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Agrément Certificate
90/2439
Product Sheet 1

FERMACELL

FERMACELL GYPSUM-FIBREBOARD

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate replaces Certificate 85/1560 and relates to Fermacell Gypsum-Fibreboard, a general-purpose internal lining board for use on internal and external walls and ceilings.

AGRÉMENT 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

Structural performance — the product will contribute to the racking resistance of timber frame walls, when used as a sheathing board (see section 5).

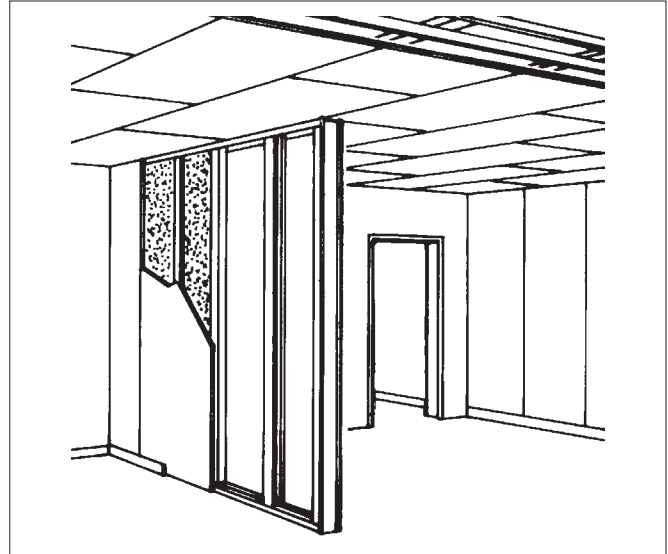
Performance in relation to fire — the product satisfies the Class 0 ('low risk') surface requirements for internal linings (see section 6).

Acoustic performance — the product can be used to improve sound insulation of new and existing walls and ceilings, (see section 7).

Hygrothermal performance — for calculation purposes, the product vapour resistivity may be taken as $1.30 \text{ MNsg}^{-1} \text{ m}^{-1}$ (see section 8).

Infestation and fungal growth — the use of the product does not promote infestation and successfully resists attack by timber destroying fungi (see section 9).

Durability — the product should have a life equal to the building in which it is installed (see section 16).



The BBA has awarded this Agrément 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 First issue: 20 October 2009

Chris Hunt

Greg Cooper

Originally certified on 28 October 1985

Head of Approvals — Physics

Chief Executive

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, Fermacell Gypsum-Fibreboard, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

Requirement: B2(1)(2)	Internal fire spread (linings)
Comment:	The board is classified Class 0 and is unrestricted by this Requirement. See section 6.2 of this Certificate.
Requirement: B3(1)(2)(3)	Internal fire spread (structure)
Comment:	The board will contribute to meeting this Requirement. See sections 6.1 to 6.6 of this Certificate.
Requirement: C2(c)	Resistance to moisture
Comment:	The board can contribute to satisfying this Requirement. See section 8.2 of this Certificate
Requirement: E1	Protection against sound from other parts of the building and adjoining buildings
Requirement: E2(a)(b)	Protection against sound within a dwelling-house etc
Comment:	The board will contribute to meeting these Requirements. See sections 7.2 to 7.7 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The board is an acceptable material. See section 16 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation: 8(1)(2)	Fitness and durability of materials and workmanship
Comment:	The board can contribute to a construction satisfying this Regulation. See sections 15 and 16 and the <i>Installation</i> part of this Certificate.
Regulation: 9	Building standards – construction
Standard: 2.1	Compartmentation
Standard: 2.2	Separation
Standard: 2.4	Cavities
Standard: 2.5	Internal linings
Comment:	The board is classified as ‘low risk’ and is unrestricted by these Standards, with reference to clauses 2.1.12 ⁽²⁾ , 2.2.4 ⁽²⁾ , 2.2.7 ⁽¹⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.3 ⁽¹⁾ , 2.4.4 ⁽¹⁾ , 2.4.5 ⁽²⁾ , 2.4.6 ⁽²⁾ , 2.4.7 ⁽¹⁾ , 2.4.9 ⁽²⁾ and 2.5.1 ⁽¹⁾⁽²⁾ respectively. See section 6.2 of this Certificate. The board is classified as A2, s1, d0 and can contribute to walls and ceilings constructed with the product meeting the requirements of these Standards for fire resistance, with reference to clauses 2.1.1 ⁽²⁾ , 2.1.4 ⁽²⁾ , 2.1.8 ⁽²⁾ to 2.1.12 ⁽²⁾ , 2.2.1 ⁽¹⁾⁽²⁾ , 2.2.7 ⁽¹⁾⁽²⁾ , 2.2.8 ⁽¹⁾ , 2.2.10 ⁽¹⁾ , 2.4.1 ⁽¹⁾⁽²⁾ , 2.4.2 ⁽¹⁾⁽²⁾ , 2.4.3 ⁽¹⁾ and 2.4.5 ⁽²⁾ . See sections 6.1 to 6.6 of this Certificate.
Standard: 3.15	Condensation
Comment:	The board can contribute to satisfying this Standard, with reference to clauses 3.15.1 ⁽¹⁾ , 3.15.4 ⁽¹⁾ and 3.15.5 ⁽¹⁾ . See section 8.2 of this Certificate.
Standard: 5.1	Resisting sound transmission to dwellings
Comment:	The board will contribute to meeting this Standard, with reference to clauses 5.1.4 ⁽¹⁾ to 5.1.11 ⁽¹⁾ . See sections 7.2 and 7.5 to 7.7 of this Certificate.
Regulation: 12	Building standards – conversions
Comment:	All comments given for this product under Regulation 9, 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) 2000 (as amended)

Regulation: B2	Fitness of materials and workmanship
Comment:	The board is an acceptable material. See section 16 and the <i>Installation</i> part of this Certificate.
Regulation: B3(2)	Suitability of certain materials
Comment:	The board is acceptable. See section 15 of this Certificate.
Regulation: C5	Condensation
Comment:	The board can contribute to satisfying this Regulation. See section 8.2 of this Certificate.
Regulation: E3	Internal fire spread – Linings
Comment:	The board is classified Class 0 and is unrestricted by this Regulation. See section 6.2 of this Certificate.
Regulation: E4	Internal fire spread – Structure
Comment:	The board will contribute to satisfying this Regulation. See sections 6.1 to 6.6 of this Certificate.
Regulation: G2(1)(2)	Separating walls and separating floors
Regulation: G3(1)(2)	Existing walls and floors which become separating walls and separating floors
Comment:	The board will contribute to satisfying these Regulations. See sections 7.2 and 7.5 to 7.7 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 sections: 1 *Description* (1.2) and 2 *Delivery and site handling* (2.3).

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Fermacell Gypsum-Fibreboard, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapters 6.3 *Internal walls*, and 8.2 *Wall and ceiling finishes*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Fermacell Gypsum-Fibreboard, when installed and used in accordance with this Certificate, satisfies the requirements of the *Zurich Building Guarantee Technical Manual*, Section 4 *Superstructure*, Sub-section *Sound insulation* and Section 5 *Internal/external works, services & finishes*, Sub-section *Internal works*.

General

This Certificate relates to Fermacell Gypsum-Fibreboard, a general-purpose internal lining board for use on internal and external walls and ceilings of new and existing buildings which can accept direct decoration.

The product improves the acoustic performance of walls and ceilings.

Technical Specification

1 Description

1.1 Fermacell Gypsum-Fibreboard consists of a homogeneous mixture of water, gypsum and cellulose fibre compressed at high pressure.

1.2 The board is light grey in colour, is available as both square edged and tapered edged and is marked on the rear face with the product name and identification. Characteristics of standard boards are:

- size (mm)⁽¹⁾ 600 x 1200, 1200 x 1200, 1000 x 1500, 1200 x 2400
1200 x 2600, 1200 x 2700 and 1200 x 3000
- thickness (mm) 10, 12.5, 15 and 18
- approximate weight (kgm⁻²) 12, 15, 18 and 22 respectively.

(1) Other sizes are available on request up to a maximum of 2540 mm by 6000 mm.

1.3 Quality control tests are carried out on the finished boards to determine:

- density
- geometry
- mechanical properties
- dimensional accuracy
- surface finish
- moisture content.

1.4 The fixing of the board depends on the application and must be in accordance with the Certificate holder's relevant specification.

1.5 Proprietary accessories and fixings comprise:

- Fermacell joint filler
- Fermacell bonding compound — for bonding the boards directly to solid walls
- Fermacell Jointstik adhesive — for butt-glueing the boards
- hollow-head nails — 2.2 mm diameter by 32 mm for fixing the boards to timber framework
- Fermacell screws — 3.9 mm diameter by 30 mm, 40 mm or 55 mm for fixing the boards to timber or metal framework
- steel staples (normal or with diverging points) — in various lengths for fixing Fermacell boards to timber framework or to each other (in case of double boarding)
- Fermacell fine surface treatment (FST) — for smoothing boards ready to accept paint finish.

2 Delivery and site handling

2.1 The board is delivered to site in stacks on wooden pallets. The stacks are wrapped in polythene and have a label marked with the product name, date of manufacture, size and quality control stamp.

2.2 Board should be stored flat on a dry, level surface in a well-ventilated area protected from rain and snow.

2.3 Materials, such as joint filler and bonding compound, must be stored dry. Metal components should also be stored in dry conditions. Packaging for these component items is given in Table 1.

Table 1 Adhesive/fixing packaging and weights

Item	Packaging	Weight
Fermacell joint filler	paper sack	5 kg and 20 kg
Fermacell bonding compound	paper sack	20 kg
Fermacell joint-stick adhesive	cartridge	310 ml tubes at 0.43 kg/tube or 580 ml sachets at 0.84 kg/sachet
Fermacell screws	boxes	0.65 kg, 2.1 kg, 2.6 kg and 3.4 kg

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Fermacell Gypsum-Fibreboard.

Design Considerations

3 General

3.1 Fermacell Gypsum-Fibreboard is satisfactory for use as internal lining board on non-loadbearing and loadbearing internal and external walls and ceilings of new or existing buildings. It will contribute to an improvement in the U value (thermal transmittance) and sound insulation performance of a wall or ceiling, and if installed correctly, will not promote interstitial condensation.

3.2 The product may be incorporated in timber-frame constructions to BS 5268-2 : 2002 or BS EN 1995-1-1 : 2004.

3.3 The product may be incorporated as an internal lining in masonry constructions (masonry includes clay and calcium silicate bricks, concrete blocks, natural and reconstituted stone blocks). Masonry walls of new buildings should be designed and constructed in accordance with BS 5628-3 : 2005 where the wall incorporates stone or cast stone, and in accordance with the relevant recommendations of BS 8000-3 : 2001.

3.4 The product is not intended to improve weather resistance and should not be used as an external cladding. Walls and ceilings should be dry before the product is installed.

3.5 Where the metal sections or timber battens are used, the detailing at doors and windows must accommodate any increased depth. In addition, every attempt should be made to avoid thermal bridging at the reveals of openings and at separating wall/external wall junctions.

3.6 New work must be designed to accommodate the thickness of the dry lining, particularly at reveals, heads, sills and in relation to ceiling heights. Where the dimensions of fixtures are critical (eg bathrooms), these should be checked before installation.

3.7 With installations forming a void, services can be incorporated behind the dry lining, making the chasing of the wall unnecessary. Where the services have a greater depth than the void, the wall can be chased provided the structural integrity is not affected. It is recommended that services penetrating the dry lining, eg light switches, power outlets, are kept to a minimum, or are correctly backed according to the Certificate holder's recommendations.

3.8 When using adhesive-based fixing systems, it is essential to establish, before installation, that a satisfactory bond can be achieved between the walling material and the adhesive. Backgrounds of high suction will obviously behave very differently to those of low suction. If difficulty with adhesion is expected, the Certificate holder's advice should be sought before proceeding.

3.9 When boards are used as a ceiling they must be mechanically fixed.

4 Practicability of installation

The product is designed to be installed by a competent general builder, or a contractor experienced in this type of work.

5 Structural performance

5.1 The board has only been assessed for use on the internal face of walls. However, when used as a sheathing board in timber-frame construction, 12.5 mm Fermacell will contribute to the racking resistance of the frame.

5.2 Tests to BS EN 594 : 1996 were used to derive the basic racking properties given in Table 2. The values indicate that Fermacell 12.5 mm thick sheathing can achieve equivalent racking resistance to that of Category 1 materials as defined in BS 5268-6.1 : 1996, Table 2 (ie in excess of the default value of 1.68 kNm⁻¹)

Table 2 Racking properties of panels⁽¹⁾

Fixing	Basic racking strength to BS 5268-6.1 (kNm ⁻¹) run of wall		Design racking resistance to BS EN 594 and BS EN 1990 (kNm ⁻¹) run of wall ⁽⁴⁾⁽⁵⁾		Vertical loading (kN per stud)
	Square edge	Taper edge	Square edge	Taper edge	
Nailed ⁽²⁾	1.72	1.84	1.71	1.88	0
Nailed ⁽²⁾	—	—	4.34	4.21	5
Stapled ⁽³⁾	1.75	1.80	1.94	1.91	0
Stapled ⁽³⁾	—	—	4.17	3.68	5

- (1) The timber frame with overall dimensions of 2400 mm by 2400 mm comprised grade C16 38 mm by 89 mm top rail, bottom rail and studs at 600 mm centres. The studs were fixed to the top and bottom rail with two 90 mm long by 3.1 mm diameter wire nails.
- (2) Wire nails 2.8 diameter by 50 mm long were used at 150 mm centres around the perimeter of each panel and at 300 mm centres at internal locations.
- (3) Staples with a 10 mm wide crown and 44 mm legs made from 1.5 mm diameter austenitic stainless steel, were used at 150 mm centres around the perimeter of each panel and at 300 mm centres at internal locations.
- (4) These values relate to a wall height of 2.4 metres.
- (5) These values are the minimum of the deflection limited to height/334 or ultimate strength with a factor of 1.6 (calculation based on characteristic values in accordance with BS EN 1990 : 2002, clause D7.2).

5.3 The structural performance of a wall utilising Fermacell sheathing should be validated by a suitably qualified engineer.

6 Performance in relation to fire



6.1 The boards were tested and shown to have a reaction to fire Class A2-s1-d0 in accordance with EN 13501-1 : 2007.

6.2 The board is classified Class 0 ('low risk') in Scotland as defined in the relevant documents supporting the national Building Regulations and so is unrestricted under these regulations.

6.3 A non-loadbearing timber stud internal wall with two layers of 10 mm thick Fermacell board on both faces was tested for fire resistance in accordance with BS 476-8 : 1972. The results of the assessments are given in Table 3.

Table 3 Fire resistance for partitions

Partition specification	Integrity (min)	Insulation (min)
20 (10 + 10) mm Fermacell both sides of 75 mm deep by 50 mm wide timber studs	73	69

6.4 The following tests have been undertaken to BS 476-21 : 1987 on loadbearing walls incorporating Fermacell Gypsum-Fibreboards as a lining:

- The construction from the exposed face out was: 15 mm thick Fermacell board fixed with screws, 1.2 mm thick 'C' channel studs (72 mm deep by 45 mm wide) and 40 mm thick Kingspan insulation board fixed with screws and wall tie channel. A loadbearing capacity, integrity and insulation rating of 34 minutes was achieved⁽¹⁾.
- The construction from the exposed face out was: 15 mm thick Fermacell board fixed with twisted nails, 12.5 mm thick Fermacell board fixed with twisted nails, 1.2 mm thick 'C' channel studs (72 mm deep by 45 mm wide), 75 mm thick Rockwool RW2 Slab friction-fitted into the void between the studs and 12.5 mm thick Fermacell board fixed with twisted nails. A loadbearing capacity, integrity and insulation rating of 72 minutes was achieved⁽¹⁾.

6.5 The following fire tests have been undertaken to BS EN 1365-1 : 1999, on loadbearing internal walls incorporating Fermacell Gypsum-Fibreboards as a lining:

- an internal wall with overall dimensions of 2600 mm high by 3000 mm wide by 114 mm thick and comprising of one layer of 12.5 mm Fermacell Gypsum-Fibreboard on either side, stapled to 89 mm by 38 mm softwood studs at nominal 600 mm centres. A loadbearing capacity, integrity and insulation rating of 40 minutes was achieved⁽¹⁾.
- an internal wall with overall dimensions of 2600 mm high by 3000 mm wide by 127 mm thick and comprising of two layers on the fireside and one layer on the non-fireside of 12.5 mm Fermacell Gypsum-Fibreboards, stapled to 89 mm by 38 mm softwood studs at nominal 600 mm centres and 9.8 kgm⁻³ glasswool sandwiched between the softwood studs. A loadbearing capacity, integrity and insulation rating of 67 minutes was achieved⁽¹⁾.

(1) A full description of the construction and fixings used in this test can be obtained from the Certificate holder.

6.6 The suitability of separating wall and floor constructions, other than those described in sections 6.3 to 6.5 should be demonstrated by an appropriate test or assessment.

6.7 Care must be taken to ensure continuity of fire resistance at junctions with fire-resisting elements, in accordance with the relevant provisions of the national Building Regulations.

6.8 Elements must incorporate cavity barriers at edges, around openings, at junctions with fire-resisting elements and in extensive cavities in accordance with the relevant provisions of the national Building Regulations. The design and installation of cavity barriers must take into account any anticipated differential movement.

7 Acoustic performance

7.1 The board can be used to improve sound insulation of new and existing floors and walls onto which it is fixed. The degree of sound insulation achieved will depend on the construction standard of the wall or floor.



7.2 The contribution of the panels to meeting the minimum mass requirements for wall types 1 to 4 (only 3 and 4 in England and Wales) and floor types 1 to 3 (and 1 to 4 in Scotland only) as detailed in the relevant documents supporting the national Building Regulations, may be calculated using the masses given in section 1.2:

England and Wales — Approved Document E, sections 2 and 3

Scotland — Mandatory Standard 5.1, clauses 5.1.4⁽¹⁾ to 5.1.7⁽¹⁾ (walls) and 5.1.8⁽¹⁾ to 5.1.11⁽¹⁾ (floors)

(1) Technical Handbook (Domestic).

Northern Ireland — Technical Booklets G and G1, section 1.



7.3 The masses shown in section 1.2 can be used to assess compliance with the minimum mass requirements for wall and ceiling linings, from the set approved and published by Robust Details Ltd for dwellings, in accordance with Approved Document E, paragraph 0.2.

7.4 In England and Wales, separating walls and floors, other than those described in 7.3 incorporating the product are subject to pre-completion testing in accordance with Approved Document E, Section 1.



7.5 The measures to be taken in design and during installation to avoid direct paths for airborne sound and to minimise flanking sound transmission are defined in the relevant documents supporting the national Building Regulations:

England and Wales — Approved Document E, sections 2 and 3

Scotland — Mandatory Standard 5.1, clauses 5.1.2⁽¹⁾ to 5.1.11⁽¹⁾

(1) Technical Handbook (Domestic).

Northern Ireland — Technical Booklets G and G1, sections 1 and 2 respectively.

7.6 From test data to BS EN ISO 140-4 : 1998, it is indicated that the separating floor construction shown in Figure 1 and the separating wall construction shown in Figure 2 can provide satisfactory airborne sound insulation (see also Tables 4, 5 and 6).

Figure 1 Fermacell Gypsum-Fibreboard ceiling lining

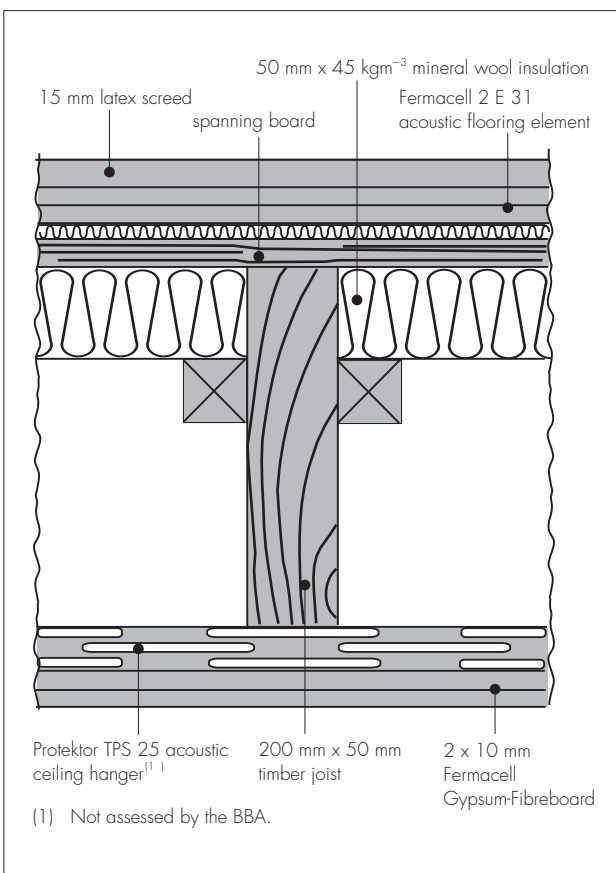


Figure 2 Fermacell Gypsum-Fibreboard wall lining

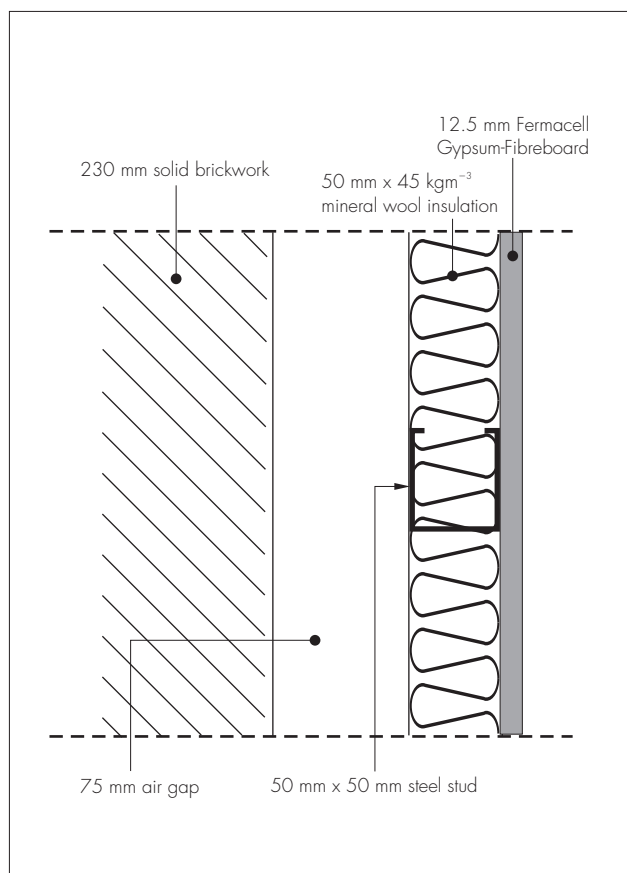


Table 4 Sound insulation (dB) — pre-completion test results

Description	Airborne $D_{nT,w}$	Airborne $D_{nT,w} + C_{tr}$
Between ground floor lounge and first floor lounge (see Figure 1)	58	54
Between kitchen and adjacent property (see Figure 2)	63	57

Table 5 Sound insulation (dB). Deemed to satisfy — England and Wales

Construction	Airborne $D_{nT,w} + C_{tr}$	Impact $L'_{nT,w}$
Purpose built dwelling-houses and flats	≥ 45	≤ 62
Dwelling-houses and flats formed by material change of use	≥ 43	≤ 64

Table 6 Sound insulation (dB). Deemed to satisfy — Scotland and Northern Ireland

	Airborne $D_{nT,w}$	Impact $L'_{nT,w}$
<i>Scotland and Northern Ireland (new constructions)</i>		
Mean value	≥ 52	≤ 61
Individual value	≥ 48	≤ 65
<i>Northern Ireland (conversions)</i>		
Individual value	≥ 48	≤ 65

7.7 From test data to BS EN ISO 140-3 : 1995 it is indicated that the wall constructions detailed in Figures 3 and 4 can provide satisfactory resistance to airborne sound transmission, when used in conjunction with suitable flanking elements (see also Tables 5 to 7).

Figure 3 Steel stud party wall with Fermacell Gypsum-Fibreboard

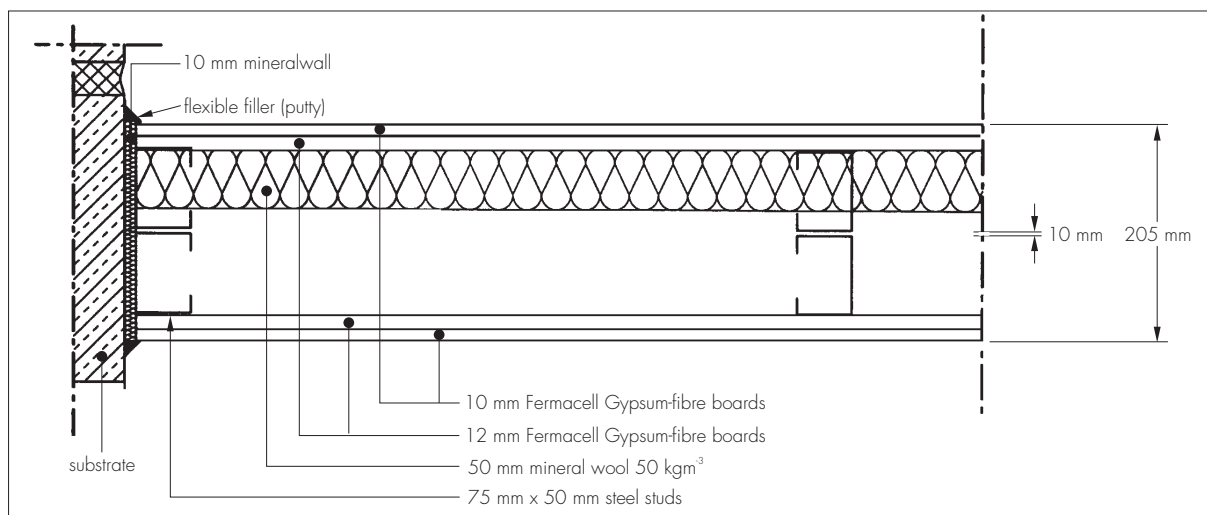


Figure 4 Timber based partition wall

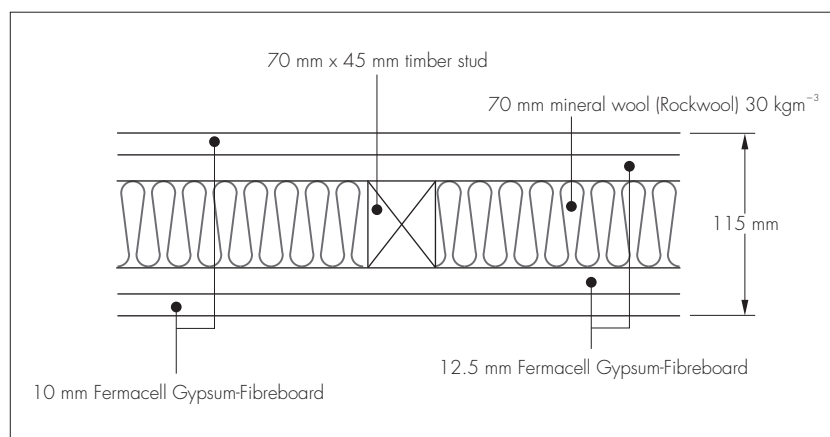


Table 7 Sound insulation (dB)

Construction	Airborne $R_w(C_{50}; C_{50})$
10 mm and 12.5 mm Fermacell with 50 mm mineral wool and two isolated 75/50 mm steel studs (see Figure 3) ⁽¹⁾	64(-1; -5)
10 mm and 12.5 mm Fermacell with 70 mm mineral wool and 70/45 mm timber stud in the centre (see Figure 4)	54(-1; -5)

(1) A full description of the construction and fixings used in this test can be obtained from the Certificate holder.

8 Hygrothermal performance

8.1 When considering the U values of elements or minimum internal surface temperatures of heat loss paths such as repeating bridges, junctions and openings, the thermal conductivity (λ value) of the boards may be taken as $0.30 \text{ Wm}^{-1}\text{K}^{-1}$.

Interstitial condensation



8.2 Walls and ceilings should be designed and constructed in accordance with BS 5250 : 2002, Section 8 and Annex D, to minimise the risk of interstitial condensation. For the purposes of calculations, the boards vapour resistivity should be $130 \text{ MNsg}^{-1}\text{m}^{-1}$.

9 Infestation and fungal growth

9.1 The use of the board does not in itself promote infestation but the creation of voids within the wall structure may provide habitation for insects or vermin in areas already infested. Care should be taken to ensure that, wherever possible, all voids are sealed as any infestation may be difficult to eradicate.

9.2 The resistance of the board to timber-destroying fungi (*Basidiomycetes*) was successfully tested. Test specimens subjected to the attack of the common fungus cultures did not lose weight whereas pine sapwood tested simultaneously lost 45% of its weight.

10 Proximity of flues and appliances

When installing the product in close proximity to certain flue pipes and/or heat-producing appliances in buildings subject to national Building Regulations, the relevant provisions and guidance given below should be met:

England and Wales — Approved Document J

Scotland — Mandatory Standard 3.19, clauses 3.19.1⁽¹⁾⁽²⁾ to 3.19.9⁽¹⁾⁽²⁾

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

Northern Ireland — Technical Booklet L.

11 Penetration by services

Any penetrations by services should be designed and constructed so as to maintain the fire resistance of the construction.

12 Materials in contact

The board does not present a risk of reaction with PVC insulated electric cables in wiring installations.

13 Impact resistance

The boards possess satisfactory resistance to impact. A sample comprising one layer of 12.5 mm Fermacell Gypsum-Fibreboard fixed at 600 mm centres to 75 mm by 50 mm by 0.6 mm steel studs achieved a pass of 'Severe Duty' level when tested to BS 5234-2 : 1992.

14 Wall-mounted fittings

The recommendations of the Certificate holder on allowable weight of fixtures should be followed. The board will support the weight of the objects within the recommendations without the need to fix to the loadbearing structure, ie the studs.

15 Maintenance



Should repairs be required, they can be easily carried out.

16 Durability



The durability of the materials is satisfactory. Provided the board is used in accordance with this Certificate and the Certificate holder's instructions, and is fixed to satisfactory, stable and durable backgrounds by fully trained operatives, it should have a life equal to the building in which it is installed.

17 General

17.1 Installation of the Fermacell Gypsum-Fibreboard should be in accordance with the requirements given in the Certificate holder's literature.

17.2 The spacing of any battens or sections depends on the thickness of the board used, and the performance required. Wall batten spacings should be 50 x the product's thickness and 40 x the product's thickness for ceilings.

18 Procedure

Ceilings

18.1 When installing onto the underside of a suspended floor (solid or joisted) or to a suspended ceiling system, the board is fixed via timber battens or metal sections mechanically-fastened to the supporting structure.

Walls

18.2 Depending on the wall construction or its degree of unevenness, one of the following methods of fixing should be used:

- the board can be fixed to timber battens or metal sections with the fixings listed in section 18.3. These battens or sections are fixed directly to the solid wall in accordance with the manufacturer's guidelines. The distance between the battens or sections depends on the board thickness (see Certificate holder's instructions)
- the boards can be fixed directly to solid walls using Fermacell bonding compound without installing additional timber or metal studs or other framework. The bonding compound is applied in dabs or strips (see Certificate holder's instructions)
- for uneven walls, the board can be fixed to timber studs or metal sections installed in front of the solid wall without direct connection to the wall. Boards are fixed to one side of the supporting framework
- with lightweight, non-loadbearing and loadbearing internal partitions, the board is fixed to one or both sides of a timber or metal framework.

Fixings

18.3 The board is secured to the framework described in sections 18.1 and 18.2 using the appropriate fixings:

- timber sections — Fermacell screws, hollow-head nails or steel staples
- metal sections — Fermacell screws.

18.4 Fermacell screws or diverging staples are used to secure the boards to each other.

Technical Investigations

19 Tests

19.1 Tests were carried out on the Fermacell Gypsum-Fibreboard to determine:

- stability in changing humidity conditions
- stability under temperature differences
- racking strength and racking resistance in accordance with BS 5268-6.1 : 1996 and BS EN 594 : 1996.
- impact resistance
- water absorption

19.2 Completed installations were tested for impact resistance and ability to take wall-mounted fittings.

20 Investigations

20.1 The manufacturing process was examined including the methods adopted for quality control and details of the quality and composition of the materials used.

20.2 Sites were visited where the various methods of installation were being carried out.

20.3 An examination was made of data relating to:

- water vapour permeability
- thermal conductivity (λ value)
- bond strength of Fermacell bonding compound and joint filler.
- acoustic performance
- fire performance

20.4 Independent reports on the behaviour and performance of dry lining systems were examined.

20.5 A theoretical analysis of the hygrothermal behaviour of various installations was carried out.

20.6 A re-examination was made of the data and investigations on which the previous Certificate was based.

Bibliography

- BS 476-8 : 1972 *Fire tests on building materials and structures — Test methods and criteria for the fire resistance of elements of building construction*
- BS 476-21 : 1987 *Fire tests on building materials and structures — Methods for determination of the fire resistance of loadbearing elements of construction*
- BS 5234-2 : 1992 *Partitions (including matching linings) — Specification for performance requirements for strength and robustness including methods of test*
- BS 5250 : 2002 *Code of practice for control of condensation in buildings*
- BS 5268-2 : 2002 *Structural use of timber — Code of practice for permissible stress design, materials and workmanship*
- BS 5268-6.1 : 1996 *Structural use of timber — Code of practice for timber frame walls — Dwellings not exceeding four storeys*
- BS 5628-3 : 2005 *Code of practice for the use of masonry — Materials and components, design and workmanship*
- BS 8000-3 : 2001 *Workmanship on building sites — Code of practice for masonry*
- BS EN 594 : 1996 *Timber structures — Test methods — Racking strength and stiffness of timber frame wall panels*
- BS EN 1365-1 : 1999 *Fire resistance tests for loadbearing elements — Walls*
- BS EN 1990 : 2002 *Eurocode. Basis of structural design*
- BS EN 1995-1-1 : 2004 *Eurocode 5 : Design of timber structures — General — Common rules and rules for buildings*
- BS EN ISO 140-3 : 1995 *Acoustics — Measurement of sound insulation in buildings and of building elements — Laboratory measurement of airborne sound insulation of building elements*
- BS EN ISO 140-4 : 1998 *Acoustics — Measurement of sound insulation in buildings and of building elements — Field measurements of airborne sound insulation between rooms*
- EN 13501-1 : 2007 *Fire classification of construction products and building elements — Classification using test data from reaction to fire tests*

21 Conditions

21.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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.

21.2 Publications and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

21.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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.

21.4 In granting this Certificate, the BBA is not responsible for:

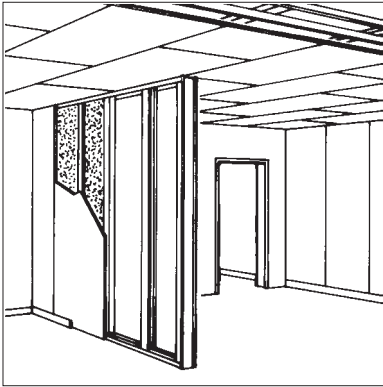
- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

21.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.



Fermacell GmbH

**FERMACELL GYPSUM-FIBREBOARD
(BBA CERTIFICATE 90/2439)
IRISH BUILDING REGULATIONS STATEMENT**



- THIS STATEMENT RELATES TO FERMACELL GYPSUM-FIBREBOARD AND SETS OUT THE OPINION OF THE BBA ON THE POSITION OF THE PRODUCT UNDER THE BUILDING REGULATIONS IN THE REPUBLIC OF IRELAND.
- It must be read in conjunction with Certificate 90/2439.
- It will remain valid provided BBA Certificate 90/2439 is valid.

The Building Regulations 1997–2008 (Ireland)

In the opinion of the BBA, Fermacell Gypsum-Fibreboard, if used in accordance with the provisions of Certificate 90/2439, will satisfy or contribute to satisfying the relevant requirements.

Requirement:	B2(a)(b)	Internal fire spread (linings)
Comment:		The board is classified Class 0 and is unrestricted by this Requirement. See section 6.2 of BBA Certificate 90/2439, Product Sheet 1.
Requirement:	B3(1)(2)(3)	Internal fire spread (structure)
Comment:		The board will contribute to meeting this Requirement. See sections 6.3 to 6.6 of BBA Certificate 90/2439, Product Sheet 1.
Requirement:	D1	Materials and workmanship
Comment:		The board is an acceptable material. See section 16 of BBA Certificate 90/2439, Product Sheet 1.
Requirement:	E1(1)	Airborne sound (walls)
Comment:		The board will contribute to meeting this Requirement. See sections 7.2 and 7.5 to 7.7 of BBA Certificate 90/2439, Product Sheet 1.
Requirement:	E2(1)	Airborne sound (floors)
Comment:		The board will contribute to meeting this Requirement. See sections 7.2, 7.5 and 7.6 of BBA Certificate 90/2439, Product Sheet 1.

On behalf of the British Board of Agrément

Chris Hunt
Head of Approvals — Physics

Greg Cooper
Chief Executive

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