

Membrane Solutions for Timber Buildings





Timber frame is an increasingly popular choice for UK house builders and it currently accounts for around a quarter of all new homes. The inherent benefits of timber as a construction material are well established.

The embodied energy of timber is lower than that of other common building materials, meaning buildings constructed with timber frames will often require less energy to produce than those built of other materials. Timber is also a renewable resource in plentiful supply and, if managed responsibly, building from timber should have no net impact on the amount of trees in our forests. Timber frame construction is also flexible in that it can be used with numerous cladding options to produce varied architecture.

The A. Proctor Group Ltd, a family owned business in its fourth generation, has been providing solutions and products to the construction industry for over 50 years.

They have a wealth of experience in providing products for roofs, floors and walls for a timber frame building as shown in this guide.

One of the main advantages of utilising timber frame building is that the building is made wind and water tight very quickly and allows speedier construction times due to less reliance on the weather conditions once the building is up.





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Timber frame building is recognised as a mainstream construction with many benefits which is continually growing its market share. The formation of the Structural Timber association (STA), formerly the UKTFA, encompasses more than traditional buildings systems and now includes systems such as SIPs (Structurally Insulated panels) and CLT (Cross laminated Timber). This provides a wider base of specialist skills when using timber in buildings.

For many years the A. Proctor Group have supported the timber frame industry in supplying solutions including breather membranes for walls and insulation solutions in terms of reflective membranes.

The partnerships and experience that the A. Proctor Group has gained throughout these years has resulted in the organisation being a trusted source of information to designers and timber frame manufacturers alike. As the timber frame industry rises to the challenges of ever increasing legislative changes the Group continue to research and develop solutions to help the industry including acoustic performance, class leading reflective membranes and air tightness solutions.

ROOFS



When designing any roof system the resistance to moisture must be considered. In a roof system a roof underlay should provide secondary, temporary protection during construction and be utilised to reduce wind loads on the roof during its life. With increasing insulation values the cold roof i.e. insulation placed horizontally at ceiling level has increased the potential for condensation within the loft space and adequate measures to reduce this risk of condensation should be considered.

The Group provides a roofing underlay to simplify design, to reduce risks of condensation and at the same time provide solutions to reduce heat loss in the roof space.

PROCTOR AIR®

Proctor Air is a vapour and air permeable pitched roof underlay which allows vapour to escape - but also allows air in – reducing the risk of condensation.



Key Features & Benefits

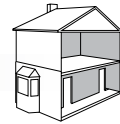
- No ventilation required.
- No VCL required.
- BBA Certified - can be used on roofs featuring Solar / PV panels
- Wind uplift resistance complies with BS5534.
- More uniform airflow than vents.
- High degree of vapour permeability greatly reduces the risk of condensation.
- Ensures continuity of air movement in loft.
- Ensures approval of non-ventilated roof and no ridge ventilation.
- 15 year warranty.
- Roll size 1m x 50m / 1.5m x 50m, weight 170g/m².
- Colour: purple printed top layer and grey underside.

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.

Proctor Air® Warranty

Specify Responsibly





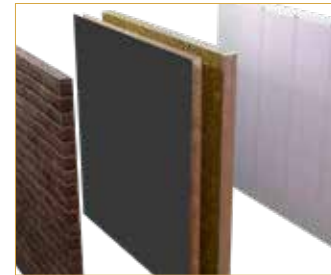
When considering moisture in a wall application for timber frame, two types of moisture should be looked at - precipitation and condensation. Precipitation factors should be looked at closely and a suitable secondary weather protection layer utilised on the timber frame to protect the building during construction. When assessing moisture in terms of condensation, the utilisation of a vapour control layer and a breather membrane will reduce any risk in the timber frame wall. The vapour control layer should be used on the inside i.e. warm side of the insulation. The correct installation of the vapour control layer will also increase the airtightness of the building and improve the energy efficiency.

PROCTORWRAP®

Proctorwrap is a spunbonded polypropylene film laminate material developed primarily as a breather membrane for use in timber frame wall and light steel frame applications.

Key Features & Benefits

- Increased airtightness over traditional breather membranes.
- Allows temporary protection until primary external covering is installed / applied.
- BBA Certified.
- Provides a reduced risk of tears and subsequent remedial work.
- Airtight and vapour permeable.
- Fire rating to EN 13501-1 Class E.
- Roll size 1.4m / 2.7m x 100m, weight 100g/m².
- Colour standard stock options grey or blue.



PROCTORWRAP REFLECT®

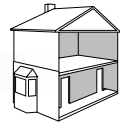
Proctorwrap Reflect is a vapour permeable low emissivity membrane specifically designed to enhance the thermal performance of timber and steel frame structures. Proctorwrap Reflect is a non-woven polypropylene foil laminate, providing breathability, as well as secondary protection to the building during construction.

Key Features & Benefits

- R value 0.71 m²K/W.
- Competitively priced.
- Enhanced foil surface.
- Low vapour resistance - complies with TRADA and NHBC requirement.
- High strength to weight ratio.
- Improved thermal resistance.
- 1.5, 2.7 & 3 metre wide rolls.
- Weight: 140g/m²



WALLS



REFLECTATHERM PLUS®

Reflectatherm Plus is a reflective, high resistance air and vapour control layer for internal walls, ceilings and floors, specifically designed to enhance the thermal performance when placed on the warm side of the insulation.

Key Features & Benefits

- High vapour resistance.
- Creates service void.
- Creates an unbroken vapour control layer.
- R value of 0.72 m²K/W when used with a minimum 19mm service cavity.
- Helps meet the requirements of the new Part L in England & Wales, Section 6 in Scotland.
- Sd value of > 150m.
- Roll size: 1.5m x 50m, 2.7 x 100m & 3m x 100m
- Weight: 140g/m².



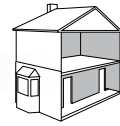
REFLECTAFOIL® TAPE

Reflectafoil Tape is a flame retardant aluminium foil tape coated with a cold weather water based acrylic adhesive on one side, and lined with a release paper to protect the adhesive face. This product has been tested to EN 13501-1 and achieves Class B.

Key Features & Benefits

- 30 micron aluminium foil tape.
- Airtight.
- Vapour tight.
- Ideal for sealing joints in vapour control layers.
- Foil conforms to irregular surfaces.
- Reaction to Fire Class B to EN 13501-1.



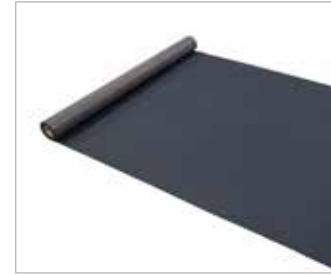


FAÇADESHIELD® UV

Façadeshield UV is designed specifically to ensure the building fabric maintains water resistance and breathability behind open jointed cladding.

Key Features & Benefits

- Open jointed façades.
- UV-stabilised.
- Anti-glare.
- UV resistance.
- Airtight yet highly vapour permeable.
- Roll size 1.4m x 50m.
- Weight 220g/m².



WRAPTITE® UV TAPE

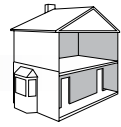
Wraptite UV Tape is a Class B fire rated tape that combines the properties of vapour permeability and airtightness in one innovative, self-adhering product. Wraptite UV Tape has water resistance and UV resistance to provide a "shadow" appearance within open rainscreen façades. Wraptite UV Tape prevents 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 tape.

Key Features & 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.



WALLS



PROCHECK® ADAPT

Procheck Adapt is a variable-permeability vapour control layer. It is designed to protect 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.



Key Features & 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.



FIRESHIELD®

Fireshield is a vapour permeable walling underlay with an intumescent coated surface. Fireshield is suitable for all walling applications including those in Timber Frame buildings. The categorisation of Fireshield as a 'FR Build – External Membrane' by the STA allows the membrane to be used in Closed panel systems and gain the maximum 5 points for wall assembly assuming the constructions are similar to those detailed in our article (please scan QR code for further details).



Key Features & Benefits

- The unique intumescent coating helps protect the substrate.
- Vapour permeable walling underlay for use either directly onto sheathing or insulation.
- Class B, s1-d0 over standard timber sheathing.
- Complies with BS5250, BS4016 & NHBC requirements for vapour permeable walling underlays.
- BBA Certified.
- Ideal for use in rainscreen / façade construction.
- Part B compliant in relevant buildings and those over 11m/18m.



WALLS



PROBREATHE® A2

Probreathe A2 is 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 freehanging or onto a substrate which is minimum A2-s1,d0.



Key Features & Benefits

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

PROCHECK® A2

Procheck A2, is a vapour and airtight membrane. Procheck A2, with its Class A2-s1,d0 fire classification to BS EN 13501-1, means it will not significantly 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.

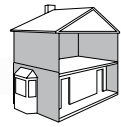


Key Features & Benefits

- Fire resistant 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 and those over 11m/18m.
- BBA Certified.



AIRTIGHTNESS

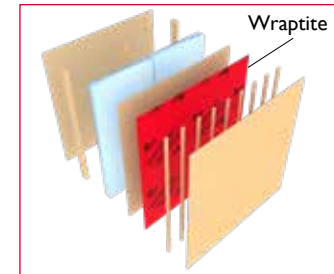


In buildings, air leakage normally manifests itself as uncontrolled flow of air through gaps and cracks in the fabric. The result is significant reduction in the thermal performance and efficiency of structures.

The construction industry, driven by increasingly rigorous Part L Regulations, Section 6 in Scotland and the overall energy-efficiency agenda, is putting the creation of air tight buildings at the top of the agenda, in refurb as well as new build.

WRAPTITE®

Wraptite combines important properties of vapour permeability and airtightness in one, affordable self-adhering membrane. Wraptite has received BBA certification (no. 15/5274) for use in timber frame walls, roofs and modular floor applications. It is the only self-adhering vapour permeable air barrier certified by the BBA.



It fully bonds to most substrates, with a key benefit being its ease of installation, negating requirement for sealants or tapes.

Wraptite airtight membrane makes a significant 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. With a rating of Sd 0.039, it provides a high degree of permeability in a commercial quality, self-adhered, airtight breathable membrane.

Key Features & Benefits

- Airtight yet vapour permeable.
- BBA Certified.
- No primer required.
- Tough facer laminate resists punctures and tears during construction.
- Manufactured rolled goods ensure consistent properties and performance.
- Wide service temperature range (-40°C - 100°C).
- Can be left exposed for up to 90 days (North America) or 120 days (UK) during construction*.
- No VOC's.



*Please contact the A. Proctor Group's technical department for advice on specific geographical locations.

AIRTIGHTNESS



WRAPTITE TAPE

A useful way of stopping unnecessary air leakage around openings and overlaps is to use Wraptite tape, an airtight tape with high vapour permeability for internal and external applications.

It fully bonds to all standard substrates, suppressing air leakage around joints, openings and penetrations. It is also suitable for permanent airtight sealing of membrane overlaps.



Key Features & Benefits

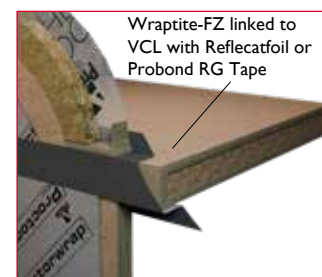
- Resilient composition, which resists punctures and tears during construction.
- Flexibility, facilitating ease of application and detailing.
- Wide operating temperature range (-40°C to +100°C).
- Can be left exposed for up to 120 days (UK) during construction.
- No primer required.

WRAPTITE-FZ

Wraptite-FZ is a vapour permeable airtight membrane for use at floor junctions. It is flexible and offers temporary protection against wind driven rain, snow and dust.

Key Features & Benefits

- Ensures continuous airtightness at floor cassettes when joined to VCL.
- 750mm & 1m wide rolls for quick installation.
- Low vapour resistance.
- Water resistant Class W1, tested to EN 1928.



Cassette Floor Junction



AIRTIGHTNESS



WRAPTITE CORNERS

Wraptite Preformed Airtight Corners have been developed for the difficult areas around doors and windows where maintaining air barrier continuity is difficult and time consuming. Wraptite corners' simple design and installation process makes sealing openings against air leakage simple, just peel off the release liner, stick the corners in place, then install the Wraptite membrane as normal.



Key Features & Benefits

- Ensures continuity of airtightness measures.
- Simplifies complex detailing.

WRAPTITE LIQUID FLASHING

Wraptite Liquid Flashing is a high-quality, gunable, elastomeric, polyether, liquid applied flashing and detailing membrane. It bonds to most construction materials, such as aluminium, brick, concrete, wood, vinyl, and exterior sheathing boards. Wraptite Liquid Flashing is compatible with the entire line of A. Proctor Group's vapour permeable products for joint detailing in exterior sheathing panels.



Key Features & Benefits

- Continuous seal and system approach.
- Can be applied in damp conditions.
- Does not peel back when left exposed.
- Does not create build up in rough openings.
- 100% solvent free.
- Bonds to most construction materials.
- Does not harm foam insulation.



Case Study - New Self-build farmhouse warms to external Wraptite® airtight solution

A new self-build farmhouse in the Scottish countryside has been fitted with the high-performing Wraptite air-barrier. The project is designed to Passivhaus standards by Architect Frances Strachan-Friar. Talla Fiodha ('timber or wooden hall' in Gaelic), Charleston Farm, near Errol, Perthshire, will be the new home for Frances and her husband.

From the outset, the aim was to achieve a more sustainable design and follow a different approach from the traditional timber kit. After undertaking significant research into different types of construction, the architect selected Xilonor CLT cross-laminated timber installed by Glulam Solutions Ltd., Inverurie.

Frances Strachan-Friar commented on how the selection of Wraptite has benefitted the development. "The specification of the correct type of airtightness barrier was critical in achieving thermal efficiency. Wraptite was

chosen because it allows the airtightness layer to be fitted to the outside of the construction. In doing so, the external application of Wraptite provides essential protection in the form of weatherproofing for the CLT during the build.

"The Wraptite system was great and easy to apply, especially around junctions, enabling us to seal all of the junctions completely. The use of a traditional membrane would not have given the same performance. I have previously specified products from the A. Proctor Group, but this was the first time using Wraptite. Proctors provided a comprehensive Toolbox Talk and have been a great support throughout the project."

The Wraptite system is the only self-adhering vapour permeable air barrier certified by the BBA. It combines the critical properties of vapour permeability and airtightness in one

self-adhering membrane. As a result, it provides high vapour permeability in a continuously sealed, airtight membrane.

The high vapour permeability of the Wraptite air barrier allows the substrate beneath to dry quickly and moisture vapour to escape and reduces the likelihood of mould, mildew, condensation, timber distortion and metal corrosion. The vapour permeability of Wraptite also allows any water vapour to escape efficiently, thereby avoiding interstitial condensation problems.

Designed to replace traditional airtightness methods cost-effectively, Wraptite is a low-resistance vapour permeable air barrier, with the added benefit of providing temporary protection against the elements during construction.



“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
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