CI/SfB

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BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

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Agrément Certificate No 02/3958
*Second issue**

Designated by Government to issue European Technical Approvals

PERMO FRAME BREATHER MEMBRANE

Couvertures de construction
Bauabdichtungen

Product

- *THIS CERTIFICATE RELATES TO PERMO FRAME BREATHER MEMBRANE, FOR USE IN TIMBER FRAME CONSTRUCTIONS.*
- *The product is manufactured in South Africa by Spunchem Africa (Pty) Ltd.*

Regulations

1 The Building Regulations 2000 (as amended) (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 breather membranes for timber frame construction with the Building Regulations. In the opinion of the BBA, Permo Frame Breather Membrane, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement:	C2(b)(c)	Resistance to moisture
Comment:		Tests for water resistance indicate that the product can contribute towards meeting this Requirement for walls provided the wall complies with the conditions set out in section 7.2 of this Certificate. See also section 10.3 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The product is an acceptable material. See section 12 of this Certificate.

2 The Building (Scotland) Regulations 2004

In the opinion of the BBA, Permo Frame Breather Membrane, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and related Mandatory Standards as listed below.

Regulation:	8	Fitness and durability of materials and workmanship
Regulation:	8(1)	Fitness and durability of materials and workmanship
Comment:		The product can contribute to a construction satisfying this Regulation. See section 12 and the *Installation* part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	3.10	Precipitation
Comment:		The use of the product can contribute to enabling a wall to satisfy the requirements of this Standard with reference to clause 3.10.5[1][2]. See section 10.3 of this Certificate.
Standard:	3.15	Condensation
Comment:		The use of the product can contribute to enabling a wall to satisfy the requirements of this Standard with reference to clauses 3.15.1[1] and 3.15.4[1]. See sections 11.1 and 11.2 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).

3 The Building Regulations (Northern Ireland) 2000

In the opinion of the BBA, Permo Frame Breather Membrane, 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 product is an acceptable material. See section 12 of this Certificate.
Regulation:	C4(b)	Resistance to ground moisture and weather
Comment:		The use of the product can contribute towards enabling a wall to satisfy the requirements of this Regulation. See section 10.3 of this Certificate.
Regulation:	C5	Condensation
Comment:		The use of the product can contribute towards enabling a wall to satisfy the requirements of this Regulation. See sections 11.1 and 11.2 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended) Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See section: *5 Description* (5.2).

Technical Specification

5 Description

5.1 Permo Frame Breather Membrane is a single ply, spunbond, polypropylene membrane (100 gm^{-2}). The product has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics

Characteristic (units)	value	
Roll width (m)	1.5	2.7
Roll length (m)	50	100
Roll weight (kg)	7.5	27
Colour	charcoal	charcoal, blue red, green

5.2 Klober Tacto Tape is a double-sided adhesive tape for use in sealing lap joints in the breather membrane.

5.3 Quality control on the final product includes the following tests:

- weight
- head of water
- tensile strength
- nail tear
- dimensional stability.

6 Delivery and site handling

6.1 The membrane is delivered to site in rolls wrapped in polyethylene with a white label bearing the company name and product name. A label bearing the BBA identification mark incorporating the number of this Certificate is applied to the outer polyethylene wrapper.

6.2 Rolls should be stored on their side, on a smooth, clean surface, under cover and protected from sunlight.

Design Data

7 General

7.1 Permo Frame Breather Membrane is suitable for timber frame constructions, either factory or site applied.

7.2 In the absence of other guidance, suitable timber frame constructions are defined as those designed and built in accordance with NHBC Standards, Section 6.2.

7.3 The product meets the NHBC requirements for minimum water penetration resistance and minimum tear resistance in any direction when dry or wet, for sites defined as standard exposure.

7.4 The membrane may be damaged by high winds, careless handling or by vandalism and should not be left uncovered for longer than is absolutely necessary. Any damaged areas should be repaired or replaced before completion.

8 Strength

8.1 Permo Frame Breather Membrane can resist the stresses associated with construction and installation into timber frame dwellings.

8.2 The product is not adversely affected by water and will retain its properties when wet.

9 Properties in relation to fire

9.1 The product has similar properties in relation to fire to other polyolefinic sheets, tending to melt and shrink away from a heat source, but it will burn in the presence of an ignition source. The product is therefore unclassifiable in terms of the Building Regulations. This should be considered when assessing the overall fire risk.

9.2 To meet the requirements for the provision of cavity barriers in national regulations, cavity barriers should be provided as described in:

England and Wales

Approved Document B, Section 10, Clauses 10.2 to 10.5

Scotland

Mandatory Standard 2.4, Clauses 2.4.1[1][2] and 2.4.2[1][2]

Northern Ireland

Technical Booklet E, Section 3, Clauses 3.27 to 3.28.

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

10 Weathertightness

10.1 Tests indicate that the product can resist water under pressure.

10.2 The product is resistant to the passage of water and wind-blown dust or snow.

10.3 The product can contribute to enabling a wall, constructed to section 7.2 of this Certificate, to satisfy:

England and Wales

Requirement C2(b)

Scotland

Mandatory Standard 3.10

Northern Ireland

Regulation C4(b).

10.4 The period prior to the installation of the brickwork should be kept to a minimum. The membranes should not be used as a temporary waterproof covering during this time.

11 Condensation risk

11.1 The risk of condensation occurring within the wall of a timber frame building will depend upon the properties and vapour resistance of other materials used in the construction, the internal and external conditions and the effectiveness of the internal vapour check.

11.2 The membrane has a vapour resistance of less than 0.2 $MNsg^{-1}$.

12 Durability

Permo Frame Breather Membrane will be unaffected by the normal conditions found in a timber frame wall and will have a life comparable with other elements of construction (eg vapour checks).

Installation

13 General

13.1 Permo Frame Breather Membrane must be installed in accordance with the Certificate holder's instructions and the recommendations given in NHBC Standards, Section 6.2, where appropriate.

13.2 The membrane can be fixed directly over insulation and boarding materials.

14 Procedure

Lapping and jointing

14.1 The membrane should be fixed in such a way as to shed water away from the sheathing, and below the lowest timber. Upper layers should be lapped over lower layers.

14.2 Horizontal laps should be at least 100 mm and vertical laps 150 mm. Vertical laps should be staggered a minimum of 300 mm. All laps should be taped and sealed using Klober Tacto Tape.

14.3 The membrane should be taken a minimum of 300 mm around external corners.

14.4 The membrane is secured into the supporting timber stud sections within the panels, using nails or staples at 500 mm centres or less to prevent wind damage to the membrane during the construction process.

14.5 Nails should be large, flat head nails and either galvanized, sherardized, austenitic stainless steel, phosphor bronze or silicon bronze. Staples should be austenitic stainless steel or other material of similar strength and corrosion resistance.

14.6 The positions of studs should be marked to enable the placement of wall ties and cladding fixings.

14.7 The membrane should extend at least 50 mm below the lowest timbers in the wall.

Technical Investigations

The following is a summary of the technical investigations carried out on the Permo Frame Breather Membrane.

15 Tests

15.1 Samples of Permo Frame Breather Membrane were obtained from the manufacturer for testing. The results of tests carried out by, or on behalf of, the BBA and show the results for the materials supplied and are summarised in Tables 2 and 3.

Table 2 Physical properties — directional

Test (units)	Method[1]	Mean results	
		Long[2]	Trans[3]
Tensile strength (N 50 mm^{-2})	BS EN 12311-1[4]		
unaged	(100 mm min^{-1})	195	205
UV and heat aged[5]		155	145
Percentage change in tensile strength (%)	BS EN ISO 527-3 (100 mm min^{-1})		
water immersion[6]		−15.3	−16.2
water soak[7]		−18.8	−14.9
Elongation (%)	BS EN 12311-1[4]		
unaged	(100 mm min^{-1})	44	49
UV and heat aged[5]		25	34
Percentage change in elongation (%)	BS EN ISO 527-3 (100 mm min^{-1})		
water immersion[6]		−27.3	−13.6
water soak[7]		−5.1	−11.4
Nail tear (N)	BS EN 12310-1[8]	187	167

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to the sections/parts of the various documents.

(2) Longitudinal direction.

(3) Transverse direction.

(4) With modifications of Annex A of BS EN 13859-2 :2004.

(5) 336 hours UVA ageing at 50°C followed by 90 days of heat ageing at 70°C.

(6) Water immersion for 24 hours at 23°C and tested wet.

(7) Water soak for 56 days at 23°C.

(8) With modifications of Annex B of BS EN 13859-2 : 2004.

Table 3 Service performance

Test (units)	Method[1]	Mean results
Water vapour permeability (gm^{-2} day^{-1})	BS 3177 (25°C/75% RH)	3465
Vapour resistance ($MNsg^{-1}$)	BS 3177 (25°C/75% RH)	0.06
Hydrostatic head (cm)	BS EN 20811	23.5
Eosin test (mm)	BS 4016	
unaged		⩾95
aged[2]		⩾95
Resistance to water spray (backing paper damp but not wet)	BBA T1/15	pass
Mullen burst strength (kNm^{-2})	BS 3137	
upper face		496
lower face		510

(1) The test documents are detailed in the *Bibliography*. Numbers in the table refer to the sections/parts of the various documents.

(2) 336 hours UVA ageing at 50°C followed by 90 days heat ageing at 70°C.

15.2 Weight per unit area of the product was also measured.

16 Investigations

Data supplied by the manufacturer relating to quality system and control were studied and incorporated into documents suitable for use by external surveillance organisations.

Bibliography

BS 3137 : 1972 *Methods for determining the bursting strength of paper and board*

BS 3177 : 1959 *Method for determining the permeability to water vapour of flexible sheet materials used for packaging*

BS 4016 : 1997 *Specification for flexible building membranes (breather type)*

BS EN 20811 : 1992 *Textiles — Determination of resistance to water penetration — Hydrostatic pressure test*

BS EN 12310-1 : 2000 *Flexible sheets for waterproofing — Determination of resistance to tearing (nail shank) — Part 1 — Bitumen sheets for roof waterproofing*

BS EN 12311-1 : 2000 *Flexible sheets for waterproofing — Determination of tensile properties — Part 1 — Bitumen sheets for roof waterproofing*

BS EN 13859-2 : 2004 *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Underlays for walls*

BS EN ISO 527-3 : 1996 *Plastics — Determination of tensile properties — Test conditions for films and sheets*

MOAT No 27 : 1983 *General Directive for the Assessment of Roof Waterproofing Systems*

Conditions of Certification

17 Conditions

17.1 This Certificate:

(a) relates only to the product that is named, described, installed, used and maintained as set out in this Certificate;

(b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;

(c) is valid only within the UK;

(d) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;

(e) is copyright of the BBA;

(f) is subject to English law.

17.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, are references to such publication in the form in which it was current at the date of this Certificate.

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

(a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;

(b) continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine; and

(c) are reviewed by the BBA as and when it considers appropriate.

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

(a) the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product;

(b) the right of the Certificate holder to market, supply, install or maintain the product; and

(c) the actual works in which the product is installed, used and maintained, including the nature, design, methods and workmanship of such works.

17.5 Any recommendations relating to the use or installation 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 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 or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future 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 installation and use of this product.

BBA BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

In the opinion of the British Board of Agrément, Permo Frame Breather Membrane is fit for its intended use provided it is installed, used and maintained as set out in this Certificate. Certificate No 02/3958 is accordingly awarded to Klober Ltd.

On behalf of the British Board of Agrément

Date of Second issue: 15th March 2006

Chief Executive

**Original Certificate issued 24th September 2002. This revised version includes revised* Building Regulations *revised* Tests *section due to change in manufacturing parameters and new* Conditions of Certification.

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