Protan G is the principal material used on gravel protected roofs and in some cases in green protected roofs. This roofing system is suitable for new build and refurbishment applications. We recommend that all roofs have an inclination of minimum 1:40 to provide positive drainage.

Protan G
Manufactured from pliable PVC with a glass fibre carrier. The PVC contains stabilisers, which make the product UV-resistant, resistant to high and low temperatures and microbe attacs.
Protan G is available in the thickness and specifications as shown below.

	Protan G
Thickness	*1,5 mm*
Weight	*≥ 1,65 kg/m²*

Low temperature flexibility – weather conditions
Protan G is designed in Norway for the low temperature conditions in Scandinavia during winter months. The material remains flexible at low temperatures, during installation and use, without fracturing. The material can be installed in all kinds of weather conditions, even when it is raining.

	Protan G 1,5 mm
Flexibility at low temperatures EN 495-5	*- 30 °C*

Water vapour permeability
Protan G is a vapour permeable material. When loosely laid the membrane provides an ideal design solution for roof constructions with limited risks of interstitial condensation.

Solar reflection
A relative light coloured roofing material can reduce surface temperatures during warm weather and heat gain within the interior of the building. Where air condition is in use, cost savings may be significant. The same effect is given using gravel protected designs.

Tensile strength and tear strength
Tensile strength is an important property in determining the material's ability to resist different movements. Tensile and tear strength properties are shown in the table.

	Protan G 1,5 mm
Tensile strength EN 12311-2	*≥ 450 N/50 mm*
Elongation at break EN 12311-2	*> 180 %*
Tear resistance EN 12310-2	*> 110 N*

Puncture resistance
Protan G is resistant to normal foot traffic during roof maintenance and inspections. At areas where frequent foot traffic is expected, for example on walkways to roof-top plant, a Protan walkway membrane can be attached to the Protan G material, normally in a contrasting colour. Details of puncture resistance are shown in the following table.

	Protan G 1,5 mm
Penetration by increasing force on EPS 20 kg/m² EN 12730	*≥ 200 N*
Resistance to puncture by impact + 23 °C ≤ 15 mm EN 12691	*≤ 15 mm*
Resistance to puncture by impact ÷ 20 °C≤ 20 mm EN 12691	*≤ 20 mm*

Chemical resistance

The chemical resistance of Protan G depends upon concentration, duration of contact and temperature. The table on the next page indicates the resistance of Protan G at normal temperature to various common substances. Please contact Protan TS-Department for particular concentrations and other materials.

Material	Resistance	Material	Resistance
Aluminium	Well suited	Paraffin	Conditional
Asphalt	Not resistant	Petrol	Not resistant
Bitumen	Not resistant	Salt of Aluminium	Not resistant
Caustic potash	Well suited	Salt of Ammonium	Well suited
Carbon Monoxide	Well Suited	Salt of Calcium	Well suited
Carbon tetrachloride	Conditional	Salt of Magnesium	Well suited
Common salt	Well suited	Salt of Potassium	Well suited
Copper & ferrous materials	Well suited	Salt of sodium	Well suited
Detergents	Well suited	Sea water	Well suited
Diesel oil & fuel oil	Conditional	Soaps	Well suited
Ethyl ether	Not resistant	Softeners	Not resistant
Fats (animal &vegetable)	Not resistant	Solvent	Not resistant
Formaldehyde	Conditional	Steam	Well suited
Iron residues	Conditional	Tar	Not resistant
Motor oils	Conditional	Turpentine oil	Not resistant
Nitric acid	Conditional	Urea	Well suited
Non-aromatic mineral oils	Conditional	Weed killer (aqueous)	Well suited
Oils (animal & vegetable)	Not resistant	Wood preservatives	Conditional

Ageing

Accelerated weathering tests have indicated that the minimum life expectancy of Protan G 1,5mm thick membrane, is 25 years. The use of lighter colours helps reduce surface temperature, and may thus improve the membrane's ageing performance.

Anti slip surface

Protan G has an unique slip resistance surface as standard. Compared with non-textured materials it provides a significant safety factor when walked on in wet weather.

Colours

Protan G material is available in the following standard colours:

	Protan G
Thickness	1,5 mm
Colour	Dark grey/Light grey

Other colours available are blue, red and olive green. Depending upon roof area, membrane material can also be produced in special customised colours.

Other properties

Resistance to root penetration according to FLL

PROTAN

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