



EXPOSED ROOF SYSTEMS



Protan solutions

Protan is Scandinavia's largest manufacturer of thermoplastic roofing materials and is at the forefront of membrane technology.

Protan (UK) Ltd offers a range of durable PVC single-ply membranes, which offer the flexibility of design required for modern roofing systems. More than 70,000,000m² of Protan membranes have been installed throughout Europe since 1971 and our oldest roofs continue to be fully-functional today.

Protan's exposed roof systems incorporate new and innovative methods of installation; time- and labour-saving devices; and improved wind uplift resistance with an increased focus on off-site prefabrication. Exposed Protan roof systems include:

- Standard Overlap
- Prefabricated
- Vacuum
- Adhered

PREFABRICATION

Protan has four manufacturing facilities throughout Europe, which can prefabricate Protan PVC single-ply membranes off-site, ensuring that waste is kept to a minimum and installation time on site is reduced.

Early consultation ensures optimal design using *ProPlan*, providing outstanding technical service to the construction market.

ENVIRONMENTAL CONSIDERATIONS

Protan prides itself on delivering new and innovative solutions that are environmentally friendly. Protan's manufacturing systems are ISO14001 certified and are continuously improved to enhance environmental performance.

Environmental Product Declarations for Protan SE 1.2mm, SE 1.6mm and G 1.5mm PVC single-ply membranes are available upon request.



Protan membranes

All Protan PVC single-ply membranes are BBA, IAB and IAB certified and approved, with a proven durability in excess of 30 years.

Protan is also a full member of the Single Ply Roofing Association (SPRA), which demonstrates the company's commitment to the improvement of single-ply roofing membranes and their installation.

PVC single-ply membranes benefit from an A+ BREEAM rating when installed within certain roof constructions. For further information, please contact the Protan (UK) Ltd technical services department, or visit www.thegreenguide.org.uk.

All Protan PVC single-ply membranes are manufactured with an anti-slip texture to the upper surface to reduce the likelihood of slipping when walking on them.

PROTAN SE PVC SINGLE-PLY MEMBRANES

Protan SE membranes are installed in the Standard Overlap, Prefabricated and Vacuum systems. Protan SE membranes must be installed in all mechanically-fixed applications, as their integral knitted polyester reinforcement gives them the required tensile strength to resist forces applied by fixings.

Protan SE membranes are available in thicknesses of 1.2mm, 1.6mm and 1.8mm and widths of 1.00m, 2.00m and 3.96m.

PROTAN EX-A PVC SINGLE-PLY MEMBRANE

Protan EX-A membrane is installed in the Adhered system and is a 1.5mm-thick, reinforced Protan membrane with a polyester fleece factory-laminated to its reverse side. Protan EX-A membrane has been developed for adhering to a variety of substrates on both new-build and refurbishment projects.

Design considerations

Unprotected roofs are exposed to all of nature's elements: sun, wind, rain, temperature variations and pollution. Provision should be made for:

- Fire resistance
- Good aesthetics
- Sound insulation
- Strength and stability
- Thermal insulation
- Weather resistance

Flat roofs have the advantage that irregular roof plans can be accommodated, giving benefits over pitched roofs where the geometry of the roof often dictates the form of the building.

Planning restrictions, particularly in urban environments, require maximum use of available building height. A flat roof enables the building to be extended vertically more easily and gives easier access for roof maintenance and arrangement of roof-mounted plant and equipment.

Protan roof systems are equally suitable for pitched and curved roofs, including vertical applications, and in both cold and warm roof constructions.



Protan standard overlap system

The Protan Standard Overlap system is installed by mechanically fixing the membrane to the substrate along its long edge, which is overlapped by the adjacent roll of membrane.

Mechanical fixing and hot-air welding together the rolls of membrane along the overlap guarantees a homogenous seam, which is of greater strength than the membrane itself.

Protan SE membrane can be supplied in widths of 1.00m and 2.00m. The installation of 2.00m-wide rolls in the roof's field zone provides significant labour and time savings for the roofing contractor.

Protan EX membrane is a fleece-backed version of Protan SE membrane, which can be installed in the Protan Standard Overlap system on a cold roof construction.

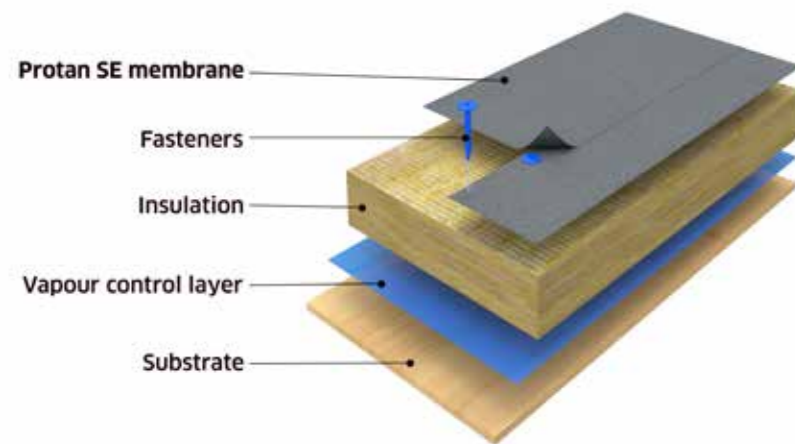
The Protan Standard Overlap system is *Factory Mutual (FM)* approved when installed to FM guidelines. Please contact Protan (UK) Ltd for further information.

BENEFITS

- Applicable for new builds and refurbishments
- Can be installed on a variety of roof decks, including concrete, 18mm OSB3/plywood and profiled steel
- Fully recyclable, as no adhesives are used
- Prefabrication possible
- Proven durability in excess of 30 years
- Quick installation, thereby providing labour savings
- Use of 2.00m-wide rolls of membrane increases installation speed

POLYPROPYLENE SLEEVES

Protan's polypropylene sleeve washer and fastener combination provides a thermal break and practically eliminates cold bridging. The sleeves also prevent the fasteners from penetrating the membrane under foot traffic and the movement of the wind from unwinding the fasteners.



Protan prefabricated system

Prefabricated Protan PVC single-ply membranes are ideal for large, simple roof plans that would traditionally be waterproofed using standard rolls of Protan SE membrane.

Prefabricated membranes enable large areas of Protan membrane to be installed rapidly by reducing on-site hot-air welding operations by up to 70%.

Prefabricated Protan membranes are manufactured off-site, with secret-fix strips factory-welded to their reverse side by high frequency welding technologies.

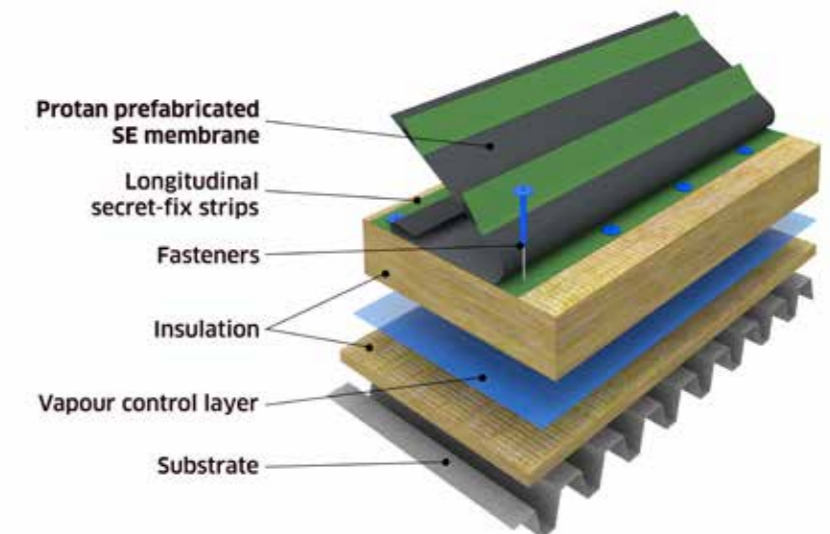
The secret-fix strips are spaced at regular centres, usually 1.00m to simulate 1.00m-wide rolls installed in a Protan Standard Overlap system, however the spacing can be reduced to account for high wind uplift pressures.

Prefabricated membranes significantly reduce the volume of membrane required, as the number and width of overlaps between adjacent rolls of membrane is minimised.

BENEFITS

- Bespoke membrane lengths to suit
- Fast-track installation
- Labour-saving system
- No adhesives required
- No penetration of the waterproofing membrane
- Significant reduction in the volume of membrane required

Animations and videos explaining the benefits and installation of the Protan Prefabricated system can be found on YouTube. Further information can be obtained from Protan (UK) Ltd.



Protan vacuum system

The unique Protan Vacuum system uses wind forces present in the environment to hold the Protan membrane in place, thus providing durability and protection even in the most extreme conditions.

Since the installation of the first Protan Vacuum system in Norway in 1985, the system has been installed on over 2,000,000m² of roofs throughout Europe.

The Protan Vacuum system works by loose-laying Protan SE, EX, or EXG membrane on the roof, with fixings around penetrations and the roof perimeter only. Strategically located Protan vacuum vents installed within the system act as pressure-release valves, which allow controlled air flow through and out of the system through specially designed air valves – the stronger the wind forces, the better the system works.

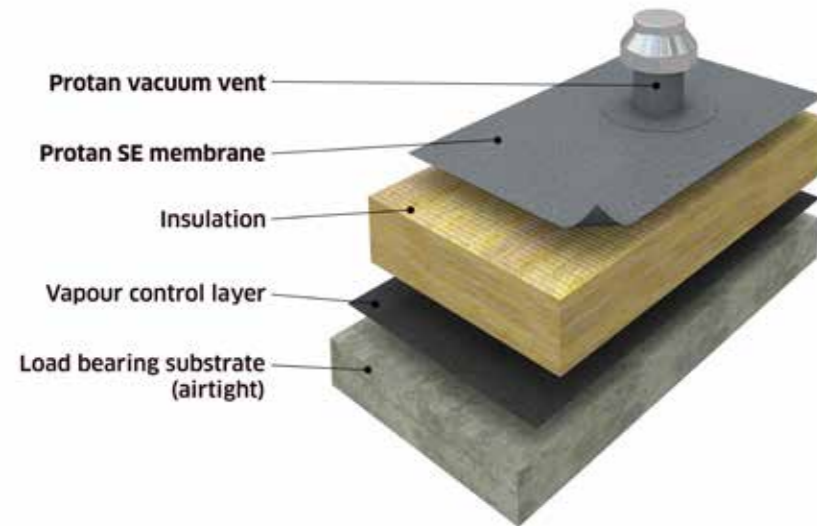
The Protan Vacuum system is suitable for new roofs and refurbished roofs, especially those with concrete roof decks.

Two key components of the Protan Vacuum system are an air-tight roof deck and a load-bearing vapour control layer.

ENERGY EFFICIENT AND SUSTAINABLE

The Protan Vacuum system offers many benefits to the specifier, contractor and building owner with regards to energy efficiency and sustainability:

- The system is adhesive-free, so there is no health risk for the installer, nor any toxic waste
- The air-tight system helps to achieve and can exceed part L building regulations
- The roof deck and vapour control layer are not penetrated by fixings
- Upon expiry of the system's minimum 30-years working life, the Protan membrane is easily recycled along with all of the components



Protan adhered system

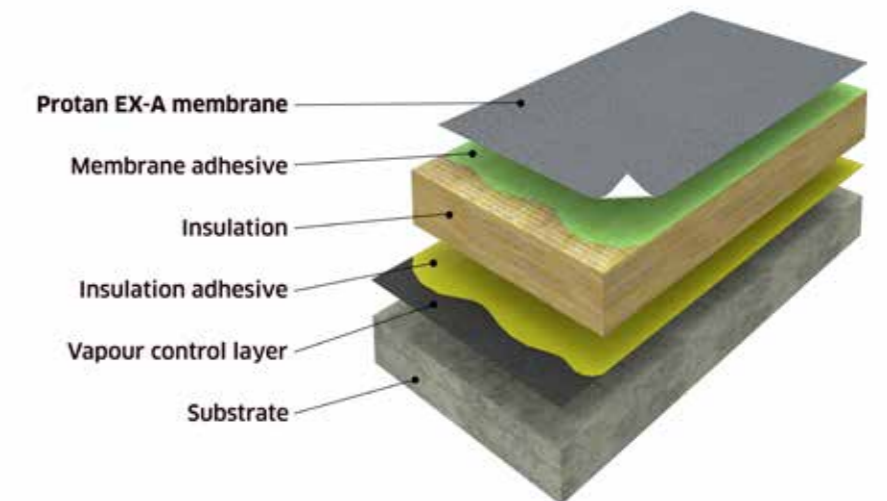
The Protan Adhered system is the only Protan roof system to use adhesives, for which the Protan EX-A PVC single-ply membrane was developed.

Protan EX-A membrane is a 1.5mm-thick, reinforced Protan membrane with a polyester fleece factory-laminated to its reverse side. The membrane is fully bonded to a tissue-faced insulation board, or the substrate, with Protan G membrane used for detail work.

The Protan Adhered system is ideal for buildings with high levels of humidity or chemically-active environments, for example swimming pools, and applications where mechanical attachment would be difficult, for example concrete roof decks.

BENEFITS

- Applicable for new builds and refurbishments
- Can avoid penetration of the vapour control layer and roof deck
- Can be installed on a variety of substrates
- Quick installation





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