

5<sup>th</sup> ADB Brown Bag Seminar  
Tools and Technologies for Resilient Transport Sector

# Prevention of Slope Hazard by Erosion Control Mat

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March 14, 2024  
Takino Filter Inc.  
Yoshihiro Tsumura





**Accelerated development**

**Still threatened by disasters**





In this context both at the construction sites and the disaster sites, slope protection is one of the urgent issue.



Takino Filter Inc. will be able to cooperate in this field of slope protection even outside Japan.





Takino Filter Inc. presents its original product called **Erosion Control Mat**, as a solution.



Takino Filter



**Erosion Control Mat** is not a kind of ordinary vegetation mat/sheet, but is a drainage material that can prevent soils from runoff.

It is a mat made of non-woven extra-fine polyester fibers, which is similar to plant root, works like a filter with 97-98% of persistent porosity, and its fine drainage prevents erosion of the surface soil by water.

This is the unique method to slope protection, that is different from ordinary vegetation mats/sheets, or hydroseeding.



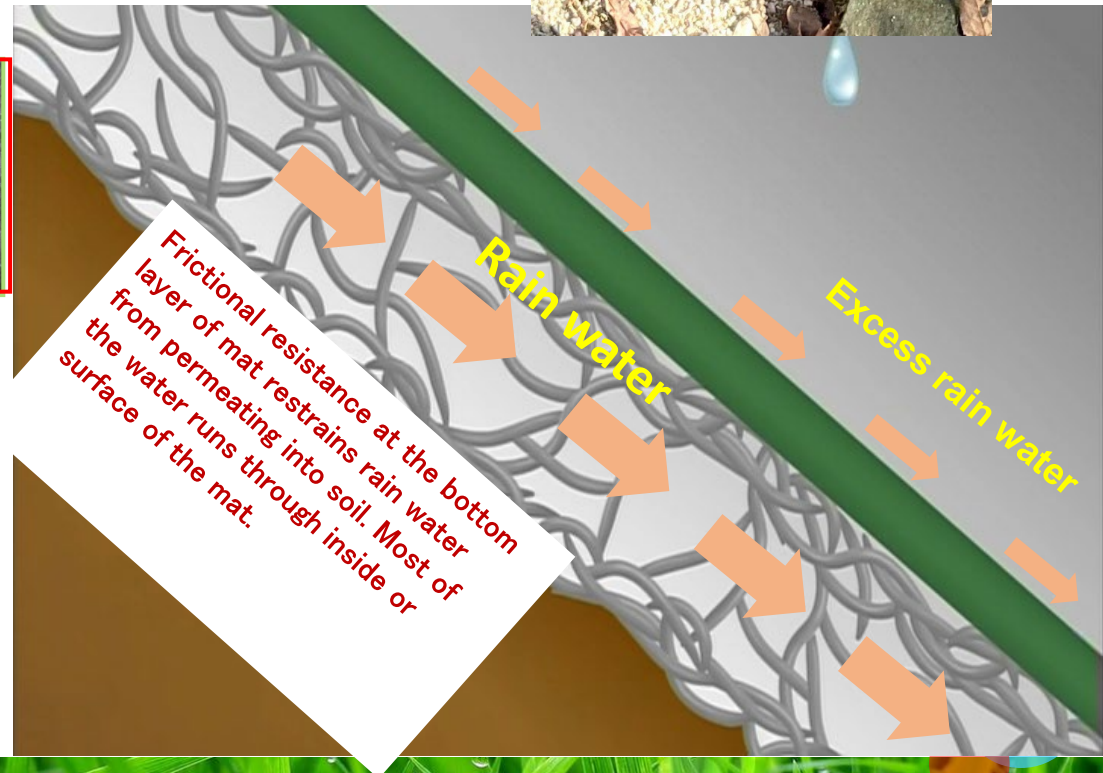
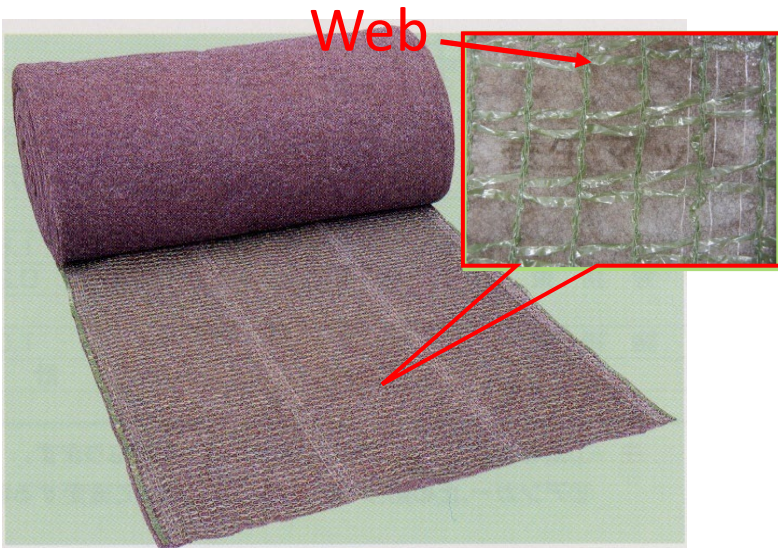


# Our Specialty

- Mat is made of non-woven extra-fine polyester fibers (what we call **Web**) reinforced by polyethylene nets.

## Functions

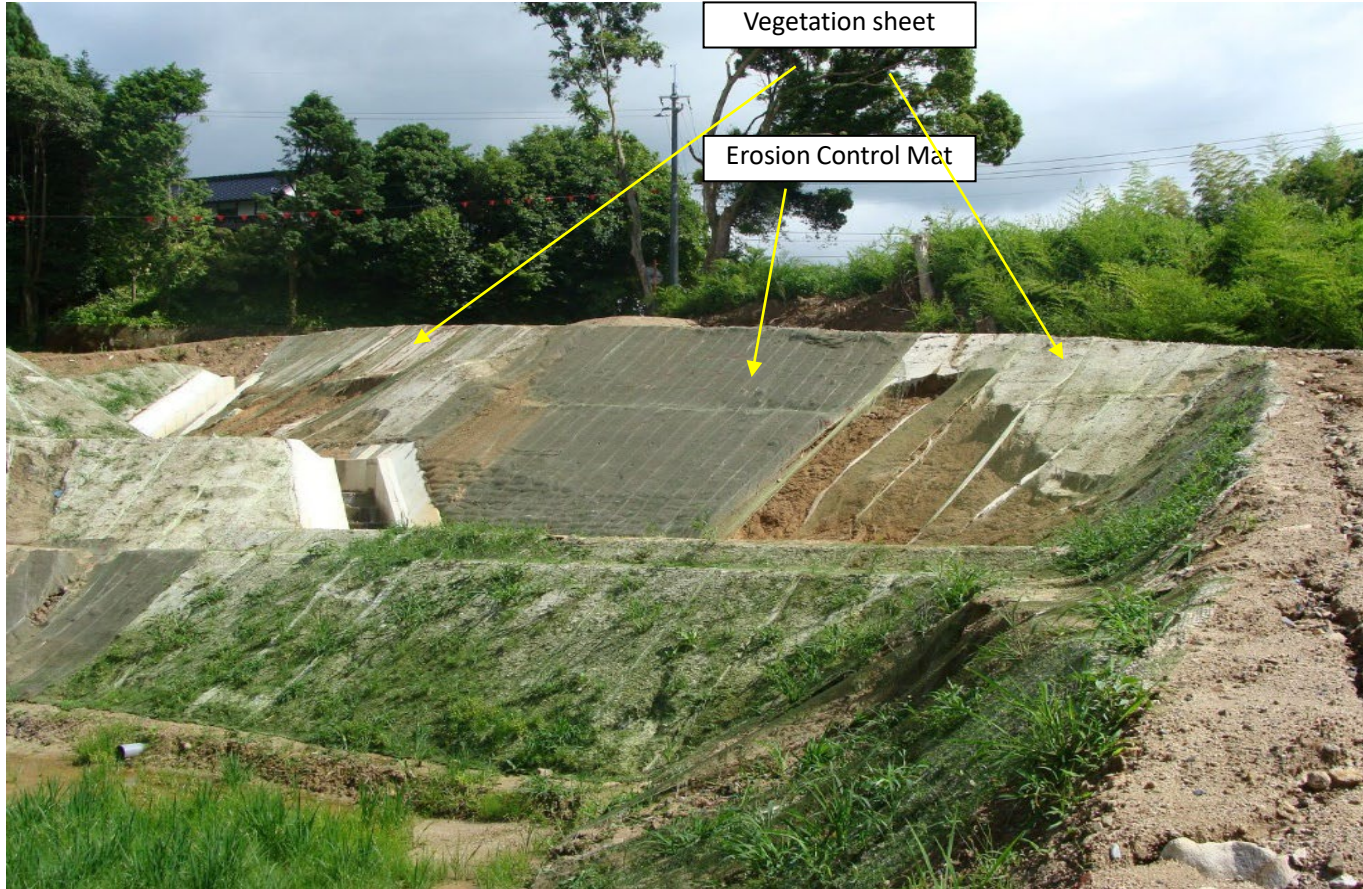
- Firm adhesivity by intertwining with surface soil →
- Cushioning soils against raindrop impact
- Fine drainage







# Comparison to ordinary vegetation sheets



Sandy soil embankment

**A slope after 150mm of rain in 1 day.**

- The vegetation sheets let rainwater permeate into the soil, resulting in surface erosion.
- Takino's Erosion Control Mat prevented the soil from runoff by its fine drainage.



# Easy Installation



 Takino Filter



It is very EASY to install the Mats over slopes.



No special skill is required.  
No need to operate any heavy machinery.







# Erosion Control Mat is effective to the soils like below;



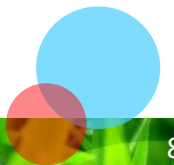
Sandy Soil  
Friable to rainfall.



Volcanic Ash Soil  
Quite friable to rainfall.



Red Clay  
Once the clay flows into the sea,  
it spoils precious ecosystems and beautiful landscapes.





# Our Works #1



Takino Filter

## Case of Kumamoto Earthquakes



April, 2016



提供:国土交通省 九州地方整備局

July, 2023

Protecting  
the recovered slope  
over 140,000 m<sup>2</sup>





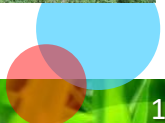
# Our Works #2



Pilot Trial: Marikina-Infanta Roadside Protection, Philippines.



After  
6 months





# Collaboration

— Takino Filter Inc. + Nippon Koei Co., Ltd. —



**Erosion Control Mat**

General Erosion Prevention

Water Retention

Vegetation



**Join forces !**



**BSC-1 (Soil Algae)**

Erosion Prevention for fine-grained soil

Water Retention

Vegetation

**Slope protection by Erosion Control Mat**

**Vegetation succession  
proceeded by BSC**

**Ability of slope protection  
and vegetation is enhanced**



Thank you very much.

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