



WASP
Water Ancillary Specialist Products



GEOMEMBRANES & GEOTEXTILES

Issue v5: March 2024

For more information please contact 01254 589987 or email sales@selenvironmental.com

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WASP geomembranes are robust weldable impermeable single layer cold applied geomembranes, suitable to form the water retaining encapsulation around an attenuation tank, to line permeable pavements where run-off is temporarily stored in voided sub-base layers or for pond liners and other water features. Geomembranes are available in different polymer types such as LLDPE, LDPE, HDPE and PP and thicknesses to suit your application.

WASP geotextiles are available in either thermally bonded or needle punched formats. They are ideal for use as a protection layer, separation layer or for infiltration when encapsulating a soakaway or permeable liner where run-off is temporarily stored in voided sub-base layers prior to dispersal into the subgrade below.

Both WASP geomembranes and geotextiles can be supplied in a range of roll widths, roll lengths or panel pieces to satisfy your project requirements whilst minimising expenditure on surplus, unwanted waste material and reducing material to landfill. Health and Safety benefits of this tailored roll cutting service become apparent as rolls sizes and weights are better for handling and installation.



Key benefits

- WASP HD geomembranes ideal for containment
- WASP MD same as HDPE but with more flexibility
- WASP LD ideal as a Category 1 liner for sub-base attenuation
- WASP FHD geomembranes have outstanding flexibility and elongation
- Minimise wastage and materials costs
- Rolls can be cut to any width to suit your application
- Rolls can be rewound to any length
- Membranes can be supplied in prefabricated panels
- WASP HD geomembranes ideal for containment
- WASP MD same as HDPE but with more flexibility
- WASP LD ideal as a Category 1 liner for sub-base attenuation
- WASP FHD geomembranes have outstanding flexibility and elongation

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WASP Geomembrane & Geotextile Application Selector



	Attenuation Tank	Cat 1 Permeable Pavement Liner	Cat 2 Permeable Pavement Liner	Cat 3 Permeable Pavement Liner	Pond Liner
Geomembrane (impermeable)					
WASP01800 Series LD Membrane					
WASP01600 Series HD Membrane					
WASP01400 Series MD Membrane					
WASP01200 Series FHD Membrane					



	Protection Layer	Infiltration	Separation
Geotextile (permeable)			
WASP03100 Series Infiltration Geotextile			
WASP02100 Series HD Geotextile			

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LIST OF AVAILABLE MEMBRANES; ROLL & PANEL SIZES

Product Code	Description
WASP01201	Flexible Heavy Duty Membrane 1m x 100m Roll
WASP01202	Flexible Heavy Duty Membrane 2m x 100m Roll
WASP01203	Flexible Heavy Duty Membrane 3m x 100m Roll
WASP01204	Flexible Heavy Duty Membrane 4m x 100m Roll
WASP01205	Flexible Heavy Duty Membrane 5m x 100m Roll
WASP01206	Flexible Heavy Duty Membrane 6m x 100m Roll
WASP01301	Flexible Heavy Duty Membrane 1m Wide Panel
WASP01302	Flexible Heavy Duty Membrane 2m Wide Panel
WASP01303	Flexible Heavy Duty Membrane 3m Wide Panel
WASP01304	Flexible Heavy Duty Membrane 4m Wide Panel
WASP01305	Flexible Heavy Duty Membrane 5m Wide Panel
WASP01306	Flexible Heavy Duty Membrane 6m Wide Panel
WASP01402	Medium Duty Membrane 2.55m x 100m Roll
WASP01405	Medium Duty Membrane 5.1m x 100m Roll
WASP01502	Medium Duty Membrane 2.55m Wide Panel
WASP01505	Medium Duty Membrane 5.1m Wide Panel
WASP01602	Heavy Duty Membrane 2.55m x 100m Roll
WASP01605	Heavy Duty Membrane 5.1m x 100m Roll
WASP01702	Heavy Duty Membrane 2.55m Wide Panel
WASP01705	Heavy Duty Membrane 5.1m Wide Panel
WASP01803	Light Duty Membrane 2.5m x 50m Roll
WASP01805	Light Duty Membrane 5.1m x 100m Roll
WASP01903	Light Duty Membrane 2.5m Wide Panel
WASP01905	Light Duty Membrane 5.1m Wide Panel

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LIST OF AVAILABLE GEOTEXTILES; ROLL & PANEL SIZES

Product Code	Description
WASP02101	Heavy Duty Geotextile 1m x 100m Roll
WASP02102	Heavy Duty Geotextile 2m x 100m Roll
WASP02103	Heavy Duty Geotextile 3m x 100m Roll
WASP02104	Heavy Duty Geotextile 4m x 100m Roll
WASP02105	Heavy Duty Geotextile 5m x 100m Roll
WASP02106	Heavy Duty Geotextile 6m x 100m Roll
WASP02201	Heavy Duty Geotextile 1m Wide Panel
WASP02202	Heavy Duty Geotextile 2m Wide Panel
WASP02203	Heavy Duty Geotextile 3m Wide Panel
WASP02204	Heavy Duty Geotextile 4m Wide Panel
WASP02205	Heavy Duty Geotextile 5m Wide Panel
WASP02206	Heavy Duty Geotextile 6m Wide Panel
WASP03101	Infiltration Geotextile 2.25m x 100m Roll
WASP03102	Infiltration Geotextile 4.5m x 100m Roll
WASP03201	Infiltration Geotextile 2.25m Wide Panel
WASP03202	Infiltration Geotextile 4.5m Wide Panel

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All our membranes can be...

- **Cut to a roll width**
 - to suit your requirements
 - to make them easier to handle
 - to minimise wastage
 - so you don't have to struggle with a 6m wide roll

All our membranes can be...

- **Supplied in prefabricated panels**
 - make your site installation simpler
 - to remove the need for dispensing equipment
 - to minimise wastage
 - to save you money £££

All our membranes can be...

- **Supplied to your exact requirements**
 - in full rolls plus make-up panels
 - to minimise wastage
 - to save you money £££



ANCILLARY PRODUCTS AVAILABLE

Geomembrane Welding Kit

WASP membranes are fully weldable using hot air welding equipment and this is the recommended method for jointing WASP membranes together. Hot air welding is a technique used to join panels of membrane together. Heated air is blown between two pieces of membrane and the heat changes the membrane into a softened, semi-solid state. A twin-wedge welder is an automated welder that is self-propelled and will form 2 welded joints creating an air pocket in the centre for air-testing to determine the joint integrity. The other method is to use a hot air gun and a hand held roller to apply pressure causing the two membrane panels to blend together. A full membrane hot air welding kit, comprising hot air welder, hand tools, testing apparatus is available to purchase with full training on use.

WASP100051 WASP 110V Twinwedge Welder Kit

Welding Unit

Leister Twinny T5 twin wedge welder unit; inc long handled wire brush; inc case



Leister Twinny T5 handle



Accessories

Accessories case



Small tube machine grease



White paint markers, Box 10



Testing clamps x2



Testing pressure gauge



Testing spare needles



Testing air pump



Cleaning cloths



WASP100005 WASP 110V Hot Air Gun Professional Kit

Welding Unit

Leister TRIAC ST Hot Air Welder; inc case



Accessories

40mm wide slot nozzle



40mm wide, 45° Single Arm Silicone Pressure Roller



Seam Test Probe



Wire cleaning brush



White paint markers, Box 10



Jointing Tape

If hot air welding is decided against, then SuDS membrane jointing tape; 100mm x 15m roll, should be used for jointing seams and sealing around pipe penetrations.

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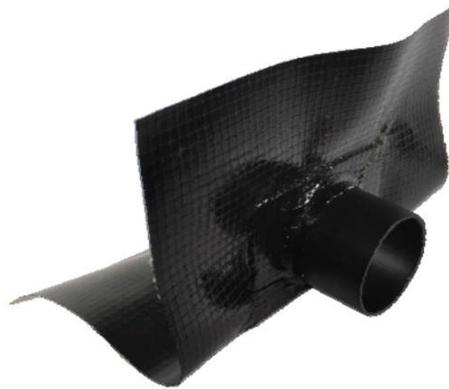
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Pipe Connections

Rigid Spigot Tank Adaptors form a watertight connection for drainage pipework. They comprise a rigid spigot in diameters from $\text{Ø}110$ to $\text{Ø}450$ extrusion welded onto a rigid backing plate with a flexible membrane apron heat sealed to the backing plate. These should be installed from the inside of the liner and sealed using the jointing tape. Drainage pipe can be connected using a pushfit coupling or flexseal type coupling. They are ideal for attenuation tanks or soakaways.



Invert Tank Connector



Flat Tank Connector

Pipe Penetrations

Puddle flange sleeves can be used to form a seal around a drainage pipe. They comprise a flexible membrane tophat in diameters from $\text{Ø}110$ to $\text{Ø}450$. They allow a standard drainage pipe to pass through an impermeable membrane liner. These should be installed from the inside of the liner and sealed around using the jointing tape with a stainless steel type jubilee band around the pipe passing through. They are ideal for sub-base attenuation systems.



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Specifications

The following compilation of specifications are for the standard roll sizes for each product within both WASP geomembranes and WASP geotextiles.

PLEASE NOTE: All the WASP geomembranes and WASP geotextiles listed within can be supplied in a range of roll widths, roll lengths or panel pieces to satisfy your project requirements.

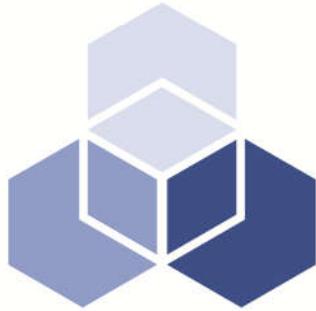
This helps you minimise expenditure on surplus, unwanted waste material whilst reducing material to landfill.

Health and Safety benefits of this tailored roll cutting service become apparent as smaller rolls sizes and weights are better for handling and installation.

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SPECIFICATION INFORMATION
FOR
WASP
FLEXIBLE HEAVY DUTY MEMBRANES

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WASP01206

Flexible Heavy Duty Membrane 6m x 100m Roll

Description

WASP Flexible Heavy Duty Membrane is a robust weldable single layer cold applied geomembrane suitable for attenuation tank encapsulations, voided sub-base installations, lake / pond liners and containment. It is produced from a resin formulation designed to provide quality geomembrane with excellent flexibility, and improved elasticity and resistance to puncture. These properties assure maximum multiaxial elongation to accommodate differential settlement. It is ideal for most geomembrane applications. Design life of 50 years plus if no exposure to UV or chemicals.



SPECIFICATION

Thickness (DIN EN ISO 9863-1) mm	1.0	Puncture Resistance (DIN EN ISO 12236) N	1000
Width m	6	Carbon Black Content (ASTM D 4218) %	3
Length m	100	Carbon Black Dispersion (ASTM D 5596)	1/2
Density (DIN EN ISO 1183-1/A) g/cm ³	0.89	Dimensional Stability (DIN 53377) %	+/- 2
Stress at Break (DIN EN ISO 527-3) MPa	19	Multiaxial Elongation at Break (similar to ASTM 5617)	120
Elongation at Break (DIN EN ISO 527-3) MPa	900	Low Temperature Brittleness (ASTM D 2136) °C	-40
Tear Resistance (DIN ISO 34-1/B) N	60		

EXCELLENT FLEXIBILITY

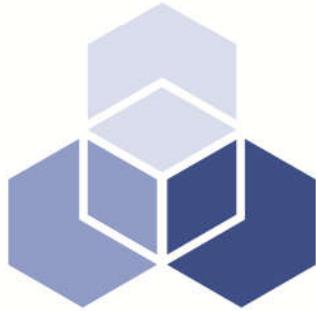
IMPROVED ELASTICITY

HIGH PUNCTURE RESISTANCE

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SPECIFICATION INFORMATION
FOR
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HEAVY DUTY MEMBRANES

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WASP01405

Heavy Gauge Membrane 5.1m x 100m Roll

Description

WASP Heavy Gauge membrane is for use in accordance with harmonised standards: BS EN 13361: Characteristics required for the construction of reservoirs and dams. BS EN 13362: Characteristics required for use in the construction of canals. BS EN 13492: Characteristics required for use in the construction of liquid waste disposal sites, transfer stations, or secondary containment. BS EN 15382: Characteristics required for use in the construction of transportation infrastructure.



SPECIFICATION

Thickness (ASTM D 5199) mm	1.0
Width m	5.1
Length m	100
Density (ASTM D 1505) g/cm ³	0.940
Break Strength (ASTM D 6693 type IV) kN/m	30
Break Elongation (ASTM D 6693 type IV) %	750
Tear Resistance (ASTM D 1004) N	130

Puncture Resistance (ASTM D 4833) N	350
Carbon Black Content (ASTM D 4218/6370) %	2-3
Oxidative Induction Time (OIT)	
Standard OIT (ASTM D 3895) min	100
High Pressure OIT (ASTM D 5885) min	400
Oven Aging at 85°C Std OIT (ASTM D 5721) %	55
UV Resistance HP OIT % Retained after 1600hrs (ASTM D 5885) %	50

HIGH PUNCTURE RESISTANCE

WELDABLE MEMBRANE

IDEAL FOR CONTAINMENT

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SPECIFICATION INFORMATION
FOR
WASP
MEDIUM DUTY MEMBRANES

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WASP01605

Medium Gauge Membrane 5.1m x 100m Roll

Description

WASP Medium Gauge membrane is used in accordance with harmonised standards: BS EN 13361: Characteristics required for use in the construction of reservoirs and dams. BS EN 13362: Characteristics required for use in the construction of canals. BS EN 13492: Characteristics required for use in the construction of liquid waste disposal sites, transfer stations, or secondary containment. BS EN 15382: Characteristics required for use in the construction of transportation infrastructure.



SPECIFICATION

Thickness (ASTM D 5199) mm	0.75
Width m	5.1
Length m	100
Density (ASTM D 1505) g/cm ³	0.939
Break Strength (ASTM D 6693 type IV) kN/m	20
Break Elongation (ASTM D 6693 type IV) %	800
Tear Resistance (ASTM D 1004) N	70

Puncture Resistance (ASTM D 4833) N	190
Carbon Black Content (ASTM D 4218/6370) %	2-3
Oxidative Induction Time (OIT)	
Standard OIT (ASTM D 3895) min	100
High Pressure OIT (ASTM D 5885) min	400
Oven Aging at 85°C Std OIT (ASTM D 5721) %	35
UV Resistance HP OIT % Retained after 1600hrs (ASTM D 5885) %	35

FULLY WELDABLE

IMPERMEABLE BARRIER

SUDS MANUAL COMPLIANT

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SPECIFICATION INFORMATION
FOR
WASP
LIGHT DUTY MEMBRANES

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WASP01805

Light Gauge Membrane 5.1m x 100m Roll

Description

WASP Light Gauge membrane is a mono layer membrane specifically designed and manufactured to perform as a robust waterproofing barrier protection system which is suitable for a variety of applications. This is a fully weldable, category 2 attenuation grade liner fully conformant to C753 and BS7533-13. This membrane will provide resistance to root penetration from invasive species.



SPECIFICATION

Thickness (EN 1849-2) mm	0.6	Resistance to Static Load (EN 12730-B) Kg	>20
Width (EN 1849-2) m	5.1	Tensile Strength MD (EN 12311-2A) N/50mm	500
Length (EN 1849-2) m	100	Tear Strength MD (EN 12310-1) N	450
Density (EN ISO 1183) g/cm ³	0.939	Resistance to Impact (EN 12691A) mm	>2000
Resistance to Roots	Impenetrable	Joint Shear Resistance (welded) (EN 12317-2) N/50mm	400
Perm to Liquids (EN 14150) m ³ /(m ² d)	1.0x10 ⁻⁶	Resistance to Liquid Chemicals (EN 1847)	Conforming
Water Tightness (60 kPa)	Pass		

FULLY WELDABLE

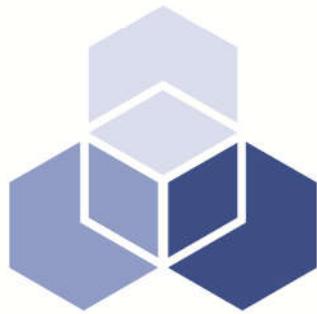
CONFORMS TO C753 & BS7533-13

CATEGORY 2 LINER

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SPECIFICATION INFORMATION
FOR
WASP
HEAVY DUTY GEOTEXTILE

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WASP02106

Heavy Duty Geotextile 6m x 100m Roll

Description

WASP Heavy Duty Geotextile is a non-woven thermally bonded double sided geotextile, manufactured from UV stabilised, high tenacity, virgin polypropylene fibres that have been mechanically entangled to provide high strength, high extensibility, high loft and excellent abrasion characteristics. The mechanical properties guarantee excellent resistance to installation damage, excellent hydraulic properties and outstanding long term performance.



SPECIFICATION

Thickness at 2kPa (EN ISO 9863-1) mm	1.25	Dynamic Puncture Resistance cone drop \varnothing hole (EN ISO 13433) mm	15
Width m	6.0	Water Flow (EN ISO 11058) l/m ² /s	60
Length m	100	Density (EN ISO 9864) g/m ²	300
Tensile Strength MD (EN ISO 10319) kN/m	24	Core Material	PP
Elongation at max load MD (EN ISO 10319) %	65		
Puncture Resistance - CBR (EN ISO 12236) kN	3-7		

HIGH TENACITY

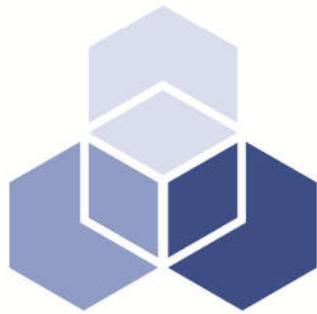
SUPERB PROTECTION

HIGH PERMEABILITY

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SPECIFICATION INFORMATION
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INFILTRATION GEOTEXTILE

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WASP03102

Infiltration Geotextile 4.5m x 100m Roll

Description

WASP Infiltration Geotextile is a UV stabilised continuous filament needle punched nonwoven geotextile. The mechanical properties guarantee excellent resistance to installation damage, excellent hydraulic properties and outstanding long term performance.



SPECIFICATION

Thickness at 2kPa (EN ISO 9863-1) mm	0.8	Dynamic Puncture Resistance cone drop \emptyset hole (EN ISO 13433) mm	26
Width m	4.5	Water Permeability Vertical VI-h50 (EN ISO 11058) l/m ² s	130
Length m	100	Density (EN ISO 9864) g/m ²	105
Tensile Strength MD (EN ISO 10319) kN/m	8	Core Material	PP
Elongation at max load MD (EN ISO 10319) %	90		
Puncture Resistance - CBR (EN ISO 12236) N	1500		

HIGH PERMEABILITY

EXCELLENT FILTER PROPERTIES

STABILISES BASE COURSES

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