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Agrément Certificate
14/5171
Product Sheet 1

ABET LAMINATI CLADDING PRODUCTS

MEG EXTERIOR CLADDING PANELS

This Agrément Certificate Product Sheet⁽¹⁾ relates to MEG Exterior Cladding Panels, compact composite panels used in conjunction with a suitable timber or aluminium sub-frame to provide a protective/decorative cladding over the external walls of new or existing buildings.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Strength and stability — the panels fixed to a suitable sub-frame can withstand the wind pressures likely to be encountered in the UK (see section 6).

Behaviour in relation to fire — MEG and MEG F1 panels when tested for reaction to fire, achieved a classification C-s2,d0 and B-s1,d0, respectively, therefore, can be incorporated in a construction meeting regulatory requirements (see section 7).

Air and water penetration — providing the joints between panels are adequately baffled, the cladding system incorporating the product will adequately protect the substrate wall (see section 8).

Durability — the panels have acceptable durability and can be expected to have an ultimate life of at least 30-years (see section 10).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

A handwritten signature in black ink that reads 'B Chamberlain'.

Brian Chamberlain
Head of Approvals — Engineering

A handwritten signature in black ink that reads 'Claire'.

Claire Curtis-Thomas
Chief Executive

Date of First issue: 3 November 2014

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, MEG Exterior Cladding Panels, if installed, used and maintained in accordance with this Certificate, will satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	A1(1)	Loading
Comment:		The panels are acceptable for use as set out in sections 4.4 and 6.1 to 6.6 of this Certificate.
Requirement:	B4(1)	External fire spread
Comment:		The panels can satisfy this Requirement. See sections 7.1 to 7.3 of this Certificate.
Requirement:	C2(b)(c)	Resistance to moisture
Comment:		The panels will contribute to satisfying this Requirement. See section 8 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The panels are acceptable. See sections 10.1 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The panels can contribute to a construction satisfying this Regulation. See sections 9.1, 9.2, 10.1 and <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)	Structure
Comment:		The panels are acceptable, with reference to clause 1.1.1 ⁽¹⁾⁽²⁾ . See sections 4.4 and 6.1 to 6.6 of this Certificate.
Standard:	2.6	Spread to neighbouring buildings
Standard:	2.7	Spread on external walls
Comment:		The panels can satisfy these Standards, with reference to clauses 2.6.4 ⁽¹⁾⁽²⁾ to 2.6.7 ⁽¹⁾⁽²⁾ , and 2.7.1 ⁽¹⁾⁽²⁾ respectively. See sections 7.1 to 7.4 of this Certificate.
Standard:	3.10	Precipitation
Comment:		The panels will contribute to satisfying this Standard, with reference to clauses 3.10.1 ⁽¹⁾⁽²⁾ to 3.10.3 ⁽¹⁾⁽²⁾ , 3.10.5 ⁽¹⁾⁽²⁾ and 3.10.6 ⁽¹⁾⁽²⁾ . See section 8 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The panels can contribute to satisfying 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. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012

Regulation:	23(a)(i)(iii)	Fitness of materials and workmanship
Comment:		This panels are acceptable. See section 10.1 and <i>Installation</i> part of this Certificate.
Regulation:	28(b)	Resistance moisture and weather
Comment:		The panels will contribute to satisfying this Regulation. See section 8 of this Certificate.
Regulation:	30	Stability
Comment:		The panels are acceptable as set out in sections 4.4 and 6.1 to 6.6 of this Certificate.
Regulation:	36(a)	External fire spread
Comment:		The panels can satisfy this Regulation. See sections 7.1 to 7.3 of this Certificate.

Construction (Design and Management) Regulations 2007

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2 and 3.3) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of MEG Exterior Cladding Panels, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 6.9 *Curtain walling and cladding*.

CE marking

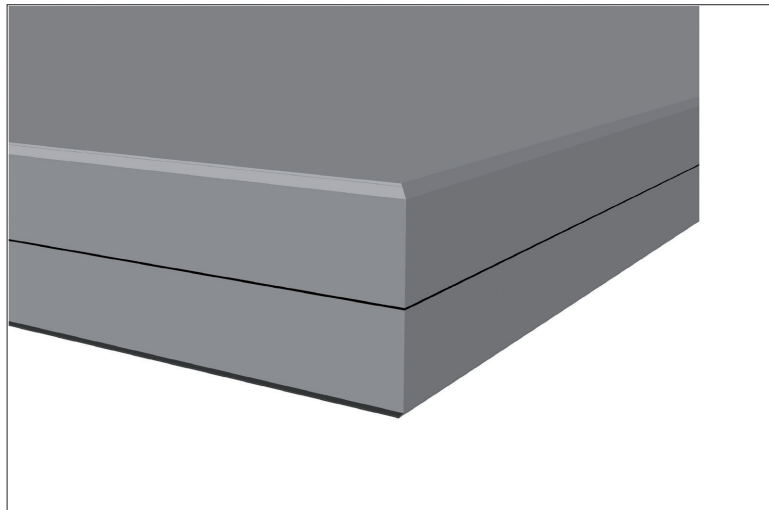
The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard BS EN 438-7 : 2005.

Technical Specification

1 Description

1.1 MEG Exterior Cladding Panels are a thermosetting high pressure, resin laminate, formed from layers of kraft and decor paper, impregnated with phenolic and melamine resins, respectively. The panels are available in two grades; a standard (MEG) and fire retardant (MEG F1). The two grades are distinguishable by the colour of a narrow line along the length at the centre of the panel edges (black for standard, white for fire retardant). One or both sides of the panel can have a decorative surface. In the case of single single-sided, the reserve face is not suitable for exterior facing unless requested.

Figure 1 MEG Panel (standard panel shown)



1.2 The panels are available to the specification shown in Table 1.

Table 1 Panels specification

Characteristic (unit)	value
Size (mm)	3050 x 1300, 3660 x 1610, 4200 x 1300, 4200 x 1610
Thickness (mm)	6 (± 0.3), 8 (± 0.4), 10 (± 0.5)
Density (g·cm ⁻³)	1.35
Weight according surface area (kg·m ⁻²)	8.6 (± 0.4), 11.4 (± 0.6), 14.3 (± 0.7)

1.3 Corner panels are also available in various sizes at 8 mm and 10 mm thicknesses. These are formed from standard panels by routing out a section down the length of the panels, bending the panels to the required angle, and then reinforcing the corner with a polyurethane resin.

1.4 The panels are available in a range of approved colours, in standard, metal, rock, concrete and wood ranges, as referenced in Table 2.

Table 2 Approved range and manufacturer's colour reference

Range	Manufacturer's colour reference
Plain colours	819, 1813, 414, 416, 1805, 854, 475, 1810, 871, 879, 898, 1801, 860, 1812, 431, 1802, 450, 1804, 842, 838, 421
Metal effect	713, 710, 711
Rock effect	545
Concrete effect	2802, 2800
Wood effect	758, 749, 754, 756, 757, 759, 748, 717, 719, 718, 631, 604, 633, 634, 781, 771, 780, 779, 782, 769, 778, 772, 768, 770

1.5 Ancillary items used in conjunction with panels but outside the scope of this Certificate:

- screws — used to fix panels when used in conjunction with timber supporting sub-frame
- rivets — used to fix panels when used in conjunction with aluminium vertical support sub-frame
- nylon caps — to match panel colour and protect fixings
- gasket — such as EPDM fixed between panels and timber support as weatherproofing
- support sub-frame — aluminium or timber vertical support framework fixed to the substrate
- trims/profiles — PVC or aluminium as required
- black PVC tape — used over aluminium vertical support
- insulation — rigid type (eg boards or batts)
- cavity barriers.

2 Manufacture

2.1 The panels are manufactured from impregnated papers and formed by compression using a heated press.

2.2 The manufacturing process involves the combined application of heat ($\geq 120^{\circ}\text{C}$) and high pressure ($\geq 5\text{ MPa}$) in multi-daylight presses in which resin poly-condensation takes place.

2.3 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.4 The management system of Abet Laminati S.p.A. Italia, where the product is manufactured, has been assessed and registered as meeting the requirements of ISO 9001 : 2008 by SGS Italia (Certificate No. IT07/1037) and ISO 14001 : 2004 by Bureau Veritas Italia (Certificate No. IT242505).

2.5 The management system of Abet Limited UK, has been assessed and registered as meeting the requirements of ISO 9001 : 2008 Lloyd's Register Quality Assurance Limited (Certificate No. LRQ 0960783) and ISO 14001 : 2004 by Lloyd's Register Quality Assurance Limited (Certificate No. LRQ 4004574).

3 Delivery and site handling

3.1 Each panel bears a label giving details of traceability including date of manufacture.

3.2 Panels are delivered to site stacked and strapped securely to pallets.

3.3 The panels must be stored on a flat, level surface clear of the ground, either inside in the dry, or under cover fully protected from the weather.

3.4 Each panel must be lifted up clear of the remaining stack and not slid across the underlying panels, to avoid scratching.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on MEG Exterior Cladding Panels.


Design Considerations

4 General

4.1 MEG Exterior Cladding Panels are satisfactory for use externally as a decorative and protective facing and are suitable for fixing to either timber or aluminium sub-frames, in residential and commercial new and existing buildings.

4.2 All design aspects of the installation should be checked by a suitably qualified and experienced individual in accordance with the requirements of the relevant national Building Regulations and Standards.

4.3 The cavity behind the cladding should be a minimum width of 38 mm, with a minimum ventilation area of 1000 mm² per metre run of cladding (see section 8). The ventilation openings should be suitably protected, or baffled, to prevent the ingress of birds, vermin and rain.

 4.4 The wall and the sub-frame to which the cladding is fixed should be structurally sound and constructed in accordance with the requirements of the relevant national Building Regulations and Standards.

4.5 The substrate to which the panels are fixed should be fire rated. No contribution from the cladding system should be assumed in this regard.

4.6 The wall to which the panels are fixed should be watertight and resistant to the transmission of sound.

4.7 Any insulation behind the panels should be suitably fixed to the supporting wall, and protected, to resist the forces of wind suction. Insulation should be of a rigid type (eg boards or batts) and where its performance could be diminished by moisture, a breather membrane should be provided over its outer face. The ventilation pathway behind the cladding must not be allowed to become blocked nor the insulation dislodged where it may be vulnerable to wetting.

4.8 To allow for expansion, the panels should be fixed to the sub-frame using the specified screw through close tolerance holes at the middle and oversized holes of appropriate diameter at the edges of the panel.

4.9 A gap of 10 mm should be provided between adjacent panels. The panels should not straddle any gaps provided for expansion between sub-frame members.

4.10 The air space between the back of the panels and the supporting wall or insulation (where specified) must be a minimum 38 mm as given in *NHBC Standards 2014*, Chapter 6.9, while allowing for conventional building tolerances.

5 Practicability of installation

The panels are designed to be installed by a competent builder experienced with ventilated rainscreen cladding systems.

6 Strength and stability



6.1 Panels, screwed to timber battens or riveted to aluminium sub-frames by conventional techniques, can withstand the wind pressures likely to be encountered in the United Kingdom, subject to suitable design.

6.2 The bending characteristics of the panels are given in Table 3.

Table 3 Bending characteristics

Characteristics (units)	longitudinal	transverse
Bending strength (N·mm ⁻²)	160	110
Elastic modulus (N·mm ⁻²)	13 000	10 000

6.3 The minimum mean ultimate pull-through and shear values for typical fixings were determined as 2 kN and 5 kN, respectively.

6.4 In designing a particular installation, a suitably qualified and experienced individual needs to take into account:

- panels fixings and spacings
- battens and sub-frames
- fixings to substrate
- hygrothermal movement
- wind pressures calculated in accordance with BS EN 1991-1-4 : 2005 and its UK National Annex
- safety factors
- manufacturer's recommendations.

6.5 The cladding panels should not be taken into account when designing a timber stud wall to resist racking forces.

6.6 Panels when tested for hard and soft body impacts, achieved adequate resistance for use in Categories II, III and IV as defined in ETAG 034, Part I (an extract of which is reproduced in Table 4).

Table 4 Definition of Use Categories (reproduced from ETAG 034, Part I, 6.4.4. Table 4)

Use category	Description
I	A zone readily accessible at ground level to the public and vulnerable to hard body impacts but not subjected to abnormally rough use.
II	A zone liable to impacts from thrown or kicked objects, but in public locations where the height of the kit will limit the size of the impact; or at lower levels where access to the building is primarily to those with some incentive to exercise care.
III	A zone not likely to be damaged by normal impacts caused by people or by thrown or kicked objects.
IV	A zone out of reach from ground level

Note: Category I shown for information only and not suitable for this product.

7 Behaviour in relation to fire



7.1 Samples of standard MEG panel and fire retardant MEG F1 panel, when tested for reaction to fire, achieved a classification of C-s2,d0 and B-s1,d0, respectively, in accordance with BS EN 13501-1 : 2007 : 2009.

7.2 The panels may be regarded as having a Class 0 surface or 'low risk' material in accordance with the national Building Regulations. The unexposed side of the panel may also be regarded as having a Class 0 surface.

7.3 For houses in Scotland and for all buildings in England and Wales and Northern Ireland, the panels are suitable for use on, or at any distance from the boundary.



7.4 For flats and maisonettes and non-domestic buildings in Scotland, the panels are suitable only for use more than 1 m from the boundary.

7.5 For resistance to fire, the performance of a wall incorporating the panels can only be determined by tests from a suitably accredited laboratory and is not covered by this Certificate.

7.6 The incorporation of combustible material behind the panels should be avoided wherever possible; any insulation should be non-combustible.

7.7 Cavity barriers should be incorporated behind the panels, as required under the national Building Regulations, for example, by use of intumescent cavity barriers or overhanging non-combustible breaks at each floor level. These should not block essential ventilation and drainage pathways.

8 Air and water penetration

8.1 The panels are suitable for use in back-ventilated and drained rainscreen cladding systems.



8.2 The cladding system will not be airtight or watertight, but intentionally back ventilated and drained. However, the amount of water entering the cavity by wind driven rain will be minimal. Any water collecting in the cavity due to rain or condensation will be removed by drainage and ventilation.

8.3 The supporting wall must be watertight and reasonably airtight.

9 Maintenance and repair



9.1 For normal soiling, the surface may be cleaned using hot water/household detergent, applied with a suitable cleaning pad or sponge. Abrasive cleaners should not be used. For more difficult chemical soiling, the Certificate holder's specialist advice should be sought.

9.2 Annual maintenance inspections should be carried out to ensure that rainware is complete and in good order and that features such as panels, flashings and seals are in place and secure.

9.3 Damaged panels should be replaced as soon as is practicable, following the Certificate holder's instructions and observing all necessary health and safety regulations.

10 Durability



10.1 Accelerated weathering tests and limited natural exposure trials indicate that the product will perform effectively as a cladding panels with an ultimate life of at least 30-years and a decorative life of at least 15-years, in heavily polluted areas, and at least 20-years in other areas.

10.2 Some colour fading is to be expected over this period, but this should be slight and uniform and not detract unduly from the overall appearance of the installation.

11 Reuse and recyclability

The panels comprise materials which can be recycled.

Installation

12 General

12.1 The MEG Exterior Cladding Panels must be installed in accordance with the Certificate holder's recommendations, the requirements of this Certificate and the specification laid down by a qualified engineer for a particular installation.

12.2 The panels can be installed under normal site conditions using the conventional cutting, drilling and machining techniques recommended by the manufacturer. However, care should be exercised when installing cladding panels above ground-floor level.

12.3 Care must be taken to ensure that fixings are placed centrally in drill holes.

12.4 In selecting fixings for use with aluminium sub-frame, caution must be exercised to ensure compatibility of fixings with both panel and sub-frame.

13 Replacement

13.1 If a panel should become damaged and require replacement, the fixings must be removed and the damaged panel lowered to a safe position.

13.2 The supporting sub-frame should be inspected to ensure it can accept a replacement panel without detriment to the façade level line. The sealing strip, where used, should be checked for damage.

13.3 If the original supporting sub-frame is retained, the new panel should be pre-drilled to a slightly different configuration to avoid re-employing the same fixing holes.

13.4 The new panel should be installed using the specified number of fixings and maintaining the correct panel gaps, squareness and level, and the specified edge distance and spacing. New matching colour caps should be inserted.

Technical Investigations

14 Tests

Tests were carried out by the BBA to determine:

- retention of appearance after UV exposure and bending strength, after heat and water soak ageing
- dimensional stability
- pull-through and shear strength of typical fixings
- resistance to hard and soft body impact
- behaviour under thermal shock.

15 Investigations

15.1 An examination was made of data relating to:

- behaviour of the cladding in fire
- colour stability
- physical characteristics.

15.2 The manufacturing process was examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS EN 438-7 : 2005 *High-pressure decorative laminates — Sheets based on thermosetting resins (usually called laminates) — Compact laminate and composite panels for internal and external wall and ceiling finishes*

BS EN 1991-1-4 : 2005 : 2010 *Eurocode 1 — Actions on structures — General actions — Wind actions*
NA to BS EN 1991-1-4 : 2005 *UK National Annex to Eurocode 1 : Actions on structures — General actions — Wind actions*

BS EN 13501-1 : 2007 : 2009 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

ETAG 034 *Guideline for European Technical Approval of kits for external wall claddings — Ventilated cladding kits comprising cladding components and associated fixing*

ISO 9001 : 2008 *Quality Management Systems — Requirements*

ISO 14001 : 2004 *Environmental Management Systems — Specification with guidance for use*

16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

16.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

16.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

16.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

16.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.