Product Solutions for Housebuilders & Developers

SPECIALIST ROOF, WALL & GROUND MEMBRANES, THERMAL INSULATION & ACOUSTIC FLOOR SOLUTIONS

Proctor Group

A. Proctor Group

Experts in membrane systems

Housebuilders and developers are facing increasing requirements to achieve compliance with ever tighter standards and building regulations, coupled with the demand to design and build homes and properties which are energy efficient, moisture free and provide a healthy living environment for the occupants.

This necessitates a clear need to manage the balance of Heat, Air & Moisture Management (HAMM) throughout the process of the building's life cycle from design, construction, completion and use. The importance of these key elements upon the building fabric is crucial to the successful construction and use of all residential properties.

The A. Proctor Group has, for 50 years, been serving the construction industry with an extensive portfolio of thermal, acoustic and membrane products. With an extensive portfolio of products, the A. Proctor Group provides product solutions for housebuilders and developers, *"from the ground up to the roof."*

The range includes solutions for:
Ground gas protection
Acoustic flooring solutions
Wall membranes
Vapour control layers
Airtightness membranes
Roof membranes

Contents

Introduction — **Pages 3-5**
- Introduction
- Standards & Building Regulations
- Construction Membranes

Membranes — **Pages 6-20**
- Proctor Air®
- Airtight Membranes
- Wraptite®
- Wraptite® UV
- Probreathe® A2
- Probreathe® A2 Air
- Procheck® A2
- Fireshield®
- Facadeshield® UV
- Reflective Membranes
- Vapour Control Layers
- Procheck® Adapt

Profloor Acoustic Solutions — **Pages 21**
- Introduction
- Profloor® Dynamic Battens
- Profloor® Dynamic Decks

Ground Gas Protection — **Pages 22-26**
- Introduction
- Protech® VOC Flex
- Protech® GM Super
- Protech® Radon 400
- Provoid 25

Services & Support — **Pages 27**

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Standards & Building Regulations

The key guidance on meeting the requirements of Building Regulations for England, Ireland and Wales, and Building Standards (Scotland) relating to ventilation, thermal efficiency, moisture and condensation control is outlined within the Approved Documents and Technical Standards below.

For specific advice on any of these please contact technical support on 01250 872261.

Ventilation

- Approved Document F - Means of Ventilation (England & Wales)
- Building Standards Section 3 Environment (Scotland 2023)
- Technical Booklet K - Ventilation (N. Ireland Oct 2012)
- Technical Guidance Document F - Ventilation (Ireland 2019)

Moisture

- Approved Document C Site Preparation and Resistance to Contaminants and Moisture 2013
- Building Standards Section 3 Environment (Scotland 2023)
- Technical Booklet C - Site Preparation and Resistance to Contaminants and Moisture (N. Ireland Oct 2012)
- Technical Guidance Document C - Site Preparation and Resistance to Moisture (Ireland 2023)

Thermal

- Approved Document L Conservation of Fuel & Power (England 2021 with amendments 2023/ Wales 2022)
- Building Standards Section 6 Energy (Scotland 2023)
- Technical Booklet F - Conservation of fuel and power (N. Ireland Oct 2012)
- Technical Guidance Document L - Conservation of fuel and energy (Ireland 2022)

Product & Performance Standards

- BS5250:2021 Management of Moisture in Buildings - Code of Practice
- BS EN 15026:2023 Hygrothermal Performance of Building Components and Building Elements
- BS EN ISO 13788:2012 Hygrothermal performance of Building Components and Building Elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation methods.

Ground Gas

- Document C Site Preparation and Resistance to Contaminants and Moisture 2013
- BR 211-2023: Radon: Guidance on protective measures for new buildings
- CIRIA C665 – Assessing risk posed by hazardous ground gas to buildings
- CIRIA C735 – Good practice on the testing and verification of protection systems for buildings against hazardous ground gases
- CIRIA C716 – Remediating and mitigating risks from volatile organic compound VOC vapours from land affected by contamination
- BS5250:2021 Management of Moisture in Buildings – Code of Practice
- BS EN ISO 13788:2012 Hygrothermal performance of Building Components and Building Elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation methods.
- BS8485:2015+A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

Construction membranes – applications in house building

Already a trusted brand with housebuilders and contractors, the A. Proctor Group product portfolio includes such familiar names as Wraptite®, the self-adhering airtight and vapour permeable membrane. The portfolio also includes Probreathe® A2, which has a Re action to Fire classifcation of A2 and combines breathability, water resistance and airtightness in one system.

Timber frame construction

Structural Timber Association STA issues the following guidance (STA Advice Note 18):
A breather membrane is the layer on the structural timber wall panel that faces the cavity of an external wall. The breather membrane may be directly on the cavity face of a sheathed timber frame panel or structural insulated panel, or be on the face of the insulation layer over a laminated timber wall panel. They are called breather membranes as they allow water vapour to pass through the material.

Requirement during the build process

The breather membrane keeps the exposed perimeter frame from excessive rain and at the same time allow the construction to dry out.

During the service life of the building wall

Where appropriate to the design of the project:

- To provide a second line of defence against water penetration that might bridge a cavity.
- To provide thermal enhancement of the wall assembly.
- To protect the wall panel against water ingress from open jointed façade cladding, sometimes called open cladding.

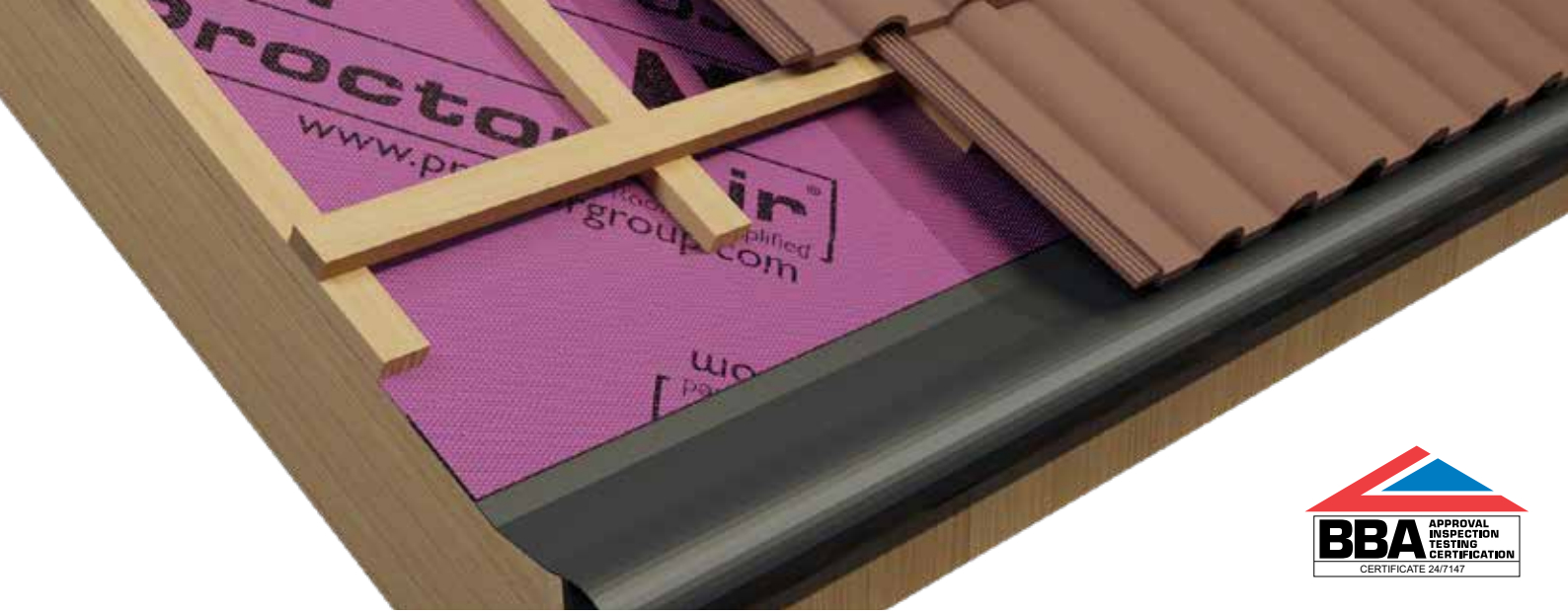
Modular and offsite construction

In the drive for more energy efficient housing, government led initiatives have continued to stimulate the growth of thermal insulation within the housing sector. Housebuilders will also seek to build homes which are designed as carbon neutral moving away from fossil fuels to renewable energy sources. This push towards increased insulation and renewables will, however, be rendered largely ineffective unless the airtightness and condensation control of the structure itself is addressed effectively.

Other construction types

Other building types will also benefit from the use of the membranes from the A. Proctor Group range. Based on extensive experience and leading industry research, the A. Proctor Group have developed some product solutions for walls, roofs and floors. Other construction types may include brick and block, stone, masonry, and Cross Laminated Timber (CLT).

Increasingly, leading housing developers are becoming more aware of the technical differences between membranes, and how some can perform differently than others in different situations. A. Proctor Group products are backed up by a dedicated team of technical experts, able to assist developers at every project stage from pre-planning to on-site.

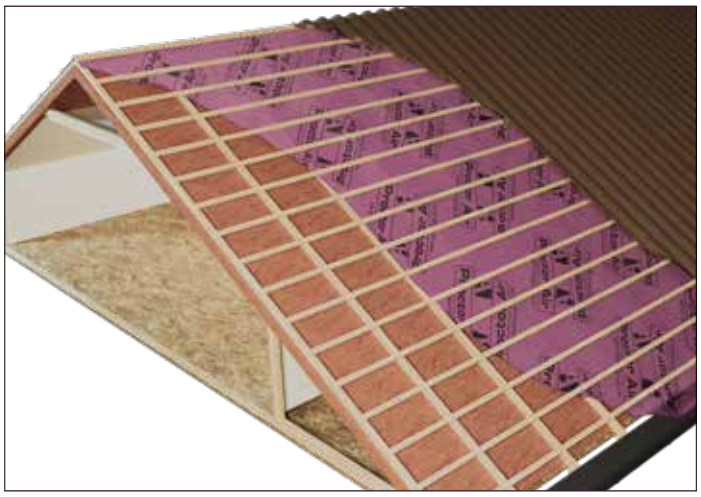


BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 24/7147

PROCTOR AIR®

Proctor Air is an air and vapour permeable, roofing underlay. Its characteristics allow even very complex pitched roofs to breathe, without the need for air gaps or secondary venting.

The meltblown core at the heart of Proctor Air allows natural air movement to 'supercharge' the passage of moisture vapour from the roofspace, making the formation of condensation in the roofspace virtually impossible.



Property	Test Method	Mean Results
	BS EN 13859-1:2010	
Roll Size	-	1m x 50m 1.5m x 50m
Mass per unit area	EN 1849-2	170 g/m^2
Reaction to Fire	EN 13501-1	Class E
Water Vapour Resistance Sd	EN 12572	0.015m
Vapour Resistance	EN 12572	0.075 MNs/g
Air Permeability (Average)	EN 12114	35 m^3/m^2.h.50Pa
Water Penetration	EN 1928	Class W1 (before ageing)

Key Benefits

- No ventilation required
- BBA Certified 24/7147
- More uniform airflow than vents
- Wind uplift resistance complies with BS5534
- High degree of vapour permeability greatly reduces the risk of condensation
- Reduces condensation risk and negates requirement for ridge ventilation
- Ensures continuity of air movement in loft
- Energy Loss by ventilation in conventionally ventilated cold roofs will be reduced by the non-vented system
- No reliance on different trades to install VCL
- Fully air permeable
- 15 year warranty

Proctor Air® Warranty
Specify Responsibly

External Airtight Membranes
An Introduction

Why are airtight membranes needed?

Air leakage through cracks, gaps, holes and improperly sealed elements such as doors and windows can cause a significant reduction in the performance of even thermally insulated building envelopes. Housebuilders have a key role to play in the installation of effective air barrier systems which have become essential in achieving the most effective means of controlling and reducing air leaks.

As thermal insulation requirements have increased over the last few years, the proportion of energy lost through air leakage has become more evident. The ever-increasing thermal insulation required will, however, be rendered largely ineffective unless the airtightness of the structure itself is addressed. Air leakage greatly reduces the effect of thermal insulation; therefore if energy efficiency is to be improved within buildings, this is the most critical area to focus on.

The two main ways to achieve airtightness in the building envelope are internally or externally, or in other terms, "inside of the services zone' or 'outside of the services zone'. For the housebuilder, the use of internal air barriers can be more complex and costly to install, due to the need to accommodate building services such as electrical, lighting, heating and drainage systems. An internal air barrier is only as good as it's installation. If all the service penetrations are not adequately sealed, performance will be compromised.

For many years, external air barriers have been commonly used in North American building design and construction. By moving the air barrier to the external side of the structural frame, external air barrier systems such as Wraptite® allow for an almost penetration-free airtight layer, which can be installed faster and more robustly. This offers an effective but simple system comprising a self-adhesive vapour permeable air barrier membrane, plus vapour permeable sealing tape, Wraptite Corners and Wraptite Liquid Flashing, and provides effective secondary weather protection while preventing trapped moisture and air leakage. Far simpler than internal options an external air barrier system like Wraptite will maintain the envelope's integrity, with less building services and structural penetrations to be sealed, and less room for error.

Wraptite® Warranty

Technology You Can Rely On From A Brand You Can Trust

See www.proctorgroup.com for Wraptite Warranty Application form.

WRAPTITE®

The self-adhered nature of Wraptite allows for a simple installation process, minimising the use of additional sealants and tapes, and requiring no specialist contractors to achieve a robust result. This one-step solution provides both a air barrier layer and effective secondary weather protection in one installation process, allowing a wind and watertight envelope to be achieved more quickly than using conventional methods. Wraptite airtight membrane makes a contribution to a building's thermal performance by preventing lateral air movement, but it also contributes to a healthy living environment and a healthy building, thanks to its vapour permeability. It fully bonds to most substrates.

Key Benefits

- Vapour permeable and airtight membrane
- Self adhered to avoid air bypass
- Full adhesion avoids damage during transportation of modular timer frame kits to site
- Part B compliant for relevant buildings and those over 11m/18m
- Reaction to Fire - Class B-s1,d0
- Can reduce wall thickness
- Leading airtightness performance
- Removes requirement for complex internal detailing and may negate requirement for VCL internally
- Reduces thermal by-pass
- Allows temporary protection until primary external covering is installed
- Provides reduced risk of tears and subsequent remedial work
- Patented technology
- Continuous airtight seal
- Simple detailing at junctions and corners - less EPDM required

WRAPTITE PHYSICAL PROPERTIES

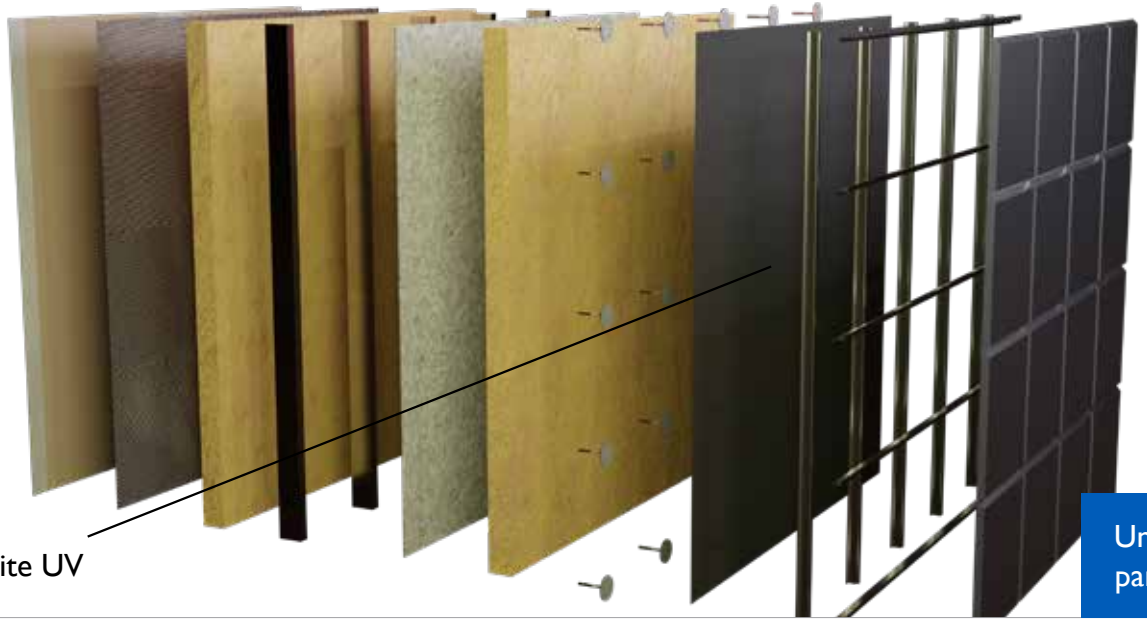
Property	Test Method	Mean Results
	BS EN 13859-1/2:2010	
Roll Size	-	1.5m x 50m
Nominal Thickness	Calibrated Deadweight Micrometer	0.65mm
Basis Weight	Electronic Weigh Scale	292 g/m^2
Application Temperature	-	Air & surface: minimum -10°C maximum 60°C
Service Temperature	-	-40°C to +100°C
Water Penetration	EN 1928 : 2000 Method A	Class W1 (before ageing) Class W1 (after ageing)
Air Permeance	EN 12114	0.01 m^3/m^2.h.50 Pa
Water Vapour Resistance Sd	Sd EN 12572	0.039m
Water Vapour Transmission	BS 3177:1959	893 g/m^2.24hr
Peel Adhesion	EN 1939	5.01 N/10mm
Tensile Strength	EN 12311-1	Mean MD 417N Mean XD 252N
Tear Resistance	EN 12310-1	Mean MD 412N Mean XD 286N
Reaction to Fire	EN 11925-2 BS EN 13501-1	Class B-s1,d0[1,2]

[1]tested over 12mm calcium silicate board / fibre cement board as per BS EN 13238:2010.

[2]free hanging. It is unlikely that any breathable membrane in this application, including Wraptite would be free hanging due to either the self-adhered backing in Wraptite or the tapes used in installing non-self-adhered membranes. This test result is included to allow product specifiers to objectively compare Wraptite to other membranes tested using this method, and does not constitute a recommendation that Wraptite is installed free-hanging. Clients are urged to discuss their individual project with the Technical Department to ensure the suitability for any given project taking into account substrate, building height and boundary proximity.

All tests carried out to EN 13859-2:2010 standard.

Please see the Wraptite brochure for technical details and information on the full Wraptite range of accessories.



Undergoing third party assessment

WRAPTITE® UV

Wraptite UV is a Class B-s2,d0 membrane that combines properties of vapour permeability and air tightness in one self-adhering product, which is specifically designed for use behind open jointed cladding.

Wraptite UV has water resistance and UV resistance to provide a "shadow" appearance within open rainscreen façades.

Wraptite UV bonds (no mechanical attachment) to multiple substrates for air tightness and ease of installation, negating the requirement for a primer, sealants or tapes. Adhesive curing time is approximately 6hrs depending on environmental conditions.

Wraptite UV prevents lateral air movement enhancing the buildings thermal performance. With a rating of Sd 0.06m it provides a high vapour permeability in a commercial quality, self-adhered, airtight breathable membrane.

To protect the membrane from mechanical damage, the joint openings in the façade covering have to be less than 40% of the area, and maximum 50mm wide.

Property		Mean Results	
BS EN 13859-2:2010			
Roll Size		1.5m x 50m	
Nominal thickness		0.38mm	
Basis Weight		392 g/m² (incl. liner)	
Water penetration	Before ageing After ageing	Class W1 (before ageing) Class W1 (after ageing)	
Water Vapour Permeability		Sd 0.06m	
Tensile strength	Before ageing After ageing	MD 490N/50mm MD 480N/50mm	CD 330N/50mm CD 310N/50mm
Tear resistance		MD 327.38N CD 453.38N	
Reaction to Fire		Class B-s2,d0*	
Resistance to penetration of air		<0.01m³/(m².h.50Pa)	
UV resistance uncovered		12 months (Climate:Central Europe)	

**tested over 12mm calcium silicate board as per BS EN 13238:2010.*

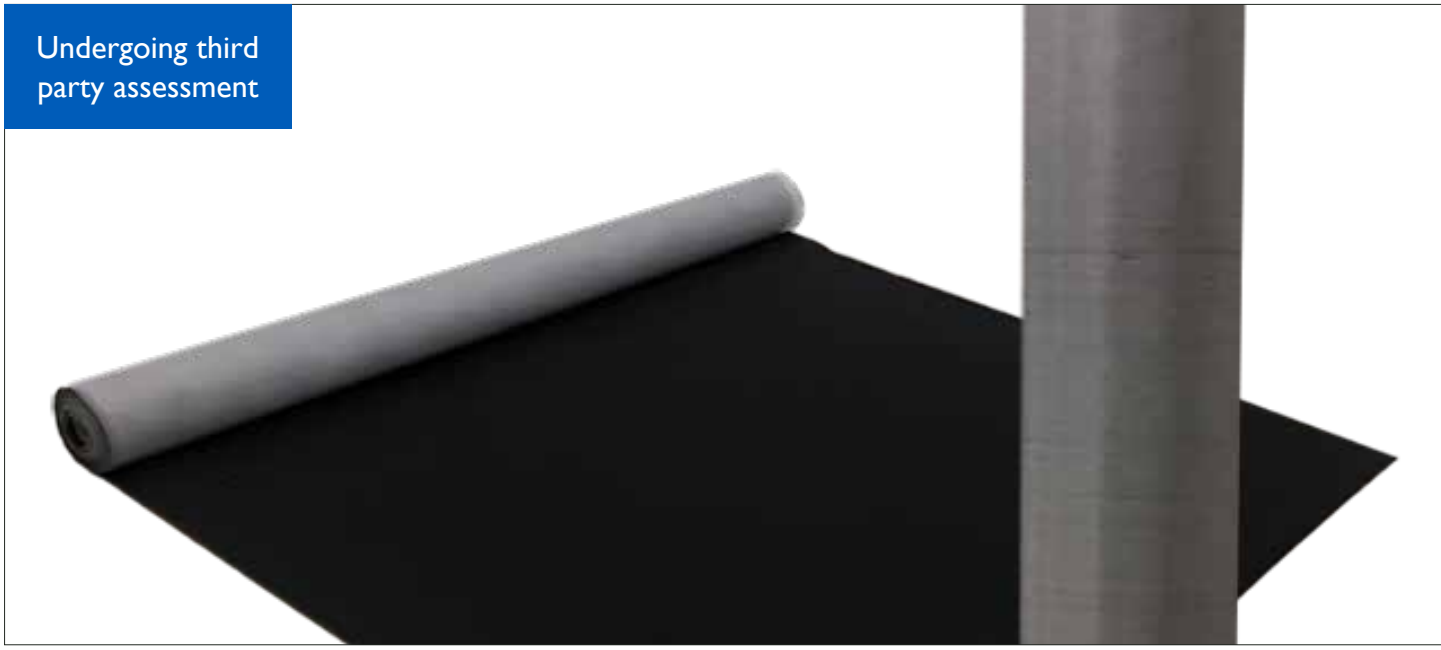
Key Benefits

- Airtight yet vapour permeable
- No primer required
- Tough facer laminate resists punctures and tears during construction
- Manufactured rolled goods ensure consistent properties and performance
- Wide service temperature range
- Can be left fully exposed for up to 12 months (UK climate)

PROBREATHE® A2

Probreathe® A2 is an A-rated breather membrane with an airtight woven glass fibre membrane with a PU coating. The membrane combines breathability, water resistance and airtightness in one membrane. It has a Reaction to Fire classification of A2-s1,d0 when installed free-hanging or onto a substrate which is minimum A2-s1,d0.

Undergoing third party assessment



Property	Test Method	Mean Results
	BS EN 13859-2:2010	
Roll Size		1.5m x 50m
Weight		230 g/m²
Thickness		0.20mm
Temperature range		-36°C to 150°C
Water vapour resistance	EN 12572	Sd 0.095m
Reaction to Fire	EN 13501-1	A2-s1,d0

Key Benefits

- A2 Reaction to Fire Classification
- Increased airtightness over conventional breather membranes
- Vapour permeable membrane for use either directly onto sheathing or over insulation.
- Ideal for use in rainscreen/facade construction
- Suitable for applications in relevant buildings and those over 11m/18m
- Allows temporary protection of the building until the primary external covering is installed

ACCESSORIES

- Probreathe FR Duo Tape (50mm x 25m)
- Probreathe FR Tape (75mm x 50m)

PROBREATHE® A2 AIR

Probreathe® A2 Air is a woven glass fibre membrane which provides water resistance and breathability to the building fabric. This membrane is air permeable, and will be installed either directly to the sheathing board, or over the insulation, providing a Reaction to Fire classification of A2-s1,d0.

Property	Test Method	Mean Results
	BS EN 13859-2:2010	
Roll Size		1.5m x 50m
Weight		210 g/m²
Thickness		0.18mm
Air permeability	EN 12114:2000	27m³/(h.m²)
Vapour permeability	EN 12572	Sd 0.03m
Temperature range		-36°C to 150°C
Resistance to water penetration	EN 1928	W2
Reaction to Fire*	EN 13501-1	A2-s1,d0

**free-hanging*

Key Benefits

- A2 Reaction to Fire Classification
- Vapour permeable membrane for use either directly onto sheathing or over insulation.
- Ideal for use in rainscreen/facade construction
- Suitable for applications in relevant buildings and those over 11m/18m

ACCESSORIES

- Probreathe FR Duo Tape (50mm x 25m)
- Probreathe FR Tape (75mm x 50m)

PROCHECK® A2

Procheck A2, is a vapour and airtight membrane. Procheck A2, with it's Class A2-s1,d0 fire classification to BS EN 13501-1, means it will not signicficantly add to the fireload or growth. Its composition comprises of the glass fibre backing, with a pure aluminium foil and clear lacquer coating. This composition affords the membrane its Class A2 performance as well as giving it a high degree of vapour controlling properties. The membrane comes with a high vapour resistance, as well as being airtight, which allows its use as an AVCL in the construction. Providing high levels of airtightness can ensure the thermal efficiency of the building.

The integral foil layer, with its protective clear lacquer coating, gives this A2 membrane the added benefit of having a low emissivity surface. This means that the membrane, when installed with the foil face next to a service cavity, with a minimum depth of 19mm, will provide additional thermal performance to the overall wall construction.

Procheck A2 air and vapour tight membrane improves energy efficiency and reduces the risk of condensation.

Property	Test Method	Mean Results
	BS EN 13984:2013	
Roll Size	-	1.5m x 50m
Weight	EN 1849-2	165 g/m²
Sd value	EN 1931	>1500m
Reaction to fire	EN 13501-1	A2-s1,d0
Water tightness	EN 1928	W1
Tensile Strength	EN 12311-1	MD 700 N/50mm CD 400 N/50mm
Elongation	EN 12311-1	MD 3% CD 3%
Tear resistance	EN 12310-1	MD 170N CD 130N
Thermal resistance of an adjacent airspace	-	0.606 m²K/W

Key Benefits

- Reaction to fire classification to A2-s1,d0
- Water vapour diffusion tight
- Reflective material, emissivity <0.05
- Clear lacquered aluminium surface allows for low emissivity surface
- Able to withstand tough site conditions
- Suitable for use in relevant buildings over 18m in England and Wales, and over 11m in Scotland

Accessories

Procheck FR Tape is an aluminium faced, air and vapour tight tape:

- Reaction to fire - Euroclass A2 for system when used in conjunction with Procheck A2

FIRESHIELD®

Fireshield is a vapour permeable walling underlay with an intumescent coated surface. Fireshield is suitable for all walling applications including those in multiple storey buildings. The intumescent coating helps protect the substrate by reducing the risk of fire taking hold and reduces the formation of droplets and smoke. It is installed and fixed to the substrate in the same manner as standard breather membranes using mechanical fixings.

Fireshield can also be used on the external cavity face to improve the fire robustness of closed panel assemblies when installed to the external sheathing alongside suitable non-combustible internal linings.

Fireshield is the first vapour permeable membrane of its kind approved for inclusion in the Structural Timber Association tested product listing for fire robustness during construction. As part of such a construction, Fireshield will be part of a system to limit the spread of fire to adjacent properties, which can allow for reduced spacing to adjacent properties.

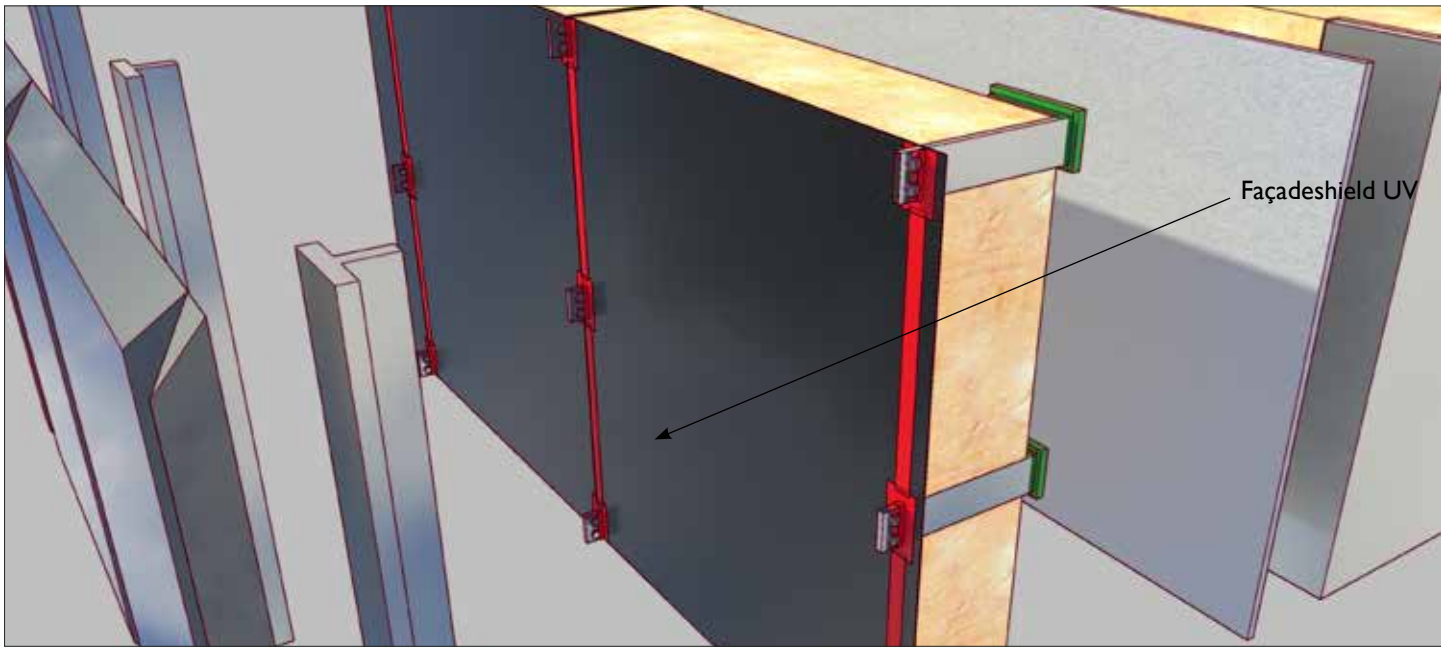
Property	Test Method	Mean Results
	BS EN 13859-2:2010	
Roll Size	-	1.1m x 20m
Weight	EN 1849-2	737g/m²
Thickness	EN 1849-2	1.2mm
Nail Tear Resistance	EN 12310-1	MD 273N CD 330N
Resistance to water penetration	EN 13859-1	Class W1
Tensile Strength	EN 12311-1	MD 300N/5cm CD 275N/5cm
Elongation	EN 12311-1	MD 2-3% CD 2-3%
Water impermeability	EN 20811	Minimum value: 2m
UV resistance	Internal method, UVB	12 months
Water vapour transmission properties	EN ISO 12572 conditions C	Sd=0.08m
Flexibility at low temperature	EN 1109	-20°C
Reaction to Fire	EN 13501-1 Test method: EN 11925-2 and EN 13823 (SBI)	B-s1,d0
Resistance to air penetration	EN 12114	1m³/m²/hr@50Pa
Artificial ageing (5000h uv + 90 days 70°C) Tensile strength after ageing Resistance to water penetration after ageing	EN 13859-1	MD: 290N/5cm CD 240N/5cm Class W1

Key Benefits

- Composition actively reacts to prevent fire taking hold
- Vapour permeable walling underlay for use either directly onto sheathing or insulation
- Class B-s1,d0 but performs differently to other similar Class B products
- Complies with BS 5250, BS 4016, EN 13859- 2 & NHBC requirements for vapour permeable walling underlays
- Ideal for use in rainscreen / façade construction
- Suitable in relevant buildings and those over 11m/18m

FAÇADESHIELD® UV

Façadeshield UV is designed specifically to ensure the building fabric maintains water resistance and breathability when used behind open jointed façades. It is a breathable membrane that combines water and UV resistance with the anti-glare dark colour which provides a "shadow" appearance within open rainscreen façades. Façadeshield UV enhances the airtightness of the building whilst reducing the risk of condensation due to its' high vapour permeability, yet airtight fabric. Façadeshield UV has tear resistance and tensile strength.



Property	Test Method	Mean Results
	BS EN 13859-2:2010	
Roll Size	EN 1848-2	1.5m x 50m
Weight	EN 1849-2	210 g/m²
Colour		Black
Sd-value	EN ISO 12572	0.04 m
Temperature resistance	EN 13859-2	- 40°C to +80°C
Fire performance*	EN 13501-1 / EN ISO 11925-2	B-s1,d0
Resistance to water permeability	EN 1928	W 1
UV resistance uncovered		12 months (Climate-Central Europe)

Key Benefits

- Provides secondary protection to open jointed & perforated façades
- Provides externally applied airtight layer for continuity of air barrier
- Class B-s1,d0 fire performance
- Can be fully exposed for up to 12 months

PROCTORWRAP REFLECT®

Proctorwrap Reflect is a non-woven polypropylene, foil faced laminate with a patented three layer composition, providing breathability, as well as secondary protection to the building during construction. Proctorwrap Reflect is vapour permeable, has low emissivity and an enhanced foil surface which improves the thermal resistance of timber and steel frame structures. It has a high strength to weight ratio. The product is installed on the external face of the timber frame, foil side face out, similar to that of a conventional breather membrane but with added thermal benefits.

Proctorwrap Reflect complies with the low vapour resistance requirements set out by TRADA and the NHBC. The existing legislation requires a breather membrane in walls to have a vapour resistance not greater than Sd 0.12m / 0.6 MNs/g. Proctorwrap Reflect has a vapour resistance of Sd 0.08m / 0.4 MNs/g.

We can provide a range of solutions, with U-values down to as low as 0.18W/m^{2}K in standard timber frame walling applications.

Property	Test Method	Mean Results
	BS EN 13859-2:2010	
Roll Sizes	n/a	1.5m x 50m 2.7m x 100m 3m x 100m
Mass per unit area	ISO 536	140 g/m^2
Reaction to Fire	EN 13501-1	Class E
Water vapour resistance Sd	EN 12572, Condition C	0.08 m
Water penetration	EN 13111:2010	Class W2 (Before and After ageing)
Thermal performance (R)		0.71 m^{2}K/W
Emissivity	EN 15976	<0.05

Key Benefits

- R value 0.71.
- Competitively priced.
- Enhanced foil surface.
- Low vapour resistance - complies with TRADA and NHBC requirement.
- High strength to weight ratio.
- Thermal resistance.
- 1.5, 2.7 & 3 metre wide rolls.

REFLECTATHERM® PLUS

Reflectatherm Plus is a reflective, high resistance vapour barrier for internal walls, ceilings and floors, specifically which improves the thermal performance and airtightness when placed on the warm side of the insulation.

The membrane should be installed with the foil side facing the cavity. In ceilings the product is placed between the underside of the rafters and the ceiling lining. Adjacent sheets should be lapped by 150mm and sealed with Reflectafoil Tape. Penetrations caused by services must be minimised to ensure effectiveness, and all joints need to be sealed.

Reflectatherm Plus will help meet the requirements of the ' Part L' in England and Wales and 'Section 6' in Scotland.

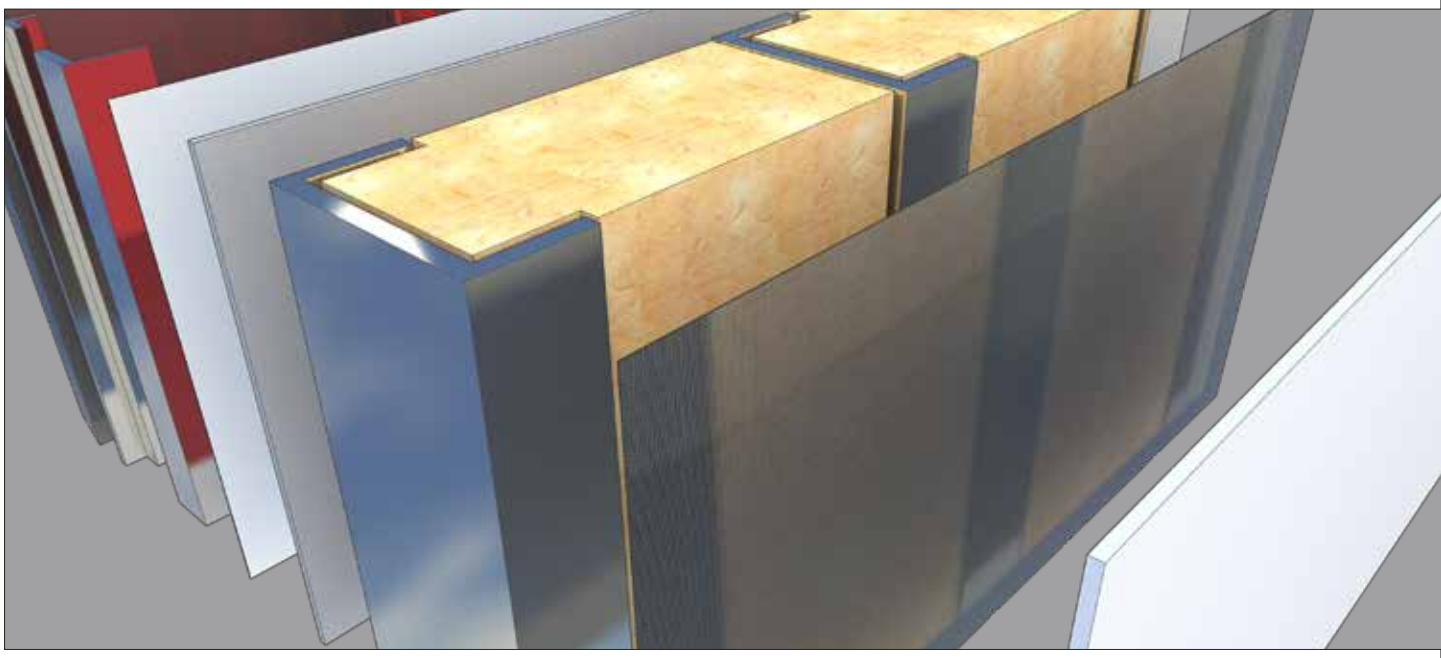
Property	Test Method	Mean Results	
	BS EN 13984:2013		
Roll Size	n/a	1.5m x 50m 2.7m x 100m 3m x 100m	
Mass per unit area	ISO 536	140g/m²	
Reaction to Fire	EN 13501-1	Class E	
Sd value	EN 1931	>150m	
Resistance to water penetration	EN 13111:2010	Class W1	
Emissivity	EN 15976	<0.05	
Tensile force	EN12311-1, mod with EN 13859-2:2014 Annex A	MD 180 N/50mm	CD 160 N/50mm
Elongation		MD 70%	CD 60%
Tearing resistance	EN 12310-1, mod with EN 13859-2:2014	MD 200N	CD 200N

Key Benefits

- R value of 0.72 m^2K/W when used with a minimum 19mm service cavity.
- High vapour resistance.
- Creates service void.
- Creates an unbroken vapour control layer.
- Sd Value of >150m.
- Help meets the requirements of the Part L in England and Wales, Section 6 in Scotland, and Technical Guidance Document L in Ireland.

Introduction to Air & Vapour Control Layers

Installed on the warm side of the heated envelope, vapour control layers restrict the ingress of moisture into the building fabric by limiting both vapour diffusion and air leakage. The correct specification of vapour control layers is closely related to the anticipated moisture loading and maintaining the integrity of the membrane is critical. The A. Proctor Groups' range of vapour control layers covers all building uses.



PROCHECK® 300

Procheck 300 is a reinforced, polyethylene vapour control layer for use within roof and wall constructions to prevent warm, moist air escaping from inside the building and condensing within the insulation. The woven, polypropylene, multifilament scrim reinforcement provides resistance to tears and punctures to withstand tough site conditions and is unaffected by chlorine. Procheck 300's vapour resistance of Sd 64m makes it the ideal choice for applications such as houses, heated warehouses, schools and shops. Its translucent colour allows visibility to the substructure.

Key Benefits

- Suitable for low risk applications e.g. heated warehouses
- Minimal tears due to reinforcement
- Withstands tough site conditions
- Visibility to substructure for ease of installation

PROCHECK® 500

Procheck 500 is a strong reinforced polyethylene vapour control layer with a vapour resistance of Sd 100m, making it suitable for low to medium risk applications e.g. offices, schools & housing. The woven extruded polypropylene multifilament scrim reinforcement provides nail tear resistance to withstand tough site conditions. The sheet is transparent allowing visibility to the substructure to ease the installation. Procheck 500 is the grade utilised by many leading system manufacturers. It is UV stabilised and unaffected by chlorine.

Key Benefits

- Suitable for low to medium risk applications e.g. offices, housing
- Reinforced, ensuring minimal tears
- Withstands tough site conditions
- Visibility to substructure

PROCHECK® FR200

Procheck FR200 has a Reaction to Fire classification of B-s1,d0 which provides assurance of fire performance for the structure. Procheck FR200, air and vapour tight membrane improves energy efficiency and reduces the condensation risk, and has a vapour resistance of Sd 44m.

Key Benefits

- Independent assurance of fire performance (EN 13501-1 B-s1,d0)
- Energy efficiency
- Reduced condensation risk
- Reinforced

PROCHECK® ADAPT

Procheck Adapt is a variable-permeability vapour control layer for use in a variety of commercial and residential applications. It protects the building fabric from potential risks of condensation and it will also act as an airtight barrier. Its variable permeability adapts to changes in humidity levels becoming more resistant in Winter and more permeable in Summer. This means the building fabric is protected from damaging moisture levels during cold, wet months of the year and it will allow the fabric to dry out effectively in warmer, drier months. Procheck Adapts' translucent structure eases fixing to structural frames and in conjunction with its integral tape allows for a fast installation time.

Property	Test Method	Mean Results
	BS EN 13984:2013	
Roll Size	-	1.5m x 50m
Weight	ISO 536	110 g/m²
Nail Tear Resistance	EN 12310-1	MD 350N CD 375N
Tensile Strength	EN 12311-1	MD 350N/50mm CD 315N/50mm
Elongation	EN 12311-1	MD 20% CD 20%
Vapour Resistance	EN 12572	Sd 0.4m - 90m
Reaction to Fire	EN 13501-1	Class E
Air Permeability	BS EN 12114:2000	0.00 m³/m².hr @ 50 Pa

Key Benefits

- Variable permeability adapts to changes in humidity
- Wide Sd range guarantees performance in demanding climatic conditions
- Ensures effective drying out of building materials
- Suitable for variety of commercial and residential applications
- Provides airtightness to structure as well as vapour control
- Translucent material allows for ease of installation onto framework

Profloor Acoustic Solutions

Profloor Systems meet the requirements of the Building Regulations for impact and airborne sound. Profloor Dynamic battens were the benchmark for other systems to aspire to. Solutions are available for timber and concrete floors on both new build and refurbishment projects. The combination of open-cell polymer foam and vertical polyester fibres are the key to the success of the A. Proctor Group's range of Profloor products.

Product selector

Battens



Properties	Unit	Profloor Dynamic Batten	Profloor Excel Batten	Profloor Solo Batten
Resilient layer composition		Open & Closed Cell	VOF	Closed Cell
Resilient layer nominal thickness	mm	22	13	7
Overall nominal thickness	mm	55 / 67 / 81 / 91	61 / 75 / 85	40 / 52
Batten length	m	2.4	2.4	2.4
FFT** compliant	-	1, 3 & 80*	1 & 3	3 (utilising 52mm batten)
Timber or Concrete Floor		Both	Both	Concrete

* Scotland only
** Floating Floor Type

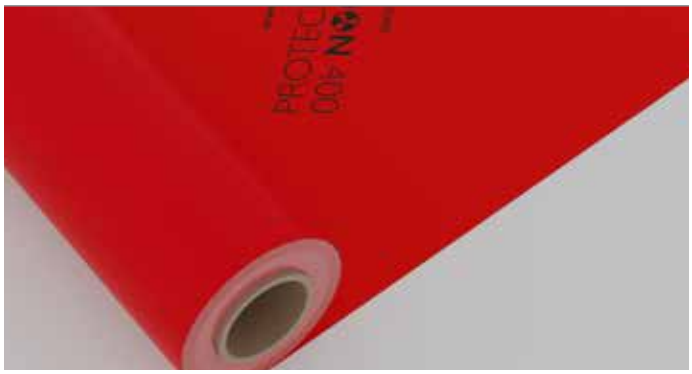
Decks

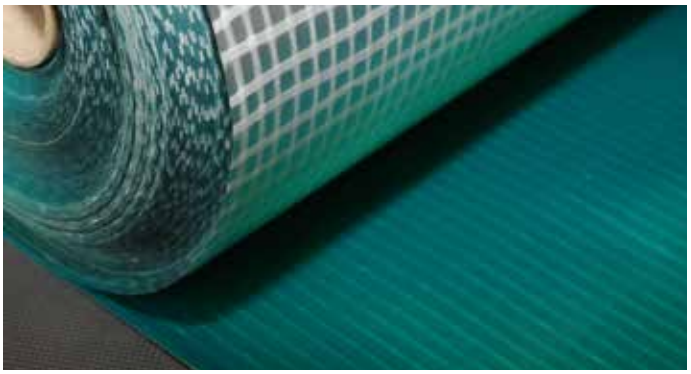



Properties	Unit	Profloor Dynamic Deck 26	Profloor Excel Deck 31	Profloor Micro Deck 17	Profloor SoloDeck 23
Resilient layer composition	-	Open & Closed Cell	VOF	Open & Closed Cell	Composite PU
Type and thickness of board	-	18mm T&G Chipboard	18mm T&G Chipboard	9mm T&G MDF	18mm T&G Chipboard
Resilient layer nominal thickness	mm	8	13	8	5
Overall nominal thickness	mm	26	31	17	23
Board size	m	0.6 x 2.4	0.6 x 2.4	0.6 x 1.2	0.6 x 2.4
FFT compliant**	-	5	5	5	5
Timber or Concrete Floor		Both	Both	Both	Both

** Only FFT5 compliant on concrete floor. Can be used on timber, but wouldn't be Robust Detail compliant.

Ground Gas Protection
Why are gas protection measures needed?





The accepted industry methodology of determining the risk to an end-user of a building, in line with guidance and legislation, comprises 'source,' 'pathway' and 'receptor.' This methodology is used by design consultants during the creation of the conceptual site model to provide the remediation strategy, in the context of the associated risks specific to the site and construction.

Current legislation and advisory documents stipulate levels of protection required, depending on the specific permanent ground gas or VOC risks associated with the site. Landfill or naturally occurring gas (or its components) can enter buildings through:

- Gaps around service pipes
- Construction joints
- Wall cavities
- Cracks in walls and ground slabs

In most buildings, measures to protect against ground gas are constructed below the ground floor level. A permanent ground gas (or VOC) protection solution consists of several individual elements, combining to form an integrated system. This is done to limit the reliance on one individual component. These components are separately designated, concerning gas protection in BS8485:2015 (permanent ground gas) and CIRIA C748 (VOCs), as:

1. Structural barrier (floor & substructure design)
2. Ventilation protection (floor slab type)
3. Membranes
4. Monitoring and detection
5. Pathway intervention

Depending on the site risks present, these components will be used to determine the overall protection system chosen. At the A. Proctor Group we have been involved in the supply and specification of gas protection systems since 1990, specifically in the areas of venting and dilution, and membranes.

Our PROVOID ventilation system is backed by a proven track record in the supply of quality materials for passive ventilation systems. As well as the necessary pipework arrangements, the system is provided with options on air inlets and outlets to suit specific site requirements.

The A. Proctor Group also supplies the PROTECH GM range of proprietary gas barrier membranes, which protects against permanent ground gases and VOCs. Our specialist technical team is available to advise on membrane specification to tailor specifications to individual site requirements, and can also advise on levels of required installation and verification.

Product Range

- Protech VOC Flex
- Protech GM Super
- Protech Radon 400
- Provoid 25
- Protech GM Accessories

PROTECH VOC FLEX

High risk characteristic sites

Protech VOC Flex complies with CIRIA C748 and BS 8485:2015. It is a 6 layer flexible proprietary reinforced VOC gas barrier and is suitable for use on brownfield sites that require protection from dangerous contaminants such as hydrocarbons. Protech VOC Flex has been developed to ease installation on site due to the flexibility of the membrane. It is also suitable as a damp proof membrane.

Property	Test Method	Mean Results
	BS EN 13967:2012	
Roll Size		2m x 50m
Weight		564 g/m²
Thickness		0.55 mm
Tensile Strength	EN 12311-1 +Mods EN 13859-1	MD 700 N/50mm CD 640 N/50mm
Elongation	EN 12311-1 +Mods EN 13859-1	MD 30% CD 25%
Nail tear resistance	EN 12310-1	MD 500N CD 540N

Key Benefits

- Complies with CIRIA C748 and BS8485:2015
- Chemical resistance
- BBA Certified
- Provides moisture protection, no additional DPM required
- Flexible membrane to ease installation on site
- Multi-layer membrane
- High resistance to puncturing

INSTALLATION

Protech VOC Flex can be sealed either by welding or using Protech GM Tape. It is considered prudent that taped joints should not be used where there will be no long term compression of the membrane or where there is a likelihood where the membrane will come into direct contact with the VOCs in a liquid state.

In areas where the membrane crosses cavity walls or internal single skin walls, Protech VOC Flex Starter Band should be used in conjunction with Protech VOC Flex Internal and External preformed corner units. Pipe penetrations should be sealed with Protech GM Tophats or Protech GM Flashing Strips. Stanchions and columns should be sealed with Protech GM Primer and Protech GM Flashing strips (Photos, isometric and standard details are available on our website).

Accessories

- Protech VOC Flex Starter Band
- Protech GM Tophats
- Protech GM Flashing
- Protech GM Corners
- Protech GM Primer
- Protech Protection Board
- Protech GM Protection Fleece
- Protech Liquid Applied Gas Membrane (LAGM)
- Protech GM Tape

For further information regarding permeation testing results please visit our website www.proctogroup.com or contact our technical department on 01250 872261.

PROTECH GM SUPER

High risk characteristic sites

Protech GM Super is a proprietary reinforced gas barrier, that incorporates a integral aluminium foil layer, for maximum protection against ground-borne gases. This specifically conforms with the latest guidance documents. Due to its composition, the membrane is extremely flexible. The membrane also provides protection from damp when placed below the slab and, therefore, there is no need to install a separate DPM.

Property	Test Method	Mean Results
	BS EN 13967:2012	
Roll Size		2m x 50m
Weight		370 g/m²
Thickness		0.4 mm
Colour		Green / Silver
Methane Permeability	ISO 15105-1	≤ 0.1 ml/day/m²

Key Benefits

- BS 8485:2015 Compliant
- Reinforced virgin polymer proprietary gas membrane
- Tear resistance
- Provides moisture protection, no additional DPM required
- Aluminium core for reduced methane permeability on higher risk sites
- Complies with the latest guidance
- BBA certified

Accessories

- Protech GM Super Starter Band (1m x 50m)
- Protech GM Tape
- Protech GM Tophats
- Protech GM Flashing
- Protech GM Corners
- Protech GM Primer
- Protech Protection Board
- Protech GM Protection Fleece
- Protech SAGM (Self Adhesive Gas Membrane)
- Protech LAGM (Liquid Applied Gas Membrane)

REGULATIONS COMPATIBILITY

	CIRIA 665 CHARACTERISTIC SITUATION 2	CIRIA 665 CHARACTERISTIC SITUATION 3-6	BS8485 CHARACTERISTIC SITUATION 2	BS8485 CHARACTERISTIC SITUATION 3-6	BRE 211 RADON	NHBC AMBER 1	NHBC AMBER 2 & RED
METHANE	✓	✓	✓	✓	N/A	✓	✓
CARBON DIOXIDE	✓	✓	✓	✓	N/A	✓	✓
RADON	N/A	N/A	N/A	N/A	✓	N/A	N/A

The table above can be used as a basic guide but for site specific guidance please contact the A. Proctor Group technical department

PROTECH RADON 400

High risk characteristic sites

Protech Radon 400 is a proprietary reinforced radon barrier. Due to its composition, the membrane is extremely flexible. It can be jointed with use of our Protech tapes or heat welded. Protech Radon 400 also acts as a Damp proof membrane, therefore there is no need to install a separate DPM.

Property	Test Method	Mean Results
	BS EN 13967:2012	
Roll Size		2m x 50m
Weight		400 g/m²
Thickness		0.43 mm
Tensile Strength	EN 12311-1 +Mods EN 13859-1	MD 385 N/50mm CD 295 N/50mm
Elongation	EN 12311-1 +Mods EN 13859-1	MD 20% CD 17%
Nail tear resistance	EN 12310-1	MD 500N CD 540N
Radon transmittance		1.4.10-8 m/s
Radon permeability		6.0.10^{-12} m²/s

Key Benefits

- Elastic material to give protection against radon gas
- Wide temperature range
- BBA certified

Accessories

- Protech Radon 400 Flex Starter Band
- Protech GM Tophats
- Protech GM Flashing
- Protech GM Corners
- Protech GM Primer
- Protech Protection Board
- Protech GM Protection Fleece
- Protech Liquid Applied Gas Membrane (LAGM)

INSTALLATION

Protech Radon 400 can be sealed by welding or taping. Pipe penetrations should be sealed with Protech Top Hats or Protech Flashing Strip.

Features and Benefits
- 25mm Geocomposite Void Former which results in less contaminated spoil compared to a 'pipe and gravel' venting layer
- Flexible
- Large rolls available for reduced installation times
- Full range of ancillary products
- Compatible with Protech GM Range of Gas Membranes

PROVOID 25

High risk characteristic sites

Provoid 25 is a 25mm thick single-sided geocomposite that provides a void beneath floor slabs which, when connected to air inlets and outlets, allows sufficient air changes to dilute gases to safe concentrations when designed correctly.

Provoid 25 can be laid in strips at predetermined centers or in a full blanket depending on site requirements. Being only 25mm thick means there is a reduced dig when compared to the alternative of 200 to 300mm of clean stone. If Provoid is laid in strips it must be bedded in 200mm of clean stone to achieve a venting performance in compliance with BS8485:2015. Provoid 25 is also extremely strong and flexible with a crush resistance of 300 kpa and is supplied in rolls of 45m^2; therefore large areas can be covered very quickly.

Provoid 25 is flexible and can be laid horizontally and vertically to deal with awkward foundation arrangements. Because of its flexibility, it will cope with settlement under the slab without compromising the system.

We offer venting design advice in line with DOE (1997) Passive venting of soil gases beneath buildings. We can offer venting layouts and detailing of inlets and outlets on existing foundation slab layouts.

Property	Test Method	Mean Results
	BS EN 13252:2016	
Roll Length		50m
Width		450mm / 900mm
Thickness		25 mm
Compressive strength		300 kPa
Gas flow capacity - Composite		0.07 m^3/s (Calculated[1])

[1]Gas flow calculation based on a discharge coefficient of 0.61 with a pressure difference of 10Pa and a standard air density of 1.29kg/m^3

Key Benefits

- Optimised for maximum strength and performance
- When installed as a full blanket achieves 1.5 to 2.5 points as per table 6 of BS8485:2015+A1 2019.
- UV stabilised
- Allows for a reduced dig
- High crush resistance
- Flow rate

Accessories**

Venting System Components
7,000mm^2 ventilation area
1: Ground Level Gully Vent Box*
2: Provoid Connector 'T-Piece'
3: Provoid (Geotextile side down)

** Provoid Gully Vent Boxes need to be set in 150mm surround of no fines concrete. No vehicular trafficking should be driven over Gully Vents.*

*** Please refer to Protech GM Accessories brochure for full range*

Technical Support

The A. Proctor Groups' products are backed up by a dedicated team of technical experts, able to assist at every project stage from pre-planning to on site. They offer CAD detail reviews, installation guidance, condensation risk analysis, WUFi calculations, U-Value calculations, ground gas system designs, telephone support & more. The products also have a range of BIM Objects & Performance Specifications.

Customer Focused

- Online Technical Advice
- Members Area / Onsite App
- WUFI & U-Value Calculations
- Condensation Risk Analysis
- CAD Design
- Site Advice
- CPD Presentations
- Accreditations
- System Design

Expertise and know-how to support your project

CONDENSATION RISK ANALYSIS

Condensation can significantly reduce the effectiveness of insulation, and result in damage to the building fabric.
A Condensation Risk Analysis evaluates the likelihood of interstitial condensation in your roof or wall construction. These calculations are regularly required by building control to demonstrate compliance with building regulation requirements. Calculations are performed free of charge when using our products.

BIM DATA

Available through NBS Chorus and NBS Source, specifiers can now access a full suite of digital products and technical specifications for many of our product solutions. The collaboration with NBS provides architects and designers with a technical specification writing service. In addition, specifiers have easy access to the manufacturer's specification data, BIM objects, literature and third-party certifications.

The A. Proctor Group can review Site Investigation Reports including Gas Monitoring Results and advise routes for compliance. Guidance on specifying and using the A. Proctor Group's full range of membranes and vents is available. Our CAD details and project-specific recommendations are CIRIA, NHBC and Building Regulations compliant. We also have close links to specialist installers, qualified to NVQ Level 2 in Gas Membrane Installation as recommended in CIRIA C735.

PRODUCT DIVISIONS

The A. Proctor Group provide a wide range of high quality solutions which meet the continuously evolving requirements of the construction industry.

Product divisions include:

- Condensation Control
- Acoustic Floor Solutions
- External Airtight Barriers
- Ground Gas Protection
- Thermal Solutions

Get in touch for more information
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contact@proctorgroup.com

GAS PROTECTION TECHNICAL SUPPORT

" I believe the success of the A. Proctor Group is down to a solid foundation of innovation backed up by an excellent, loyal and committed team, every one of them playing an important role in our continued success. Scotland provides us with a unique platform to launch our ideas, systems and products. I am fiercely proud of this heritage and our brand."

Keira Proctor
Managing Director, A. Proctor Group Ltd

Proctor Group

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