

Timber Frame Solutions





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.

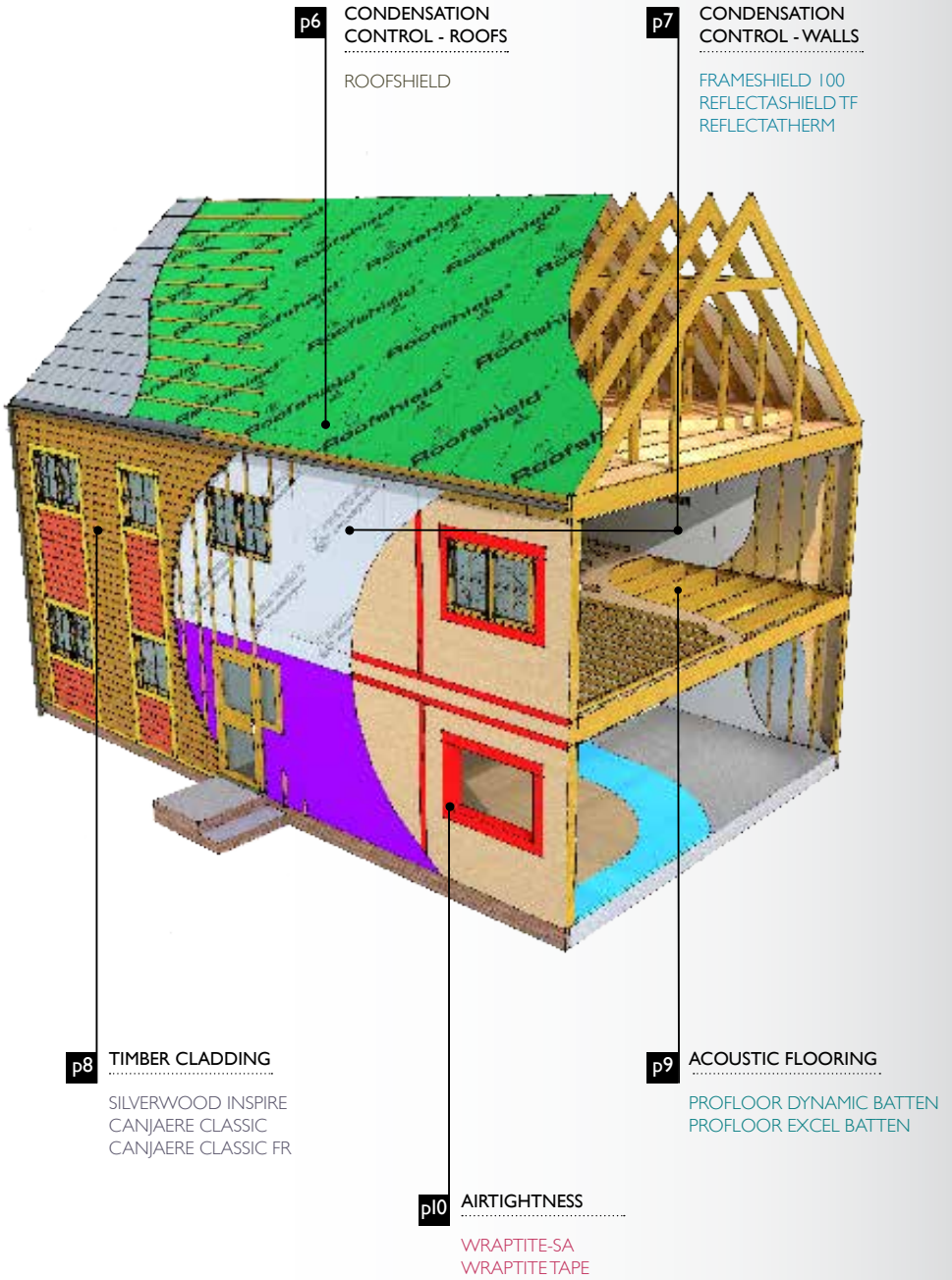
The embodied energy of timber is lower than that of other common building materials, meaning buildings constructed with timber frames will often require less energy to produce than those built of other materials. Timber is also a renewable resource in plentiful supply and, if managed responsibly, building 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.







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 innovative solutions including breather membranes for walls, insulation solutions in terms of reflective membranes and acoustic flooring solutions resulting in them providing the benchmark performance for timber party floors in the Robust Detail handbook.

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.

The Group commissioned their own acoustic laboratory which is timber frame based to offer our clients the ability to test both wall and floor options to meet the requirements laid down by the building regulations.



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 high performance innovative roofing underlay to simplify design, to reduce risks of condensation and at the same time providing solutions to reduce heat loss in the roof space.

ROOFSHIELD

Roofshield is a unique patented vapour permeable tile and slate underlay. The product provides the most cost effective solution to controlling interstitial condensation in a pitched roof.

Key Features & Benefits

- Air and Vapour permeable.
- Low vapour resistance.
- Water Resistant
- Cost effective solution.
- Roll size 1m x 50m, weight 9.25kg.
- Colour green printed top layer and white underside.



Roofshield carries 2 BBA certificates -96/3220 for insulated pitched roofs, and 99/3648 for cold roofs where insulation is placed at ceiling level. The cold roof certificate includes for various shapes and sizes of roofs, including hips, valleys, room in the roof etc and even extends to the Scottish construction of softwood sarking boards with the slates fixed directly to the underlay without the requirement of additional ventilation into the loftspace.

Roofshield has approval from the NHBC for use in pitched roofs without ventilation offering cost savings and ease of design and supervision.

ROOFSHIELD FACILITATES RADICAL ROOF DESIGN

This unique and innovative private dwelling house in Aberdeenshire has used Roofshield breather membrane, supplied by the A. Proctor Group Ltd.

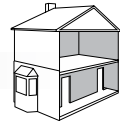
The architectural design is particularly distinctive being of circular form with split dual sloping roof. The construction form is based on high thermal efficiency timber frame using Scotframes Val-U-Therm system. The roof was particularly difficult with its geometry, almost like slating the inside of a bowl. 2.5 tonnes of Burlington Best random width slate has been laid on the roof.



On such a complex roof, the roofing contractors, John Rhind Slaters, wanted to make sure only the best vapour and air permeable membrane was used.

Roofshield has unique vapour and air permeability characteristics, which allows even the most complex of pitched roofs to breathe - without the need for traditional air gaps or secondary venting products. Roofshield is as easy to install as traditional roofing felt.

The very low vapour resistance of 0.065MN/g combined with high air permeability reduces the potential for interstitial condensation as far as is possible, and without the requirement to use a vapour control layer, thus giving a robust and dependable solution that can be specified with confidence.



WALLS

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 waterproofing 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.

FRAMESHIELD 100

Frameshield 100 is a single layer non-woven polypropylene wall breather membrane. It can be used behind brick work, rain screen cladding, vertical tiling, timber cladding and other close jointed cladding materials or systems.

Key Features & Benefits

- Low vapour resistance.
- Special sizes, corporate colour and printing available on request.
- Class W2 in accordance with BS EN 13859-2:2010.
- Fire rating to BS EN 13501-1:2007 Class F.
- Roll size 2.7m x 100m, weight 27kg.
- Colour standard stock options grey or green.



REFLECTASHIELD TF 0.81

Reflectashield TF 0.81 has the highest performance of any reflective vapour permeable membrane. It is specifically designed to enhance the thermal performance of timber and steel frame structures. Reflectashield TF 0.81 is a non-woven polypropylene film laminate, providing excellent emissivity and breathability, as well as secondary protection to the building during construction.

Key Features & Benefits

- R value 0.81 as tested by NPL.
- Enhanced foil surface.
- Unique patented three layer composition.
- Low vapour resistance - complies with BS4016, TRADA and NHBC requirement.
- Water resistant.
- High strength to weight ratio.
- Improved thermal resistance.
- 1.45 & 2.7 metre wide rolls.



REFLECTATHERM PLUS

Reflectatherm Plus is a reflective vapour control layer. It combines the highest thermal performance in its class with a high vapour resistance to prevent interstitial condensation.

Key Features & Benefits

- High vapour resistance.
- Improved airtightness.
- Creates service void.
- Improved thermal resistance.
- R value of 0.79 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.
- Roll size: 1.35m x 50m
- Weight: 7kg. Thickness: 0.17mm.





EXTERIOR

Timber Cladding provides flexibility to create unique designs through the selection of wood, texture, colour and profiles. All of the range is suitable for timber frame construction.

SILVERWOOD INSPIRE TIMBER CLADDING

Silverwood is one of Europe's leading manufacturers of painted timber cladding. It is regularly specified by architects & contractors due to its proven performance from over 20 years of industry use. Silverwood Inspire is an original range combining traditional cladding with a planed and brushed finish available in a modern palette of colours.

Key Features & Benefits

- 10 year guarantee against timber decay
- 10 year guarantee on the finish.
- Secret fix profile for an updated modern look and an easier more cost effective installation
- Norway Spruce treated to Class Use 3a, durable up to 50 years as a result of the combined timber treatment and the Silverwood factory applied paint finish
- Cladding certified CTB B+ and CE marked
- Extensive range of modern, traditional or natural colours.
- Bespoke colours available for orders over 300m².



CANJAERE CLASSIC TIMBER CLADDING

The Canjaere Classic range combines the aesthetic beauty of natural wood with a preserved, pre-finished look. Canjaere has been manufacturing treated timber cladding for over 10 years. The sophisticated oil treatment protects the timber by avoiding moisture pick-up.

Key Features & Benefits

- Canjaere Classic 30 year warranty.
- Available in Brown, Golden, Natural & Red.
- Available in three standard profiles.
- Excellent durability
- Low maintenance
- Certified PEFC & CE marked



CANJAERE CLASSIC FIRE RETARDANT TIMBER CLADDING

The fire retardant treatment protects the wood and the building in slowing down fire progress. The treatment also protects the wood against moisture and combines the aesthetic beauty of wood with a preserved pre-finished look.

Key Features & Benefits

- Canjaere Classic FR 10 year warranty.
- Available in Brown, Golden & Red.
- Available in three standard profiles.
- Fire retardant to B-S2-d0 equivalent to Class 0
- Environmental credentials





The acoustic performance of party floors is an increasingly important factor in flatted developments and The A Proctor Group can provide solutions to meet the statutory requirements of Part E for England and Wales and Section 5 for Scotland.

PROFLOOR DYNAMIC BATTEN - Type 55 / 67 / 81 / 91

Profloor Dynamic batten provides excellent levels of impact and airborne sound insulation. The unique dual foam not only provides the performance characteristics but enables minor irregularities in the surface of the sub-floor to be taken up.

Key Features & Benefits

- Robust Detail compliant FFT1, FFT3 & FFT80 (Scotland)
- Foam will not degrade through time unlike some fibrous materials.
- Can be used on timber or concrete floors.
- Moisture resistant impregnated battens are available.
- Non-load bearing partitions can be built off the finished floor.
- Foams are biologically stable.
- Timber in battens is kiln dried to below 20% moisture content.
- 2.4m length batten for quicker installation.
- Suitable for new build and refurbishment.
- 6 - 8mm compression under load.



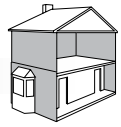
PROFLOOR EXCEL BATTEN - Type 58 / 72 / 82

Profloor Excel Batten System provides exceptional levels of impact and airborne sound insulation using a unique vertically oriented fibre (VOF) as the resilient layer. The cavity created by the batten can be used to accommodate services.

Key Features & Benefits

- Robust detail compliant FFT1 & FFT3.
- Single batten for use in main floor area, perimeters, kitchens and bathrooms.
- High performance resilient layer - 13mm.
- 2.4m length batten for quicker installation.
- Suitable for new build and refurbishment.
- 1 - 2mm compression under load.





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-SA

Wraptite-SA combines important properties of vapour permeability and airtightness in one, affordable self-adhering membrane. Wraptite-SA has received BBA certification (no. 15/5274) for use in both roofs and in walls behind the rain screen cladding making it an ideal choice for commercial projects with large uninterrupted facades. It is the only self-adhering vapour permeable air barrier certified by the BBA.

It fully bonds (needing no mechanical attachment) to virtually any substrate, with a key benefit being its ease of installation, negating requirement for sealants or tapes.

Wraptite-SA 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

- No primer required.
- BBA certification no 15/5274.
- Tough facer laminate resists punctures and tears during construction.
- Lightweight and easy to install.
- Manufactured rolled goods ensure consistent properties and performance.
- Wide service temperature range.
- Can be left exposed for up to six weeks during construction
- No VOC's

WRAPTITE TAPE

A useful way of stopping unnecessary air leakage around openings and overlaps is to use Wraptite tape, an air-tight, tear resistant 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 six weeks during construction
- No primer required





PUSHING THE BOUNDARY IN EFFICIENT CONSTRUCTION

The A. Proctor Group recently supplied Roofshield, their unique air and vapour permeable pitched roof underlay to an exclusive self build project.

To complement the specification, for the walls, Reflectashield TF 0.81 high performance breather membrane was used on the outside face with Reflectatherm Plus vapour barrier on the inside which assisted in achieving a U-value for the walls of $0.12 \text{ W/m}^2\text{K}$. The roof panels also had Reflectatherm Plus vapour barrier on the inside with Roofshield on the outside, contributing toward a final U-value for the roof of $0.11 \text{ W/m}^2\text{K}$.

Scotframe, in association with Hybrid Build Solutions, have recently started work on a “ground breaking” new house project at Oyne near Inverurie in Aberdeenshire

The project involved manufacturing for the very first time, Hybrid Build Solution’s “CLTherm” concept, which is a combination of CLT (Cross Laminated Timber) slab and Scotframe Val-U-Therm panels. The house has some very distinct features and will showcase a large number of CLT and Val-U-Therm panels, pushing the boundaries in efficient construction.

This is the first of it’s kind, not only in terms of “CLTherm” but also a real hybrid construction using all product types. Air-tightness was also a key requirement on this project.





"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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