



**PROTAN**

Product Catalogue

Roofing and Waterproofing Membranes

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# Welcome to Protan – We Make Roofs

**Protan manufactures single ply roofing membranes. Our customers are based worldwide with the majority of our customers being based in Northern Europe.**

Protan's roofing membranes are produced in Norway to the highest quality standards. We offer factory-welded, pre-cut and tailor made sheets to meet all of your roofing needs. We also offer pre-fabricated accessories as well as standard rolls of single ply at your request.

We have different system solutions which will meet your roofing requirements. Our systems and products are presented in this catalogue.

## History

Protan, established in 1939, has a long successful history. Protan has installed more than 100 million square metres of PVC roofs. Protan roofs installed 40 years ago are still performing well today.

Protan's history is characterised by innovation and development to advance our products and the market forwards, whilst Protan's culture is based on solid traditions. Our vast experience and in-depth competence enables us to continuously improve and innovate.

Our products are accredited and tested by many building technology institutes across Europe.

Protan is, to our knowledge, the only PVC single ply manufacturer in the world with its own significant roof contracting business. Protan employs more than 400 roofers in Scandinavia.

We know what our customers require from a single ply product as we ourselves have colleagues with the same requirements. We share our practical roofing knowledge, systems and software with all of our customers.

We believe that contributing to our customers' success will benefit Protan; hence we do our utmost to ensure that our customers succeed in their markets.



*The Company's headquarters and main production plant is situated in Drammen, Norway.*



Trust is earned over time and a good reputation is not achieved overnight. Our customers trust Protan's solutions, our product quality and our continuous focus on meeting their customer expectations. Protan's strategy is to employ the best people and to contribute to our customers' success, hence we work with the best customers.

### Why Choose Protan?

Protan applies high skill levels and high level of innovation to develop and commercialise products, systems and services.

Our products, systems and services include significant technology content and feature user-friendliness and high quality, providing our customers and other stakeholders with efficient solutions, contributing to enhanced customer benefit.

### What Makes Protan Unique?

- We produce prefabricated sheets, tailor made for your roofing project. Utilising prefabricated sheets significantly reduces installation time and risk.

- Our products and roof solutions meet the highest quality requirements and our products have a 40 year long track-record exposed to harsh weather conditions.

- We offer a unique roof planning software called ProPlan which works within AutoCAD. ProPlan lets the designer optimise the roof system both regarding technical solution and planning of materials. The software both specifies the work required as well membrane layout and the material requirements down to the exact number of rolls, fixings and accessories.

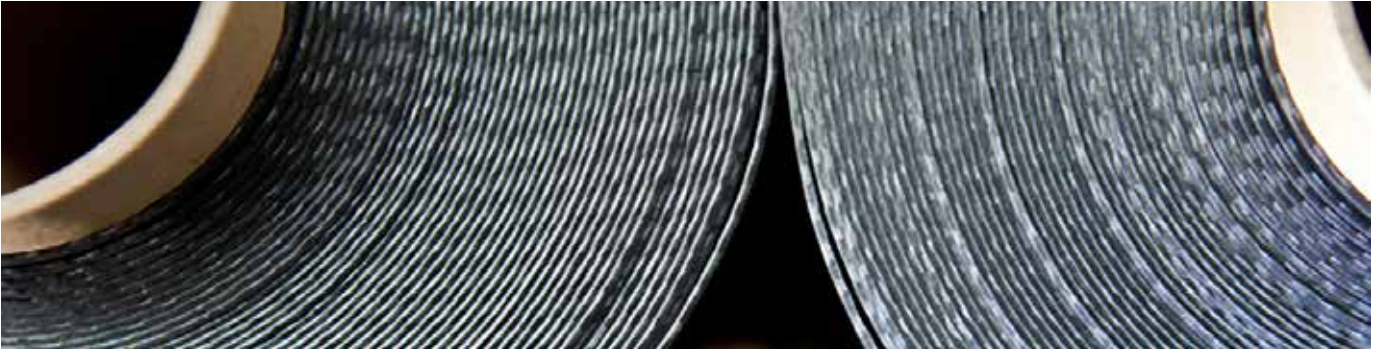
- We offer to our customers a software tool called ProKalk facilitating the offer phase for the roof contractor in their dialogue with the main contractor or principal. ProKalk facilitates the accurate cost calculations of a roofing project enabling the roofer to focus on project profit early in the process.

- Our core focus is roofs and roofing solutions. Roofs are what we do.

### Protan In Brief

- Established in Norway 1939
- Group Sales approximately 140 mill Euro
- Number of employees: 700
- Export: 60% of the sales
- Production plants in Norway and Poland
- Exports to more than 40 countries worldwide





*«The principal function of a roof is to provide durable protection against the internal and external environment to a building.»*

This catalogue has been designed to provide the reader with an overview of the systems and products available from Protan.

The catalogue is split into sections with information on installation systems, membranes and accessories.

Please note that not all products/systems featured in this catalogue are available in all countries. Please contact your local distributor for further details.

**Protan's PVC roofing membranes are textile reinforcement coated with plasticized PVC on both sides.**

Unprotected roofs are exposed to all of nature's elements;

Sun, rain, wind, temperature variations and pollution.

Provision should be made for:

- Weather resistance
- Strength and stability
- Thermal stability
- Fire resistance
- Sound insulation
- Aesthetic appearance



Telenor Arena

*Protan membranes can be produced made-to-measure allowing for zero waste solutions.*

Protan has a positive impact on the environment due our customers using Protan products instead of alternative solutions that are less environmentally friendly.

Protan aims to be an environmentally conscious quality manufacturer of roofing materials and plastic-coated textiles. We achieve this by openly communicating information on our products, solutions and behaviour in line with the needs and expectations of our customers and partners.

Protan aims to help reduce total resource consumption within our value chain.



### Protan's Quality, Health, Safety and Environmental Goals

Protan aims to communicate both internally and externally on all essential environmental conditions related to our business operations.

Protan aims to satisfy all relevant laws and regulations as well as self-imposed quality and environmental requirements.

We continuously monitor compliance with Protan's goals for health, safety, quality and the environment throughout the entire company.

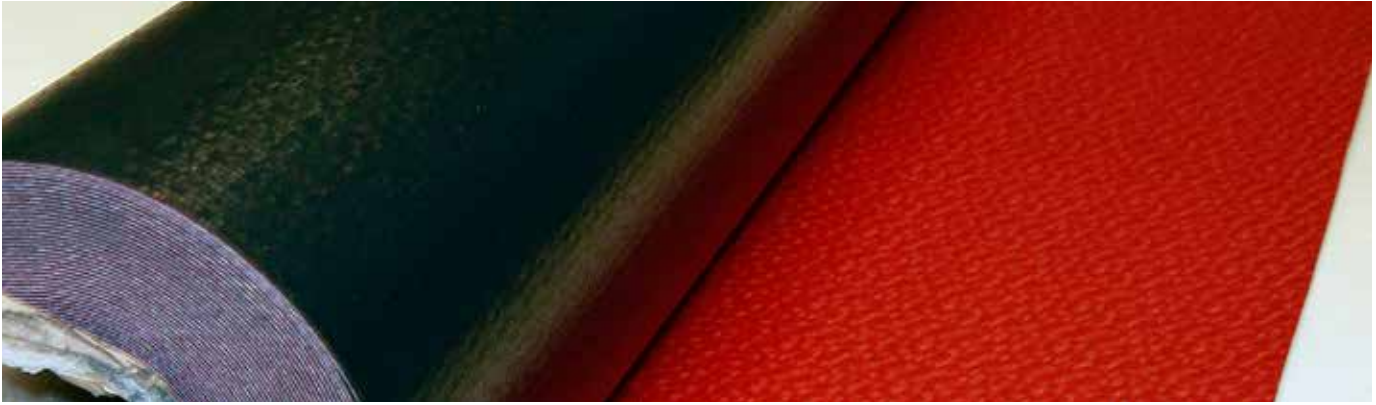
Quality and environmental awareness are the responsibility of all employees. Protan's managers are responsible for addressing these goals in their daily work. All employees should be informed about Protan's goals.

The Quality Assurance Manager is responsible for monitoring systems and documentation as well as providing information and training.

### Positive Contribution to the Environment:

1. Long and proven durability of products
2. Full life cycle analysis
3. Lightweight materials - low environmental emissions from transportation
4. Safe use of chemicals
5. Effective waste management
6. Unique customization - minimising waste and material consumption
7. Outstanding fire retardant properties – PVC is self-extinguishing.
8. Additional fire safety – use of hot air welding (no naked flames)
9. Quality and Safety –ISO9001 and ISO14001





### PROTAN SE

Protan SE is the product Protan recommends to be used on most exposed roof applications, in vacuum or mechanically attached systems. These roofing systems are suitable for new build and refurbishment applications, flat and pitched roofs.

The material is manufactured from pliable PVC with reinforcement of knitted polyester. Protan SE contains stabilizers, which make the product resistant to high and low temperatures, UV-resistant and flame retardant. It has high tear strength, which is especially essential for mechanically attached roofing membrane systems.

The Protan SE range of roofing material has a unique anti-slip surface as standard. Compared with non-textured materials this provides a significant safety factor together with an attractive finish. Hot air is used to weld the membrane together.

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### Description Of Protan SE Range Membranes

#### **Protan SE:**

Polyester reinforced PVC membrane for exposed roof applications.

#### **Protan EX:**

Protan EX is a Protan SE with a laminated polyester fleece on its reverse side and can be installed directly on old roofing underlay or wooden decks.

#### **Protan EXG:**

Protan EXG is a Protan SE with a laminated glass fleece on its reverse side and can be installed directly on polystyrene thermal insulation.

#### **Protan SE Titanium +:**

Protan Titanium + is a root resistant PVC membrane with polyester reinforcement for the application on extensive green roofs.

#### **Protan CoolRoof:**

Protan CoolRoof is a white coloured polyester reinforced membrane with or without extra surface treatment in different variants for applications and design.

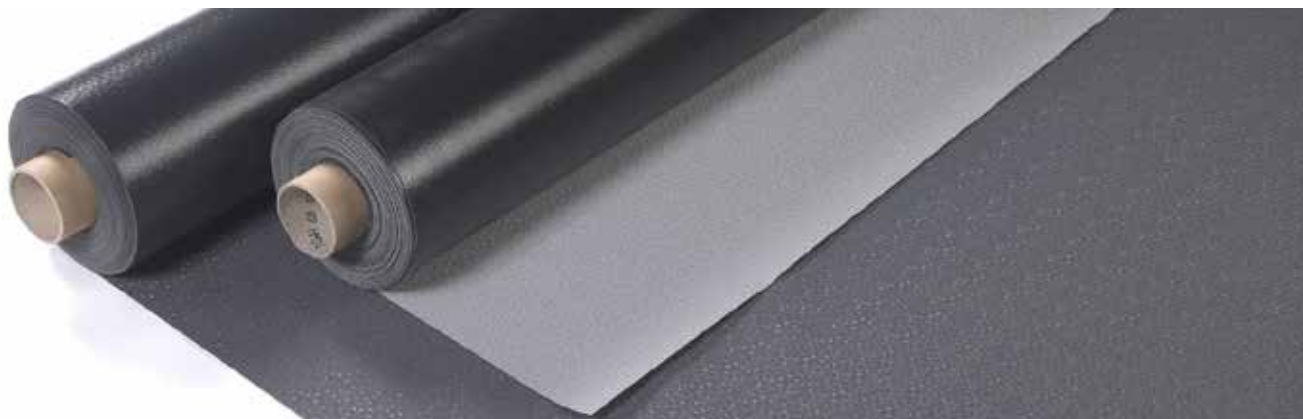
#### **Protan T:**

The Protan T membrane is primarily intended for use as exposed covering on terraces with pedestrian traffic. Protan T is also used as walkway membrane on exposed roofing designs.

#### **Protan EX-A:**

Protan EX-A is a polyester reinforced PVC membrane with a laminated polyester fleece on its reverse side. The membrane is for use in exposed adhered applications.





### PROTAN G

Protan G is the product Protan recommends on protected roofs and in some cases on green roofs. This roofing system is suitable for new build and refurbishment applications. The material is manufactured from pliable PVC with a glass fibre reinforcement.

The PVC contains stabilisers, which makes the product resistant to UV radiation and microbe attacks. It allows the material to keep its functionality when exposed to high and low temperatures and it is also root resistant.

Protan GG is the principal material used for parking decks, on roofs with planting in culverts and in ground structures.

The Protan GG is manufactured from pliable PVC with a glass fibre reinforcement.

Protan GT is the product Protan recommends used for most terraces and balconies, where a strong, durable and safe walking surface is required. This membrane can be installed on solid bases, such as concrete tiles.

Protan membranes have a unique anti-slip surface as standard. Compared with non-textured materials this provides a significant safety factor if walked on when wet, both during installation and regular maintenance.

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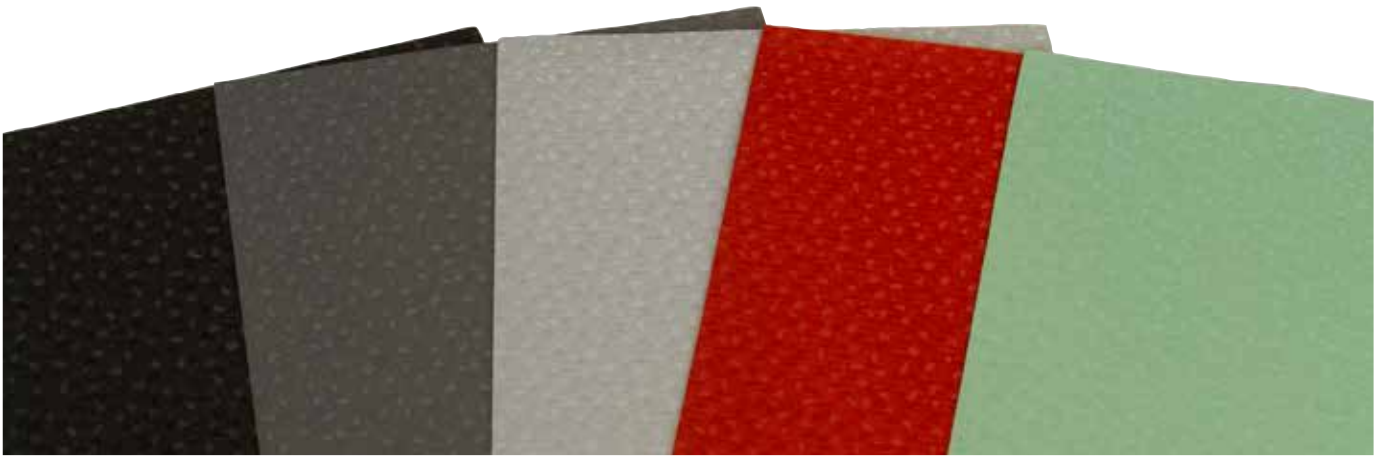
### Description of Protan G Range Membranes

**Protan G:** Glass fibre reinforced PVC membrane for protected roof applications and pitched turf roofs. Glass fibre reinforced, microbe resistant PVC membrane for eg: gravel protected roofs, inverted roofs, extensive green roofs and protected terrace applications.

**Protan GG:** Glass fibre reinforced PVC membrane for example: parking deck applications, intensive green roofs, culverts and in ground constructions. (not UV-resistant).

**Protan GT:** Glass fibre reinforced PVC membrane for exposed covering on terraces with pedestrian traffic.

**Protan GX:** Glass fibre reinforced PVC membrane for adhered exposed applications.



**STANDARD COLOURS**

Protan Code	Nearest RAL
F91 Light Grey	7040
F94 Dark Grey	7012
F01 CoolRoof	9003
F12 Red	3013
F41 Copper Green	6021
FX9 Black Standard	

**SPECIAL COLOUR EXAMPLES**

Protan Code	Nearest RAL
F40 Bluegreen	5021
F19 Brownish red	3009
F68 Blue	5009
F26 Brown	8017
F45 Forrest Green	6005
F38 Yellow	

Special colours are produced to order and are subject to minimum quantities.

**Roof Logos**

It is possible to vary the colours to design your own logo on your roof. Other colours available upon request.



*Using unique design optimization software, Protan is able to provide solutions from the most basic roof type to large, complex designs.*



Working within AutoCAD Architecture, the design software enables the membrane layout to be specified to the exact number of rolls, fixings and other components.

It also allows easy comparison of different Protan Roofing Systems, for example large prefabricated sheets or cut to length rolls.

Architectural CAD drawings are imported directly into ProPlan, which produces the optimal design for the different Protan Roofing Systems.

ProPlan can also schedule all of the materials required for the roof enabling virtual zero waste systems to be supplied.

A roof system which has been optimized technically will also often result in a more efficient solution.

ProPlan offers many benefits to the specifier, contractor and building owner:

### **Reduction**

- In installation costs
- In waste - the membrane is made to measure
- In logistical costs - the membrane is made to order not made for stock

### **Saving**

- In completion time – allows internal trades to start earlier
- In process efficiency - using a single information platform

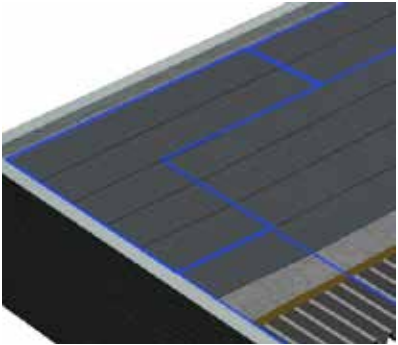
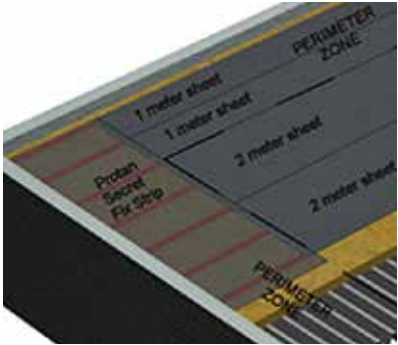
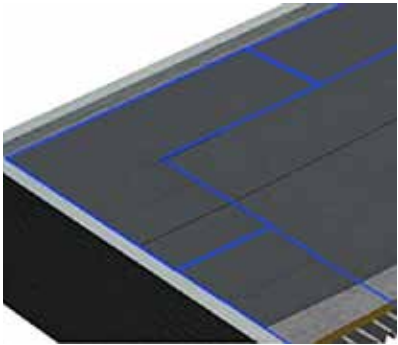



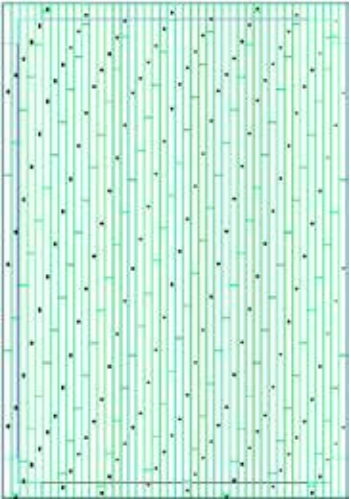

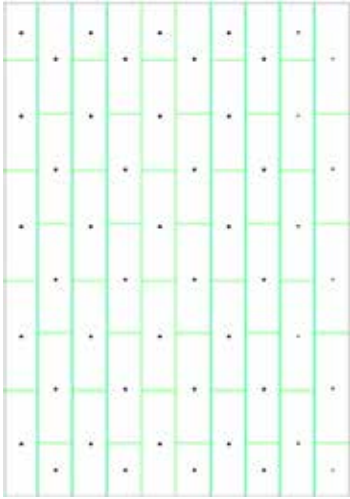



### **ProPlan Design Service**

Please contact your local distributor for further information regarding ProPlan.

ProPlan is designed to help the calculation of roofing projects easier, more accurate and help you choose the best solution.

**ProPlan In Action**

A major benefit of ProPlan is the ability to easily compare different systems. This assists with optimisation and can help make significant savings in materials and installation time. The example below shows a 2000 m<sup>2</sup> roof with three different systems installed.

	Standard Overlap System	Standard Overlap & Secret-fix System Combination	Prefabricated Sheets System
System choice			
			
Membrane layout			
			
Comparison	<p>Welding required: 100%</p> <p>Membrane required: 100%</p>	<p>Welding required: 56%</p> <p>Membrane required: 96%</p>	<p>Welding required: 36%</p> <p>Membrane required: 91%</p>

## 1. Protan Standard Overlap System

Protan's Standard Overlap Mechanically fixed system is the most commonly specified system which is supplied by Protan. Standard Overlap with mechanical fixing can be used in both new build and refurbishment projects and can be installed in both warm and cold roof constructions. The system can be installed on a variety of roof decks.

### Protan Standard Overlap System

In the Standard Overlap System, the membrane is fixed to the base within its side lap and overlapped by the adjacent sheet. The two sheets are then welded together using hot air welding equipment. This guarantees a homogenous seam, which is as strong as the membrane itself.

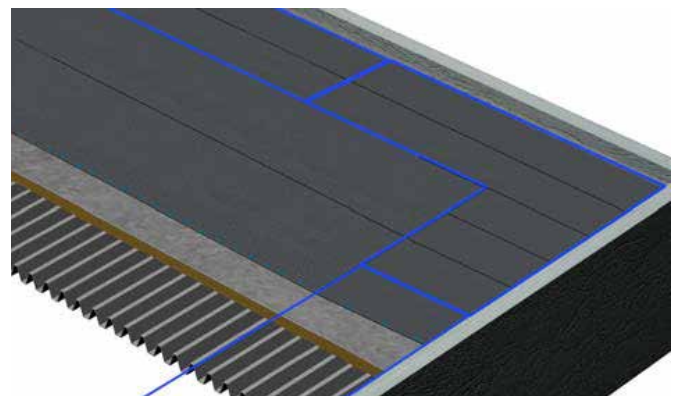


The Standard Overlap System is mechanically fixed and can be installed on the following roof decks in both warm and cold roof build ups:

- Concrete
- Light weight concrete
- Steel
- Plywood
- Timber
- Aluminium

Only Protan SE membrane can be used for mechanically fixed applications such as the Standard Overlap System.

The integral polyester knit gives the membrane the tensile strength necessary for membranes used in mechanically fixed systems.

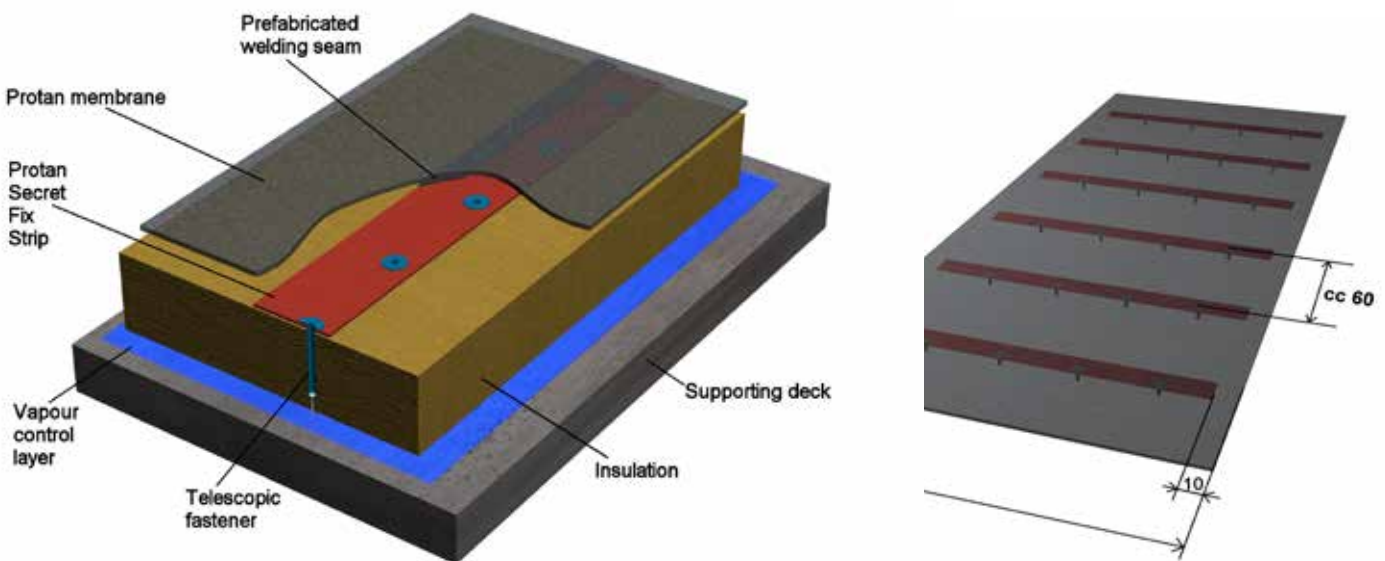


## 2. Protan Secret Fix Strip System

Protan Secret Fix Strip System offers a fast and safe way of covering large areas with no or few penetrations in the membrane.

The system is designed to optimize fastener density by spreading the attachment across the width of the roll. It also has the capacity for very high wind uplift performance and can accommodate profiled metal decking with wide crowns or large spacing between crown centres.

The system achieves high wind uplift ratings under the ETAG and FM Approval, and uniquely provides welding savings compared to the 1m or narrower overlap system.



The Protan Secret-Fix Strip System uses 2m wide Protan SE membrane with 130mm wide, extra strong membrane strips, factory-welded using high frequency welding technologies to the reverse side at regular intervals.

These strips are located transverse to the roll length with intervals varying from 400mm to 1200mm. Side overlaps are 100mm and a 40mm weld is required being produced on site using a hot air welding machine.

On metal deck roofs the Secret-Fix rolls should be laid in line with the decking to ensure that the strips spread the load across the crowns.

A wind uplift calculation should be carried out to determine the quantity of fasteners required per m<sup>2</sup> with regards to corners, perimeters and field zones.

## 3. Protan Prefabricated Sheet System

**Prefabricated sheets are well suited for buildings that require a rapid progress. It is also a patented system specially adapted to wind exposed areas.**

Prefabricated roofing sheets are available in standard widths and lengths, but can also be available in special lengths and widths to suit each project. Waste and number of weld operations on the roof are reduced to a minimum when using prefabricated sheets.

Protan Prefabricated Sheets are ideal for large, simple roof designs that would traditionally require the use of the 1m or 0,67m Standard Overlap System. They enable rapid installation of Protan roofing membrane on large areas by reducing the number of welding operations.

Protan Prefabricated Sheets are manufactured from two widths of 2m Protan SE with 130mm wide Secret fix strips factory welded using high frequency welding technologies to the reverse side longitudinally at regular centres.



***The Prefabricated sheets are available with either 4 or 6 strips on the reverse.***

***These sheets replicate 1m and 0.67m systems respectively, and have the advantage of reducing welding operations by up to 6 fold.***

**Protan has been experience in installing prefabricated systems for more than 20 years.**

### **Prefabricated Sheets may be required If:**

- Short weather windows require greater speed
- Limited winter daylight hours
- Legislation regarding site generated waste
- Lack of available skilled labour
- Reduced on site welding risk
- Preplanned fastening
- Windy areas makes installation of narrow membrane rolls difficult.



### 4. Protan CoolRoof System

Protan CoolRoof is a general description of a white coloured polyester reinforced membrane with or without extra surface treatment in different variants for applications and design. The CoolRoof membrane is used where either the colour itself due to aesthetical reasons or the colour combined with solar reflection properties is focused on.

#### Pure white surface gives:

- Excellent sun reflection values
- Extra surface treatment gives
  - extended protection against pollution
  - extended lifetime expectation

#### Installation:

Protan CoolRoof membrane is a polyester reinforced PVC membrane based on Protan SE product family. It can be both mechanically and vacuum installed.



#### CoolRoof Concept

CoolRoof is a roofing system that can deliver high solar reflectance (the ability to reflect sun rays, reducing heat transfer to the building) and high thermal emittance (the ability to radiate absorbed, or non-reflected solar energy).

Cool roofs enhance roof durability and reduce both building cooling loads and the urban heat island effect. Any building with a dark coloured roof, but

particularly large buildings, will consume more energy for air conditioning than a “cooler” building – a strain on both operating costs and the electric power grid.

Cool roofs offer both immediate and long-term savings in building energy costs.

*The CoolRoof concept is more efficient in warm and sunny geographical areas, than in cooler climates.*

#### Solar panel solutions on Protan CoolRoof membrane

Any solar panel solution, installed on a roof covered by the Protan CoolRoof membrane, will benefit from the high reflection values of the pure white membrane.

Contribution of the reflected sun light to the total power gain from the solar panel will always depend on the angle between the surface of a solar panel and the roof: The sharper this angle is, the more the panel can make use of the reflected sun light.



## 5. Protan Vacuum Roof System

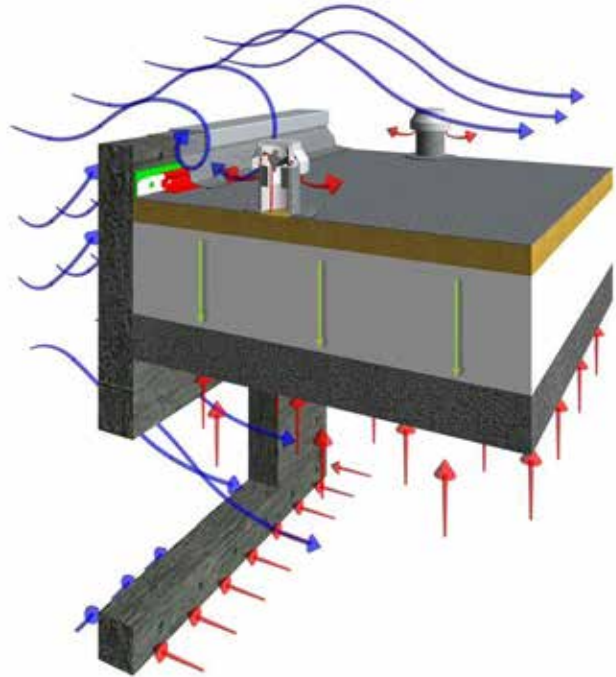
Protan Vacuum Roof system is a unique system which does not require fasteners on the roof surface. The membrane is loose laid on the roof, fastened only around the perimeters and penetrations. The system uses the wind forces (to create a vacuum effect) to secure the membrane to the roof construction.

Since the first Protan Vacuum roof was installed on the Sintef Building and Research Institute in 1998, several million square metres of vacuum roofs have been installed throughout Europe. The stronger the wind force, the better the system works.

The Protan Vacuum system is verified and approved by Sintef Building and Research Institute.

### Benefits:

- No fasteners on the roof surface, therefore reducing costs
- No penetration of the vapour control layer
- No noise from drilling during installation
- Fast installation utilising large sheets of membrane
- Allows trapped moisture to escape from the roof construction



***The Protan vacuum installed roofing system is based on the principle of anchoring the membrane by creating negative pressure in the layer between the membrane and the airtight substrate when subject to wind loading.***

***The negative pressure causes the membrane to be held down against the substrate, and the load is transferred downwards to the supporting structure.***

**The system introduces controlled airflow beneath the membrane through specially designed air valves.**

However due to the nature of the design principle, the load bearing substrate must be airtight.

*The Protan SE product range is well suited for the vacuum roofing system.*

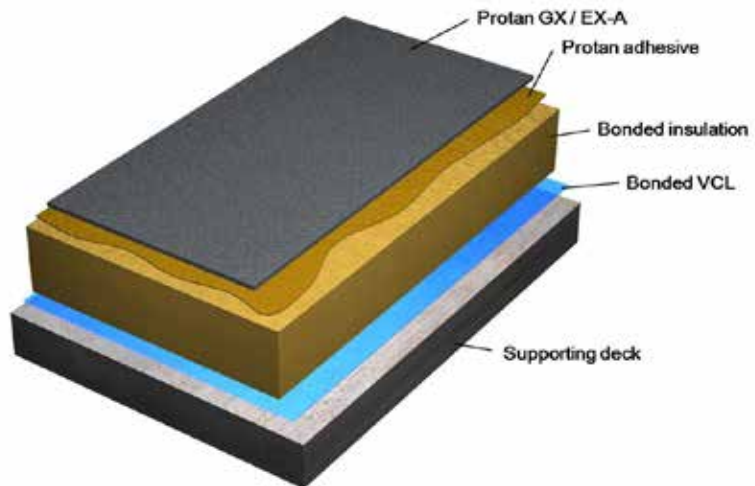


### 6. Protan Adhered Roof System

To secure the membranes against wind uplift, fully adhering is commonly used in regions where weather conditions favour installation using this adhesive based system. Protan Adhered system should not be installed in temperatures below 5°C or conditions of excessive moisture.

Fully adhered systems can be installed over any material, such as:

- Asphalt (primer may be required)
- Aerated concrete
- Plywood
- Timber (boarding and boards made of wood derivatives)
- Polyurethane foam boards with wet lay glass fibre coating
- Mineral fibre insulation boards



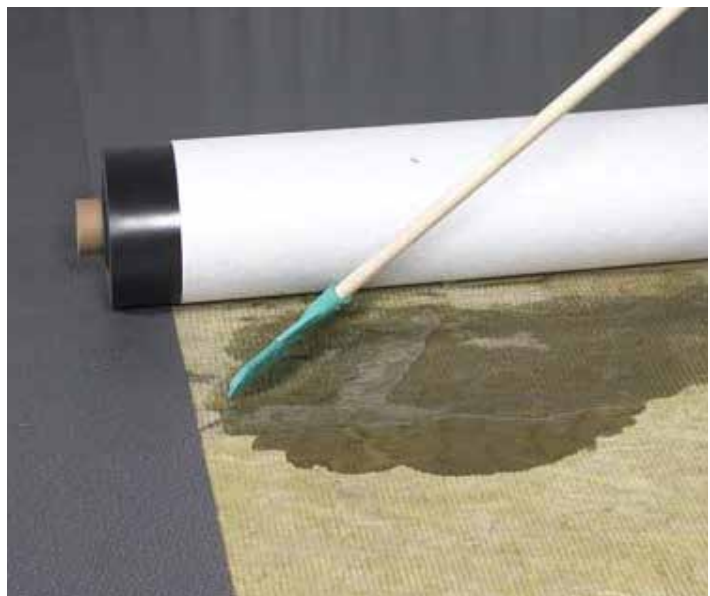
**Protan's Fully Adhered System is welded similarly to all other Protan systems with laps of 100mm and a weld of 40mm.**

Mechanical fixings are also used at changes of angle, perimeters and upstands. Fully Adhered applications can be installed on both cold and warm roofs and new and refurbishment projects.

For fully adhered roofing systems, Protan has developed the PROTAN GX glass fleece reinforced PVC membrane with polyester fleece backing and PROTAN EX-A polyester reinforced PVC membrane with polyester fleece backing.

**Fully Adhered Applications may be required if:**

- Penetration of the roof deck is undesirable
- Perforation of the vapour control layer is prohibited (eg. buildings with high levels of humidity like swimming pools)
- Mechanical attachment is difficult or impossible (eg. woodwool decks)



Roof waterproofing membranes covered with ballast, are in general referred to as protected roofs. The ballast material can be paving, gravel and also soil as substrate for cultivating plants on the roof surface area. The weight of the ballast often requires structural strength in the load bearing construction.

- Protection from the effects of the sun and wind
- Protection from mechanical damage
- Improved fire protection
- Protects the building against the effects of rapid temperature changes
- No penetration of the vapour control layer
- Protection from root penetration
- Requires no mechanical fixing in the main roof area
- Improved acoustic performance
- Provides more natural landscape
- Freedom of aesthetic design
- Provides additional usable space on the roof

## 1. Protan Ballasted Roof System

Gravel gives the roofs an aesthetically appealing surface and provides resistance to flame spread.

The gravel's heat capacity, its ability to reflect light and the humidity stored beneath, all contributes to cooler interior climate during hot periods of summer.

Gravel ballasted roof is a well-proven construction, which allows use of roofing membrane in larger sheets without any need of mechanical fasteners in the field.

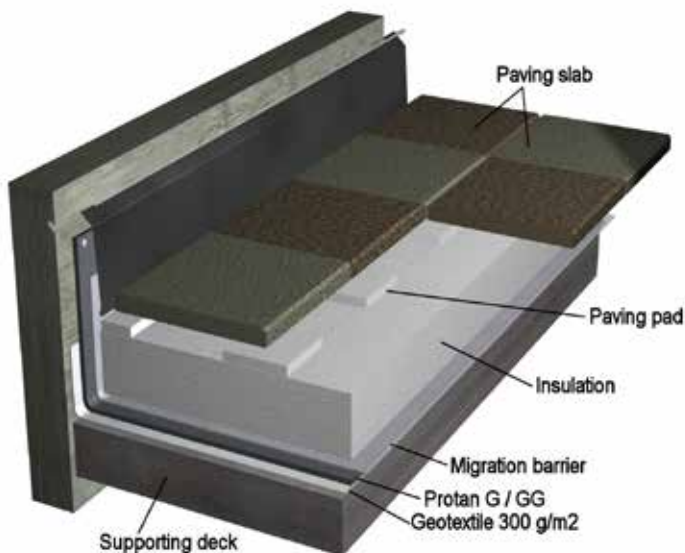
It provides easy and efficient installation, but requires mechanical anchoring of the membrane with a linear system along all

upstands, changes of angle and terminations.

Additional ballast may be needed at those areas subject to greater wind uplift, such as corners and perimeters. Aggregate should then be replaced with paving of concrete tiles and in extreme cases, poured concrete would be recommended.

Recommended membrane for gravel ballasted roof is Protan G. The membrane is root resistant, stabilized to withstand UV-radiation, heat and microbes.

On roof constructions with extra impact, Protan GG, which is thicker than Protan G, can be recommended.



## 2. Protan Inverted and DuoRoof System

These are both variants of the traditional insulated, protected roof constructions, in which the membrane is placed under or in between the insulation panels.

Vapour resistant insulation made from extruded polystyrene (XPS) on top of the membrane provides additional protection from temperature and mechanical stress.

The insulation panels are installed with overlapping

rebutted edges or in two layers.

To stop fines and sharps from penetrating into insulation and membrane layer, polyester felt is to be installed on top of the insulation.

Protan G and GG must be separated from EPS- and XPS- panels by a migration barrier.

The wind uplift forces and flotation of insulation from rainwater panels must be compensated by sufficient gravel or ballast thickness.

Green roofs are vegetated layers on top of the conventional waterproofed roof surfaces of a building. Whilst green roofs come in many different forms and types, usually a distinction is made between extensive, intensive and turf roofs. Aesthetic effects, as well as utilization of the roof for other purposes, may be additional benefits for these types of roof construction.

Green roofs provide aesthetic, environmental and economic benefits which are especially useful in urban areas. If green roofs, with their positive environmental impact, are incorporated into urban buildings with flat roofs, they can result in great advantages:

- Delaying rainwater (sustainable drainage systems)
- Reducing dust, pollution and the greenhouse effect
- Cooling effects
- Urban Ecology -The Heat Island Effect
- Life expectancy of the roof membrane
- Noise reduction
- Recreation and Health
- Wildlife habitat / Biodiversity



## 1. Protan Intensive Green Roof System

**Intensive green roofs are composed of relatively deep substrates (>200mm) and can therefore support a wide range of plant types.**

Intensive green roof is a well-proven construction that allows applying the membrane in larger sheets without any mechanical fasteners in the field. It provides easy and efficient installation, and requires no mechanical anchoring of the membrane along upstands and terminations.

Recommended membrane for the intensive green roof is Protan GG.

Protan GG is root resistant, designed to withstand heavy loads and pressure from water and roots, and exhibits excellent ageing properties under these circumstances.

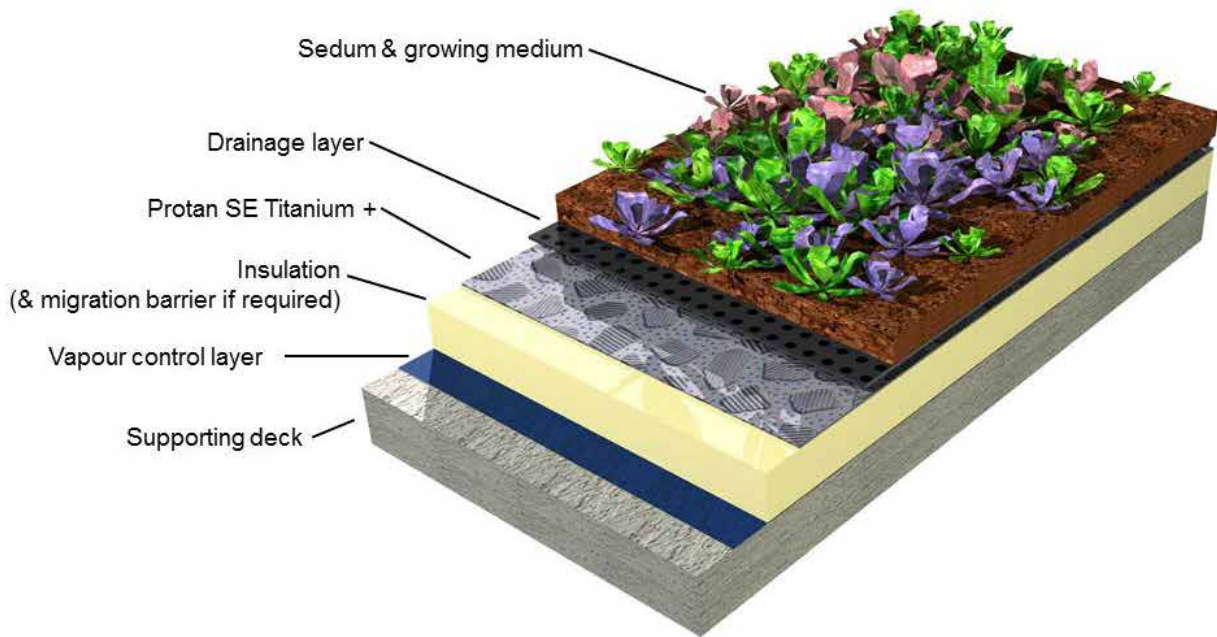


## 2. Protan Extensive Green Roof System

Extensive green roofs are composed of lightweight layers of free-draining material that support low-growing, hardy, drought-tolerant vegetation. Generally the depth of growing medium is from a few centimetres up to a maximum of around 10-15cm.

These roof types have great potential for wide application because, being lightweight, they require little or no additional structural support from the building. However, as with all ballasted roofs, wind load should be considered and may be required concrete slabs or equal support in perimeter and corner areas.

The green roof system must be able to drain freely so that the vegetation does not become ponded in water. It is also essential that the system is able to store enough water to survive drought conditions. Therefore, it is important that a horticultural consultant assesses the individual roof to specify a suitable system.



### Protan SE 1,6 Titanium +

is root resistant PVC membrane with polyester reinforcement for the application of extensive green roofs.

The polyester reinforcement makes it optimal for mechanical fixing where needed. It also has a well suited chemical composition for the purpose with regard to resistance UV radiation, heat and microbes.

Protan SE 1,6 Titanium + is also classified BroofT1 and T2, resistance to external fire, which is beneficial where this is required or if the sedum plants will not be installed immediately, or when the sedum plants do not have any fire classification.



### 3. Protan Turf Roof System

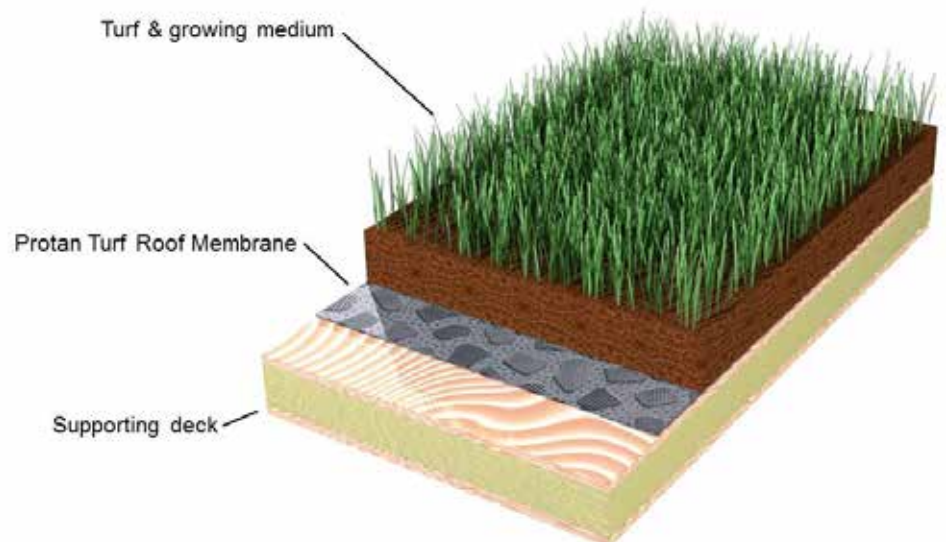
Turf Roof system has been a traditional building technique in many Scandinavian countries. In countryside areas, turf roofs help building developments to blend in with the rural environment whilst in town and cities they can soften the urban landscape.

Turf roof is a special variant of extensive green roof, and is widely used on smaller pitched roof surfaces in the Scandinavian countries, mostly on cottages in rural areas. However, in the last decades, modern versions also have been developed for the needs we have in the cities today. The way of building culture and progress often requires that the membrane has to withstand wind loads in longer periods before the turf can be applied. In such cases mechanical fixing is required.

**Recommended membrane for turf roof is Protan Turf Roof Membrane.**

Protan Turf Roof membrane is stabilized to withstand UV-radiation and heat. It is polyester reinforced and designed to transfer wind load forces, and is classified to resist external fire spread in accordance to test norms described in ENV 1187.

Polyester felt is laminated to the reverse side of the membrane to prevent mechanical stress from rough and uneven substrates.



By choosing Protan membrane systems on terraces and balconies, water related problems such as corrosion of steel reinforcement in concrete structures and rotting of timber is avoided. The terrace solutions are either Protan terrace membrane installed as exposed terrace membrane or as a protected Protan membrane system.

### 1. Protan Exposed Terrace System

For the use on exposed terraces and balconies where an aesthetic, strong, durable and safe walking surface is required.

The system can be installed on areas where there is limited height for surface finishes, such as door thresholds.

Protan Exposed Terrace membrane is 2.0 mm (Protan T) or 2.4 mm (Protan GT) thick. The two membranes have different physical properties and must be used in accordance to proper installation guidance.

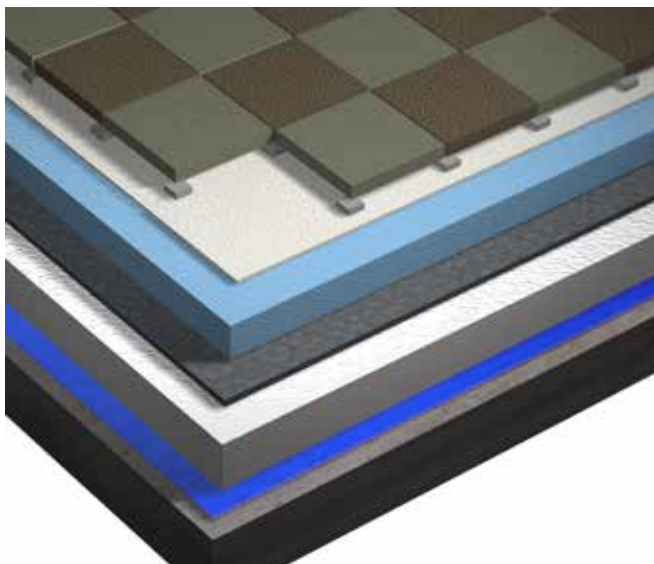
They are available in three standard colours:

- Green
- Dark grey
- Light grey

The system can also be installed on areas where there is limited height for surface finishes.

Protan Terrace membrane can be cleaned as an ordinary indoor floor, and does not need special maintenance.

Lifetime expectancy of up to 20 years depending on level of wear.



### 2. Protan Protected Terrace System

Protan G 1,5 mm is used as Protected Terrace Membrane on terrace areas with surfaces of concrete tiles, slatted wood or concrete, both in insulated and cold roof constructions.

## Protan Prefabricated Details provide the perfect time saving and job enhancing solution.

There are a variety of prefabricated details available from Protan including details for corners, pipes and rooflight upstands plus many more.

The benefit of prefabricated details is that they arrive onsite ready for immediate use. They offer a significant time saving as the contractor will not have to spend time forming the details individually themselves.

The details will also improve the look of the roof once it is finished, as the details are of uniform size so they present a better, more consistent roof. The details are constructed from both G, SE and homogenous membrane to provide the perfect solution for every application.

The details are available in a variety of sizes depending on the application.



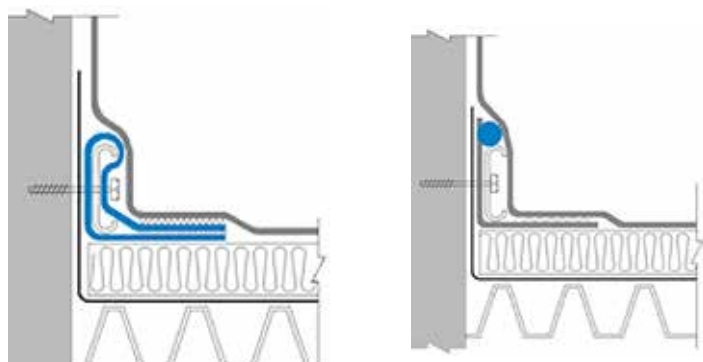
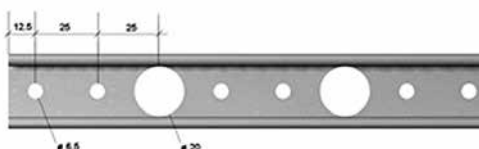
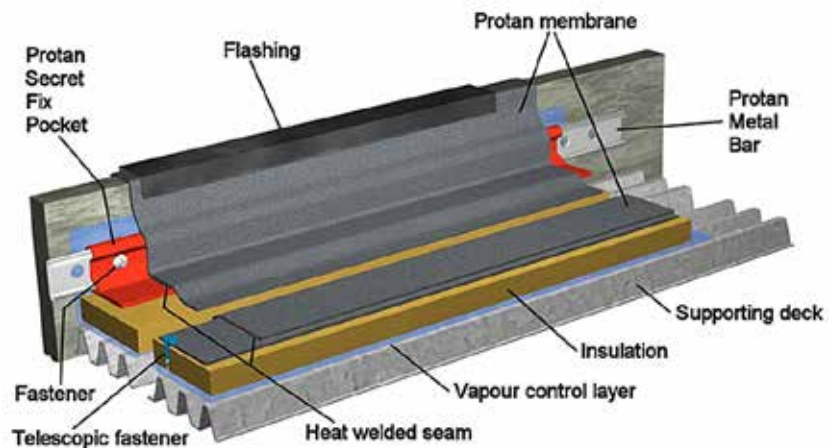
## Protan Parapet System

Prefabricated parapet details together with Protan Steel bar ensures a linear and safe installation along the parapet and edges.

The Protan Steel bar is well suited with respect to ease of installation, strength and rigidity.

The Protan parapet detail is preferably delivered with a secret fix pocket detail prewelded to its reverse side at the change of angle. It is also available with prewelded secret strips as an alternative to the pocket.

Parapet details are delivered in standard measures but can also be made to measure. High parapets (>600mm) need additional fixing at the vertical wall and secret strips can be welded to the back of the parapet detail at centres up to 600mm.



**Protan RadonSafe is a reinforced TPO membrane for the protection of buildings from exposure to radon penetration from beneath.**

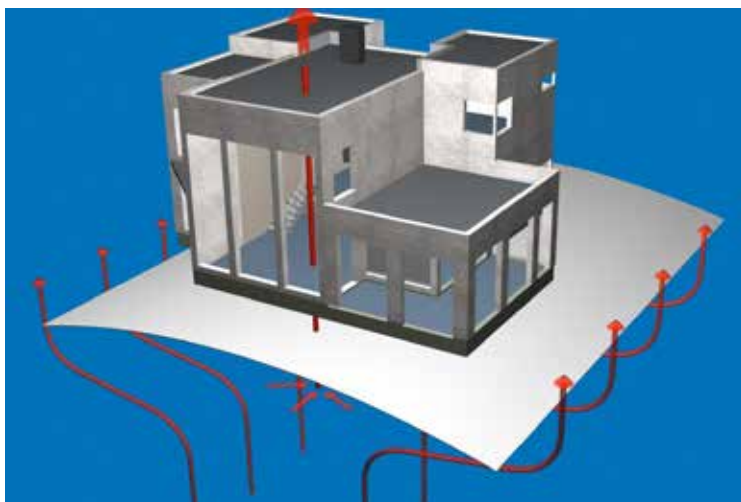
Radon is an invisible, odourless gas and can typically seep through the construction where penetration is the easiest. It is therefore vital to ensure that corner details, pipe penetrations and other penetrations are 100% airtight.

Protan RadonSafe is a membrane that is produced in several layers. Top and bottom layer consist of TPO.

In the centre there is a reinforcement of strong polyester fabric. This membrane construction ensures both good radon density and durable strength and installation.

Sheets of Protan RadonSafe membrane, corners and penetrations are welded together by hot air welding. This material selection and welding method ensures homogenous seams seems fully air sealed.

Protan RadonSafe can be delivered with prefabricated details and accessories to ensure that complex details are easily and properly sealed during installation.



**Installation in all weather conditions**



**Rain and moist environment**



**Snow and cold temperatures**



**Sun and heat**

### **Facts About Radon:**

***Radon is a gas derived by the radioactive decay of uranium and thorium.***

Radon is an invisible and odourless gas, and is non-detectable by any of the human senses. This gas is prevalent in varying concentrations in certain types of rock.

Due to its specific geological conditions, climate and local traditions of construction the Nordic countries have the highest indoor concentrations of radon in the world.

***Radon gases are produced by natural radioactivity.***

Large differences between indoor and outdoor temperatures, especially during winter, tend to increase the concentration of radon gas within buildings.

Radon concentration in dwellings is recommended not to exceed 200 Bq/m<sup>3</sup> (Becquerel).

The costs of various measures vary, but it is always cheaper and easier with preventive measures during construction, such as installation of radon membranes.

***Radon concentrations are a growing health problem.***

High concentrations of radon gas is dangerous. 15% of all cases of lung cancer in Norway are probably due to excessive radon exposure.

***Moisture cause more damage to buildings than anything else.  
Damage caused by moisture is costing homeowners and society billions annually.***

In addition to costs are the health issues created by bacteria and fungus growth in building materials. Small leaks with "insignificant" volumes of water can quickly cause a serious damage to the building.

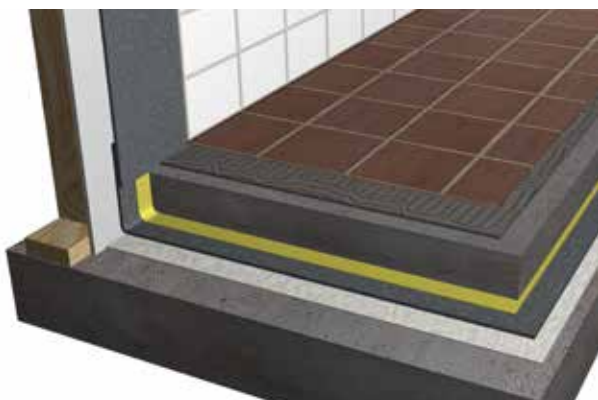
Protan recommends Protan G membrane, for both rehabilitation and new construction of bathrooms.

### Facts about Protan membrane for bathrooms

- Diffusion that meets all current requirements
- Efficient seal against the clamp ring in drain
- The Protan G membrane has a thickness of 1.5 mm and good flexibility
- Rapid progress - the membrane is installed in one single operation
- Prefabricated detail to corners and penetrations
- Approved installers ensures professional performance
- Hot air welding ensures a water tight finish

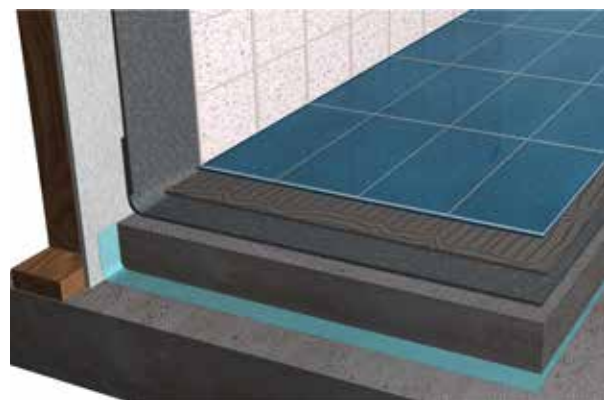


Relevant technical solutions for both refurbishment and new buildings:



### **Membrane under cast concrete on floors and sealing layer membrane on walls.**

The traditional technical solution for wet rooms is waterproofing membrane under cast concrete on floors with or without electrical heating.



### **Sealing layer membrane on floors and walls.**

Many wet room constructions require waterproofing membrane right under tiling, thus providing lower construction height.



On the following pages we present Protans different products, membranes, systems and accessories.

A full range of roofing fittings, accessories and prefabricated components are used to provide complete and reliable roofing systems.

Each element has been carefully designed and manufactured to give durable, watertight performance and visual appeal.

Please do not hesitate to contact our customer services department if you have further questions or need any help ordering our products.

Contact information is on page 39.

## What to Choose?

Use the table below to select the right system and membrane for each project.

SYSTEM		Polyester Reinforced										Glass Fibre Reinforced				
		SE	Secret Fix	Prefabricated Sheet	EX	EXG	SE Titanium+	CoolRoof	T	Turf Roof	EX-A	RadonSafe	G	GG	GT	GX
Exposed Roof	Standard Overlap	x			x	x		x								
	Secret Fix Strip		x					x								
	Prefabricated Sheet			x				x								
	Vacuum	x			x	x		x								
	Adhered										x					x
	Terrace								x						x	
Protected Roof	Ballast											x	x			
	Terrace											x				
	Extensive Green						x					x				
	Turf									x		x				
	Intensive Green											x	x			
Internal	Radon											x				
	Wetroom/Bathroom											x				

**Polyester Reinforced Roofing Membrane**

ARTICLE	PROTAN SE (Mechanically Attached System)	DIMENSION
31512910	Protan SE 1,2 light grey F91	1 m x 20 m
31512918	Protan SE 1,2 light grey F91	2 m x 20 m
31512940	Protan SE 1,2 dark grey F94	1 m x 20 m
31512948	Protan SE 1,2 dark grey F94	2 m x 20 m
31512X90	Protan SE 1,2 black FX9	1 m x 20 m
31512X98	Protan SE 1,2 black FX9	2 m x 20 m
31512010	Protan SE 1,2 white F01	1 m x 20 m
31512018	Protan SE 1,2 white F01	2 m x 20 m
31912910	Protan SE-T1 1,2 light grey F91	1 m x 20 m
31912918	Protan SE-T1 1,2 light grey F91	2 m x 20 m
31912940	Protan SE-T1 1,2 dark grey F94	1 m x 20 m
31912948	Protan SE-T1 1,2 dark grey F94	2 m x 20 m
31515910	Protan SE 1,5 light grey F91	1 m x 20 m
31515918	Protan SE 1,5 light grey F91	2 m x 20 m
31515940	Protan SE 1,5 dark grey F94	1 m x 20 m
31515948	Protan SE 1,5 dark grey F94	2 m x 20 m
31516910	Protan SE 1,6 light grey F91	1 m x 20 m
31516918	Protan SE 1,6 light grey F91	2 m x 20 m
31516940	Protan SE 1,6 dark grey F94	1 m x 20 m
31516948	Protan SE 1,6 dark grey F94	2 m x 20 m
31516410	Protan SE 1,6 copper green F41	1 m x 20 m
31516418	Protan SE 1,6 copper green F41	2 m x 20 m
31516120	Protan SE 1,6 red F12	1 m x 20 m
31516128	Protan SE 1,6 red F12	2 m x 20 m
31516010	Protan SE 1,6 white F01	1 m x 20 m
31516018	Protan SE 1,6 white F01	2 m x 20 m
<i>SE 1,2 and SE 1,6 std. colours F91 + F94 can be delivered in lengths from 15-28 meter at the same price, 1 meter rolls only in pairs</i>		
31518910	Protan SE1,8 light grey F91 Extreme	1 m x 15 m
31518918	Protan SE1,8 light grey F91 Extreme	2 m x 15 m
31518940	Protan SE1,8 dark grey F94 Extreme	1 m x 15 m
31518948	Protan SE1,8 dark grey F94 Extreme	2 m x 15 m
31518018	Protan SE1,8 white F01 Extreme	2 m x 15 m
31520910	Protan SE2,0 light greyF91 Extreme	1 m x 15 m
31520918	Protan SE2,0 light greyF91 Extreme	2 m x 15 m
31520010	Protan SE2,0 white F01	1 m x 15 m
31520018	Protan SE2,0 white F01	2 m x 15 m



**Polyester Reinforced Roofing Membrane with fleece on the reverse side**

ARTICLE	PROTAN EX (Mechanically Attached System)	DIMENSION
31570910	Protan EX 1,2 light grey F91	1 m x 20 m
31570918	Protan EX 1,2 light grey F91	2 m x 20 m
31570940	Protan EX 1,2 dark grey F94	1 m x 20 m
31570948	Protan EX 1,2 dark grey F94	2 m x 20 m
31573910	Protan EX 1,6 light grey F91	1 m x 20 m
31573918	Protan EX 1,6 light grey F91	2 m x 20 m
31573940	Protan EX 1,6 dark grey F94	1 m x 20 m
31573948	Protan EX 1,6 dark grey F94	2 m x 20 m
31573947	Protan EX 1,6 dark grey F94 (Turf roof)	2 m x 10 m
31575910	Protan EX1,8 light grey F91 Extreme+	1 m x 15 m

## Membranes and Accessories

31575918	Protan EX1,8 light grey F91 Extreme+	2 m x 15 m
31575940	Protan EX1,8 dark grey F94 Extreme+	1 m x 15 m
31575948	Protan EX1,8 dark grey F94 Extreme+	2 m x 15 m
31575018	Protan EX1,8 white F01 Extreme+	2 m x 15 m
31576910	Protan EX2,0 light grey F91 2m	1 m x 15 m
31576918	Protan EX2,0 light grey F91 2m	2 m x 15 m
31576010	Protan EX2,0 white F01 2m	1 m x 15 m
31576018	Protan EX2,0 white F01 2m	2 m x 15 m

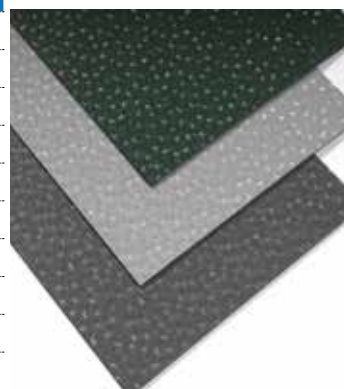
### ***Polyester Reinforced Roofing Membrane with glassfibre on the reverse side***

ARTICLE	PROTAN EXG (Mechanically Attached System)	DIMENSION
31560910	Protan EXG 1,2 light grey F91	1 m x 20 m
31560918	Protan EXG 1,2 light grey F91	2 m x 20 m
31560940	Protan EXG 1,2 dark grey F94	1 m x 20 m
31560948	Protan EXG 1,2 dark grey F94	2 m x 20 m

### ***Glassfibre Reinforced Roofing Membrane***

ARTICLE	PROTAN G (Protected terraces)	DIMENSION
31115910	Protan G 1,5 light grey F91	2 m x 15 m
31115940	Protan G 1,5 dark grey F94	2 m x 15 m
31115X95	Protan G 1,5 black FX9	2 m x 7,5 m
31115415	Protan G 1,5 copper green F41	2 m x 7,5 m
31115125	Protan G 1,5 red F12	2 m x 7,5 m
31118910	Protan G 1,8 light grey F91	2 m x 10 m
31118010	Protan G 1,8 white F01	2 m x 10 m
31118015	Protan G 1,8 white F01	2 m x 7,5 m
31120010	Protan G 2,0 white F01	2 m x 10 m
32115910	Protan G 1,5 sheet light g. F91	custom made

Rolls up to 5.92 X 20.00 m. Black FX9 for Northern Climate only.



ARTICLE	PROTAN D (Homogenous membrane for details)	DIMENSION
39002000	Protan D 1,8mm light grey F91	1 m x 10 m

ARTICLE	PROTAN GG 2.0 MM (not uv-resistant)	DIMENSION
31220950	Protan GG 2,0	2 m x 10 m
Each roll can be wrapped up in plastic: Price on request		
32220950	Protan GG 2,0 sheet	custom made
Rolls up to 5.92 X 20.00 M		

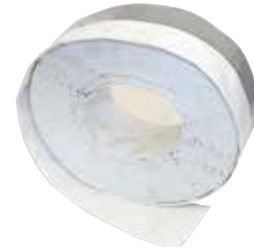
### ***Glassfibre Reinforced Roofing Membrane with fleece on the reverse side***

ARTICLE	PROTAN GX180 (180g fleece on the reverse side)	DIMENSION
31175910	Protan GX 1,5 light grey F91	2 m x 15 m
31175940	Protan GX 1,5 dark grey F94	2 m x 15 m
31178910	Protan GX 1,8 light grey F91	2 m x 10 m
31172010	Protan GX 2,0 white F01	2 m x 10 m

ARTICLE	PROTAN GX300 (300g fleece on the reverse side)	DIMENSION
31185910	Protan GX 1,5 light grey F91	2 m x 15 m

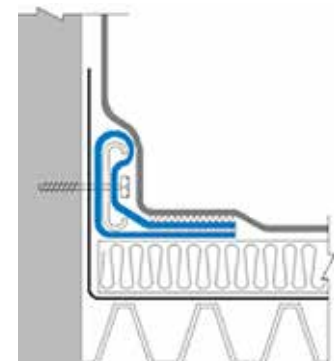
**Protan Parapet System**

ARTICLE	NAME	DIMENSION
39000025	Steel bar l=2,10 lm	2,10 LM
39005101	Protan pocket,loose	19,8M
39001053	Secret Fix Strip 13cm width	0,13 x 75m
39001017	PVC welding cord l.grey F91	70lm / Roll
39001019	PVC welding cord d.grey F94	70lm / Roll
39000800	Pvc-coated Metal Light grey244	1,25 m x 300,00 m coil
39000801	Pvc-coated Metal Light grey244	1,25 m x 2,00 m



**Protan prefabricated and custom made parapet solutions**

34901950	Parapet light grey Pocket 15cm	0,67m x 20m
34901955	Parapet dark grey Pocket 15 cm	0,67m x 20m
34901960	Parapet light grey Pocket 15cm	1,00m x 20m
34901965	Parapet dark grey Pocket 15 cm	1,00m x 20m
34901961	Parapet light grey Pocket 40cm	1,00m x 20m
34901966	Parapet dark grey Pocket 40 cm	1,00m x 20m
34901962	Parapet light grey Pocket 60cm	1,00m x 20m
34901967	Parapet dark grey Pocket 40/60	1,00m x 20m

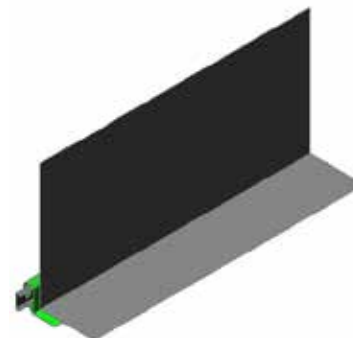


15cm - 40cm - 60cm = the distance from the edge of the parapet to the point where the pocket is prewelded on to the parapet sheet.

## Protan prefabricated and custom made parapet solutions

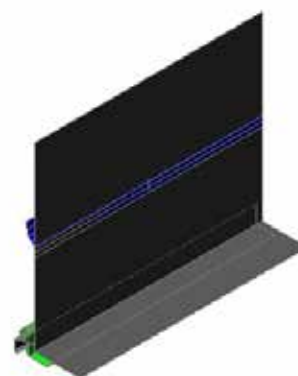
ARTICLE	CUSTOM MADE PARAPET WITH 1 POCKET - SE 1,2mm	DIMENSION
34901912	Parapet:1 pocket 67cm light gr. F91	
34901942	Parapet:1 pocket 67cm dark gr. F94	
34901914	Parapet:1 pocket 100cm light gr. F91	
34901944	Parapet:1 pocket 100cm dark gr. F94	
34901916	Parapet:1 pocket 133cm light gr. F91	
34901946	Parapet:1 pocket 133cm dark gr. F94	

Width of the parapet = 67cm - 100cm and 133cm • Length = 20lm or on request •  
NB! The distance from the edge of the parapet to the point where the pocket is pre-welded onto the parapet sheet will be according to drawings from the customer



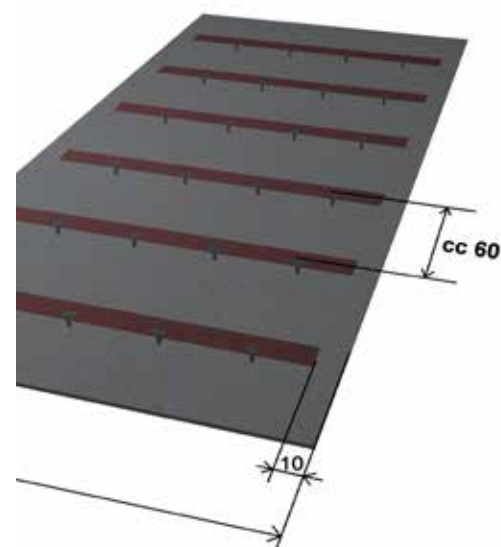
ARTICLE	CUSTOM MADE PARAPET WITH 1 POCKET - SE 1,2mm	DIMENSION
34902914	Parapet:pocket+strip 100cm F91	
34902944	Parapet:pocket+strip 100cm F94	
34902916	Parapet:pocket+strip 133cm F91	
34902946	Parapet:pocket+strip 133cm F94	

Width of the parapet = 100cm and 133cm • Length = 20lm or on request • The distance from the edge of the parapet to the point where the pocket and strip is prewelded onto the parapet sheet will be according to drawings from the customer



## Protan Secret Fix Membrane

ARTICLE	NAME	DIMENSION
34512952	Protan SE 1,2 cc 60cm light gr. F91	2 m x 15 m
34512911	Protan SE 1,2 c/c 40-59cm lighth gr.F91	2m x ...
34512913	Protan SE 1,2 c/c 60-79cm light gr.F91	2m x ...
34512915	Protan SE 1,2 c/c 80-99cm light gr. F91	2m x ...
34512917	Protan SE 1,2 c/c100-120cm light gr.F91	2m x ...
34512960	Protan SE 1,2 c/c 40cm dark gr.F94	2 m x 15 m
34512962	Protan SE 1,2 c/c 60cm dark gr.F94	2 m x 15 m
34512964	Protan SE 1,2 c/c 80cm dark gr.F94	2 m x 15 m
34512941	Protan SE 1,2 c/c 40-59cm dark gr.F94	2 m x ...
34512943	Protan SE 1,2 c/c 60-79cm dark gr.F94	2 m x ...
34512945	Protan SE 1,2 c/c 80-99cm dark gr.F94	2 m x ...
34512947	Protan SE 1,2 c/c100-120cm dark gr. F94	2 m x ...
34516962	Protan SE1,6 w/strip cc 60 dark gr. F94	2 m x 15 m
34516964	Protan SE1,6 w/strip cc 80 dark gr. F94	2 m x 15 m



**Prefabricated sheets with secret strips**

ARTICLE	SHEETS WITH LONGITUDINAL STRIP	DIMENSION
33512942	Protan SE1,2 with 3 strips F94	2m x 15m
33512946	Protan SE 1,2 sheet 4 strips F94	3,96m x ....
33512944	Protan SE1,2 with 6 strips F94	3,96m x 12,5m
33516947	Protan SE1,6 with 4 strips F94	3,96m x ....
33516944	Protan SE1,6 with 6 strips F94	3,96m x 12,5m

Sheets in 3,96m width with 6 strips only available in complete pallets • Additional charge of EUR 0,25/m<sup>2</sup> for each additional strip over 6 pieces



Image of a near-completion roof system with prefabricated sheets in UK

**Protan Terrace and Balcony System - Glassfibre Reinforced Membrane**

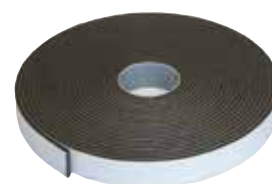
ARTICLE	NAME	DIMENSION
31324910	Protan terr.GT 2,4 light gr. F91	2 m x 10 m
31324940	Protan terr.GT 2,4 dark gr. F94	2 m x 10 m
31324450	Protan terr.GT 2,4 green F45	2 m x 10 m
31320940	Protan T 2,0 dark gr.F94	2 m x 15 m
31320450	Protan T 2,0 green F45	2 m x 15 m
31314910	Protan terr. GT 1,4 light gr. F91	1 m x 10 m
31314450	Protan terr. GT 1,4 green F45	1 m x 10 m
39001070	Strips/terr.covering 20cm wide	50lm / Roll
39001017	PVC welding cord light gr. F91	70lm / Roll
39001019	PVC welding cord dark gr. F94	70lm / Roll

**Protan RadonSafe system**

31080010	Protan Radonsafe light gr. F91, 0,77mm	2 m x 20 m
31070011	Protan Radonsafe H light gr. 1,15mm	0,40 m x 12,5 m
39001112	Radon Sealant, Butyl 1590 Grey	Patron 0,3 l

### Protan Vacuum Roofing System

ARTICLE	NAME	DIMENSION
39006120	Vent	H = 27 cm.
39005047	Prefab. vent detail light grey F91	H = 19 cm
39005097	Prefab. vent detail dark grey F94	H = 19 cm
39006125	Protan airsealing band vacuum	15lm/roll
39000025	Steel bar l=2,10 lm	2,10 LM
39001050	Bitumen resistant transition membrane	1,10m x 15m
39001054	Bitumen resistant transition membrane	0,275m x 15m
39001108	Separation layer 120g/sqm (Migration barrier, glass fleece)	2 x 100 m
39001101	Fibre material 140g/m2 (105M2)	2,10 x 50 m
39001102	Fibre material 300g/m2 (105M2) (Polyester fleece)	2,10 x 50 m



**Rainwater Outlets**

ARTICLE	NAME	DIMENSION
39001221	Jual outlet 50 mm, short 250mm	Ø = 50mm
39001223	Jual outlet 75 mm, short	Ø = 75mm
39001224	Jual outlet 90 mm, short	Ø = 90mm
39001226	Jual outlet 110 mm, short	Ø = 110mm
39001231	Jual outlet 50 mm, long 600mm	Ø = 50mm
39001233	Jual outlet 75 mm, long	Ø = 75mm
39001234	Jual outlet 90 mm, long	Ø = 90mm
39001236	Jual outlet 110 mm, long	Ø = 110mm
39001241	Jual outlet 50 mm, angled	Ø = 50mm
39001243	Jual outlet 75 mm, angled	Ø = 75mm



**Rainwater Outlet - Accessories**

39001296	Backflow seal	Ø = 50mm
39001297	Backflow seal	Ø = 75mm
39001299	Backflow seal	Ø = 90mm
39001298	Backflow seal	Ø = 110mm
39001300	Backflow seal	Ø = 75mm
39001301	Backflow seal	Ø = 90mm
39001399	Clamp ring for UV-50 outlet	



**Leaf Grate**

39001281	Leafgrate cylinder shaped	Ø = 50mm
39001283	Leafgrate cylinder shaped	Ø = 75mm
39001284	Leafgrate cylinder shaped	Ø = 90mm
39001286	Leafgrate cylinder shaped	Ø = 110mm



39001292	Jual leaf grate, plastic	Gravel grate for Ø=160mm
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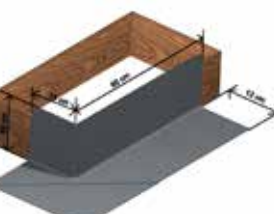


39001290	Leaf grate, terrace/stainless	Fits 50mm+75mm
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## Prefabricated Protan Roofing Details

ARTICLE	NAME	DIMENSION
39005062	Protan G, Internal corner small dark gr.	H = 9 cm
39005012	Protan G, Internal corner small light gr.	H = 9 cm
39005060	Protan G, Internal corner large dark gr.	H = 20 cm
39005010	Protan G, Internal corner large light gr.	H = 20 cm
39005063	Protan G, External corner small dark gr.	H = 6,5 cm
39005013	Protan G, External corner small light gr.	H = 6,5 cm
39005061	Protan G, External corner large dark gr.	H = 20 cm
39005011	Protan G, External corner large light gr.	H = 20 cm
39002003	Protan D Conical Corner 120mm	Small, light grey F91
39002004	Protan D Wavy Corner 170mm	Large, light grey F91
39005014	Jumbo Corner F91 light grey	
39005064	Jumbo Corner F94 dark grey	
39005090	Pipe 35 mm dark grey F94	H = 9,5cm
39005071	Pipe 75 mm dark grey F94	H = 60 cm
39005072	Pipe 110 mm dark grey F94	H = 60 cm
39005074	Pipe 160 mm dark grey F94	H = 60 cm
39005076	Pipe 200 mm dark grey F94	H = 60 cm
39005067	Pipe dark grey F94 (detail turf roof system)	



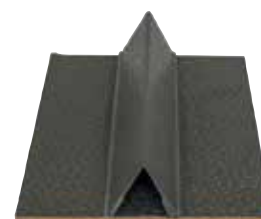
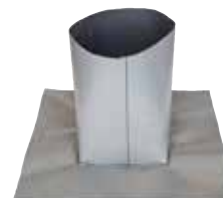
**Prefabricated Protan Roofing Details**

ARTICLE	NAME	DIMENSION
39005039	Pipe 20 mm light grey F91	H = 16 cm
39005038	Pipe 30 mm light grey F91	H = 15 cm
39005040	Pipe 35 mm light grey F91	H = 9,5 cm
39005021	Pipe 75 mm light grey F91	H = 60 cm
39005022	Pipe 110 mm light grey F91	H = 60 cm
39005024	Pipe 160 mm light grey F91	H = 60 cm
39005026	Pipe 200 mm light grey F91	H = 60 cm
39005045	Prefab. cone light grey F91	H = 30 cm
39005095	Prefab. cone dark grey F94	H = 30 cm
39005921	Rectangular Collar light grey F91	H = 10,5 cm, 2" x 3"
39005923	Rectangular Collar dark grey F94	H = 10,5 cm, 2" x 3"
39005922	Rectangular Collar green F45	H = 10,5 cm, 2" x 3"
39005041	Prefab. snowguard light grey F91	H = 7 cm
39005091	Prefab. snowguard dark grey F94	H = 7 cm
	I x w x h = 435 x 300 x 70 mm	

**Protan Architectural Profiles**

39001003	Protan triangle profile	2 lm
	Creates architectural effects on roofs	
39001020	PVC Omega profile l.grey F91	4 lm
39001021	PVC Omega profile d.grey F94	4 lm
39001025	PVC Omega profile black FX9*	4 lm
39001024	PVC Omega profile coppergr.F41	4 lm
39001022	PVC Omega profile red F12	4 lm
39001029	PVC profile other colours	min. 1000 lm

\*Black FX9 for Northern Climate only



ARTICLE	NAME	DIMENSION
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### Protan Architectural Profiles - Accessories

39005046	End detail triangle profil light gr. F91	
39005096	End detail triangle profile dark gr. F94	
	Covering end piece of Protan Triangle profile. Protan SE and Protan G	
39001017	PVC welding cord light gr. F91	70lm / Roll
39001019	PVC welding cord dark gr. F94	70lm / Roll
39001018	PVC welding cord green F45	70lm / Roll
39001016	PVC welding cord red F12	70lm / Roll
39001014	PVC welding cord black FX9*	70lm / Roll



### Sundries

39001114	Protan Sealant grey	0,3 l
39001112	Radon Sealant, Butyl 1590 Grey	0,3 l
39001111	Protan Bonding adhesive 95 Bonding Protan membranes to wood, metal, concrete etc.	10L / bucket



Extra transportation costs to be considered, due to international regulations regarding transport of dangerous goods

39005057	Qual.inspect.patch SE 1,6 dark gr. F94	Ø=180mm
39005007	Qual.inspect.patch SE 1,6 light gr. F91	Ø=180mm
39005055	Welding patch 110 dark grey F94	Ø=110mm
39005005	Welding patch 110 light grey F91	Ø=110mm
39005056	Welding patch 180 dark grey F94	Ø=180mm
39005006	Welding patch 180 light grey F91	Ø=180mm



ARTICLE	NAME
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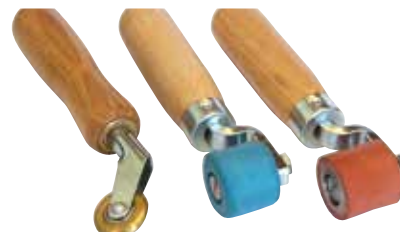
39700004	Protan Seam Probe
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39006001	Press roller narrow
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39006004	Press roller teflone
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39006003	Press roller silicone
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39001113	Radon Gas Monitor
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39006110	Vacuum chamber
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39005151	Hood for pallets SE 1,2 + G
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39700400	Edge trimmer with sharpener
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# Terms and Conditions for Sale and Delivery of Goods

## 1. General

These terms and conditions of sale and delivery of goods from Protan AS shall apply to all deliveries unless otherwise agreed in writing between Protan and the Buyer.

## 2. Specification and use of goods

Protan AS's goods shall be supplied in accordance with the goods applicable specifications/product datasheet, unless otherwise agreed in writing.

The Buyer shall familiarise themselves with the goods properties and potential applications. The Buyer must determine that the goods are suitable for the intended application before use and the Buyer shall bear all risks and liabilities in connection with the application of goods. The Buyer may not assert as a defect any claim that the product is unsuitable for the intended use.

## 3. Offers and orders

Offers from Protan AS shall be valid for 30 days from the date of the offer, unless otherwise indicated. Changes to or deviations from the offer shall not be valid until confirmed in writing by Protan AS.

All orders to Protan AS shall be acknowledged by a written confirmation of order. Upon receipt, the Buyer shall immediately check that the confirmation of order is correct and complete and immediately inform Protan AS of any errors, omissions or misunderstandings evident in the confirmation of order received. The Buyer may not subsequently assert any claim arising from matters which should have been discovered and/or notified to Protan AS.

If Protan believes that Buyer has financial or cash flow difficulties, or a change occurs in Buyer's legal or financial status, Protan AS reserves the right to cancel any contracts entered into or to require guarantees before scheduled deliveries of goods or further deliveries of goods are made.

In case of goods being manufactured to order, the Buyer may not cancel the order after production has started.

## 4. Prices

All orders shall be confirmed at the current sales prices in accordance with the applicable price list, unless otherwise agreed in writing.

Protan AS reserves the right to at any time and without prewarning alter agreed prices corresponding to changes to statutory customs and taxes, costs of raw materials, foreign exchange rates, insurances or other matters outside Protan AS's control.

All stated prices are exclusive of VAT.

## 5. Terms of delivery

All deliveries shall be Ex works Protan AS's sales location (INCOTerms 2000) unless otherwise agreed in writing between Protan AS and Buyer.

Upon receipt, the Buyer shall examine the goods. Any deviations from the confirmation of order shall be notified to Protan AS immediately. The individual receiving the goods must note any damage or short quantities on the freight note before acknowledging receipt.

The Buyer may not assert any claim for deviations which should have been discovered in this examination and/or notified to Protan AS.

Unless otherwise agreed, delivery of the goods shall be effected within a reasonable time after the issue of the confirmation of order, taking into account Protan AS's delivery capacity at any time.

## 6. Terms of payment

Unless otherwise agreed in writing, Protan AS's terms of payment shall be 15 days net after date of invoice. In the case of late payment, default interest will be claimed and shall be paid.

The goods shall remain the property of Protan AS until paid for in full.

## 7. Delays in Delivery of Goods

Unless the delivery date has been agreed in writing, Protan AS shall not be liable for any delay in the delivery of goods. Protan AS shall not be liable for delays due to fire, strike, lockout or any other reasons outside of Protan AS's reasonable control.

In order to pursue a liability claim, a written complaint stating reasons should be made immediately and no later than seven working days after delivery.

Protan AS liability in the event of a justified complaint shall be limited to the value of the invoice relating to the delivery in question. The total liability for delays and defects shall likewise be limited to the value of the invoice for the delivery in question.

The above shall also apply in the event of cancellation.

Under no circumstances shall Protan AS be liable for indirect damage or loss.

## 8. Defects

Any defects or errors in the delivered goods shall be reported to Protan AS immediately in writing, and no later than seven working days after the defect was or ought to have been discovered. Defects or errors notified to Protan AS later than one year after the date of delivery may under no circumstances be made subject of any claim.

The Buyer may not lodge claims for defects or errors unless the goods have been paid for in full.

Any return of goods must be previously agreed in writing.

Protan AS liability, including price reductions, in the case of justified complaints shall be limited to the value of the invoice for the delivery in question. The total liability for defects and delays shall likewise be limited to the value of the invoice for the delivery in question.

The above shall also apply in the event of cancellation.

## 9. Force majeure

Unforeseen and unpredictable hindrances to the performance of the agreement shall entitle Protan AS to cancel the agreement either in full or in part or to extend the delivery time in relation to the nature and duration of the hindrance. Cancellation of the agreement or extended delivery time shall not incur liability on Protan AS part.

## 10. Disputes

This agreement and every order shall be subject to and interpreted in accordance with Norwegian law.

Any dispute in connection with the agreement and/or an order shall be settled by arbitration in Drammen in accordance with the Norwegian Arbitration Act.



**Protan AS**  
**Baches vei 1, N-3413 Lier**  
**P.O. Box 420, Brakerøya, N-3002 DRAMMEN**

**Contact:**  
**Support: [technicalsupport@protan.no](mailto:technicalsupport@protan.no)**  
**Orders: [order@protan.no](mailto:order@protan.no)**  
**Sales: [sales@protan.no](mailto:sales@protan.no)**

**Tel: +47 32 22 16 00**

You will find an updated version of this catalogue at [www.protan.com](http://www.protan.com)



*Statoil office at Fornebu. Exposed mechanically installed roof, protected extensive green roof and gravel ballasted roof.*



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