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BAW-20-154-P-A-UK
BDA Agrément®
Versaroc MPA1
Flat Sheet Building Board

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SCOPE OF AGRÉMENT

This Agrément relates to Versaroc MPA1 (hereinafter the 'Product'), a fibre-cement sheathing board. The Product is for non-structural use as an external sheathing board on light gauge steel frame (hereinafter 'LGSF') supporting walls of new and existing residential, commercial and industrial buildings. The Product shall not be used as a substrate for direct render or as a wall cladding. A proprietary direct render or wall cladding system shall hold its own verification of performance.

DESCRIPTION

The Product consists of Portland cement and inorganic reinforcing fibres, manufactured in accordance with BS EN 12467.

ILLUSTRATION

THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

STATEMENT

It is the opinion of Kiwa Ltd., that the Product is safe and 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 safety and fitness for the intended use of the Product. This Agrément covers the following:

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

MAJOR POINTS OF ASSESSMENT

Strength - the Product can be incorporated in a building subject to typical wind actions encountered in the UK (see section 2.2.9).

Moisture control - the Product has adequate resistance to moisture (see section 2.2.10).

Fire performance - the Product is classified as European Classification A1, in accordance with BS EN 13501-1 (see section 2.2.11).

Durability - the Product shall have a service life durability equivalent to that of the building into which it is incorporated (see section 2.2.12).

UKCA and CE marking - the Agrément holder has responsibility for conformity marking, in accordance with all relevant British and European Product Standards (see section 2.2.13).

CONTENTS

CHAPTER 1 - GENERAL CONSIDERATIONS

1.1 - CONDITIONS OF USE

1.1.1 Design considerations
See section 2.2.

1.1.2 Application
The assessment of the Product relates to its use in accordance with this Agrément and the Agrément holder's requirements.

1.1.3 Assessment
Kiwa Ltd. has assessed the Product 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 must be controlled by a competent person who must be an employee of the installation company.

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

1.1.5 Geographical scope
The validity of this document is limited to England, Wales, Scotland and Northern Ireland, with due regard to 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 Product 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 - PRODUCTION CONTROL AND QUALITY MANAGEMENT SYSTEM

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

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 Product 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.

CHAPTER 2 - TECHNICAL ASSESSMENT

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

2.1 - PRODUCT COMPONENTS AND ANCILLARY ITEMS

2.1.1 Components included within the scope of this Agrément
The following components are integral to the use of the Product:

Product	Description	Dimensions
Versaroc MPA1	fibre-cement board comprising ordinary Portland cement reinforced with inorganic fibres; mean density 1360 kg/m^3	1200 mm by 2400 mm, available in 9, 12 or 15 mm thicknesses
mechanical fixings	EMF1 self-drilling/self-tapping screws	4.8 mm diameter by 45 mm long
	EMF2 self-drilling/self-tapping screws	4.8 mm diameter by 35 mm long

2.1.2 Ancillary items falling outside the scope of this Agrément
Ancillary items detailed in this section may be used in conjunction with the Product but fall outside the scope of this Agrément:
- LGSF - supporting wall;
- Versatape - for covering open joints;
- Versaseal® intumescent joint compound - for filling open joints.

2.2 - POINTS OF ATTENTION TO THE SPECIFIER

2.2.1 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 installing contractor is responsible for the final as-built design.

2.2.2 Applied building physics (heat, air, moisture)
A competent specialist shall check the hygrothermal behaviour of a project specific design incorporating the Product and, if necessary, can offer advice in respect of 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 consultant Specialist co-operates closely with the Agrément holder).

2.2.3 General design considerations
The supporting wall shall be structurally sound, designed and constructed in accordance with the requirements of the relevant national Building Regulations and Standards, namely:
- BS EN 1090-2;
- BS EN 1993-1-1;
- BS EN 1993-1-3.

During construction, the Product shall:
- be covered with a breather membrane; without a covering, water can penetrate a wall via taped open joints, fasteners and penetrations (e.g. flues, ducts);
- include appropriate detailing with respect to damp proofing at penetrations, openings, eaves and sole plates;
- include a drained cavity between the breather membrane and cladding. The width of the drained cavity is determined by the cladding finish and shall be a minimum of 15 mm.

When using the Product as sheathing at the warm side of framed walls, use a Vapour Control Layer (VCL) at the interior (warm) side of the external wall to limit the risk of interstitial condensation.

LGSF studs shall have minimum dimensions specified by a suitably qualified engineer. Fixings for use with:
- 1-2 mm thick LGSF studs shall be EMF1 self-drilling/self-tapping screws;
- 2-3 mm thick LGSF studs shall be EMF2 self-drilling/self-tapping screws;
- LGSF studs shall have a maximum spacing of 600 mm.

Studding and framing shall be adequately supported by noggins to ensure rigidity.

2.2.4 Project-specific design considerations
The project-specific design shall take into account the service life durability required - see section 2.2.12.

The project-specific design shall take into account the requirements of the national Building Regulations - see section 3.2.

No pre-installation survey is required.

For the purpose of thermal transmittance (hereinafter 'U-value') calculations for a completed wall construction, and to determine if the requirements (of legislation or other statutes) are met, the thermal resistances of wall assemblies shall be calculated in accordance with BS EN ISO 6946, BRE Report 443 and BS 5250 as appropriate.

The Product can limit the air permeability of a wall when all open joints and penetrations are properly sealed using Versatape - see section 2.5.4.

2.2.5 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.

2.2.6 Installer competence level
The Product 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 sort of work.

2.2.7 Delivery, storage and site handling
The Product is delivered to site in suitable packaging, bearing the Product name, the Agrément holder's name and the BDA Agrément® logo incorporating the number of this Agrément.

Prior to installation, store the Product in accordance with the Agrément holder's requirements. Good housekeeping protocols shall be followed to avoid damage.

The Product shall be:
- received palletised in a dry state, with pallets protected from weather by plastic sheeting or similar;
- stored flat on elevated pallets in a well-ventilated, covered area, protected from rain, frost, humidity and damp.

When manually handling the Product, it shall be carried vertically.

2.2.8 Maintenance and repair
Once installed, the Product 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

2.2.9 Strength
Wind actions shall be calculated in accordance with BS EN 1991-1-4. Special consideration shall be given to locations with high wind-load pressure coefficients, as additional fixings may be necessary.

The Product:
- does not contribute to the racking resistance of LGSF supporting walls; LGSF supporting walls shall withstand racking forces by use of appropriate anchors, plates, braces and connections;
- has been tested in accordance with CWCT Standard Test Methods for Building Envelope and achieved ± 2.4 kPa for serviceability and ± 3.2 kPa for safety. In accordance with BS EN 1990, it is recommended that a partial load factor of 1.5 is used to determine the design wind load to be resisted by the completed wall (see section 2.5.1);
- meets the requirements for Category A, Class 2 fibre-cement boards, in accordance with BS EN 12467 (see section 2.5.1).

Specifiers shall ensure that the LGSF supporting wall has adequate strength to resist all lateral (and any other) loads on its own. No contribution may be assumed from the Product in this regard.

Cladding support brackets and any other applied loads shall be fixed back through the Product to the LGSF supporting wall.

2.2.10 Moisture control
Water impermeability
The Product meets the requirements of Category A with regard to water impermeability when tested in accordance with BS EN 12467.

External walls shall:
- have suitable weather protection on the outside;
- incorporate a ventilated cavity.

The Product shall be treated as a conventional sheathing board with regard to detailing and damp-proofing at openings, eaves and sole plates, and the fixing of wall ties. Where required by the project-specific design, the addition of a breather membrane shall be in accordance with BS 5250.

Moisture movement
The Product is resistant to moisture movement, in accordance with BS EN 12467.

2.2.11 Fire performance
The Product is classified as:
- European Classification A1, in accordance with BS EN 13501-1;
- non-combustible and is not subject to any restriction on building height or proximity to boundaries.

The fire resistance of walls is based on the occupancy, size and use of a building and shall be a minimum of 30 minutes. It is then specified in 60-minute intervals thereafter. The fire resistance shall be confirmed by tests or assessments by a suitably accredited laboratory.

It is recommended that open joints are either filled using Versaseal® intumescent joint compound or covered with Versatape.

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

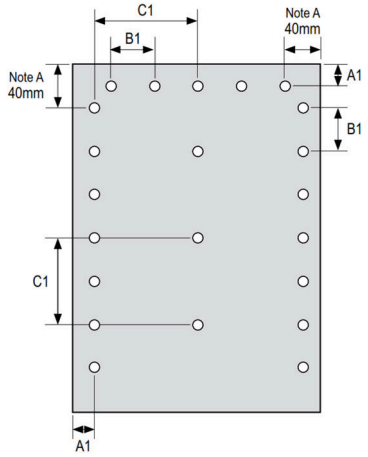
Specifiers shall refer to the relevant national Building Regulations for detailed conditions of use regarding requirements for substrate fire performance, cavity closers and barriers, fire stopping of service penetrations and combustibility limitations for other materials, thermal insulation, cladding and components used in the overall wall construction.

2.2.12 Durability
The service life durability of the Product shall have a service life durability equivalent to that of the building into which it is incorporated. The expected lifespan of the building itself should be at least 60-years.

2.2.13 UKCA and CE marking
The European standard for the Product is BS EN 12467.

2.3 - EXAMPLES OF TYPICAL DETAILS

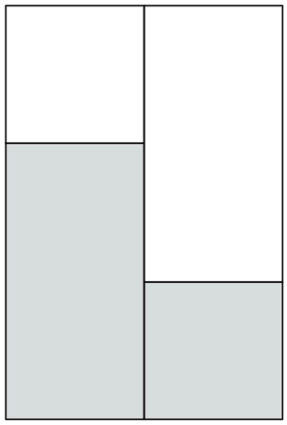
Diagram 1 - fixing centres



Note A:
- the first fixing from the corner for both horizontal and vertical fixings shall be 40 mm from the edge of the Product.

Product thickness (mm)	Fixing centres (mm)		
	A1	B1	C1
9-12	15	300	600

Diagram 2 - recommended Product configuration (brick bond)



Note:
- four-way joints are not recommended;
- minimum Product width shall not be less than 600 mm.

2.4 - INSTALLATION

The Product shall be installed strictly in accordance with the instructions (hereinafter 'Installation Manual') of the Agrément holder and the requirements of this Agrément.

2.4.1 Installer competence level
See section 2.2.6.

2.4.2 Delivery, storage and site handling
See section 2.2.7.

2.4.3 Project-specific installation considerations
No pre-installation survey is required for the installation of the Product.

2.4.4 Preparation
The following considerations apply before starting work:
- the LGSF supporting wall shall be correctly constructed and structurally sound.

The following works shall be undertaken before the installation of the Product:
- check that the edges of the Product are sound; discard damaged Product or cut away damaged edges;
- check the alignment of LGSF studs for level and plumb; ensure no members are distorted.

2.4.5 Outline installation procedure
The detailed installation sequence can be found in full in the Agrément holder's Installation Manual.

The key sequence for installation is:
- ensure the Product is the correct size to allow for correct arrangement;
- fix the Product using the correct fixing centres;
- use fixings with a regular spacing along the perimeter of the Product; space fixings in the centre of the Product at a maximum of twice that of the spacing of the perimeter fixings;
- fill open joints using Versaseal® intumescent joint compound or cover with Versatape;
- maintain a joint of 3-6 mm between each Product to allow movement due to moisture and temperature.

2.4.6 Finishing
The following finishing is required on completion of the installation:
- cover the Product with a breather membrane.

2.5 - INDEPENDENTLY ASSESSED PRODUCT CHARACTERISTICS

2.5.1 Strength

Test		Standard	Result
Wind-uplift resistance^	(serviceability), design load	CWCT	2.4 kPa
	(safety), peak test (suction)		3.2 kPa

^ values for LGSF supporting walls constructed from 50 mm by 92.4 mm by 1.2 mm thick studs at 600 mm centres with EMF1 self-drilling/self-tapping screws at 300 mm centres along the perimeter and 600 mm centres to the intermediate studs

2.5.2 Moisture control

Test	Standard	Result
Water impermeability	BS EN 12467	Pass
Moisture movement (mean)		0.0148 %

2.5.3 Fire performance

Test	Standard	Result
Reaction to fire classification	BS EN 13501-1	A1

2.5.4 Other material properties

Test		Standard	Result
Air leakage rate of Product with open joints	with 1 mm joint unsealed^	BS EN 12114	4.75 l/m/s
	with 1 mm joint sealed using Versatape^^		no air leakage
Durability against soak/dry, warm water soak, freeze/thaw and heat/rain		BS EN 12467	Category A
Thermal conductivity (λ_D)		ASTM C518-17	0.260 W/mK

^ total air flow = 6.22 l/s

^^ total air flow = 2.74 l/s

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 - THE NATIONAL BUILDING REGULATIONS

In the opinion of Kiwa Ltd., the Product, 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.

This Agrément shall not be construed to confer 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 Product can withstand wind pressures when installed on a suitable supporting wall
- B4(1) External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another
- C2(b) Resistance to moisture - the Product can resist the passage of moisture when installed in accordance with the requirements of this Agrément
- Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance provided it is installed in accordance with the requirements of this Agrément
- Regulation 7(2) Materials and workmanship - the Product can contribute to satisfying this Requirement

3.2.2 - WALES
THE BUILDING REGULATIONS 2010 AND SUBSEQUENT AMENDMENTS

- A1 Loading - the Product can withstand wind pressures when installed on a suitable supporting wall
- B4(1) External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another
- C2(b) Resistance to moisture - the Product can resist the passage of moisture when installed in accordance with the requirements of this Agrément
- Regulation 7(1) Materials and workmanship - the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance provided it is installed in accordance with the requirements of this Agrément
- Regulation 7(2) Materials and workmanship - the Product can contribute to satisfying this Requirement

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

3.2.3.1 Regulations 8 (1)(2) Fitness and durability of materials and workmanship

- the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance provided it is installed in accordance with the requirements of this Agrément

3.2.3.2 Regulation 9 Building Standards - Construction

- 1.1 Structure - the Product can withstand wind pressures when installed on a suitable supporting wall
- 2.6 Fire spread to neighbouring buildings - the Product can inhibit the spread of the fire to neighbouring buildings
- 2.7 Fire spread on external walls - the Product can inhibit the spread of fire on external walls
- 3.10 Precipitation - the Product can resist precipitation penetrating to the inner face of a building
- 7.1(a)(b) Statement of sustainability - the Product can contribute to satisfying the relevant Requirements of Regulation 9, Standards 1 to 6, and therefore can contribute to a construction meeting a bronze level of sustainability as defined in this Standard; in addition, the Product 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(a)(i)(iii)(iv)(b) Fitness of materials and workmanship - the Product is manufactured from suitably safe and durable materials for its application and can be installed to give a satisfactory performance provided it is installed in accordance with the requirements of this Agrément
- 28(b) Resistance to moisture and weather - the Product can be constructed to prevent the passage of moisture
- 30 Stability - the Product can withstand wind pressures when installed on a suitable supporting wall
- 35 Internal fire spread (structure) - the Product can inhibit the spread of a fire within a building
- 36(a) External fire spread - the Product can adequately resist the spread of fire over walls and from one building to another

3.3 - THIRD-PARTY ACCEPTANCE

None requested by the Agrément holder.

CHAPTER 4 - SOURCES

- BS EN ISO 6946:2017 Building components and building elements. Thermal resistance and thermal transmittance. Calculation methods
- BS EN 1090-2:2018 Execution of steel structures and aluminium structures. Technical requirements for steel structures
- BS EN 1990:2002+A1:2005 Eurocode - Basis of structural design
- NA to BS EN 1990:2002+A1:2005 UK National Annex for Eurocode - Basis of structural design
- 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 1993-1-1:2005+A1:2014 Eurocode 3. Design of steel structures - General rules and rules for buildings
- NA+A1:2014 to BS EN 1993-1-1:2005+A1:2014 Eurocode 3. UK National Annex to Eurocode 3: Design of steel structures - General rules and rules for buildings
- BS EN 1993-1-3:2006 Eurocode 3. Design of steel structures - General rules - Supplementary rules for cold-formed members and sheeting
- NA to BS EN 1993-1-3:2006 UK National Annex to Eurocode 3. Design of steel structures -General rules - Supplementary rules for cold-formed members and sheeting
- BS EN 12114:2000 Thermal performance of buildings. Air permeability of building components and building elements. Laboratory test methods
- BS EN 12467:2012+A2:2018 Fibre-cement flat sheets. Product specification and test methods
- BS EN 13501-1:2018 Fire classification of construction products and building elements - Classification using data from reaction to fire tests
- BS 5250:2021 Management of moisture in buildings. Code of practice
- ASTM C518-17:2017 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- BRE Report 443:2006 Conventions for U-value calculations
- CWCT Standard Test Methods for Building envelopes:2005

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 Product may be subject to change, and the Agrément holder should be contacted for clarification of revisions.

CHAPTER 5 - AMENDMENT HISTORY

Revision	Amendment description	Author	Approver	Date
-	First Issue	C Devine	C Vurley	November 2021

CHAPTER 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.

For full terms and conditions refer to Kiwa Ltd.