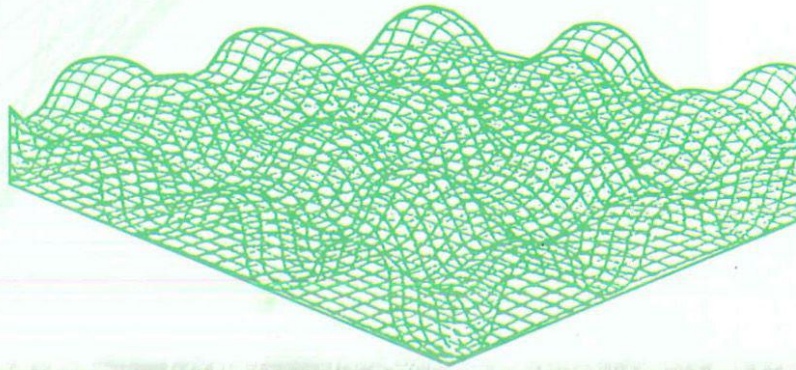


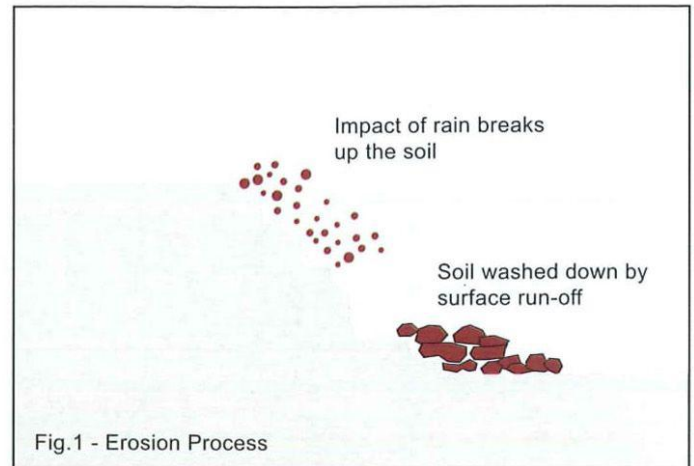
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Erosion Mat



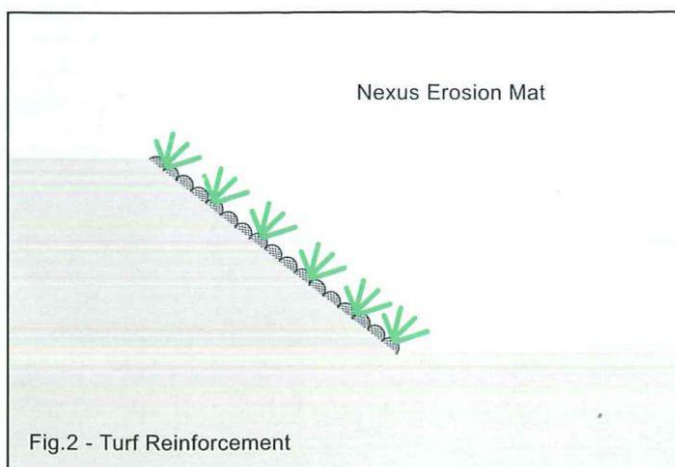
EROSION CONTROL FOR SLOPES, WATERWAYS, DAMS, PONDS AND LAKES

The process of erosion on earth slopes is normally started by the weathering elements of wind and rain. The soil on a barren slope is first loosened by the impact of rain drops and subsequently washed down by the surface run-off (Fig.1). As the process of erosion proceeds, deep gullies and rills will eventually develop leading to slope instability. Turf will not be able to establish itself on these slopes which are devoid of top soil and nutrients by the erosion process.



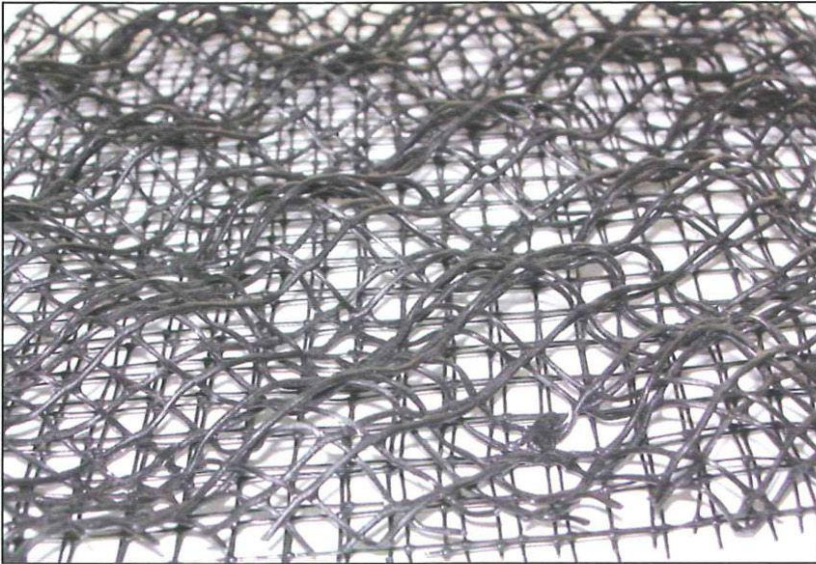
Slopes subject to severe erosion.

The traditional methods of slope protection using rip-rap or concrete have rendered many slopes rather unsightly besides being more costly. Turf or grass cover is nature's defence against erosion. Besides being more aesthetically pleasing and economical, it helps to reduce the surrounding temperature thus alleviating the problem of thermal pollution.



Nexus erosion mat is specially developed to reinforce natural turf (Fig.2). The root system of the turf intertwines with the erosion mat forming a reinforced turf/soil matrix that is highly resistant to erosion.

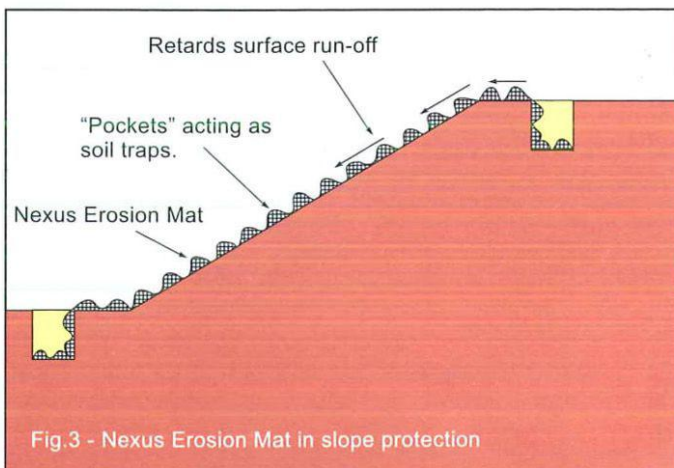
It has been shown in independent laboratory studies that the use of reinforced turf matrix increases the erosion resistance of unreinforced vegetation by 30% - 100%.



Nexus Erosion Mat is a 3-dimensional netting made from polyethylene. It is UV stabilized by addition of 2% finely divided carbon black and hence is able to withstand prolonged exposure to sunlight under tropical conditions.

The base layers are made from 2 layers of biaxially oriented nets which impart high tensile strength and dimensional stability to the Erosion mat. As a result, Nexus Erosion mat will not deform when stretch and subject to tensile stresses.

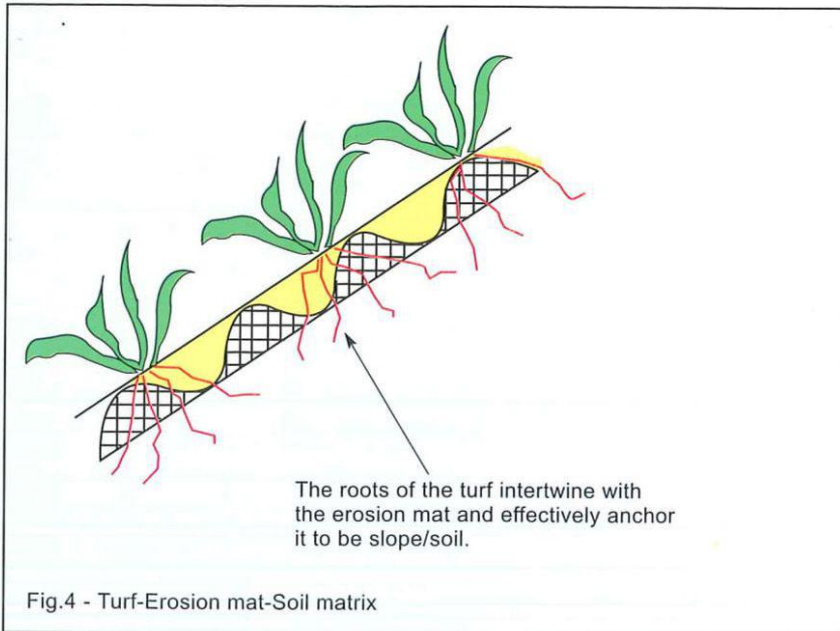
Nexus Erosion Mat In Slope Protection



Nexus Erosion Mat affords immediate protection when laid on slopes. The erosion mat, being cusped, is highly effective in retarding the flow of surface run-off on slopes (Fig. 3). The series of "pockets" act as soil traps and prevent the top soil from being washed away by surface run-off and hence effectively arresting the erosion process. It is highly effective in steep slopes where erosive forces are more severe.



Nexus erosion mat is secured to the slope by means of J-shape mild steel pins. The slope is then hydroseeded. A layer of top soil is then laid on the erosion mat and brushed into the pockets.



As the seeds germinate and develop, the stem/leaves grow through the netting while the roots will intertwine with the netting and penetrate into the soil. It permanently anchors the erosion mat to the slope and develops a reinforced turf matrix that is highly resistant to erosion.

In cases where close turfing is desired, a layer of top soil is first brushed into the erosion mat. This is then followed by turfing operations.

In steep slopes where soil filling operations is impractical, Nexus erosion mat has proven its effectiveness even without soil filling. Under such site conditions, the slope is hydroseeded first, Nexus erosion mat is then simply unrolled down the slope and secured by means of mild steel pins.

Nexus Erosion Mat In Waterway Application

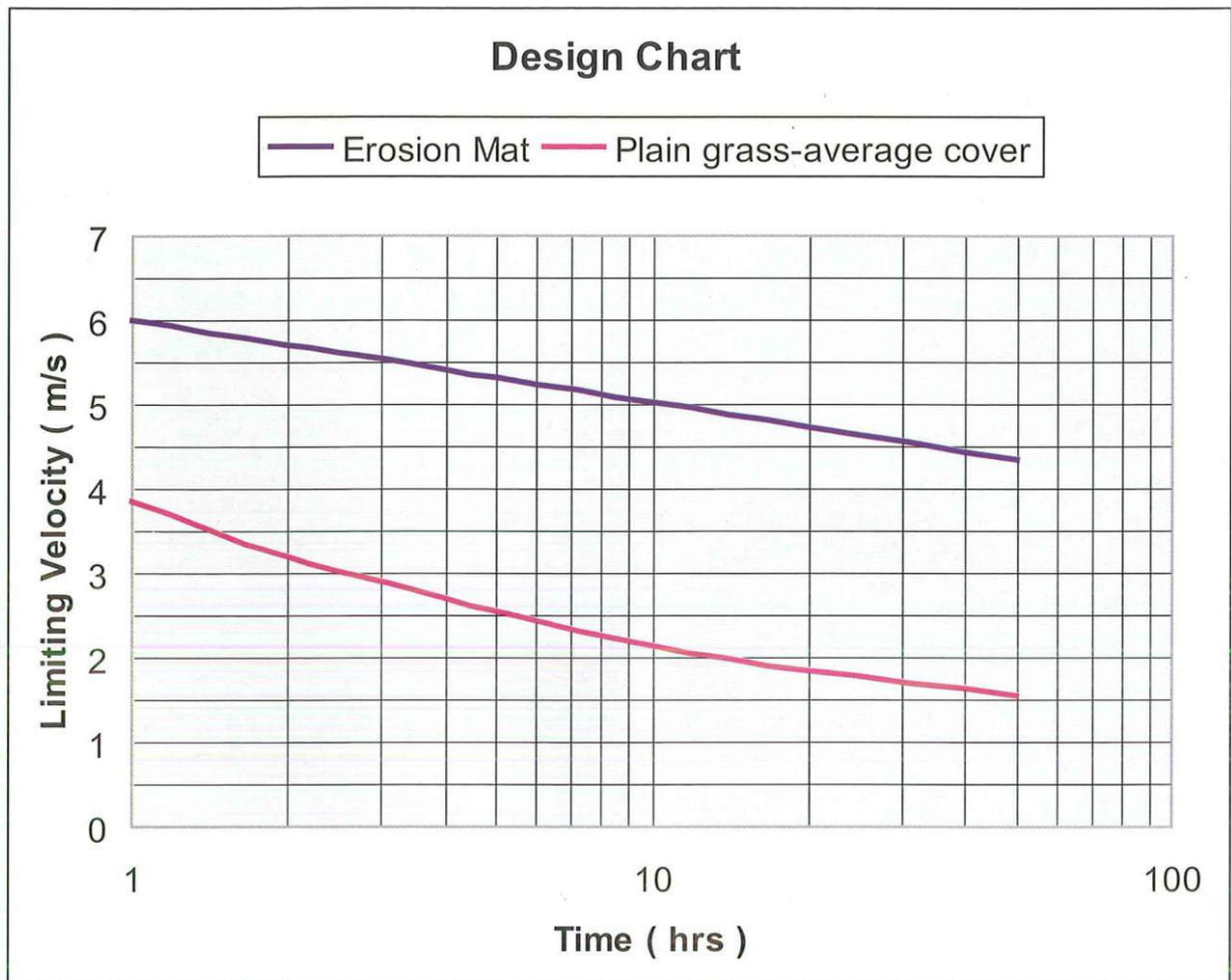
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In waterway applications, it has been shown in the laboratory that turf-erosion mat matrix can withstand flow rates up to 4.4 m/s compared to 1.5 m/s for unreinforced grass cover when subject to prolonged submergence under water (> 50 hrs).

Turf can also be pre-grown on the erosion mat and laid on the bank slope. This method will give immediate protection against erosion on banks of waterways.





The limiting velocities for plain turf and turf reinforced with erosion mat (after Hewlett, et al. 1987) for different flood durations when used in waterway application are as shown in the chart above. The advantage of using erosion mat becomes very apparent as turf reinforced with erosion mat can withstand a very much higher water velocity compared with plain turf i.e a factor of 1.55 for 1hr flood duration and 2.8 for flood duration longer than 50 hrs.

The above chart provides the basis for design of turf reinforced with erosion mat in waterway application.

Nexus Erosion Mat Applications

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The full advantage of enhanced erosion resistance and protection can be realized when used in :

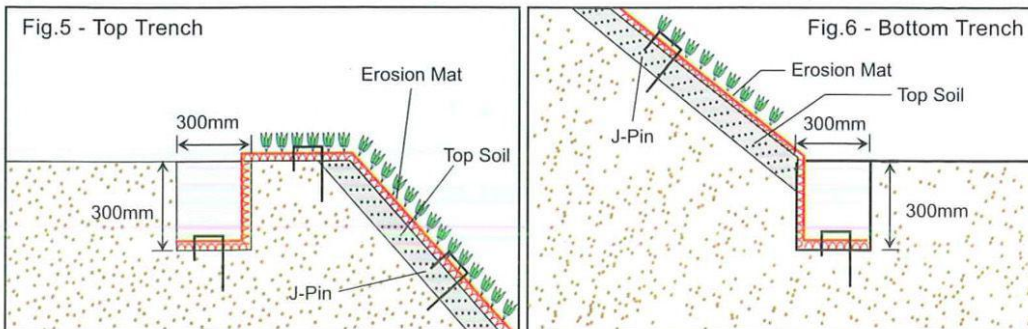
- Hydroseeded slopes
- Steep slopes
- Banks of waterways, ponds and lakes.
- Channel Lining.
- Reinforced soil slopes.
- Highway embankment slopes.
- Slopes of dams and bunds.



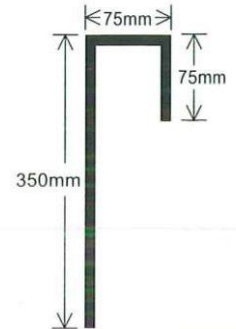
Nexus Erosion Mat for steep slope protection

1. Regrade eroded slope.
2. Place 50mm top soil if necessary (optional).
3. Add soil supplements eg. fertiliser etc. as required (optional).
4. Unroll Nexus erosion mat down the slope and allow net to drape closely to slope contour.
5. Bury top and bottom end of erosion mat in trenches (Fig. 5 & 6).
6. Secure erosion mat to slope surface by means of J - shape mild steel pins, typically 350mm(L) x 75mm(W) x 8mm dia.
7. Overlap adjacent rolls by 100mm.
8. Sow friable soil and brush into the full depth of the mat.
9. Lightly tamp the soil surface.
10. Commence turfing.

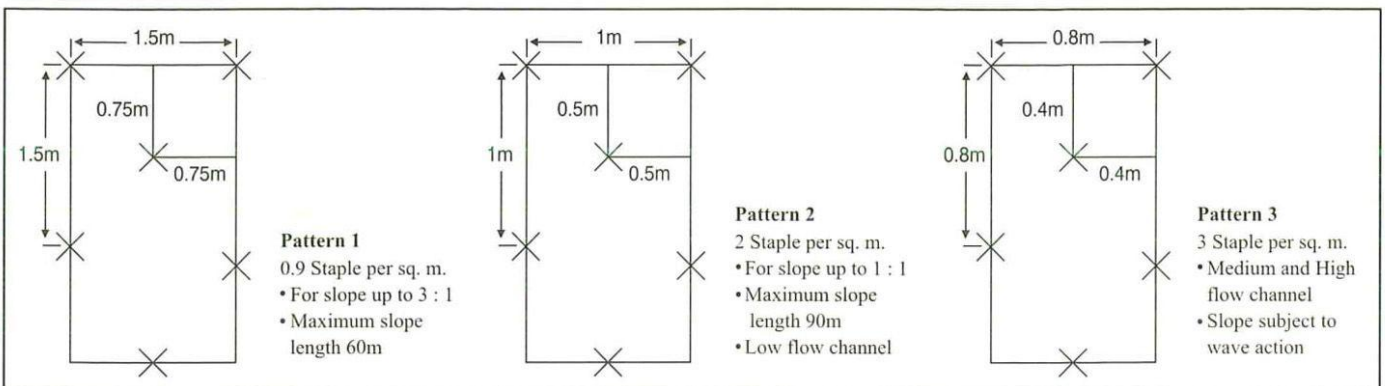
Trench Details



J - Pin Details



Staple Patterns



Specifications

Properties	Unit	Value
Material	-	PE
Layers	-	4
Weight	g/m ²	350
Thickness	mm	15
Tensile Strength	N/m	2600
Elongation	%	27

UV Stability

Nexus Erosion Mat is UV stabilised by addition of 2% finely divided carbon black. It is designed to withstand prolonged exposure to sunlight under tropical conditions.

Chemical and Biological Resistance

Nexus Erosion Mat is not affected by chemicals, acids and alkalis in the range pH 2 to pH 9, normally found in soils. It is also not affected by soil micro-organisms.

Test Method : ISO 10319

The above are average values and are correct to the best of our knowledge.

It may subject to change from time to time. We shall not be liable for the interpretation of the above data.

Nexus Erosion Mat is tested by SIRIM BHD, Malaysia.

Distributed By:

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