

**PROTECTION OF AGRICULTURAL WATER STORAGE POND USING
TECHGEO NONWOVEN GEOTEXTILE, THAILAND**
THAILAND

POND LINING

Client:	Products used:
IRRIGATION DEPARTMENT, THAILAND	TECHGEO NONWOVEN GEOTEXTILE PR 20 - 3800 SQM
Main contractors:	
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Manufacturer & Supplier:	Year of Construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2024

Project brief & Problem Description:

Agricultural water storage ponds are essential for maintaining a reliable water supply in regions with irregular rainfall, especially in areas like Thailand. These ponds store water for irrigation, helping farmers during the dry season and ensuring crops thrive in water-scarce conditions. To further enhance water storage capacity, the Department of Irrigation decided to develop a new agricultural water storage pond with a geomembrane lining. This geomembrane was intended to prevent water seepage, ensuring the pond retains water effectively.

However, a significant challenge arose due to the uneven ground surface of the selected location. The geomembrane, while effective in providing a waterproof barrier, is highly vulnerable to damage when placed directly on uneven terrain. The rough and inconsistent surface underneath the geomembrane can lead to punctures which compromises the integrity of the liner. When the geomembrane is damaged, water leakage occurs, undermining the primary purpose of the pond and leading to a loss of stored water.

This situation results in several issues: increased maintenance costs, reduced lifespan of the pond, and the potential need for frequent repairs or replacement of the geomembrane. The department decided to implement a protective solution to prevent damage to the geomembrane from the uneven ground.



Photo 1 : TechGeo Nonwoven Geotextile Installation

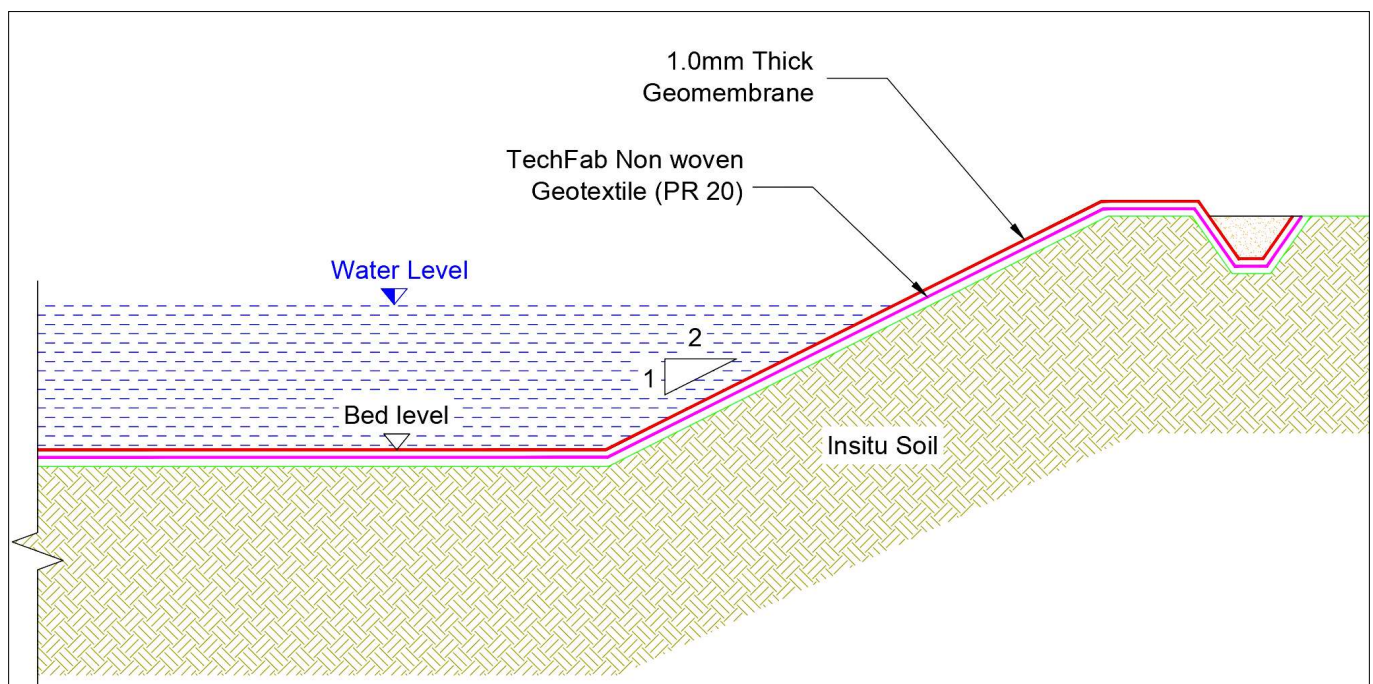
Solution Proposed:

To protect the geomembrane and enhance the longevity of agricultural water storage ponds, TechGeo Nonwoven Geotextile (PR 20) has been effectively used beneath the geomembrane. This high-quality geotextile acts as a cushioning and protective layer, offering critical defense against the uneven ground surfaces beneath the pond liner. It prevents punctures, abrasions, and physical damage that could compromise the integrity of the geomembrane, ensuring its effectiveness in retaining water.

This solution not only protects the geomembrane but also promotes sustainable water management practices by maintaining the pond's integrity and reducing the need for frequent repairs or replacements, ensuring long-term agricultural productivity.

Advantages of TechGeo Nonwoven Geotextile:

1. **Durable Protection:** Provides long-lasting protection for geomembranes.
2. **Enhanced Stability:** Distributes loads evenly, preventing damage to the pond liner.
3. **Superior Filtration:** Promotes efficient water flow while preventing soil or silt infiltration.
4. **Cost-Effective:** Reduces maintenance and replacement costs by extending the lifespan of the pond liner.
5. **Sustainability:** Improves the overall water management system, supporting agricultural sustainability.



Typical Cross Section Drawing



Photo 2 : Geomembrane Installation Over Nonwoven Geotextile

Conclusion:

The project was successfully completed, with TechGeo Nonwoven Geotextile providing durable, stable, and effective geomembrane protection, ensuring sustainable water management and long-term efficiency for agricultural water storage in Thailand.

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