



WASP
Water Ancillary Specialist Products



ATTENUATION LINER INSTALLATION PROCEDURE

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

Disclaimer

This product specification is neither giving nor implying warranty for the use of this information for design and installation, as these are beyond our control. The data provided is typical and based upon the mean values and we reserve the right to change the specifications without prior notice.



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
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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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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 £££

Attenuation Liner Installation Procedure

This document is to be provided without prejudice to assist contractors where self-installation is preferred following a purchase of geomembranes and geotextiles. It outlines recommended methods and procedures to ensure a successful installation.

Contents

1. Excavation and Ground Preparation
2. Attenuation Installation Method Statement
3. Backfilling Operation
4. Protection of Tank System after installation

Excavation and Ground Preparation

- 1.1 Excavate for the tank to the dimensions as detailed in the engineers drawing allowing for a minimum additional 500mm around the perimeter of the tank for working space.
- 1.2 Remove any large objects and treat relevant soft spots.
- 1.3 Ensure that the excavation has suitable edge protection or batter / step the sides in accordance with current health and safety guidelines.
- 1.4 Place the recommended bedding material to engineers specification, rolled and compacted ensuring there are no sharp objects protruding from the surface.
- 1.5 Mark out the dimensions of the tank using spray paint or stakes.
- 1.6 Any standing surface water must be pumped out of the excavation prior to installation commencement.

Attenuation Installation Method Statement

General Advice

- 2.1 Materials may be delivered up to 1 week prior to installation commencement, therefore adequate provision must be made for mechanical off loading and storage in close proximity to the tank location.
- 2.2 The inlet / outlet pipes and vent pipes must be provided by the contractor.
- 2.3 The pipes must be a minimum of 50mm above ground level and 200mm from any corner. The pipes should be parallel and 90 deg to the box walls to ensure successful sealing to the tank.
- 2.4 The liner should not be installed in weather conditions that adversely affect the impermeable membrane's performance weldability, impermeability and working tolerances. The system should not be installed if there is continuous heavy rain, snow, heavy frost or high winds. Daily assessments should be made prior to commencement of installation.

- 2.5 No smoking permitted on or around the installation.
- 2.6 Only suitable footwear permitted on the geomembrane.
- 2.7 No vehicular traffic, plant or heavy equipment should be allowed directly upon the uncovered tank.

Protection Fleece

- 2.8 All seams to run vertically; no horizontal joints allowed on inclines greater than 30 deg or areas of high stress.
- 2.9 Overlaps to be a minimum of 100mm or as specified.
- 2.10 Geotextile to be placed across the base and side walls of the tank and battened on top of the excavation.
- 2.11 After the liner and Attenuation units have been installed, the geotextile will cover the tank and envelop the tank.

Attenuation Liner

(Whilst we discuss tape joints below, SEL highly recommend hot air welded seams. SEL offer a liner welding service or welding equipment for purchase, with a training programme)

Prefabricated Shoebox Option

- 2.12 Lower the palletised Shoebox liner onto the protection fleece in the excavation. The shoebox will comprise a box, a sheet panel lid and some double sided jointing tape sufficient for taping the lid and sealing the pipe connections / top hats.
- 2.13 Carefully remove all packing and position in the excavation and open the shoebox liner. The shoebox liner will usually have dimensions written on in white paint pen to assist with it's orientation.
- 2.14 Carefully **place** the attenuation units inside the shoebox. Dropping the attenuation units into position will likely puncture the liner causing a leak.
- 2.15 Place the Attenuation units side by side inside the opened Shoebox liner.
- 2.16 Connect the units laterally with proprietary clips and shear connectors as per manufacturers recommendations.
- 2.17 Only full units should be used. Cutting units will weaken them, reduce their loading capacity.
- 2.18 Drainage pipes and vent pipes are connected to the tank using our recommended rigid pre-formed pipe connections. These should be installed from the inside of the shoebox liner and sealed around the spigot to the liner using the jointing tape. Drainage pipe can be connected using a push-fit coupling or flexseal type coupling.

2.19 Once all the units are installed the top panel aka lid should be taped onto the shoebox liner and then the protection fleece placed on top.

Prefabricated Panel / Roll Option

2.20 Lower the palletised prefabricated panel onto the protection fleece in the excavation. The panel comprises sufficient to line the base and sides of the tank, and go over the top of the tank, plus double sided mastic tape sufficient for taping all seams, corners and pipe connections.

2.21 Open the base panel after carefully removing all packing and position in the excavation, ensuring there is enough geomembrane to extend up the sides of the tank and over the top. The panel will usually have dimensions written on in white paint pen to assist with its orientation.

2.22 Carefully place the attenuation units onto the base panel (following the procedure 2.14-2.17), pull the geomembrane up the sides of the tank, create 'bedsheet folds' to the corners and tape into position. Fold should be made upwards as this will help retain surface water run-off.

2.24 Drainage pipes and vent pipes are connected to the tank using our recommended rigid pre-formed pipe connections. These should be installed from the inside of the shoebox liner and sealed around the spigot to the liner using the jointing tape. Drainage pipe can be connected using a push-fit coupling or flexseal type coupling.

2.25 Once all the units are installed, pull the remaining liner over the top of the units and tape the remaining seams, then place the protection fleece placed on top.

Backfilling Operation

The backfilling operation should be carried out with great care and attention. It is vital that the correct material is selected for backfilling around and above the attenuation tanks.

3.1 For non trafficked areas, suitable as dug material is acceptable. This material however should be approved by the engineer and must not be compacted with mechanical equipment.

3.2 For areas that are to be subjected to vehicular traffic we recommend that granular material such as a capping layer and Mot Type 1 backfill material is used surrounding and covering the tank. The minimum depth of structural cover required should be confirmed by the attenuation crate provider, together with the method of placement.

Protection of Tank post installation

4.1 The Attenuation System is designed to withstand loadings from landscaping areas, car parks and service yards (subject to design criteria) however, after installation and backfilling, but prior to final surfacing, we suggest that the tank area is fenced off with high visibility fencing and traffic is prohibited from using the footprint area of the tank. Unless confirmed by the attenuation crate provider, these systems are not designed to provide a load platform for construction traffic and should be treated accordingly.

4.2 This action will protect the long term loading performance of the tanks structure.



4.3 The client (in agreement with the attenuation crate provider) may wish to provide sign posts indicating maximum loads allowable over the tank footprint, to ensure the long term stability of the system is assured.



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End of Document

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