

**Amerasia**

# COMPOSITE DRAIN MAT

FILTER FABRIC TYPAR 3401/Geo-200

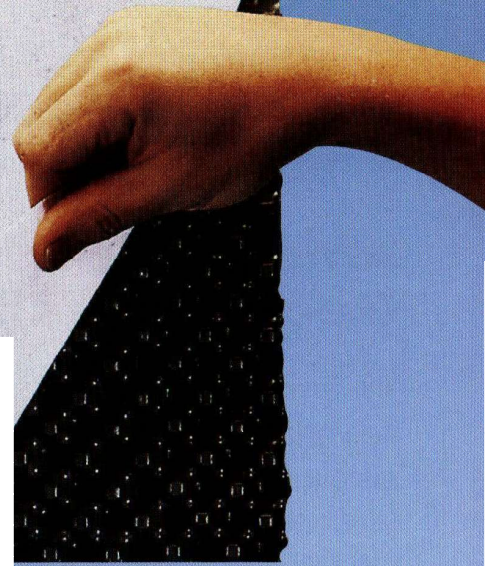


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## DRAIN-MAT. Efficient, economical drainage of walls and other subground structures.

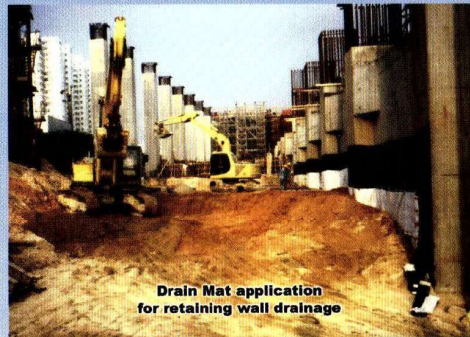
This prefabricated sheet drain system provides a high water-permeability blanket layer for near vertical drainage behind retaining walls and bridge abutments.

Like composite drainage layer, it features a geotextile filter fabric, but wrapped over only one side of the thermoplastic core.

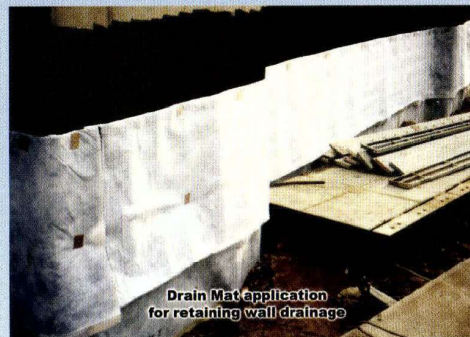
The water permeability of a composite drainage layer typically exceeds 8 metres of sand and/ or 3 metres of gravel and provides substantial savings.

The material is designed to withstand, with unimpeded flow and withstand, soil pressures which are typically far higher than actually encountered in the field, giving a wide margin of safety when tamping down.

Drain Mat also provides a waterproof membrane through the supporting core for the filter cloth facing. The unique core geometry permits an open back - particularly



Drain Mat application for retaining wall drainage



Drain Mat application for retaining wall drainage



Drain Mat application for Greenroofs

valuable in assisting in the waterproofing of retaining walls and cellars, while also allowing any condensation to evaporate from between the core and the concrete wall.

**Amerasia**

For further information, please contact

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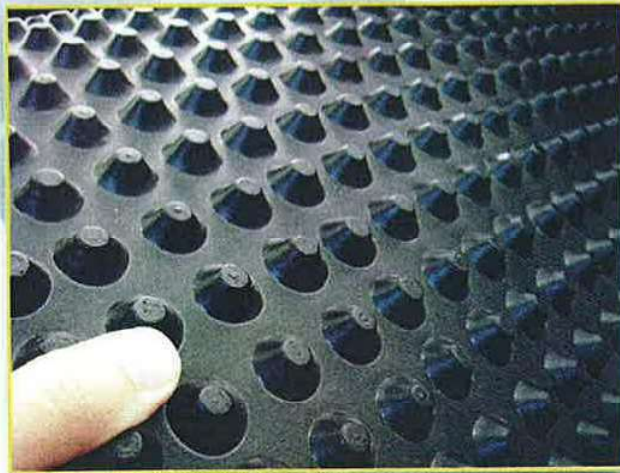
## Product Descriptions

### Amerasia Drain-mat Geocomposite Panel

*Amerasia Drain-Mat* is a geocomposite vertical drainage blanket which consists of a plastic cuspates inner core (cuspatation on both sides) with additional geotextile wrapped with non-woven geotextile filter fabric bonded on one side.



Model: DM-18 (Double Cuspate)



Model: DM-10 (Single Cuspate)

### Design Benefits

*Amerasia Drain-Mat* has been specifically designed to:

- \* effectively reduce hydrostatic pressure behind structure walls
- \* provide an airlock between drainage layer and wall
- \* assist in the waterproofing of structures
- \* reduce the likelihood of structural damage caused by foundation movements in expansive soils.

### Economic Benefits

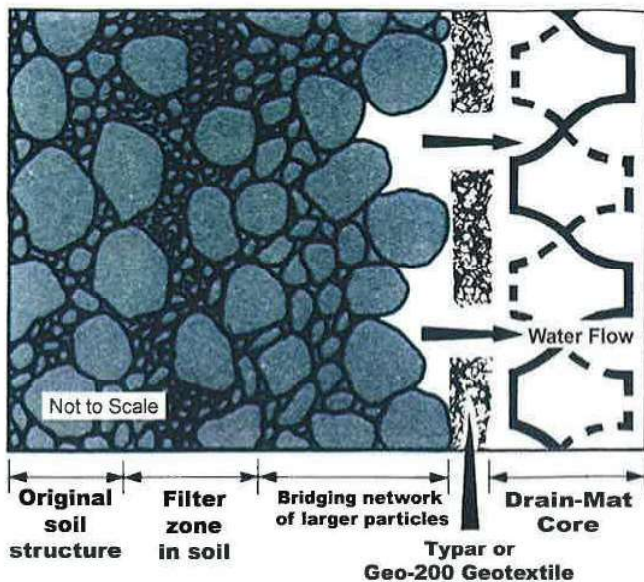
*Amerasia Drain-Mat* typically

- \* Eliminates the need for aggregate or sand backfill
- \* Light-weight and flexible
- \* Easy to handle and quick to install.



Model: DM-20 (Single Cuspate)

# How Drain-Mat Works



## Mechanism

*Amerasia Drain-mat* is wrapped with **Typar** or **Geo-200**, a non-woven geotextile and in the vast majority of soils the geotextile ensures stable filtration of the adjacent soil.

A soil filter develops within the first few millimetres between the soil mass and the geotextile. As water passes from the original soil into the drain it washes a few small particles for a short period of time after installation. As the small particles are washed through, a bridging network of larger particles builds up against the geotextile. This network prevents further small particles from being washed through, stabilising the soil and allowing only water to pass through the system.

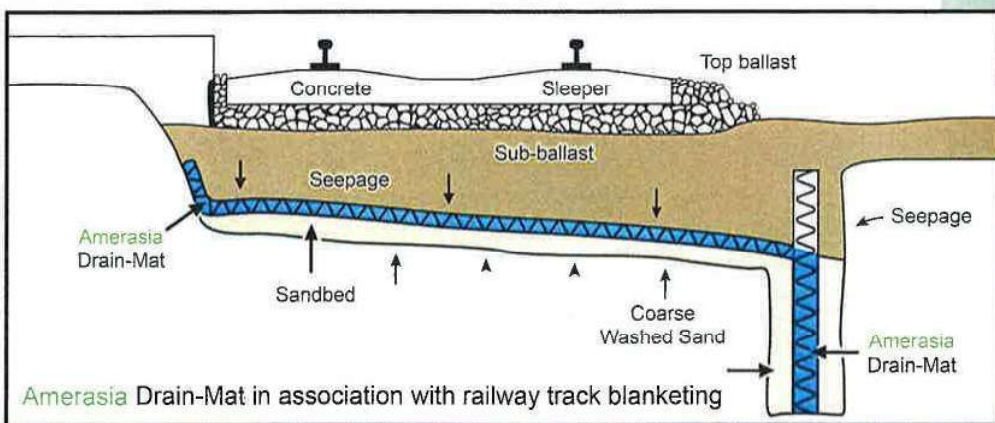
## Amerasia Drain-Mat

*Efficient, economical vertical drainage of walls and other subground structures.*

*Amerasia Drain-Mat* has been specifically designed to reduce hydrostatic pressure behind structures such as retaining walls and bridge abutments. It is also ideal for draining foundations and basements, reducing the likelihood of structural damage caused by foundation movements in expansive soils.

The impermeable core provides the added benefit of assisting in the waterproofing of structures which may reduce the functional requirement of a tanking membrane.

**SOLUTIONS FOR:  
BASEMENTS, RETAINING WALLS, BRIDGE ABUTMENTS  
CULVERTS, TUNNEL LINING, CELLARS AND BASEMENTS**



Typar or Geo-200  
Filter Fabrics

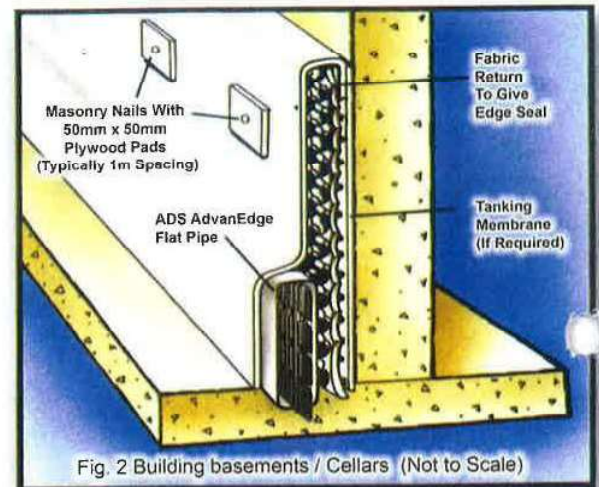
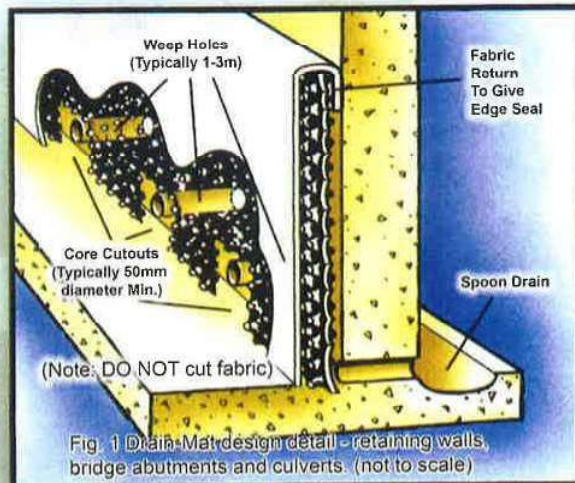


**DRAIN-MAT PRODUCTS**

# Installations

**Amerasia Drain-Mat** can be installed either vertically or horizontally and can be fixed to the structure in various ways :-

- masonry nails through a 50mm x 50mm pad of plywood or other suitable material at one metre centres
- hot melt adhesives or contact adhesives at approx. one metre centres.
- butyl-mastic tape strips with lengths of approx. 25mm long and at one metre centres.



## Jointing and Sealing

**Amerasia Drain-mat** should be joined in the horizontal direction by overlapping the top core layer cover the lower one by 75-100mm. The top geotextile wrap is then lapped over the lower-geotextile wrap and taped.

Vertical joints are made similarly by overlapping the cores and geotextile wraps and taping the top geotextile wrap.

The side edges and the top edges of the **Amerasia Drain-mat** must be sealed to prevent soil entering the drainage system. At the top of the **Drain-Mat** the geotextile wrap must be turned over the top of the core or secure against the wall. Similarly at the sides of the **Drain-Mat**, 100mm of core should be cut away and the geotextile 'turned' around onto the inside of the core or taped to the structure.

## Drainage Outlets

Water can be drained from the **Drain-Mat** vertical drainage blanket by several methods.

(a) **Weep Holes** (Fig. 1 above). This method is common for culverts, bridge abutments, retaining walls and tunnel lining where waterproofing is not typically a major requirement.

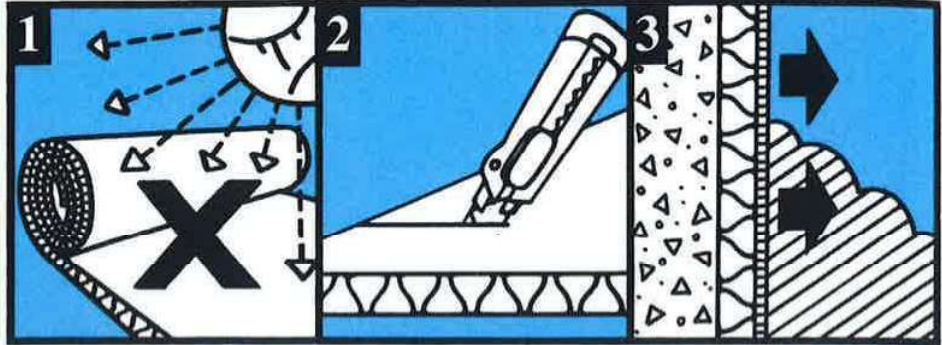
(b) **Collector Pipe** (Fig. 2 above). In situations where waterproofing is required on the external structure wall, **ADS AdvanEdge pipe** should be installed as a collector drain at the invert of the **Drain-Mat** and under the geotextile.

## Backfill Material

Care must be taken in the selection of the backfill material. In most instances, the excavated material can be used as backfill except in circumstances where clays are encountered for most of the depth. Backfilling with clays will impair drainage efficiency as clays have a low flow conductivity. In this case a free draining material should be used as backfill.

Large angular stone backfill which can physically damage the geotextile should also be avoided and is not recommended. Soil testing may be required to assess the suitability of excavated material for use as backfill. It is recommended that compaction equipment should be kept 100mm from the face of the **Drain-Mat** to prevent any damage.

**Composite Drain - Mat Installation Guide**



Keep wrapped until ready to use to minimise harmful effects of sunlight. Bury as soon as possible. Once installed do not leave exposed for more than 1-2 weeks.

Cutting method: **Drain mat** can be readily cut with most commonly available cutting blades such as a Stanley knife or NT cutter.

Always face the geotextile filter fabric to the soil you wish to be drained.



Fix with masonry nails through a 50mm x 50mm pad of plywood or other suitable material at one metre centres.

**OR**

Fix to wall with contact adhesive covering, 4 to 6 tips at one metre centres if waterproofing materials have already been applied to walls.

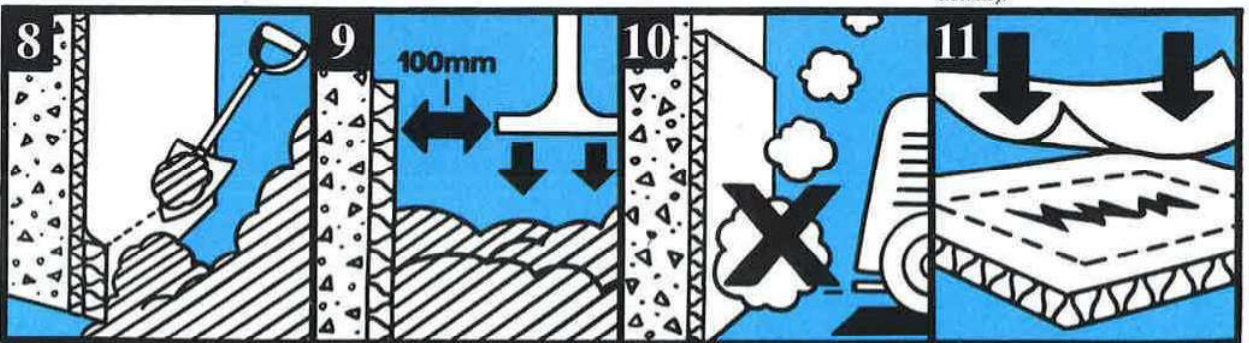
Join sheets horizontally by overlapping the top core layer over the lower one by 75-100mm. The top geotextile is then lapped over the lower geotextile filter fabric and taped. Vertical joints are made similarly by over-wrapping cores and filter fabrics and taping the top filter fabric down. (Suggested tape PVC Duct Tape, preferably 100mm)

At top of the **Drain mat** excess filter fabric must either be turned over the top and back onto the core, or secured against the walls to prevent backfill from entering the core.

For retaining walls using weep holes, the core only at the base must have cutouts 50 x 12mm at 1.0m centres (need not align with weep holes).

**DO NOT CUT FILTER FABRIC.**

When weep holes are not used, Stripdrain should be installed as a base drain by inserting under Cordrain geotextile. (Refer Stripdrain Designer's Guide for terminating details).



Backfilling should commence by hand around the base of drain but can be completed mechanically. Care should be taken to prevent damage to **Drain mat** during backfilling. It is advisable to temporarily protect the **Drain mat** with a plywood sheet that is raised as work proceeds. Backfill with sharp stones or rock is not recommended.

**Drain mat** can withstand the lateral load applied by compaction equipment up to 100mm from the face.

Machinery exhausts should be pointed away from **Drain mat** when compacting as excessive heat can cause damage.

Should a cut occur in the geotextile then it should be taped over to ensure that no soil can enter the drain. If a large area of geotextile is torn, a patch of geotextile should be placed over the area and taped, allowing an overlap of 100mm.

## Product Specification

### PROPERTIES CORE

### DATA

Core profile	Single Cuspate	10mm thick
Colour		Black
Fungus resistance		Excellent
Compressive strength (kPa)		900 kPa
Material		HIP

### GEOTEXTILE

**3401TG  
TYPAR USA**

**Geo-200  
AMERASIA**

#### Mechanical properties - control

Wide width strip tensile  
(BS6906 Part1:1987)

Mean peak strength	kN/m	7.9	5.0
Elongation	%	25	---

CBR puncture resistance  
(BS6906 Part 4:1989)

Mean peak strength	N	1110	1265
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Trapezoidal tear resistance  
ASTM D4533

Mean peak strength	N	365	---
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#### Hydraulic properties

Pore size  
BS6906: Part 3: 1989

Mean AOS O <sub>90</sub>	µm	163	75
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Permeability  
BS6906: Part 3: 1989

Mean Flow rate -10cm head	L/m <sup>2</sup> .s	70	50
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#### Physical properties - typical

Mass per unit area	g/m <sup>2</sup>	166	200
Roll width	m	2	2
Roll length	m	15	15



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