied by the Agrément holder, which can be fixed to horizontal timber battens if required.

SYSTEM ILLUSTRATION

THIRD-PARTY ACCEPTANCE

NHBC - For detailed information see section 3.3 (Third-Party acceptance).

STATEMENT

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

Chris Vurley, CEng
Technical Manager, Building Products

Mark Crowther, M.A. (Oxon)
Kiwa Ltd. Technical Director

SUMMARY OF AGRÉMENT

This document provides independent information to specifiers, building control personnel, contractors, installers and other construction industry professionals considering the fitness for the intended use of the System. This Agrément covers the following:

- Conditions of use;
- Initial Factory Production Control, Quality Management System and the Annual Verification procedure;
- Points of attention for the Specifier and examples of details;
- Installation;
- Independently assessed System characteristics and other information;
- Compliance with national Building Regulations and Third-Party acceptance;
- Sources, including codes of practice, test and calculation reports.

MAJOR POINTS OF ASSESSMENT

Strength - the System has adequate strength to resist wind loads and impact loads normally encountered in the UK (see section 2.1.11).

Fire performance - the System components have a reaction to fire classification of A1 or A2 (render boards), A1 (A96 render) and A2-s1,d0 (RX 561 finish coat). The fire performance of the sub-frame (and hence the System as a whole) will depend upon the selection of the timber used (see section 2.1.12).

Moisture control - the System can withstand wind-driven rain (see section 2.1.10).

Durability - When installed and maintained in accordance with the Agrément holder's recommendations and this Agrément, the System will have a service life expectancy in excess of 30 years (see section 2.1.8).

CE marking - The product manufacturers have taken responsibility for CE marking of the products used in the System in accordance with all relevant harmonised European Product Standards. An asterisk (*) appearing in this Agrément indicates that data shown is given in the relevant product manufacturer's Declaration of Performance (DoP).

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1.1 - Conditions of use
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CHAPTER 1 - GENERAL CONSIDERATIONS

1.1 - CONDITIONS OF USE

1.1.1 Design considerations
See section 2.1.

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 its relevant DoPs, test reports, technical literature and factory and site visits. Also, NHBC Standards have been taken into consideration. Factory Production Control has been assessed.

1.1.4 Installation
The quality of installation and workmanship must be controlled by a competent person who shall be an employee of the installation company.

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

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

1.1.6 Validity
The purpose of this BDA Agrément® is to provide for well-founded confidence to apply the System within the Scope described. The validity of this Agrément is three years after the issue date, and as published on www.kiwa.co.uk/bda.

1.2 - FACTORY PRODUCTION CONTROL (FPC) AND QUALITY MANAGEMENT SYSTEM (QMS)

Kiwa Ltd. has determined that the Agrément holder fulfils all obligations in relation to this Agrément, in respect of the System.

The initial FPC audit demonstrated that the Agrément holder has a satisfactory Quality Management System (QMS) and is committed to continuously improving their FPC operations.

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 FPC is in conformity with the requirements of the technical specification described in this Agrément, the continuous surveillance, assessment and approval of the FPC will be done at a frequency of not less than once per year by Kiwa Ltd.

CHAPTER 2 - TECHNICAL ASSESSMENT

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

2.1 - POINTS OF ATTENTION TO THE SPECIFIER

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 is responsible for the final project specific design.

The Agrément holder considers all project specific designs submitted for review and offers advice and guidance to ensure a compliant final project specific design; the Agrément holder is responsible for the project specific design.

2.1.2 Applied building physics (heat, air, moisture)
The physical behaviour of the building incorporating the System shall be verified as suitable by a competent specialist, who can be either a qualified employee of the Agrément holder or a qualified consultant. The Specialist will check the physical behaviour of the building design and if necessary, can offer advice in respect of improvements to achieve the final specification. It is recommended that the Specialist co-operates closely with the Agrément holder.

The ventilated cavity in the System increases the total thermal resistance of the façade ($R_T = 1/U$) by raising the surface resistance (R_{se}).

2.1.3 General design considerations
The System may be detailed with one of three different types of render board. See section 2.4.1.2. To comply with chapter 6.2.10 of the NHBC Standards a ventilated cavity of minimum 25 mm must be formed between the back of a render board and the sheathing or backing wall. Construction details for areas of very severe exposure are given in section 2.1.10.

Horizontal timber battens (counter battens) are only required if two conditions are met. See section 2.3.5.

Use timber battens with a thickness of at least 25 mm.

The durability of timber battens shall be adequate for Use Class 2 (see BS EN 335 for details of recognised service conditions) and may require a preservative treatment if the timber is not heartwood of durability class 1 or 2 (see tables 1 and 2 in chapter 3.3 of the NHBC Standards).

Due consideration should be given to the maximum spacings at vertical battens and the distance of fixings from edges and corners when siting fixings. The preferred fasteners for fixing the render boards are Externa Light 4.0 x 41 mm wood screws (with a head diameter of 10.1 mm) are supplied by the Agrément holder.

Timber battens and fixings which are different to those detailed in this Agrément may only be specified if test reports from an accredited laboratory confirm the pull strength of the fixings is adequate for the design wind load.

Timber framed walls
A breather membrane must be considered when the System is to be applied to a timber framed wall. This will be a project specific consideration. To comply with chapter 6.2.13 of the NHBC Standards a breather membrane must be used. The breather membrane should be applied to the exterior (cold) side of the sheathing of the timber framed wall.

Due consideration must be given to expansion, contraction and movement in respect of render finishes when used on timber framed walls.

2.1.4 Project specific design considerations
No pre-installation survey is required for the installation of the System.

2.1.5 Permitted applications
Only constructions designed according to the specifications as given in this Agrément are allowed under this Agrément; in each case the Specifier will have to co-operate closely with the Agrément holder.

2.1.6 Installer competence level
The System must be installed strictly in accordance with the instructions of the Agrément holder and the requirements of this Agrément.

Installation shall be by contractors with employees trained and approved by the Agrément holder.

2.1.7 Delivery, storage and site handling
The System is delivered to site in suitable packaging that bears the System name, the Agrément holder's name and the BDA Agrément® logo incorporating the number of this Agrément.

Store the System in accordance with the Agrément holder's requirements. Particular care must be taken to:
- avoid exposure to direct sunlight;
- avoid exposure to high and low temperatures for long periods of time;
- store in a well-ventilated covered area to protect from rain, frost and humidity;
- store away from possible ignition sources.

Disposal of containers with residues of RX 561 finish must be in accordance with local requirements; residue must not be disposed of via surface water or drains.

2.1.8 Durability
The System comprises durable materials. The insect mesh incorporated at the ventilation openings will prevent the ingress of birds, animals or insects. There is no mould risk to any component in the System.

The System is considered to be adequately resistant to deterioration and wear in normal service conditions, provided it is installed in accordance with the requirements of this Agrément.

The durability and service life of the System will depend upon the immediate environmental conditions, location, height and intended use of the building. Providing regular inspection and maintenance is carried out and any defects are promptly repaired in accordance with the Agrément holder's maintenance and repair instructions, the System will have a service life expectancy in excess of 30 years.

2.1.9 Maintenance and repair
Once installed, the System requires routine maintenance. For advice in respect of maintenance and repair, consult the Agrément holder.

Performance factors in relation to the Major Points of Assessment

2.1.10 Moisture Control
The System is suitable for use in all areas of exposure to wind driven rain; for external timber framed walls in areas of very severe exposure the System must include a 50 mm cavity between the sheathing boards and the back of the render boards, and a high-performance breather membrane.

If horizontal and vertical cavity barriers are required other than directly under the roof eaves they should be individually protected by a damp-proof course (DPC) arranged to shed moisture away from the sheathing boards.

2.1.11 Strength
Wind actions should be calculated in accordance with BS EN 1991-1-4. Due consideration must be given to the higher-pressure coefficients applicable to the corners of a building.

The System must not be subjected to vertical loads other than the System self-weight; the supporting wall must support all vertical loads.

The wind resistance of the System can achieve a negative (suction) peak test pressure of 4 kPa (safety) while the design wind pressure is 2.6 kPa (serviceability) (see section 2.4.1.5).

Variations in the System build-up as described in section 2.4.1.5 of this Agrément are allowed if test reports from an accredited laboratory are available to confirm the variation; or if calculations by a Structural Engineer show the design strength is adequate with regard to the design wind pressure.

The System has Category I hard body impact resistance in accordance with ETAG 004 (for use in a zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use).

2.1.12 Fire Performance
The fire performance of a wall will not solely depend on the System; use of intumescent sealant, cavity barriers and fire-stopping may be required to limit the spread of fire and smoke; compartmentation is required to control the spread of smoke and fire.

Provisions relating to external fire spread depend on the distance to the relevant boundary, the use of a building and the height of a building; provisions relating to fire resistance depend on a wall being load-bearing or not, the distance to the relevant boundary, the use or purpose group of a building and the height of a top floor above ground.

The System components have a reaction to fire classification of A1 or A2 (render boards), A1 (A96 render) and A2-s1,d0 (RX 561 finish coat). The fire performance of the sub-frame (and hence the System as a whole) will depend upon the selection of the timber used.

2.2 - EXAMPLES OF DETAILS

Examples of details (e.g. wall-window interface, penetrations and roof and wall junctions) can be given by the Agrément holder. Note: figures are not exhaustive and in practice every project requires bespoke details and solutions.

Diagram 1 - typical wall-window interface with sill

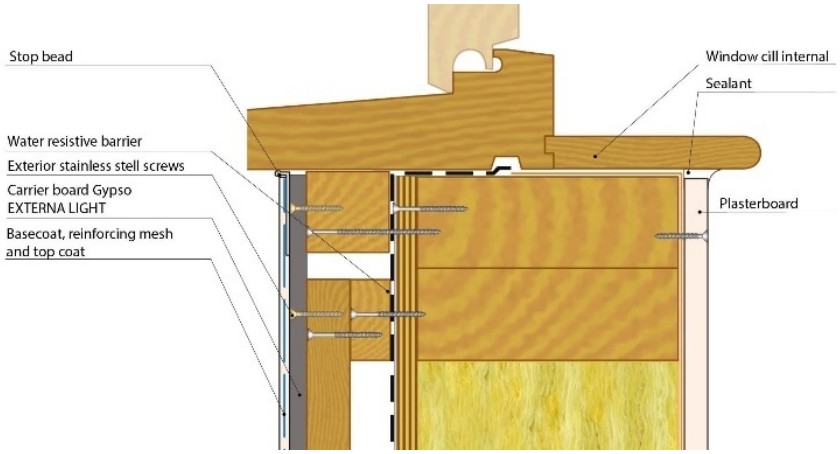


Diagram 2 - typical base detail

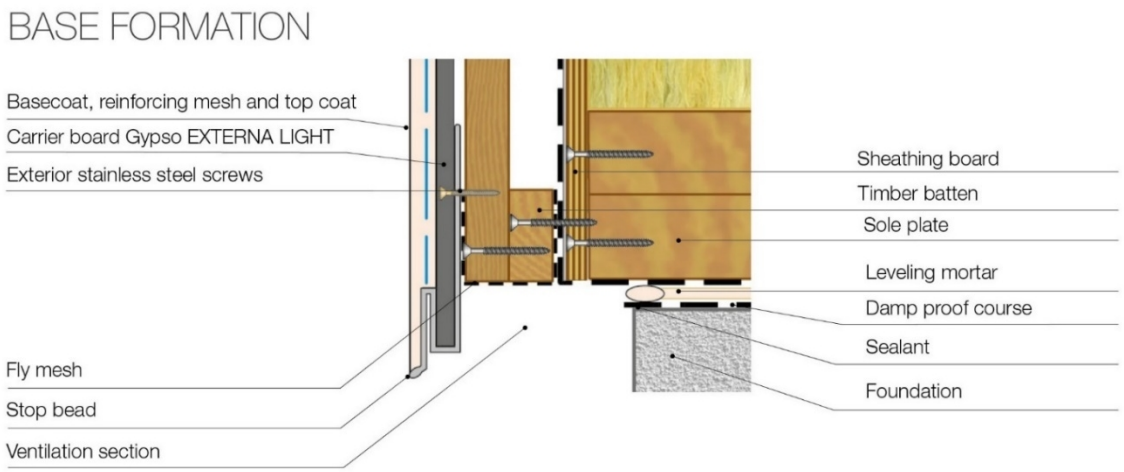


Diagram 3 - typical (horizontal) movement joint

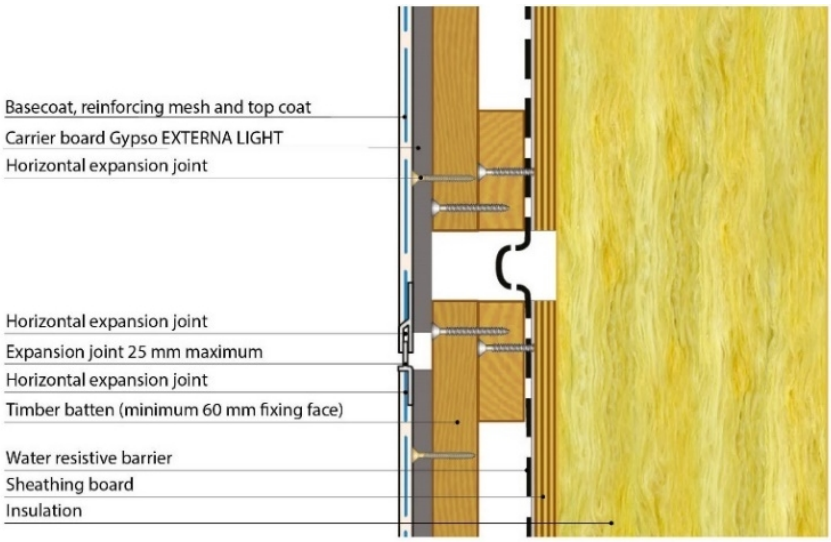
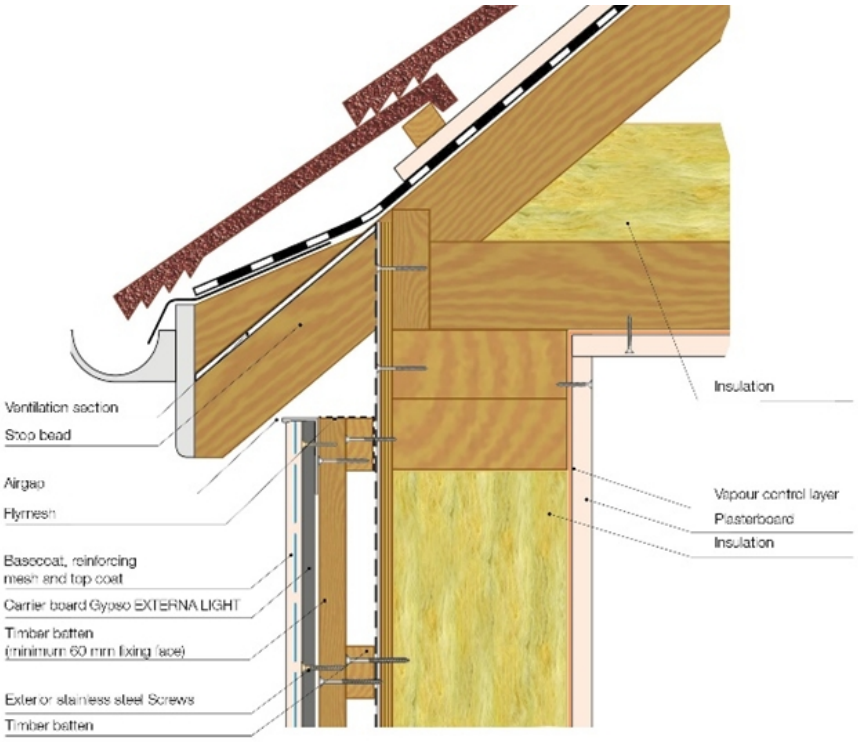


Diagram 4 - typical roof-wall junction (eaves)



2.3 - INSTALLATION

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

2.3.1 Installer competence level
See section 2.1.6.

2.3.2 Delivery, storage and site handling
See section 2.1.7.

2.3.3 Project specific installation considerations
For project specific installation considerations, please refer to the project specific design.

2.3.4 Preparation
The following considerations apply prior to the commencement of work:

- check for the presence and position of movement joints, meter boxes, outlets and flues in order to dimension and correctly install the sub-frame of timber battens and the render boards;
- where a breather membrane is present, check for defects (e.g. tears, loose overlaps and improperly sealed penetrations). If defects are observed, record these and report accordingly.

2.3.5 Outline installation procedure
The key points to note for installation of the System are described in detail in the Installation Manual:

- use horizontal battens only when the following two conditions apply:
  1) Externa Light render boards are used (see table 2); and
  2) the spacing between the timber studs exceeds 400 mm.
  When these conditions are not met, only vertical battens can be used;
- attach the widest face of a batten directly to the supporting wall to ensure a minimum ventilated cavity of no less than 25 mm is maintained;
- where horizontal battens are fixed to a timber framed wall, they must be fixed through the sheathing board into the backing studs;
- horizontal battens must be fixed to the supporting wall except at either side of movement joints;
- in areas of very severe exposure the ventilated cavity behind render boards shall be at least 50 mm, see section 2.1.10;
- ensure that the heads of the Externa Light 4.0 x 41 mm wood screws are flush with the exterior face of the boards and are fixed at the recommended fixing centres equally spaced along the length of every batten; to avoid causing damage to the boards, do not over-tighten the wood screws;
- at every board joint, maintain a joint gap of 3 mm - 4 mm to allow for movement due to moisture and temperature;
- use an intumescent sealant where required according to the project specific design;
- apply A96 render and allow to cure for 2 - 3 weeks before application of the FX 526 primer;
- apply the FX 526 primer to a dry and clean substrate; allow to dry for 16 - 24 hours prior to application of the RX 561 finish;
- apply the FX 526 primer and RX 561 finish when air temperatures are between 5 °C and 30 °C and when the relative humidity is higher than 75 %; do not apply the FX 526 primer and RX 561 finish on façades in full sunlight or strong winds.

2.3.6 Finishing
The following finishing is required upon completion of the installation:

- apply silicone-based sealant according to the Agrément holder's recommendations;
- dispose of containers with residues of RX 561 finish in accordance with local requirements; residue must not be disposed of via surface water or drains.

2.4 - INDEPENDENTLY ASSESSED SYSTEM CHARACTERISTICS

2.4.1 Characteristics of System components

2.4.1.1 A96 Render coat
Table 1 - Characteristics of A96 render

Property	Value	Unit
Dry bulk density (ρ_s) of base coat	1500	$kg \cdot m^{-3}$
Water absorption coefficient (C_m), coat without finish	0.1	$kg/(m^2 \cdot min^{0.5})$
Reaction to fire, classification	A1	(-)

2.4.1.2 Render boards
Table 2 - Characteristics of cement-based render boards

Property	Gypsotech Externa Light (Fassa)	AQUAPANEL (Knauf)	RCM Renderboard (RCM)	Unit
Length x width (mean values)	1998 x 1198	2396 x 896	2400 x 1200	mm
Thickness (mean value)	11.6	12.3	12.1	mm
Apparent density (mean value)	866	1138	1426	$kg \cdot m^{-3}$
Swelling in thickness (mean value)	0.7	-1.2	-3.2	%
Water impermeability (waterhead 20 mm)	Pass (no damp spots at underside)	Pass, watertight	Pass, watertight	(-)
Water impermeability (waterhead 100 mm)	NPD	Fail	Pass, watertight	(-)

Property	Gypsotech Externa Light (Fassa)	AQUAPANEL (Knauf)	RCM Renderboard (RCM)	Unit
Category according to EN 12467	A	B^	B^^	(-)
Bending strength (MOR) according to EN 12467	Class 1 (≥ 4 MPa)	Class 2 (≥ 7 MPa)	Class 3 (≥ 13 MPa)	(-)
Reaction to fire, classification	A1*	A1*	A2*	(-)

^ warm water test showed R_L = 0.56
^^ number of heat-rain cycles is unknown

Table 3 - Dimensional changes of render boards associated with changes in relative humidity at 20 °C

Board - direction	Adsorption 65 % → 85 %	Desorption 65 % → 45 %
Externa Light boards - change in length δl (mm/m)	0.39	-0.46^
Externa Light boards - change in thickness δt (%)	1.16	-1.12^
AQUAPANEL - change in length δl (mm/m)	0.2	-0.7
AQUAPANEL - change in thickness δt (%)	0.1	-0.2
RCM Renderboard - change in length δl (mm/m)	0.3	0.1
RCM Renderboard - change in thickness δt (%)	-0.4	0.3

^ values for desorption conditions from 65 % to 30 %.

2.4.1.3 Strength of fixings

Pull tests with Externa Light 4.0 x 41 mm wood screws have been conducted based on annex D.2.1 of ETAG 006. In this test the wood screws secured render boards to a substrate formed by two timber battens, both nominally 22 mm thick. The failure mode was pull-through of the head of the wood screws.

Table 4 - Pull strength of wood screws with various boards

Board	F_{mean} (N)	(range)
Externa Light boards	483	(350-588)
AQUAPANEL	525	(267-773)
RCM Renderboard	1739	(1568-1957)

Note: the mean values are based on 10 measurements.

2.4.1.4 Bond strength of render

Table 5 - Bond strength of A96 render on various substrates

Substrate	Initial strength (kPa)	After ageing (kPa)
Externa Light	335 (303 - 375)	244 (125 - 303)
AQUAPANEL	340 (290 - 460)	449 (381 - 519)
RCM Renderboard	574 (393 - 689)^	576 (179 - 784)^

^ delamination in the render, not the substrate.
Note: mean values for bond strength between brackets (rounded down), after 5 measurements.
Note: ageing was done by 80 cycles of heat-rain and two periods of freezing during 64 hours to -20 °C (after cycles 40 and 80).

2.4.1.5 Wind-uplift resistance

To determine the wind design pressure a dynamic wind-uplift test has been performed with Externa Light render boards only.

Table 6 - Wind-uplift resistance

Maximum peak test pressure (suction)	4.0 kPa
Design wind pressure (suction)	2.6 kPa

Note: Design wind pressure value calculated with a safety factor of 1.5 which is valid for a wall having the characteristics in Table 7:

Table 7 - System build-up

Timber studs, 145 mm x 45 mm, spaced 600 mm apart
OSB sheathing, 12 mm thick, secured with wood screws 5.0 x 50 mm (flat countersunk head of 90 °)
Horizontal timber battens, 22 mm x 50 mm and spaced 750 mm apart, shall be fixed to the studs using wood screws 5.0 x 70 mm (head diameter 9.7 mm)
Vertical timber battens, 22 mm x 75 mm and spaced 400 mm apart, fixed to the horizontal battens using wood screws 5.0 x 70 mm (head diameter 9.7 mm)
Render board Externa Light, 12 mm thick, secured to the vertical battens with Externa Light 4.0 x 41 mm wood screws. The vertical distance between wood screws is 200 mm
A96 render coat, FASSANET 160 reinforcement mesh, FX 526 primer and RX 561 finish

Note: Alterations to the System build-up in Table 7 may have a negative effect on the design wind pressure; in such instances verification of the strength of fixings and vertical battens must be better or equal to those used for the System build-up as tested.

2.4.1.6 Impact resistance

Table 8 - Hard body impact for A96 render on various render boards

Substrate	Safety in use (10 Nm)	Serviceability (6 Nm)
Externa Light	No collapse, penetration and/or projection	No penetration and/or degradation^

^ no cracks, depressions or protuberances are visible to the naked eye.
Note: safety in use: one impact of 10 Nm (impact energy), serviceability: three impacts of 6 Nm each. Tests according to EOTA Technical Report TR 001:2003.

2.4.2 Resistance to fatigue and watertightness

The water penetration resistance of a movement joint after cyclic movement (fatigue) is determined with a water head of 100 mm during 24 h after 500 cycles. The cycles represent the deformation (between +1 and +3 mm) of a movement joint with an initial gap of 2 mm, with a speed of 16 ± 0,1 mm/h at a temperature of (-10 ± 2) °C.

Table 9 - Resistance to fatigue (A96 render with movement joint)

Render - substrate	Watertightness
A96 (5 mm) - Externa Light	Watertight^

^ no debonding occurred.

Note: testing was conducted based on test method in EOTA TR 008:2004.

Watertightness of the System has not been tested with a specific water head because its integrity is guaranteed by the inclusion of the ventilated cavity behind the render boards.

2.5 - ANCILLARY ITEMS

Note: ancillary items detailed in this section are to be used in conjunction with the System.

Reinforcement mesh - FASSANET 160

Table 10 - Characteristics tested on glass fibre reinforcement mesh

Property	Value	Unit
Length x width (nominal values)	50 x 1	m
Thickness (mean value)	0.44	mm
Mesh size (longitudinal / transverse direction)	5.0 / 4.5	mm
Apparent density (mean value)	159	$g \cdot m^{-2}$
Tensile strength (in N/50 mm) and elongation (%) - longitudinal direction (mean values)	986 & 63	N & %
Tensile strength (in N/50 mm) and elongation (%) - transverse direction (mean values)	1055 & 42	N & %

Primer - FX 526 primer

Table 11 - Product Data Sheet information regarding technical data and consumption

Property	Value	Unit
Water vapour transmission rate (V)	$V \approx 45$	$g/(m^2 \cdot d)$
Water vapour resistance factor (μ)	$\mu \approx 1250$	(-)
Diffusion equivalent layer thickness S_d (= μ·d)	$S_d \approx 0.5$	m
Liquid water permeability (water absorption)	$w \leq 0.1 \pm 0.02$	$kg/(m^2 \cdot h^{0.5})$
Reaction to fire, classification	NPD	(-)
Coverage	0.2 - 0.25	$kg \cdot m^{-2}$
Test reports confirm the coverage	0.220 / 0.235 / 0.315	$kg \cdot m^{-2}$

Finish - RX 561 finish

Table 12 - Technical Data Sheet information regarding application, technical data and consumption

Property	Value	Unit
Water vapour permeability	category V_2 (medium)	(-)
Water vapour transmission rate (V)	$15 < V \leq 150$	$g/(m^2 \cdot d)$
Diffusion equivalent layer thickness S_d (= μ·d)	$0.14 < S_d \leq 1.4$	m
Water absorption: category W_3 (low)	$w \leq 0.1$	$kg/(m^2 \cdot h^{0.5})$
Reaction to fire, classification	A2-s1,d0	(-)
Coverage (depends on grading)	2.0 - 4.6	$kg \cdot m^{-2}$

Bead profiles

A wide variety of bead profiles (e.g. corner, stop and APU) are used with the System, as defined in the project specific design.

CHAPTER 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 - NATIONAL BUILDING REGULATIONS

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

3.2.1 - ENGLAND
REQUIREMENTS: THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- A1(2) Loading - imposed and wind loads - the System can withstand wind design pressures up to 2,600 Pa and an impact load of 10 Nm by a hard body;
- B3(1)(4) Internal fire spread (structure) - the fire resistance of an external wall must be verified by a specialist for each project in advance; any unseen spread of fire and smoke shall be limited by cavity barriers, compartmentation and fire stopping to be determined by a specialist;
- B4(1) External fire spread - the risk shall be assessed by a specialist; additional testing may be required;
- C2(a)(b) Resistance to moisture - the System can withstand precipitation if a finishing coat is applied; interstitial condensation shall be assessed by a specialist;
- Regulation 7 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.

3.2.2 - WALES
REQUIREMENTS: THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- A1(2) Loading - imposed and wind loads - the System can withstand wind design pressures up to 2,600 Pa and an impact load of 10 Nm by a hard body;
- B3(1)(4) Internal fire spread (structure) - the fire resistance of an external wall must be verified by a specialist for each project in advance; any unseen spread of fire and smoke shall be limited by cavity barriers, compartmentation and fire stopping to be determined by a specialist;
- B4(1) External fire spread - the risk shall be assessed by a specialist; additional testing may be required;
- C2(a)(b) Resistance to moisture - the System can withstand precipitation if a finishing coat is applied; interstitial condensation shall be assessed by a specialist;
- Regulation 7 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.

3.2.3 - SCOTLAND
REQUIREMENTS: THE BUILDING (SCOTLAND) REGULATIONS 2004 AND SUBSEQUENT AMENDMENTS

3.1 Regulations 8 (1)(2): Fitness and Durability of materials and workmanship

- the System is manufactured from acceptable materials which are considered to be adequately resistant to deterioration and wear under normal service conditions, provided they are installed in accordance with the requirements of this Agrément;
- maintenance or repair work will not be necessary unless (a part of) the external wall is damaged or is affected by structural modifications.

3.2 Regulation 9: Building Standards - Construction

- 1.1 (a) Structure - the System can withstand wind design pressures up to 2,600 Pa and an impact load of 10 Nm by a hard body;
- 2.4 Cavities - any unseen spread of fire and smoke shall be limited by cavity barriers, compartmentation and fire stopping to be determined by a specialist;
- 2.7 Fire spread on external walls - the risk shall be assessed by a specialist; additional testing may be required;
- 3.10 Precipitation - the System can withstand precipitation if a finishing coat is applied;
- 3.15 Condensation - interstitial condensation shall be assessed by a specialist.

3.3 Regulation 12: Building Standards - Conversions

- All comments given for the System under Regulation 9 also apply to this Regulation, with reference to clause 0.12 and Schedule 6 of this Standard.

3.2.4 - NORTHERN IRELAND
REQUIREMENTS: THE BUILDING REGULATIONS (NORTHERN IRELAND) 2012 AND SUBSEQUENT AMENDMENTS

- 23(a)(ii)(iii) Fitness of materials and workmanship - the System is manufactured from materials which are considered to be suitably safe;
- 28(b) Resistance to moisture and weather - the System can be constructed to prevent any harmful effect on the building or the health of the occupants caused by the passage of moisture to any part of the building from (b) the weather;
- 29 Condensation - interstitial condensation shall be assessed by a specialist;
- 30(a)(b) Stability - the System can transmit wind loads to the ground safely given an adequate timber sub-frame and backing are constructed;
- 35(1)(4) Internal fire spread (Structure) - the fire resistance of an external wall (1) must be verified by a specialist for each project in advance; any unseen spread of fire and smoke (4) shall be limited by cavity barriers, compartmentation and fire stopping to be determined by a specialist;

- 36(a) External fire spread - adequate resistance to the spread of fire over an external wall depends on the combination with other materials, the use, position and height of the building; the risk shall be assessed by a specialist, additional testing may be required.

3.3 - THIRD-PARTY ACCEPTANCE

NHBC - In the opinion of Kiwa Ltd., the System, if installed, used and maintained in accordance with this Agrément, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Chapter 6.9.

CHAPTER 4 - SOURCES

- BS EN ISO 7783:2011 Paints and varnishes. Determination of water-vapour transmission properties. Cup method.
- BS EN 15824:2017 Specifications for external renders and internal plasters based on organic binders.
- BS EN 15026:2007 Hygrothermal performance of building components and building elements. Assessment of moisture transfer by numerical simulation.
- BS EN 12467:2012+A2:2018 Fibre-cement flat sheets. Product specification and test methods.
- BS EN 1991-1-4:2005+A1:2010 Eurocode 1 Actions on structures. General actions. Wind actions.
- NA to BS EN 1991-1-4:2005+A1:2010 UK National Annex to Eurocode 1. Actions on structures. General actions. Wind actions.
- BS EN 1062-3:2008 Paints and varnishes. Coating materials and coating systems for exterior masonry and concrete. Determination of liquid water permeability.
- BS EN 1015-12:2016 Methods of test for mortar for masonry. Part 12: Determination of adhesive strength of hardened rendering and plastering mortars on substrates.
- BS EN 335:2013 Durability of wood and wood-based products. Use classes: definitions, application to solid wood and wood-based products.
- BS 5250:2011+A1:2016 Code of practice for control of condensation in buildings.
- BR 443 - Conventions for U-value calculations (2006 Edition).
- BR 497 - Conventions for Calculating Linear thermal transmittance and Temperature Factors (BR 497).
- NHBC Standards 2019, Chapter 2.1 The Standards and Technical Requirements, Chapter 6.9 (Curtain walling and cladding).
- Fassa UK, OPERATING AND MAINTENANCE MANUAL.

Remark: apart from these sources, technical information and confidential reports have been assessed; any relevant documents are in the possession of Kiwa Ltd. and kept in the Technical Assessment File of this Agrément. The Installation Manual for the System may be subject to change, the Agrément holder should be contacted for clarification of revision.

CHAPTER 5 - AMENDMENT HISTORY

Revision	Amendment Description	Amended By	Approved By	Date
-	First Issue	C Vurley	C Forshaw	June 2019