Filtration & Separation

Reservoir Lining, Terrex NW8, Ely, UK

CASE STUDY

Project Information

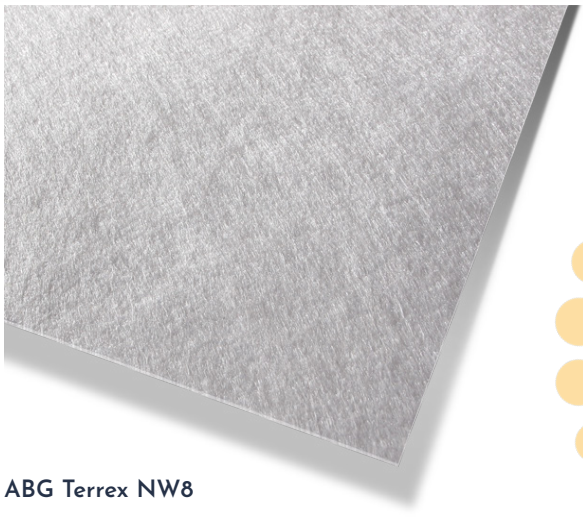
Client	Greencoat Capital
Contractor	Miles Water Engineering
Product	Terrex NW8
Quantity	219,000m²
Benefits	• Permeable layer to facilitate the flow and filtration of leakages • Prevention of localised pressure build-up beneath the liner • Good CBR values • Consistent pore sizes • Uniform tensile strength • Helps to minimise future maintenance requirements

Project Description

Water sector specialists Miles Water Engineering were appointed to complete the construction of two new reservoirs to support one of the world's most advanced greenhouse projects near Ely in Cambridgeshire. The £86 million project, led by AGR Renewables on behalf of developer Greencoat Capital, utilises one smaller 5.5 acre reservoir (equivalent to 3 football pitches) to harvest rainwater from the adjacent 55 acre greenhouse before returning it to irrigate the crops. The larger reservoir is a vast 22 acres (equivalent to 12 football pitches) and is utilised to warm the greenhouse via a heat exchange system, with open loop heat pumps transferring energy from the nearby reservoir to the greenhouses. The greenhouse is among the largest ever constructed in the UK, with a footprint of over 22Ha to enable tomatoes and cucumbers to be grown all year-round. The project increases the volume of UK grown vegetables, thereby reducing food mileage and helping to support decarbonisation in the agriculture sector.

The Challenge

The reservoir lining is subject to large pressures from the head of water acting on it when the basins are full. In the event of localised leakages through any small gaps in the primary liner, a geotextile filtration layer was required to protect against washout and provide separation between the liner and the underlying soils.



ABG Terrex NW8

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The Solution

ABG's **Terrex NW8** geotextile was specified to facilitate the flow and filtration of leakages and to prevent localised water pressure build-ups from causing soil degradation issues directly beneath the primary liner. **Terrex NW** geotextile is made from high performance staple-fibres mechanically bonded to offer optimum performance per unit weight. The general purpose separation function plays an important role in maintaining the overall structure of the new reservoirs and serves to provide additional strengthening of the underlying soils.

The ABG Service

ABG has over 30 years' experience in ground engineering design in the reservoir sector. The project required coordination of frequent just-in-time deliveries to site to ensure accurate supply of the large volumes of material required for the project.

Terrex NW8 provides separation and filtration function to protect the integrity of the underlying soils

The 5.5 acre basin collects run-off from the adjacent greenhouse buildings and redirects it for irrigation of the crops.

HDPE liner filling with water in the large 22 acre reservoir basin.

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