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**Agrément
Certificate
No 90/2439**
*Third issue**

Designated by Government
to issue
European Technical
Approvals

FERMACELL GYPSUM-FIBREBOARD

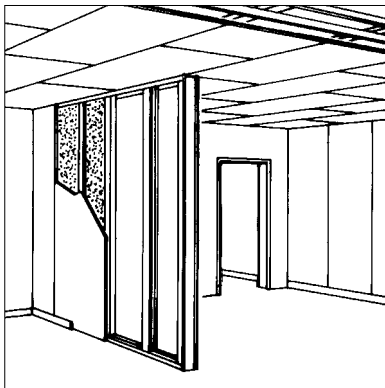
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Product

• *THIS CERTIFICATE REPLACES CERTIFICATE No 85/1560 AND RELATES TO FERMACELL GYPSUM-FIBREBOARD, A GENERAL PURPOSE INTERNAL LINING AND PARTITION BOARD WHICH CAN ACCEPT DIRECT DECORATION.*


• *The product may be used in non-loadbearing partitions and as a lining on walls and ceilings of new and existing buildings.*

• *The product also improves the acoustic and fire performance of the walls and ceilings.*




Regulations

1 The Building Regulations 1991 (as amended 1994) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of internal lining materials with the Building 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.

Requirement: B2	Internal fire spread (linings)
Comment:	The boards meet this Requirement for use in all locations. See section 10.2 of this Certificate.
Requirement: B3	Internal fire spread (structure)
Comment:	The boards will contribute to meeting this Requirement. See section 10.3 of this Certificate.
Requirement: E1	Airborne sound (walls)
Comment:	The boards will contribute to meeting this Requirement. See section 13 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The boards are an acceptable material. See section 15 of this Certificate.

2 The Building Standards (Scotland) Regulations 1990 (as amended)

 In the opinion of the BBA, Fermacell Gypsum-Fibreboard, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards as listed below.

Regulation: 10	Fitness of materials
Standard: B2.1	Selection and use of materials and components
Comment:	The boards are an acceptable material.
Regulation: 12	Structural fire precautions
Standard: D2.2	Fire resistance
Comment:	The boards will contribute to satisfying the requirements as detailed in Table 1 of this Standard and may be used in buildings subject to the provisions detailed in Table 2 of this Standard for minimum periods of fire resistance. See section 10.3 of this Certificate.
Regulation: 13	Means of escape from fire, facilities for fire-fighting and means of warning of fire in dwellings
Standard: E2.42	Resistance to surface spread of flame
Comment:	The boards are considered Class 0 in accordance with Table 4 to this Standard. They may therefore be used in all situations. See section 10.2 of this Certificate.
Regulation: 19	Resistance to transmission of sound
Standard: H2.1	Airborne sound
Comment:	The boards will contribute to satisfying this Standard. See section 13 of this Certificate.

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3 The Building Regulations (Northern Ireland) 1994



In the opinion of the BBA, Fermacell Gypsum-Fibreboard, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The boards are an acceptable material. See section 1.5 of this Certificate.
Regulation:	E4	Internal fire spread — linings
Comment:		The boards are considered Class 0 in accordance with the requirements of paragraph 2.4 of Technical Booklet E. They may therefore be used on the internal surfaces of buildings in every purpose group. See section 10.2 of this Certificate.
Regulation:	E6	Internal fire spread — structure
Comment:		The boards will contribute to satisfying this Regulation. See section 10.3 of this Certificate.
Regulation:	G2	Separating walls and separating floors
Comments:		The boards will contribute to satisfying this Regulation. See section 1.3 of this Certificate.

Technical Specification

4 Description

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

4.2 The boards are light grey in colour, are available square edged and are marked on the rear face with the product name and identification. Characteristics of standard boards are given in Table 1.

Table 1 Board characteristics*

Thickness (mm)	Approximate weight (kgm ⁻²)	Sizes (mm)					
		1000 x 1500	600 x 2400	1200 x 2400	600 x 2600	1200 x 2600	1200 x 3000
10	12	—	—	—	—	—	—
12.5	15	—	—	—	—	—	—
15	18	—	—	—	—	—	—
18	22	—	—	—	—	—	—

*Other sizes are available on request up to a maximum of 2540 mm by 6000 mm

— indicates size available.

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

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

4.4 The fixing of the boards depends on the application and must be in accordance with the manufacturer's relevant specification. Installation details are given in sections 16 and 17 of this Certificate.

4.5 Proprietary accessories and fixings comprise:
Fermacell joint filler — supplied in paper sacks.

Fermacell plaster — for glueing the boards directly to solid walls, supplied in paper sacks.

Fermacell joint adhesive — for butt-glueing the boards, supplied in cartridges.

Fermacell hollow-head nails — 2.2 mm by 32 mm for fixing the boards to timber framework, supplied in boxes.

Fermacell screws — 3.9 mm by 30 mm or 45 mm for fixing the boards to timber or metal framework, supplied in boxes.

Steel staples (normal or with slanting points) — in various lengths for fixing Fermacell boards to timber framework or to each other (in case of double planking).

5 Delivery and site handling

5.1 The boards are 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.

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

5.3 Materials, such as joint filler and plaster, must be stored dry. Metal components should also be stored in dry conditions.

Design Data

6 General

6.1 Fermacell Gypsum-Fibreboard is satisfactory for use as a non-loadbearing partition board and lining on walls and ceilings of new or existing buildings, when installed in accordance with sections 16 and 17 of this Certificate. It will contribute to an improvement in the thermal, acoustic and fire performance of a wall or ceiling, and will not promote interstitial condensation.

6.2 The product may be incorporated in timber frame constructions to BS 5268 : Part 2 : 1991.

6.3 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 : Part 3 : 1985 and/or BS 5390 : 1976(1984) where the wall incorporates stone or cast stone.

6.4 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.

6.5 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 party wall/external wall junctions.

6.6 Where room dimensions may be critical to achieve minimum ceiling heights or to accommodate fixtures (eg bathrooms), these should be checked.

6.7 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, etc, are kept to a minimum.

6.8 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 manufacturer's advice should be sought before proceeding.

7 Thermal conductivity

The thermal conductivity (λ value) of the boards may be taken as $0.30 \text{ Wm}^{-1}\text{K}^{-1}$.

8 Condensation and hygrothermal characteristics

8.1 The boards have a vapour resistivity of $130 \text{ MNsg}^{-1}\text{m}^{-1}$.

8.2 When using the boards, consideration must be given to the overall design to minimise the risk of condensation, and the recommendations contained in BS 5250 : 1989 should be followed.

9 Infestation and fungal growth


9.1 The use of the boards 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. Such infestation may be difficult to eradicate.

9.2 The resistance of the boards to timber-destroying fungi (*Basidiomycetes*) was successfully tested. Test specimens subjected to the attack of the common fungus cultures showed no loss of weight whereas pine sapwood tested simultaneously lost 45% of its weight.

10 Performance in relation to fire

10.1 The boards were tested for fire propagation in accordance with BS 476 : Part 6 : 1981 and surface spread of flame in accordance with BS 476 : Part 7 : 1971. The results are given in Table 2.

Thickness (mm)	Fire propagation		Surface spread of flame classification
	Indices I	Sub-indices i_1	
18.0	3.1	1.5	1 (nil flame spread)

 10.2 The boards meet the requirements for a Class 0 surface in accordance with Appendix A to Approved Document B to the Building Regulations 1991 (as amended 1994) (England and Wales), Table 4 to (E2.42) of Technical Standard E2 for compliance with the Building Standards (Scotland) Regulations 1990 (as amended) and paragraph 2.4 of Technical Booklet E to the Building Regulations (Northern Ireland) 1994. They may be used in all situations as detailed in Table 10 of Approved Document B

and Table 2.1 of Technical Booklet E. Their use is unrestricted by Standard E2.42 of Technical Standard E2.

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

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


11 Materials in contact

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

12 Impact resistance

When tested in accordance with BBA test methods, the boards performed in a satisfactory manner.


13 Acoustic performance

 The contribution of the boards to meeting the minimum mass requirements for wall types 1 to 3 of Approved Document E to the Building Regulations 1991 (as amended 1994) (England and Wales), the Provisions deemed to satisfy the standards to Technical Standard H2.1 for compliance with the Building Standards (Scotland) Regulations 1990 (as amended) and Technical Booklet G of the Building Regulations (Northern Ireland) 1994 may be calculated using the masses given in section 4.2 of this Certificate.

14 Wall-mounted fittings

The recommendations of the manufacturer on allowable weight of fixtures should be followed. The boards will then support the weight of the objects within the recommendations without the need to fix to the loadbearing structure, i.e. the studs.

15 Durability

 The durability of the materials is satisfactory. Provided the boards are used in accordance with this Certificate and the manufacturer's instructions, and are fixed to satisfactory, stable and durable backgrounds by fully trained operatives, they should have a life equal to the building in which they are installed. Under normal conditions of occupancy they are unlikely to suffer damage, but should it occur repairs are easily carried out.

16 General

16.1 Installation of Fermacell Gypsum-Fibreboard should be in accordance with the manufacturer's literature.

16.2 The spacing of any battens or sections depends on the thickness of the board used (see manufacturer's instructions).

17 Procedure

Ceilings

17.1 When installing onto the underside of a suspended floor (solid or joisted) or to a suspended ceiling system, timber battens or metal sections must be fixed to the ceiling and the boards fixed to them.

Walls

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

(a) The boards can be fixed to timber battens or metal sections fastened directly to the solid wall with the fixings listed in section 17.3. The distance of battens or sections depends on the board thickness (see manufacturer's instructions).

(b) The boards can be fixed directly to solid walls by means of the Fermacell plaster without installing additional timber or metal studs or other framework. The bonding compound is applied in dabs or strips (see manufacturer's instructions).

(c) For uneven walls the board can be fixed to timber battens or metal sections installed in front of the solid wall without direct connection to the wall. One side of the framework is fastened with boards.

(d) With lightweight non-loadbearing internal partitions the board is fixed to both sides of a timber or metal framework.

Fixings

17.3 The boards are secured to the framework described in sections 17.1 and 17.2 using the appropriate fixings:

(a) with timber battens — Fermacell screws, Fermacell hollow-head nails or steel staples

(b) with metal sections — Fermacell screws.

17.4 Fermacell screws or steel staples with slanting points are used to secure the boards to each other.

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

18 Tests

18.1 Tests were carried out by the BBA on the boards to determine:

stability in changing humidity conditions
stability under temperature differences
impact resistance
water absorption.

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

19 Other investigations

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

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

19.3 An examination was made of data relating to:

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

19.4 Independent reports on the behaviour and performance of dry lining system were examined.

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

19.6 A re-examination was made of the data and investigations on which the previous Certificate was based. No failure of the product in use has been reported to the BBA.

Bibliography

- BS 476 *Fire tests on building materials and structures*
Part 6 : 1981 *Method of test for fire propagation for products*
Part 7 : 1971 *Surface spread of flame tests for materials*
Part 8 : 1972 *Test methods and criteria for the fire resistance of elements of building construction*
- BS 5250 : 1989 *Code of practice for control of condensation in buildings*
- BS 5268 *Structural use of timber*
Part 2 : 1984 *Code of practice for permissible stress design, materials and workmanship*
- BS 5390 : 1976(1984) *Code of practice for stone masonry*
- BS 5628 *Code of practice for use of masonry*
Part 3 : 1985 *Materials and components, design and workmanship*

Conditions of Certification

20 Conditions

20.1 The quality of materials and the method of manufacture have been examined and found satisfactory by the BBA and must be maintained to this standard during the period of validity of this Certificate. This Certificate will remain valid for an unlimited period provided that:

- (a) the specification of the product is unchanged, and
- (b) the manufacturer continues to have the product checked by the BBA.

20.2 Where reference is made in this Certificate to any Act of Parliament, Regulation made thereunder, Statutory Instrument, Code of Practice, British Standard, manufacturer's instruction or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this Certificate.

20.3 In granting this Certificate, the BBA makes no representation as to the presence or absence of patent rights subsisting in the product and/or as to the legal right of FELS-WERKE GmbH (UK Branch) to market, install or maintain the product.

20.4 It should be noted that any recommendations relating to the safe use of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to re-state the requirements of the Health and Safety at Work etc Act 1974, or of any other statutory or Common Law duties of care, or of any duty of care which may in the future exist; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any other present or future statutory or Common Law duties of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage incurred in respect of personal injury arising as a direct or indirect result of the use of this product.



In the opinion of the British Board of Agrément, Fermacell Gypsum-Fibreboard is fit for its intended use if used as set out in this Certificate. Certificate No 90/2439 is accordingly awarded to FELS-WERKE GmbH (UK Branch).

On behalf of the British Board of Agrément

Date of Third issue: 21st March 1995

Director

*Original Certificate issued 22nd March 1990. This amended version includes change of name of Certificate holder, and references to the revised national Building Regulations and associated text.

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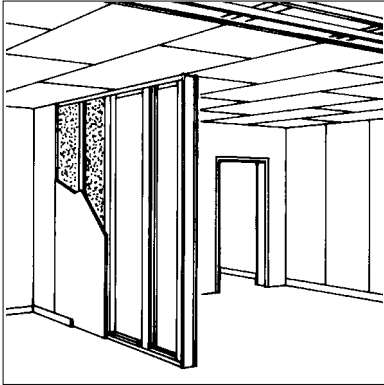
e-mail: mail@bba.star.co.uk
website: www.bbacerts.co.uk



For technical or additional information,
contact the Certificate holder (see
front page).
For information about the Agrément
Certificate, including validity and
scope, tel: Hotline 01923 665400,
or check the BBA website.



FERMACELL GYPSUM-FIBREBOARD (BBA CERTIFICATE No 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 No 90/2439.
- It will remain valid provided BBA Certificate No 90/2439 is valid.

The Building Regulations 1997/2000 Ireland

In the opinion of the BBA, Fermacell Gypsum-Fibreboard, if used in accordance with the provisions of Certificate No 90/2439, will satisfy or contribute to satisfying the relevant requirements.

Requirement:	B2	Internal fire spread (linings)
Comment:		The boards meet this Requirement for use in all locations. See section 10.2 of this Certificate.
Requirement:	B3	Internal fire spread (structure)
Comment:		The boards will contribute to meeting this Requirement. See section 10.3 of this Certificate.
Requirement:	D1	Materials and workmanship
Comment:		The products are an acceptable material. See section 15 of this Certificate.
Requirement:	E1	Airborne sound (walls)
Comment:		The boards will contribute to meeting this Requirement. See section 13 of this Certificate.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. Q. Newson'.

Date of issue: 29th August 2003

Chief Executive