

# CASE STUDY

Erosion Mats

Project: School Stream Enkamat Protection  
Date: February - April 2008  
Client: Hastings District Council  
Location: Havelock North, Hawkes Bay



## Enkamat

School Stream runs through the back of private properties, in one of the large catchment areas that leads off the Te Mata Peak range, originating in a very steep gully. Runoff is controlled by a detention dam limiting peak flows (which can exceed super critical velocities) to 20 year events. Peak rainfall causes flooding and erosion due to the meandering nature and width of the stream (bed is alluvial and highly erodible).

**Enkamat** was chosen as the lining for the stream, which firstly had to be reshaped and widened to cope with the high expected flows. Degrading streambeds and unstable banks are not desirable in high value residential areas. This decision proved to be sound, with 6 hours of rain of a 15 year intensity storm event occurring in the first maintenance period (within 2 months of installation). Little damage occurred, and the Council was very happy with the result. An enhanced stream reserve environment has now been created.

The use of the **Enkamat 7018** was determined by modelling the expected flow rates. The 7018 allows for higher flow rates during peak flooding events, once vegetation has established.

The channel was cut and reshaped to a 2.4m base width, with a slope batter of 1:2 to a height of 500mm. Installation started from the downstream end, with toe in trenches at the top of both slopes. Pinning of the Enkamat was done with aluminium pins. Overlap of **Enkamat** was 150mm, with 2/3 of the grass seed mix sown into the **Enkamat**, before covering with topsoil and the remaining 1/3 seed mix put on top. Approximate installation per day was 30 lineal metres, with 5 people, using a 6 tonne digger, a light truck and light plate compactor.



Site prior to construction



Placement of Enkamat



Unvegetated stream of flood

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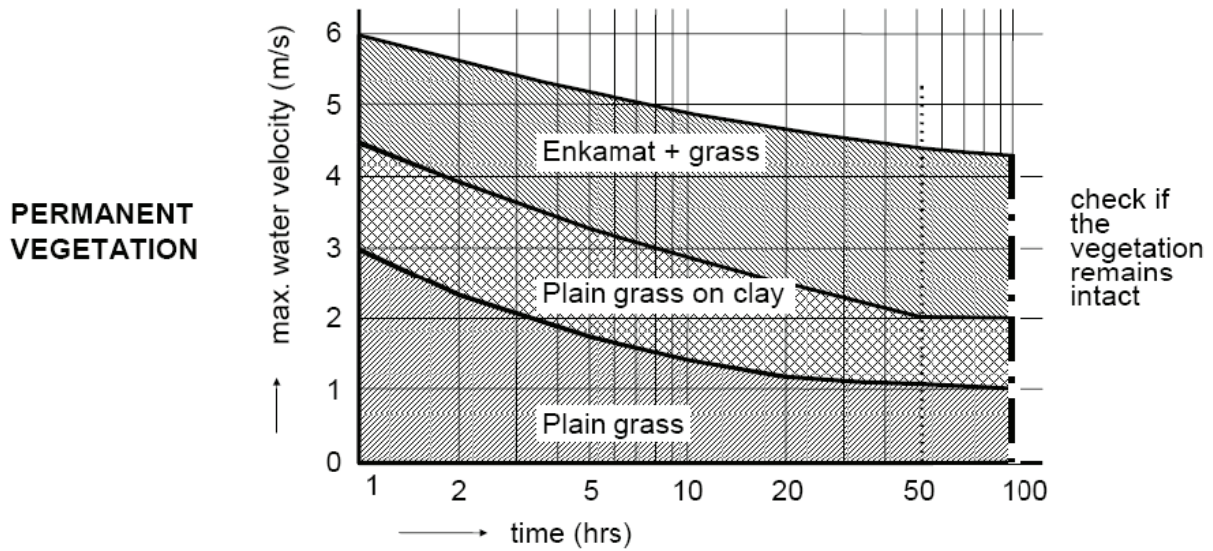
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The chart below provides a guide to the performance of **Enkamat**, a three dimension turf reinforcement mat (TRM). One of the key factors for this performance is the soil holding capacity provided by **Enkamat**. Unlike thin two dimensional erosion control mats (ECM's), **Enkamat** retains the soil providing a suitable depth of soil for root development within the mat.



Completed vegetated stream