



## IRISH AGRÉMENT BOARD CERTIFICATE NO. 05/0227

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# Permo® Frame Breather Membrane for Timber Frame Construction

## System de revetment Dachbelagsystem

**NSAI Agrément (Irish Agrément Board)** is designated by Government to issue European Technical Approvals.

NSAI Agrément Certificates establish proof that the certified products are '**proper materials**' suitable for their intended use under Irish site conditions, and in accordance with the **Building Regulations 1997 to 2017**.



### PRODUCT DESCRIPTION:

This Certificate relates to Permo® Frame Breather Membrane for use on timber framed construction. Permo® Frame Breather Membrane is manufactured from polypropylene fibres which are bonded together with heat and pressure to form a flexible sheet for use as a breathable membrane.

This Certificate certifies compliance with the requirements of the Building Regulations 1997 to 2017.

### USE:

The Permo® Frame Breather Membrane is suitable for timber frame constructions either factory or site applied. The product is water resistant and is used to prevent water passing to the timber structure. It is water vapour permeable thus allowing the timber structure to breathe.

Any vapour which enters the wall construction from inside can pass into the wall cavity where it can be removed by air movement or condense and drain safely away. A vapour control layer must be utilised on the internal structure of the building.

Permo® Frame Breather Membrane must be fitted with the approved fixing nails or stainless steel staples with the minimum vertical and horizontal laps (see Section 2.4 of this Certificate).

### MANUFACTURE AND MARKETING:

The product is manufactured by:  
Spunchem Africa,  
22 Burnside Drive, Mount Edgecombe,  
Kwazulu Natal 4300, South Africa.

The product is marketed by:  
Klober Ltd,  
Unit 6F East Midlands Distribution Centre,  
Short Lane, Castle Donington,  
Derbyshire DE74 2HA

and

Capco Roofing,  
Unit 42 O'Casey Avenue,  
Parkwest Industrial Estate,  
Nangor Road, Dublin 12.  
T: 01 4620740

**1.1 ASSESSMENT**

In the opinion of NSAI Agrément, Permo® Frame Breather Membrane if used in accordance with this Certificate can meet the requirements of the Building Regulations 1997 to 2017, as indicated in Section 1.2 of this Irish Agrément Certificate.

**1.2 BUILDING REGULATIONS 1997 to 2017****REQUIREMENTS:*****Part D – Materials and Workmanship***

**D3** – Permo® Frame Breather Membrane, as certified in this Certificate, is comprised of 'proper materials' fit for their intended use (see Part 4 of this Certificate).

**D1** – Permo® Frame Breather Membrane, as certified in this Certificate, meets the requirements of the building regulations for workmanship.

***Part A - Structure*****A1 – Loading**

Tests indicate that walls incorporating Permo® Frame Breather Membrane meet the requirements set out in Section 3.2 of this Certificate.

***Part B – Fire Safety******Part B Vol 2 – Fire Safety*****B3 & B8 – Internal Fire Spread (Structure)**

Permo® Frame Breather Membrane installed in accordance with this Certificate will not adversely affect the control of fire and smoke within concealed spaces in the structure or fabric of a properly designed building.

**B4 & B9 – External Fire Spread****B9 – External Fire Spread**

Permo® Frame Breather Membrane will not prejudice the external fire resistance of the wall, as indicated in Section 4.1 of this Certificate.

***Part C – Site Preparation and Resistance to Moisture*****C4 – Resistance to Weather and Ground Moisture**

Permo® Frame Breather Membrane meets the requirements when used in accordance with Part 3 of this Certificate.

***Part L – Conservation of Fuel and Energy*****L1 – Conservation of Fuel and Energy**

Based on the measured vapour resistance of Permo® Frame Breather Membrane, walls incorporating insulation can meet the requirements of Part L of the Building Regulations 1997 to 2017.

## 2.1 PRODUCT DESCRIPTION

Permo® Frame Breather Membrane is manufactured from non-woven, spunbonded polypropylene fibres in the form of a flexible fleece. Permo® Frame Breather Membrane can be installed on site or fixed to the timber framed panels before delivery to site. The products nominal characteristics are given in Table 1.

<b>Roll Size</b>	1.5 x 50m, 2.7 x 100m
<b>Density</b>	100g/m <sup>2</sup>
<b>Roll Weight</b>	75, 27kg
<b>Colour</b>	Anthracite, Red, Dark Blue and Green

**Table 1: Nominal Characteristics**

### 2.1.1 Ancillary Products

- Klobber Tacto Tape (double sided tape)
- Permo® Pro HD Tape (single sided tape)
- Nails/staples.

## 2.2 MANUFACTURE

Permo® Frame Breather Membrane is manufactured by spinning strands of polypropylene and bonding them together with heat and pressure to form a flexible non-woven sheet.

### 2.2.1 Quality Control

Quality control checks are carried out on the incoming raw materials, during production and on the finished product. These checks include visual inspection and checks on dimensions (length, width), average mass, roll weight, tensile strength and elongation, nail tear resistance and hydrostatic head (water penetration resistance).

## 2.3 DELIVERY, STORAGE AND MARKING

Permo® Frame Breather Membrane is delivered to site in 50m and 100m rolls, wrapped in polythene with a label bearing the NSAI Agrément logo and Certificate number, the company and product name and instructions on storage and installation. In addition, the Permo® Frame logo is printed on the outer surface of the membrane

Rolls should be stored on a flat level, smooth, clean, dry surface and be kept under cover to protect from long-term exposure to UV light. Care must be taken to avoid contact with solvents and with materials containing volatile organic components such as coal tar, and timbers newly treated with solvent based preservative (creosote). Reasonable precautions must be taken in handling the rolls to prevent damage, such as tears or perforations, occurring before and during installation.

The rolls must not be exposed to a naked flame or other ignition source.

## 2.4 INSTALLATION

### 2.4.1 General

Permo® Frame Breather Membrane must be installed in accordance with this Certificate and the Certificate holder's instructions.

### 2.4.2 Installation Procedure

The Permo® Frame Breather Membrane provides a barrier to moisture moving inwards and must therefore be installed to channel condensate run-off and melt-water to the outside. The upper layers should always overlap the lower layers which in turn must overlap DPC and cavity trays. Cavities must be ventilated, e.g. via weep holes in the brickwork.

Wood preservatives applied to timbers should be fully dried prior to the installation of the Permo® Frame Breather Membrane. The membrane should be installed with horizontal joints which overlap by 100mm minimum. Vertical laps should be at least 150mm, staggered by a minimum of 300mm. In addition, the membrane should be taken a minimum of 300mm around external corners. All joints should be taped and sealed with Klobber Tacto Tape.

Allow for sufficient overlap at the bottom of panels to ensure that the bottom timbers and sole plates are well covered. Permo® Frame Breather Membrane should extend at least 50mm below the top of the rising wall.

At window sills, a DPC should be folded on site to provide protection for the bottom, back and ends of the sill. A layer of Permo® Frame Breather Membrane should be folded over and inwards to cover all timber cavity barriers. All stud positions must be marked to facilitate fixing of wall ties.

The membrane must be secured with nails or staples at max 500mm centres in both the vertical and horizontal planes to prevent damage to the membrane during the construction process.

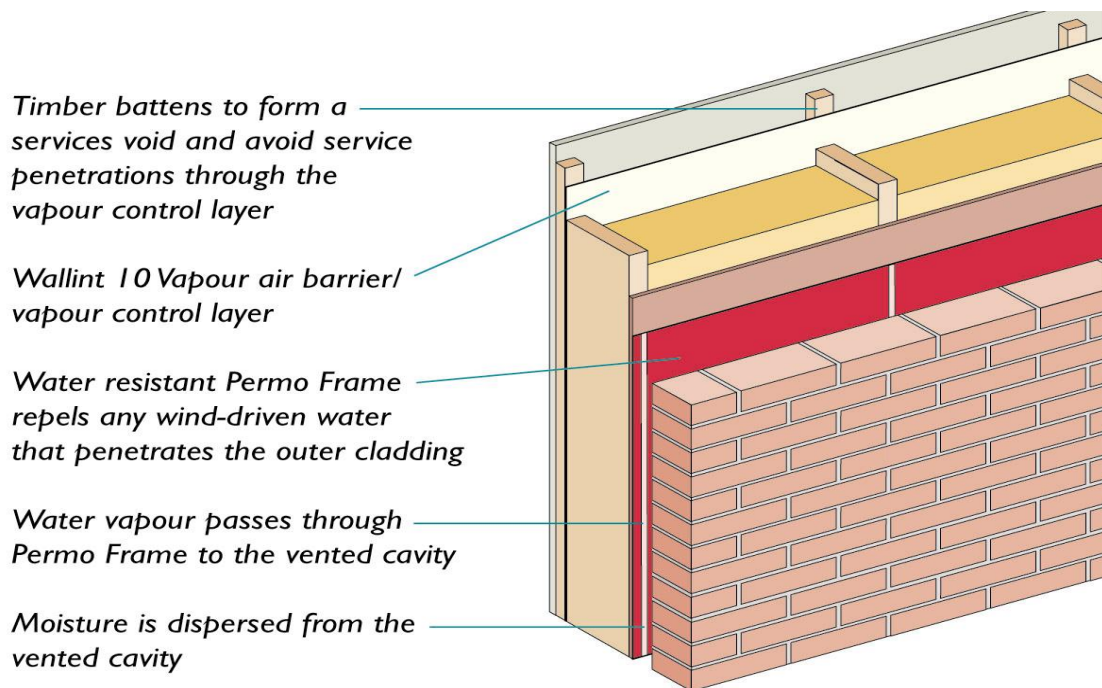
Nails should be flat head nails manufactured from galvanised or sheradized mild steel, austenitic stainless steel, phosphor bronze or silicon bronze. Staples should be of austenitic stainless steel or other material of similar strength and corrosion resistance.

Should any damage occur through mishap or vandalism, these areas should be repaired or replaced before the final outer cladding is

applied, ensuring that the laps are maintained and that the upper sheet laps over the lower.

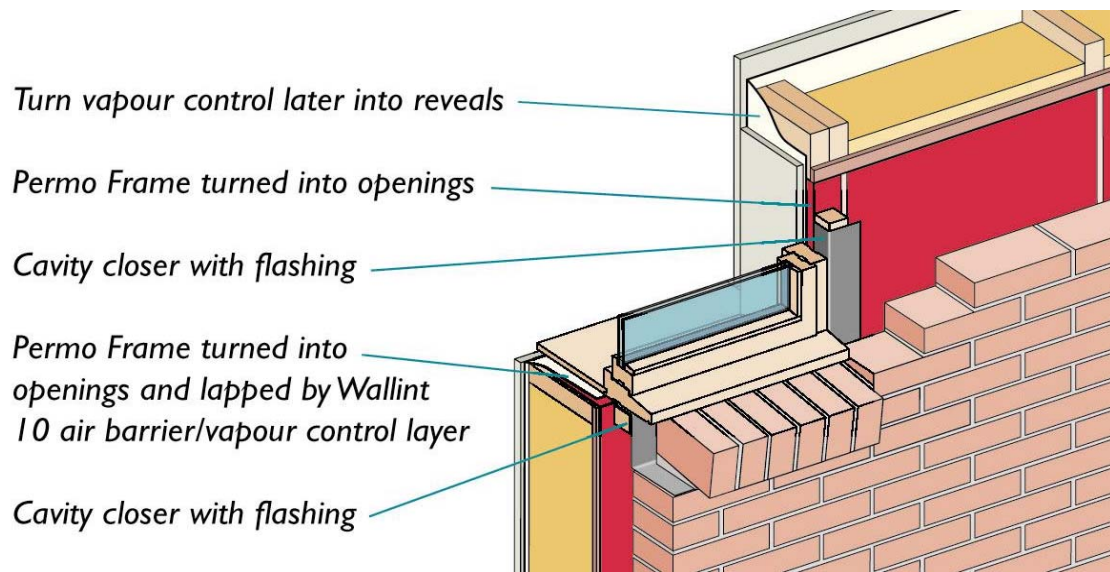
#### 2.4.3 Cavity Barriers

Cavity fire barriers in accordance with TGD to Part B of the Building Regulations 1997 to 2017 must be installed after the installation of the Permo® Frame Breather Membrane.

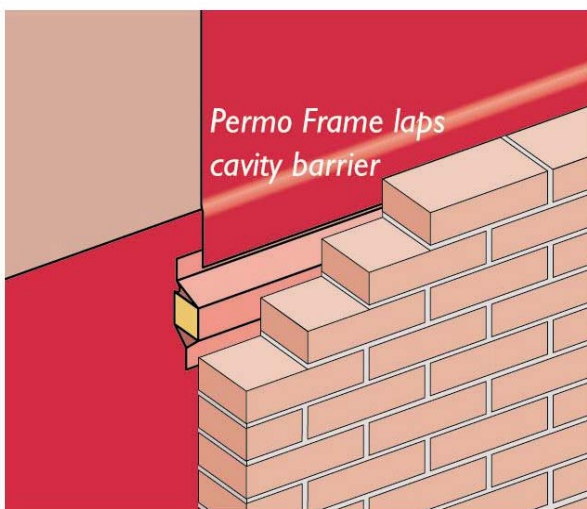


**Figure 1: Typical Wall Detail**

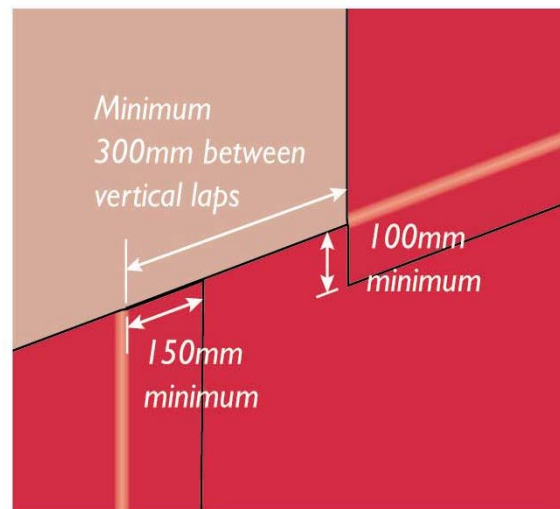




**Figure 2: Typical Detail at Window Opening**



**Figure 3: Typical Detail showing Cavity Barrier**



**Figure 4: Horizontal and Vertical Joints**

### 3.1 GENERAL

Permo® Frame Breather Membrane is suitable for timber frame constructions, either in the factory or on-site installation.

### 3.2 WIND LOADING

Permo® Frame Breather Membrane will resist the loads associated with the installation of the material onto a timber frame stud wall.

Suitable timber frame constructions are defined as those designed and built in accordance with the relevant parts of IS EN 1995-1-2:2004+A2:2014 *Eurocode 5: Design of timber structures – Part 1-1: General – Common rules and rules for buildings*.

The membrane should not be left uncovered for longer than is absolutely necessary. Should the membrane be damaged by high winds, careless handling or by vandalism, the damaged areas should be repaired or replaced before completion of the final outer cladding is applied.

### 3.3 WEATHERTIGHTNESS

Tests confirm that Permo® Frame Breather Membrane will resist the passage of water, wind-blown snow and dust into the interior of a building under all conditions to be found in a roof constructed to IS EN 1995-1-2:2004+A2:2014 and BS 8000-6:2013 *Workmanship on building sites – Code of practice for slating and tiling of roofs and walls*.

Care must be taken to ensure that all timber in the cavity is covered by the membrane including the base timbers.

Particular attention should be given to ensure that adequate ventilation is provided and drainage to wall cavities must be catered for in accordance with the Building Regulations 1997 to 2017. The cavity must be open to the atmosphere.

#### 4.1 BEHAVIOUR IN FIRE

Permo® Frame Breather Membrane has similar properties in relation to fire to other polyolefinic sheets, tending to melt and shrink away from a heat source, but they will burn in the presence of an ignition source. The product is therefore unclassifiable in terms of TGD to Part B of the Building Regulations 1997 to 2017. This should be considered when assessing the overall risks to the construction of the building.

Cavity barriers must be provided as indicated in TGD to Part B of the Building Regulations 1997 to 2016.

Toxicity – Negligible when used in a wall construction situation.

#### 4.2 WATER PENETRATION

Permo® Frame Breather Membrane, when used in accordance with this Certificate, present no significant risk of water penetration.

#### 4.3 WATER VAPOUR PENETRATION AND CONDENSATION RISK

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 barrier.

Permo® Frame Breather Membrane has a water vapour permeability of 2424g/m<sup>2</sup>/day and a vapour resistance of less than 0.2MNs/g.

The general design guides contained in BS 5250:2011+A1:2016 *Codes of practice for control of condensation in buildings* must be met when installing this product.

#### 4.4 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. However, the membrane like most similar materials must be protected from sunlight, flame and solvents.

#### 4.5 TESTS AND ASSESSMENTS WERE CARRIED OUT TO DETERMINE THE FOLLOWING:

Table 2 gives a summary of the technical investigations carried out on Permo® Frame Breather Membrane.

<b>Weight*</b>	100g/m <sup>2</sup>
<b>Water vapour transmission*</b>	0.02MNs/g
<b>Water column*</b>	W2
<b>Tensile strength*</b>	MD: 225N/50mm CD: 200N/50mm
<b>Elongation*</b>	MD: 50% CD: 50%
<b>Resistance to tearing (nail shank)*</b>	MD: 130N CD: 130N
<b>Reaction to fire*</b>	F
<b>Resistance to temperature*</b>	-40°C

**Table 2: Technical Data**

#### 4.6 OTHER INVESTIGATIONS

- (i) Existing data on product properties in relation to fire, toxicity, environmental impact and the effect on mechanical strength/stability and durability were assessed.
- (ii) The manufacturing process was examined including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.
- (iii) A condensation risk analysis was performed.

#### 4.7 CE MARKING

The manufacturer has taken responsibility of CE marking the Permo® Frame Breather Membrane in accordance with harmonised European Standard EN 13859-2:2014 *Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 2: Underlays for walls*. An asterisk (\*) appearing in this Certificate indicates that data shown is an essential characteristic of the product and declared in the manufacturers Declaration of Performance (DoP). Reference should be made to the latest version of the manufacturer's DoP for current information on any essential characteristics declared by the manufacturer.

**5.1** National Standards Authority of Ireland ("NSAI") following consultation with NSAI Agrément has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this Certificate and in accordance with the manufacturer's instructions and usual trade practice. This Certificate shall remain valid for five years from date of issue so long as:

- (a) the specification of the product is unchanged.
- (b) the Building Regulations 1997 to 2017 and any other regulation or standard applicable to the product/process, its use or installation remains unchanged.
- (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI.
- (d) no new information becomes available which in the opinion of the NSAI, would preclude the granting of the Certificate.
- (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.
- (f) the registration and/or surveillance fees due to NSAI are paid.

**5.2** The NSAI Agrément mark and certification number may only be used on or in relation to product/processes in respect of which a valid Certificate exists. If the Certificate becomes invalid the Certificate holder must not use the NSAI Agrément mark and certification number and must remove them from the products already marked.

**5.3** In granting Certification, the NSAI makes no representation as to;

- (a) the absence or presence of patent rights subsisting in the product/process; or
- (b) the legal right of the Certificate holder to market, install or maintain the product/process; or

- (c) whether individual products have been manufactured or installed by the Certificate holder in accordance with the descriptions and specifications set out in this Certificate.

**5.4** This Certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

**5.5** Any recommendations contained in this Certificate relating to the safe use of the certified product/process are preconditions to the validity of the Certificate. However the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this Certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act 2005, or of any other current or future common law duty of care owed by the manufacturer or by the Certificate holder.

**5.6** The NSAI is not responsible to any person or body for loss or damage including personal injury arising as a direct or indirect result of the use of this product or process.

**5.7** Where reference is made in this Certificate to any Act of the Oireachtas, Regulation made thereunder, Statutory Instrument, Code of Practice, National Standards, manufacturer's instructions, 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 Certification.

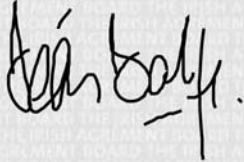


## NSAI Agrément

This Certificate No. **05/0227** is accordingly granted by the NSAI to **Klober Ltd** on behalf of NSAI Agrément.

Date of Issue: **September 2005**

Signed



**Seán Balfe**  
**Director of NSAI Agrément**

Readers may check that the status of this Certificate has not changed by contacting NSAI Agrément, NSAI, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland. Telephone: (01) 807 3800. Fax: (01) 807 3842. [www.nsai.ie](http://www.nsai.ie)

**Revisions: 30<sup>th</sup> January 2018**

- References to Building Regulations and standards updated, product specification updated to reflect manufacturer's DoP.