

# Tunnel Inverted Sheet Drain



Tunnel inverted cusped drainage mat is made from High Density Polypropylene (HDPE). The drain mat is also available with a high strength needlepunched polyester (PET) filter fabric bonded to it.

When shotcrete is applied, inverted sheet drains provide a free draining void behind tunnel waterproofing, walls or basement floors. The drainage layer collects infiltration water from the tunnel wall, reduces hydrostatic pressure and enhances the effectiveness of the waterproofing. Inverted sheet drain can also be used as a gas collection void under a reinforced concrete slab. The open flow channels in the cusped core deliver high flow velocities, which, together with the smooth HDPE surface, make inverted sheet drains extremely resistant to clogging by precipitates.

When used to waterproof basement slabs or act as a gas collection barrier, the dimples are laid face down on a separation geotextile and a cement grout is poured on top.



## Core Properties

Product	Color	Material	Weight (g/ m <sup>2</sup> )	Thickness (mm)	Drainage Capacity (L/m <sup>2</sup> )	Compressive strength (kPa)	Dimensions* (MM)
TD-30	Black	High Density Polypropylene (HDPE)	1500	30	7.2	150	2400x1000

\*..includes 10cm wide flat along both edges

## Geotextile Filter Fabric (when supplied)

Material	Colour	Vertical Permeability Coefficient (cm/s)	EOS (O <sub>95</sub> ) (mm)	CBR (KN)	Tear Strength (KN)	Tensile strength (KN/m)	Weight (g/m <sup>2</sup> )
Needlepunched monofilament polyester	White	$2.36 \times 10^{-1}$	0.108	1.7	0.26	8.5	180

Cuspated invert drains easily attach to the excavated wall of tunnels or onto a shotcrete smoothing layer with rondels. The flexible sheets follow the contours of excavated tunnel walls.

Shotcrete adheres directly to the inverted surface of the liner. The rebound loss is significantly less than for smooth waterproof linings as concrete is retained in the dimples.

