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Agrément Certificate
07/4444
Product Sheet 1 Issue 4

MANNOK INSULATION

MANNOK THERM LAMINATE – INSULATED COMPOSITE BOARD

This Agrément Certificate Product Sheet(1) relates to Mannok Therm Laminate – Insulated Composite Board, a rigid polyisocyanurate (PIR) foam board with composite foil or foil/kraft paper facings, bonded to plasterboard. The product is for use, as an internal insulated dry lining for external masonry walls, and also as a lining to the underside of rafters in pitched roofs, of new or existing domestic and non-domestic buildings with height restrictions in some cases.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:
- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:
- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:
- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

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

Date of Fourth issue: 10 January 2024
Originally certificated on 01 November 2007

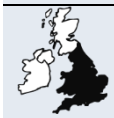
Hardy Giesler
Chief Executive Officer

SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that Mannok Therm Laminate – Insulated Composite Board, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



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

Requirement:	**B2(1)**	**Internal fire spread (linings)**
Comment:		The product is unrestricted by this Requirement. See section 2 of this Certificate.
Requirement:	**B3(4)**	**Internal fire spread (structure)**
Comment:		The product can contribute to satisfying this Requirement. See section 2 of this Certificate.
Requirement:	**B4(1)**	**External fire spread**
Comment:		The product is restricted by this Requirement. See section 2 of this Certificate.
Requirement:	**C2(c)**	**Resistance to moisture**
Comment:		The product can contribute to satisfying this Requirement. See section 3 of this Certificate.
Requirement:	**L1(a)(i)**	**Conservation of fuel and power**
Comment:		The product can contribute to satisfying this Requirement, however, compensating fabric measures may be required. See section 6 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**7(2)**	**Materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**25B**	**Nearly zero-energy requirements for new buildings**
Regulation:	**26**	**CO_2 emission rates for new buildings**
Regulation:	**26A**	**Fabric energy efficiency rates for new dwellings (applicable to England only)**
Regulation:	**26A**	**Primary energy rates for new buildings (applicable to Wales only)**
Regulation:	**26B**	**Fabric performance values for new dwellings (applicable to Wales only)**
Regulation:	**26C**	**Target primary energy rates for new buildings (applicable to England only)**
Regulation:	**26C**	**Energy efficiency rating (applicable to Wales only)**
Comment:		The product can contribute to satisfying these Regulations; however, compensating fabric/services measures may be required. See section 6 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Fitness and durability of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**8(3)**	**Fitness and durability of materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.

Regulation:	**9**	**Building standards - construction**
Standard:	2.4	Cavities
Comment:		The product can contribute to satisfying this Standard with reference to clauses 2.4.2(1)(2), 2.4.4(1) and 2.4.6(2). See section 2 of this Certificate.
Standard:	2.5	Internal linings
Comment:		The product is unrestricted by this Standard, with reference to clause 2.5.1(1)(2). See section 2 of this Certificate.
Standard:	3.15	Condensation
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.15.1(1)(2), 3.15.4(1)(2) and 3.15.5(1)(2). See section 3 of this Certificate.
Standard:	6.1(b)(c)	Energy demand and carbon dioxide emissions
Comment:	(d)	The product can contribute to satisfying this Standard with reference to clauses 6.1.1(1), 6.1.2(2) and 6.1.6(1), however, compensating fabric/services measures may be required. See section 6 of this Certificate.
Standard:	6.2	Building insulation envelope
Comment:		The product can contribute to satisfying this Standard with reference to clauses, or parts of clauses, 6.2.1(1)(2), 6.2.3(1), 6.2.4(2), 2.8(1), 6.2.9(2) and 6.2.12(1), however, compensating fabric measures may be required. See section 6 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The product 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. In addition, the product can contribute to a construction meeting a higher level of sustainability as defined in this Standard with reference to clauses 7.1.4(1), 7.1.6(1)(2), 7.1.7(1) , 7.1.9(2), and 7.1.10(2). See section 6 of this Certificate.
Regulation:	**12**	**Building standards - conversions**
Comment:		All comments given for the product under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1(1)(2) and Schedule 6(1)(2).

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	**23(1)(a)(i) (iii)(b)(i)(ii)**	**Fitness of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**23(2)**	**Fitness of materials and workmanship**
Comment:		The product is restricted by this Regulation. See section 2 of this Certificate.
Regulation:	**29**	**Condensation**
Comment:		The product can contribute to satisfying this Regulation. See section 3 of this Certificate.
Regulation:	**34**	**Internal fire spread — linings**
Comment:		The product is unrestricted under this Regulation. See section 2 of this Certificate.
Regulation:	**35(4)**	**Internal fire spread - structure**
Comment:		The product can contribute to satisfying this Regulation. See section 2 of this Certificate.

Regulation:	**36(a)**	**External fire spread**
Comment:		The product is restricted by this Regulation in some cases. See section 2 of this Certificate.
Regulation:	**39(a)(i)**	**Conservation measures**
Comment:		The product can contribute to satisfying this Regulation, however, compensating fabric measures may be required. See section 6 of this Certificate.
Regulation:	**40(2)**	**Target carbon dioxide emission rate**
Regulation:	**43(1)(2)**	**Renovation of thermal elements**
Regulation:	**43B**	**Nearly zero-energy requirements for new buildings**
Comment:		The product can contribute to satisfying these Regulations, however, compensating fabric/services measures may be required. See section 6 of this Certificate.

Additional Information

NHBC Standards 2024

In the opinion of the BBA, Mannok Therm Laminate – Insulated Composite Board, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 6.1 *External masonry* walls, 7.2 *Pitched Roofs* and 9.2 *Wall and ceiling finishes.*

Fulfilment of Requirements

The BBA has judged Mannok Therm Laminate – Insulated Composite Board to be satisfactory for use as described in this Certificate. The product has been assessed as an internal insulated dry lining for external masonry walls, and also as a lining to the underside of rafters in pitched roofs, of new or existing domestic and non-domestic buildings with height restrictions in some cases.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. Mannok Therm Laminate – Insulated Composite Board consists of a rigid PIR foam board with composite foil or foil/kraft paper facings, bonded to Type A tapered edge gypsum plasterboard to BS EN 520 : 2004.

The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Product	Board size (mm)	Plasterboard thickness (mm)	PIR insulation thickness (mm)	Edge profile	Board facings	Fixing method
Mannok Therm Laminate-Foil/MLF	2400 x 1200 2438 x 1200 2700 x 1200 2743 x 1200 3000 x 1200	9.5 or 12.5	20, 25, 30, 38, 50, 60, 70, 80	Square	Composite foil-facing each side, one side printed and bonded to plasterboard, other side unprinted	Mechanical fixing only
Mannok Therm Laminate-Kraft/MLK	2400 x 1200 2438 x 1200 2700 x 1200 2743 x 1200 3000 x 1200	9.5 or 12.5	20, 25, 30, 38, 50, 60, 70, 80	Square	Foil/kraft paper facing each side (no printing), one side bonded to plasterboard	Direct bonding (adhesive) or mechanical fixing

Ancillary Items

The Certificate holder recommends the following ancillary items for use with the product, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- gypsum-based dry-lining adhesive compound (plaster dabs) to BS EN 14496 : 2017
- metal component furring systems to BS EN 14195 : 2005
- mechanical fasteners including dry wall screws, plasterboard nails and nailable plugs to BS EN 14566 : 2008
- metal edge and corner beads to BS EN 14353 : 2017
- jointing materials including scrim tape and jointing compound to BS EN 13963 : 2014
- softwood timber battens.

Application

The product is intended for use as an insulated dry lining board that may be applied:

- to the internal face of solid or cavity masonry walls of new and existing, domestic and non-domestic buildings
- to the underside of sloping rafters in pitched roofs.

The product may be installed on masonry construction including clay and calcium silicate bricks, concrete blocks, and natural and reconstituted stone blocks, with height restrictions in some cases (see section 2).

Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Not applicable.

2 Safety in case of fire

Data were assessed for the following characteristics.

2.1 Reaction to fire

2.1.1 The product was tested for reaction to fire and the classification is given in Table 2.

Table 2 Reaction to fire classification

Product assessed	Assessment method	Requirement	Result
Mannok Therm Laminate-Foil/MLF	UNE EN 13501-1 : 2019	Value achieved	B-s1, d0(1)
Mannok Therm Laminate-Kraft/MLK			

(1) Applus+ Laboratories report 22/32300973-2 M3, 3 February 2023. Copies are available from the Certificate holder on request.

2.1.2 The Certificate holder has not declared a reaction to fire classification for the insulation component (reverse side).

2.1.3 On the basis of data assessed, the product will be restricted in use under the documents supporting the national Building Regulations in some cases.

2.1.4 In England, the product must not be used on residential buildings with a storey 11 m or more above the ground, or on any other building with a storey 18 m or more above the ground.

2.1.5 In Wales and Northern Ireland, the product must not be used on buildings with a storey 18 m or more above ground level.

2.1.6 In Scotland, the product must not be used on buildings with a storey 11 m or more above the ground or within 1 m of a relevant boundary.

2.1.7 Where the reverse side forms the face of an internal cavity, the cavity must be subdivided with cavity barriers in accordance with the requirements of the documents supporting the national Building Regulations.

2.2 Resistance to fire

Where the product is incorporated in a wall construction where fire resistance is required by the documents supporting the national Building Regulations, the fire resistance must be confirmed by a suitably experienced and competent individual.

3 Hygiene, health and the environment

Data were assessed for the following characteristics.

3.1 Water vapour permeability

For the purposes of assessing the risk of interstitial condensation, the water vapour resistance/resistivity values may be taken as stated in Table 3.

Table 3 Water vapour resistance/resistivity

Material	Assessment method	Requirement	Result
PIR foam insulation	BS EN ISO 10456 : 2007	Declared value	300 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$
Foil and foil/kraft paper-facing	BS 5250 : 2021		1000 $MN \cdot s \cdot g^{-1}$
Plasterboard	BS EN ISO 10456 : 2007		50 $MN \cdot s \cdot g^{-1} \cdot m^{-1}$

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Data were assessed for the following characteristics.

6.1 Thermal conductivity

6.1.1 The product was tested for thermal conductivity and the results are given in Table 4.

Table 4 Thermal conductivity

Product assessed	Insulation thickness	Assessment method	Requirement	Result
Mannok Therm Laminate-Foil/MLF	20 to 80 mm	Thermal conductivity to BS EN 13165 : 2012	Declared value (λ_D)	0.022 $W \cdot m^{-1} \cdot K^{-1}$
Mannok Therm Laminate-Kraft/MLK				

6.1.2 A design value of 0.21 $W \cdot m^{-1} \cdot K^{-1}$ can be taken for the plasterboard.

6.2 Thermal performance

6.2.1 The facings were tested for emissivity and the results are given in Table 5.

Table 5 Emissivity of the facings

Product assessed	Assessment method	Requirement	Result
Mannok Therm Laminate-Foil/MLF (Unprinted foil-facing)	Aged emissivity to BS EN 15976 : 2011	Declared value	0.03
Mannok Therm Laminate-Kraft/MLK (Unprinted foil/kraft paper facing)			0.14

6.2.2 Example U-values are given in Tables 6 and 7.

Table 6 Example U-values — Solid brickwork wall(1)

U-value ($W \cdot m^{-2} \cdot K^{-1}$)	Mannok Therm Laminate – Insulated Composite Board Thickness of insulation(2) (mm)	
	215 mm brickwork — adhesively fixed with dabs(3)	215 mm brickwork — mechanically fixed on timber battens(4)
0.13	— (5)	— (5)
0.15	— (5)	— (5)
0.17	— (5)	— (5)
0.18	— (5)	— (5)
0.21	— (5)	— (5)
0.26	70	80
0.28	70	80
0.30	60	70

(1) 215 mm thick existing solid brickwork wall (0.77 $W \cdot m^{-1} \cdot K^{-1}$ thermal conductivity).
(2) Thickness of insulation specified excludes plasterboard thickness of 9.5 and 12.5 mm.
(3) Mannok Therm Laminate-Kraft/MLK – (12.5 mm thick plasterboard), direct bonding with 15 mm plaster adhesive dabs (15 mm air cavity). Boards adhesively fixed in addition to 0.69 fully penetrating steel fixings (50 $W \cdot m^{-1} \cdot K^{-1}$) per square metre with a cross-sectional area of 18.2 mm^2 (minimum of two nailable fixings, at midpoint of the board, 25 mm from board edge).
(4) Mannok Therm Laminate-Foil/MLF – (12.5 mm thick plasterboard), mechanical fixing to treated softwood timber battens, 22 mm batten cavity. Boards mechanically fixed with 10.35 fully penetrating steel fixings (50 $W \cdot m^{-1} \cdot K^{-1}$) per square metre with a cross-sectional area of 18.2 mm^2 (47 mm wide timber battens at 600 mm centres maximum).
(5) See section 6.2.4.

Table 7 Example U-values — Underside of pitched roof rafters(1)

U-value ($W \cdot m^{-2} \cdot K^{-1}$)	Mannok Therm Laminate – Insulated Composite Board Thickness of insulation (mm)
0.09	— (2)
0.11	— (2)
0.12	— (2)
0.13	— (2)
0.15	— (2)
0.16	— (2)
0.18	— (2)
0.20	— (2)
0.28	80

(1) Pitched roof construction — concrete tiles on 25 mm timber tile battens (well ventilated) on low-resistance (LR) breather membrane, 47 by 150 mm timber rafters with a low emissivity (0.03) airspace between (11.75%; λ = 0.13 $W \cdot m^{-1} \cdot K^{-1}$), insulation, AVCL, and 12.5 mm plasterboard (λ = 0.25 $W \cdot m^{-1} \cdot K^{-1}$) secured with 14.58 fixings per m^2 – mild steel (λ = 50 $W \cdot m^{-1} \cdot K^{-1}$) with a cross-sectional area of 10.46 mm^2.
(2) See section 6.2.4.

6.2.3 The product can contribute towards a construction satisfying the national Building Regulations in respect of energy economy and heat retention.

6.2.4 For improved energy or carbon savings, designers must consider appropriate fabric and/or services measures.

7 Sustainable use of natural resources

Not applicable.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the product were assessed.

8.2 Service life

Under normal service conditions the product will have a life equivalent to the building in which it is incorporated, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Walls must be designed and constructed in accordance with the relevant clauses of:

- BS 5250 : 2021
- BS 8000-3 : 2001
- BS EN 1996-1-1 : 2005 and its UK National Annex
- BS EN 1996-1-2 : 2005 and its UK National Annex
- BS EN 1996-2 : 2006 and its UK National Annex
- BS EN 1996-3 : 2006 and its UK National Annex.

9.1.3 Roofs must be designed and constructed in accordance with the relevant clauses of:

- BS 5250 : 2021
- BS 8000-3 : 2001
- BS 5534 : 2014
- BS 8212 : 1995
- BS EN 1995-1-1 : 2004 and its National Annex.

9.1.4 All walls must be in a good state of repair without evidence of rain penetration, damp or frost damage, and must be at least two bricks or 200 mm in thickness.

9.1.5 It is essential that proper care and attention is given to maintaining the integrity/continuity of the air and vapour control layer (AVCL).

9.1.6 If present, mould or fungal growth should be treated prior to the application of the product.

9.1.7 Services can be incorporated in the void formed between the insulation and the lining boards, making the chasing of the wall unnecessary. Where the services have a greater depth than the void, the wall must be chased rather than the insulation. Suitable isolation methods, such as conduit or capping, must be used to ensure cables do not come into contact with the insulation. Electrical cables that are likely to come into contact with the insulation are required to be protected by a suitable conduit or PVC-U trunking. The installation of electrical services must be carried out in accordance with BS 7671 : 2018.

9.1.8 As with any form of insulation, de-rating of electrical cables should be considered where the insulation restricts the air cooling of cables.

9.1.9 All services which penetrate the dry lining, eg light switches and power outlets, must be kept to a minimum to limit damage to vapour checks. All perimeters of the board, around service penetrations, openings, junctions and around the perimeter of suspended timber floors must be sealed with a suitable sealant.

9.1.10 The detailed guidance given in the documents supporting the national Building Regulations for the provisions that are applicable when the product is installed in close proximity to certain flue pipes and/or heat producing appliances must be followed.

9.1.11 It is essential that the boards are butted as close as possible to minimise any gaps between them.

9.1.12 The successful installation of an insulating dry lining system requires careful detailing around doors and windows to achieve a satisfactory surface for finishing. In addition, every attempt must be made to minimise the risk of thermal bridging at reveals and where heavy separating walls are attached to the external wall. Thinner boards must be selected to suit site-specific door and window reveal conditions. All work must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads and sills and in relation to ceiling height. Where the dimensions of fixtures are critical (eg bathrooms), these must be checked before installation.

9.1.13 Any object fixed to the wall, other than lightweight items, eg framed pictures, must be fixed through the lining board and insulation into the wall behind, using recommended proprietary fixings. The recommendations of the Certificate holder must be followed.

9.1.14 Calculations of the thermal transmittance (U-value) of a wall or roof must be carried out in accordance with BS EN ISO 6946 : 2017 and BRE Report BR 443 : 2019.

9.1.15 Care must be taken in the overall design and construction of junctions with other elements and openings to minimise thermal bridges and air infiltration and the detailed guidance can be found in the documents supporting the national Building Regulations must be followed.

Interstitial condensation

9.1.16 Walls and roofs incorporating the products will adequately limit the risk of interstitial condensation when they are designed and constructed in accordance with BS 5250 : 2021.

9.1.17 A condensation risk analysis of the specific construction must be undertaken to BS EN ISO 13788 : 2012 and BS 5250 : 2021, using the water vapour transmission values for each component given in Table 3 of this Certificate.

9.1.18 The risk of summer condensation on the foil component must be considered for solid masonry walls, orientated from ESE through south to WSW, in accordance with BRE Report BR 262 : 2002, section 3.10.

9.1.19 Where calculations to BS 5250 : 2021, Section 13 indicate a risk of persistent condensation, a site-specific dynamic analysis to BS EN 15026 : 2007 must be considered.

9.1.20 Provided all joints between the product are sealed in accordance with the Certificate holder's literature, they can offer significant resistance to water vapour transmission.

Surface condensation

9.1.21 In England and Wales, walls and roofs incorporating the product will adequately limit the risk of surface condensation when the thermal transmittance (U-value) does not exceed 0.7 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in section 9.1.15 of this Certificate.

9.1.22 For buildings in Scotland, wall and roof constructions will be acceptable when the thermal transmittance (U-value) does not exceed 1.2 $W \cdot m^{-2} \cdot K^{-1}$ at any point, and the junctions with other elements are designed in accordance with the guidance referred to in BS 5250 : 2021. Further guidance may be obtained from BRE Report BR 262 : 2002 and section 9.1.15 of this Certificate.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance are provided in Annex A of this Certificate.

9.2.3 Existing constructions must be in a good state of repair, with no evidence of rain penetration or damp. Defects must be made good prior to installation.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

Under conditions of normal use, maintenance is not required. However, if the product is damaged during use, it can be readily removed and replaced.

10 Manufacture

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

† 10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the product is delivered to site in packaging bearing the product name, Certificate holder's name, batch number and the BBA logo incorporating the number of this Certificate.

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 The product must be protected from prolonged exposure to sunlight and must be stored either under cover or protected with opaque polythene sheeting. Where possible, packs should be stored inside. If outside, the product must be stacked flat, and raised above ground level and not in contact with ground moisture.

11.2.2 Care must be taken when handling the boards to avoid crushing the edges or corners.

11.2.3 The product must not be exposed to open flame or other ignition sources, or solvents or other chemicals.

11.2.4 If damaged or wet, the product must be discarded.

ANNEX A – SUPPLEMENTARY INFORMATION †

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

CE marking

The Certificate holder has taken the responsibility of CE marking the product, in accordance with harmonised European Standard EN 13165 : 2012.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Certification Europe (Certificate 2005/262 A/8).

Additional information on installation

Preparation

A.1 A detailed survey of the property should be carried out before work starts. The walls must be made good if required and be dry and structurally sound with no evidence of damp, contamination or frost damage, before the product and its ancillary items are installed.

A.2 The survey should include a detailed examination of the internal and external fabric of the building, ensuring that any leaking external pipework and blocked gutters are made good. The efficiency, type and continuity of existing damp-proof course (DPC) materials should be checked. For existing buildings where there is no DPC, the requirement for one must be determined.

A.3 The building must be examined for the following:

- suitability of substrate
- detailing around windows and doors
- position and number of electrical sockets and switches
- wall fittings and fixtures, including coving and skirting
- areas where flexible sealants must be used
- ventilation plates.

A.4 A qualified plumber is required to make alterations to heating systems. A qualified electrician must be used to make good the electrical wirings and services.

A.5 Before starting to fit the product, the position of all main service cable and pipe runs must be clearly marked on the walls to avoid damage. All plaster coving, skirting board and laminate floor angle beads must be removed.

A.6 There should be no gaps at the perimeter (such as floors and ceilings) or junctions (such as internal corners), or around openings or service penetrations. Existing gaps should be sealed before installation commences.

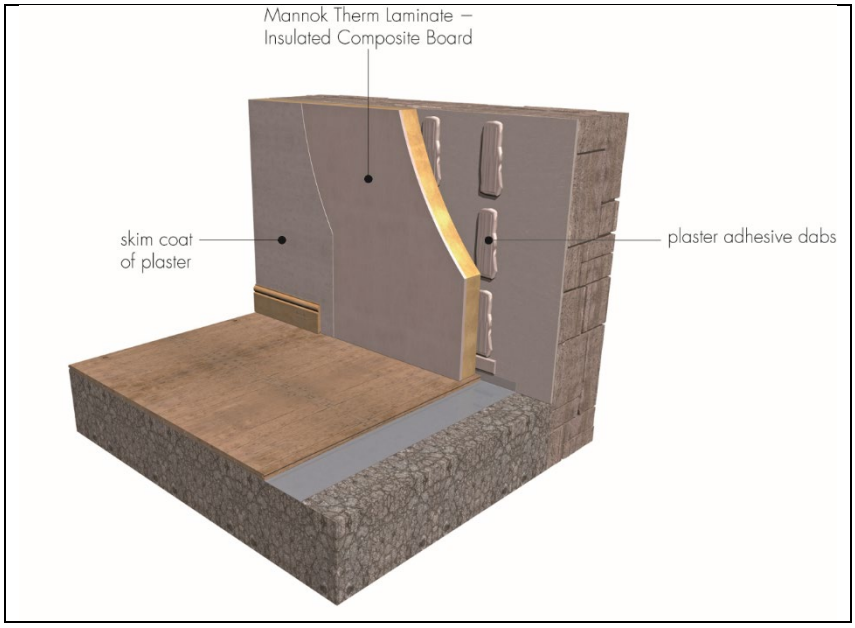
A.7 For existing walls, the wallpaper, skirting, picture rails, gloss paint and projecting window boards should be removed to expose bare walls. The wall surface should be clean and dust free.

A.8 Before fixing the product, sufficient time must be allowed for damp-proofing treatments, where applied, to dry out (for information, see BS 6576 : 2005 for dry-lining in conjunction with a chemical DPC application).

A.9 Care must be taken when exposing electrical cables (see sections 9.1.7 and 9.1.8).

A.10 All insulated dry lining installations require careful planning and setting out. Installation should start from an internal corner or a window or door reveal, and vertical chalk guidelines should be marked on the wall at 1200 mm centres to indicate the positioning of the boards. Installation should be in accordance with BS 8212 : 1995, good dry lining practice and the Certificate holder's instructions. A typical installation method is shown in Figure 1.

Figure 1 Typical installation (adhesively fixed)



A.11 Additional consideration should also be given to the fixing of such features as cupboards and radiators.

A.12 The boards can be cut using a fine-toothed saw. Appropriate Personal Protective Equipment (PPE) must be used when cutting the boards, and cutting should be done in a ventilated space, outside or in an area with dust extraction.

A.13 The boards are cut to fit around windows, doors and air bricks. Care must be taken when trimming the insulation of the product to ensure the foil is not damaged. It is essential that cut pieces completely fill the spaces for which they are intended and are adequately secured. Thinner boards are available to suit door and window reveal conditions. Suitable provisions will also need to be adopted at junctions and other details such as separating floors. A 400 mm return is suggested on the internal/external wall junction. Suitable provisions will also need to be adopted at junctions and other details such as separating floors. Further guidance can be obtained from BRE Report BR 262 : 2002.

Procedure

Direct bonding to a wall using plaster adhesive dabs (Mannok Therm Laminate-Kraft/MLK) — Figure 1

A.14 A continuous bed of adhesive should be applied around the perimeter of the wall as well as around any services or other openings. All conduits and piping should be installed prior to commencement of all works. The insulating backing of the laminates should not be removed to accommodate services.

A.15 Adhesive dabs should be applied in three or four rows (as appropriate, but minimum coverage 20% of the board area) together with intermediate dabs at ceiling level and a continuous band of adhesive at skirting level.

A.16 The boards are positioned with the bottom edge resting on plasterboard packing strips. The boards are tapped into position, lifted tight to the ceiling using a foot-lifter and supported until the adhesive sets. Further boards are installed, lightly butted together, to complete the lining.

A.17 When the adhesive/dabs are set, these should be complemented by the addition of two nailable plugs per board (with a minimum 25 mm penetration into the masonry wall, positioned at mid-height either side of the board and in the tapered edges of boards so they are covered by the finishing processes).

Mechanically fixed to timber battens or metal furrings (Mannok Therm Laminate-Foil/MLF and Mannok Therm Laminate-Kraft/MLK)

A.18 Using suitable mechanical fixings, minimum 25 mm thick by 47 mm wide, treated softwood timber battens or proprietary metal furrings are installed vertically at a maximum of 600 mm centres, along with horizontal battens at the top and bottom of the installation area. Additional lengths of timber batten or metal furring should be installed to coincide with horizontal board joints and around services, doors and windows. The framing must provide a minimum of 20 mm bearing at joints and be of sufficient depth to accommodate the fixings for the system. Metal furring systems can also be bonded to the wall in accordance with the manufacturer's recommendations, and the same preparation and setting out procedure should be used. The adhesive dabs should be applied at centres suitable for the system, typically from 450 to 600 mm.

A.19 The boards are positioned against the timber battens or metal frame with the bottom edge resting on plasterboard packing strips, and the boards should be lifted to the ceiling edge using a floor lifter and supported with additional packing at the base of the board. The board is fixed to the timber battens or metal frame using appropriate dry wall screws. Fixings should be installed at 300 mm centres across the horizontal and vertical elements of the frame. Further boards are installed, closely butted together, to complete the lining.

Mechanically fixed direct to wall (Mannok Therm Laminate-Foil/MLF and Mannok Therm Laminate-Kraft/MLK)

A.20 The boards are positioned with the bottom edge resting on plasterboard packing strips. The boards are placed into position, lifted tight to the ceiling using a foot-lifter and supported with additional packing at the base of the board. The board should be fixed to the wall using suitable stainless steel mechanical fixings at 300 mm centres from the vertical and horizontal board edges with a minimum of 12 fixings per board. Further boards are installed, closely butted together, to complete the lining.

Insulated lining fixed to underside of sloping rafters (Mannok Therm Laminate-Foil/MLF)

A.21 The boards should be fixed into the underside of the rafters. All board joints should be tightly butted against each other to prevent gaps. For guidance on roof tile underlay type and roof ventilation refer to BS 5250 : 2021.

A.22 Jointing and finishing of the plasterboard lining are carried out in the appropriate manner in accordance with BS EN 13914-2 : 2016 applying plasterer's joint tape to all joints. A finishing skim coat of plaster should be applied to complete the installation.

A.23 Any gaps between the ceiling and the wall must be filled.

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