Wallbarn

GEOTEXTILES

www.wallbarn.com

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Introduction

Wallbarn supplies a large range of nonwoven geotextile, suitable for a wide number of uses – including protection, separation, drainage, filtration, soil stabilisation & green roofing.

These nonwoven fabrics are strong, flexible but permeable membranes which allow water to pass through but hold the particles in place. The soil does not become saturated, thereby improving the strength and stability of the ground.

The geotextile is manufactured through a thermal process without the use of glues or staples. The fabric is run through a number of super heavy presses to ensure the fibres are securely bonded. The makeup of the fabric is uniform throughout the roll, so no weak spots will be present in the layer.

A number of different grades and strengths of fabric are available from Wallbarn, depending on the exact nature of the project.
Wallbarn supplies geotextile fabrics manufactured from virgin fibre polypropylene or recycled polyester and recycled polypropylene. The material is supplied packed into tight rolls and which we carry in 1 or 2 metre widths. Widths of 3, 4, 5 or 6 metre widths are available on special order.

These large widths are designed for use on very large projects, such as road construction, reservoirs and landfills. Using very wide rolls reduces the number of joints between individual rolls. This cuts down on labour by having less individual rolls to stitch together, and also makes the whole fabric layer stronger by having less weak points at the joints.

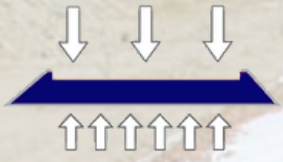
FLAT ROOFS

For applications such as roofing, smaller rolls would be required to make access to the roof space easier. Wallbarn can supply all its geotextile fabrics in 1 & 2 metre wide rolls for these purposes.

Common uses on Flat Roofs include:

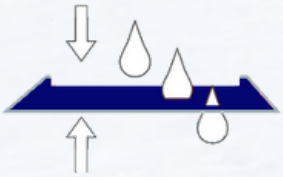
- When ballasting on Inverted Roofs - In order to protect the lower layers, the geotextile is laid before ballast of pebbles/gravel is laid.
- When using Pedestals for paving or decking - protection of sub-layers including insulation or roofing membrane.
- Green Roofs - Used as a protection layer and also filtration layer above the drainage board.

Functions of Geotextile



Separation

Separation & retaining of soil and/or filling materials to stabilise groundworks



Filtration

Retaining soil or other particles while allowing the passage of moisture

Protection

Preventing compression or puncture damage to delicate membranes beneath

Applications

Roads, Railways & Heavy Traffic Areas

Modern infrastructures require advanced technologies to meet specific technical requirements. Wallbarn has developed a wide range of geosynthetics, primarily used in the construction of foundations, that can perform various functions

Landfill for Solid & Liquid Waste

Landfills present complex challenges that geosynthetics can address, including chemical-physical issues like acidic conditions and high temperatures, as well as mechanical stresses from heavy loads.
In landfill applications, geosynthetics are used for foundation and soil stabilization, embankment support, and the collection of rainwater, leachate, and biogas. These materials perform all essential functions: protection, separation, filtration, drainage, reinforcement, and barrier.

Tunnel and underground works

For the construction of standard and cut-and-cover tunnels, key requirements include structure lining and effective stormwater or groundwater drainage. Nonwoven geotextiles and drainage geocomposites are essential to meet these needs.
During tunnel construction, the waterproofing membrane must be protected by high-quality nonwoven geotextiles to prevent damage both during installation and throughout the tunnel's lifespan. Therefore, geotextiles must have high strength and durability, especially in alkaline conditions.

Applications cont’d

Mining

Minerals play a crucial role in daily life, from construction materials like crushed stone, sand, and gravel used in infrastructure and buildings, to industrial uses such as metals, lime, kaolin, silica sand, and talc in steel production, cars, computers, medicines, food, and fertilizers.
Key needs in mining include:

- Proper treatment of chemicals, heavy metals, sludge, and contaminated water
- Environmental impact management of excavation sites
- Preservation of geological conditions
- Efficient extraction and transportation of raw materials

Mining shares many application needs with landfills, road construction, and erosion control. Our geotextiles can be effectively applied across these areas, depending on the extraction site and location.

Roofing

Geotextiles play a vital role in modern roofing systems, providing essential protection and enhancing the longevity of various roof types. When used in green roof applications, geotextiles safeguard waterproofing membranes from potential damage caused by the buildup of soil, plants, and root systems. This protective layer not only prevents punctures but also aids in proper drainage, ensuring that excess water is effectively managed, which is crucial for the health of the green roof and the integrity of the underlying subfloor.

For inverted roof systems, where gravel or pebbles are used to ballast insulation, geotextiles act as a protective barrier between the insulation and the ballast material. This prevents abrasion and mechanical damage to the insulation and membrane while maintaining the roof's performance. Similarly, when installing paving or decking systems on flat roofs, geotextiles protect the waterproofing membrane from the weight and movement of the overlying materials, reducing the risk of punctures and extending the roof's lifespan.

Additionally, geotextiles can be used in combination with drainage materials to help water management on flat roofs, particularly in systems with minimal slope or fall for drainage. This further helps the roof's longevity by preventing water accumulation, which can lead to structural issues over time. Overall, the use of geotextiles in roofing applications is a key component in creating durable, long-lasting, and environmentally resilient roof systems.

Wallbarn's Geotextile Range

Wallbarn's nonwoven geotextiles are synthetic materials manufactured from polypropylene, polyester or high density polyethylene fibres. They are randomnly orientated, needle punched together by mechanical and/or thermal processes. No glues, staples or chemical binders are used to bind any of our geotextiles.

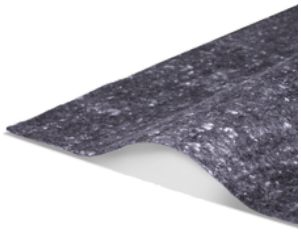
PPST

PPST is the best quality geotextile in the Wallbarn range, made from high tenacity UV stabilised polypropylene fibres. It is a product to designed to perform functions of filtration, separation, protection and drainage. It is the right choice where excellent performance is required at low weights.

PPEXT

PPEXT is a white polypropylene nonwoven geotextile that performs the function of filtration, separation & protection.

PPT

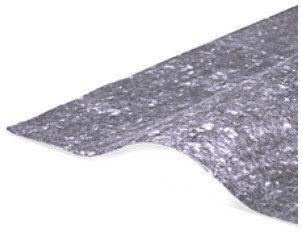


PPT is the most economic solution when you need polypropylene nonwoven geotextile. It is manufactured from recycled multi-coloured fibres resulting from the recycling process. It is ideal for projects wheere sustainable practices are paramount and our recommended choice for use on Green Roofs.

PEIT

PEIT is an economic and sustainable choice as it is made from recycled polyester.

PECT



PECT is the most economic solution when you need polyester nonwoven geotextile. It is manufactured from recycled multi-coloured fibres resulting from the recycling process.

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