Secutex® HB

Coastal Protection

Project name
West Sands Holiday Park, Selsey, UK

Designer / Consultant representing the client
Atkins

Contractor
Balfour Beatty

Product
Secutex® HB 751

Naue

Fig. 1: Unrolling Secutex® HB 751

England has a long and well-known history of coastal defence. Today, coastal protection remains a high priority – though it now focuses on erosion and flood control and civil infrastructure. The West Sands Beach Project at Medmerry near Selsey and Sussex on the southeastern coast is the largest privately funded coastal protection scheme of its kind in the UK's history.

The Medmerry project is an extraordinary managed realignment scheme that is part of a more extensive program of integrated inland and coastal sea defences. More than 93,000t of rock have been shipped from Norway to create two breakwaters on a two-acre footprint, 600m apart, with 3,000m^3 (nearly half a million tonnes) of sand and shingle deposited to form a beach.

Challenge

Roughly 300 properties including numerous farms are located along the 650ha of low-lying land along this stretch of coast. A wastewater treatment plant and an electrical substantion are also located inland and have been threatened by the area's poor flood defences. For many years, a raised shingle beach (more than 15,000t of shingle) has been used as a defence, but flooding has caused more than £5 million of damage between Selsey and Bracklesham.

This new, far more extensive approach is a major effort by the Environment Agency to establish real long-term protection for the coastline.

Solution

The project engineer specified Naue Secutex® HB to be used as the filter/separator geotextile between the Norwegian rock (which includes up to 10t boulders) and the sea bed. The geotextile had to be robust enough to cope with such loading. It also had to be installed underwater during the construction of the breakwaters.

Secutex® HB is a unique geosynthetic. Two geotextiles encapsulate a sand layer. The increased density allows it to sink in water for easier installation and material control during hydraulic engineering applications.

In "sinking" underwater, Secutex® HB provided an efficiency that has made the installation process significantly quicker than that of a conventional geotextile.

This also resulted in welcomed project cost savings.

Full construction of the beach at Medmerry took place with an eight-week window for the geotextile installation. More than 24,300m^2 of Secutex® HB were installed.

Fig. 2: Covering of Secutex® HB 751