

MERITUS PELANGI BEACH RESORT, MALAYSIA

Protecting Langkawi's Meritus Pelangi Beach with GEOTUBE®



Industry:	Water
Application:	Coastal protection
Location:	Langkawi, Malaysia
Product:	GEOTUBE®

Challenge

To address this issue, the resort assessed various erosion protection methods. After careful consideration, the Solmax solution, combining **GEOTUBE®** GT650MC and Geobag composites, was chosen due to its cost-effectiveness and ease of filling and handling.

Overview

The Meritus Pelangi Beach Resort, situated in Pantai Cenang, Langkawi, has been experiencing severe erosion during the Southwest Monsoon since 2016. The conventional sandbags used to combat erosion proved ineffective, as they were easily displaced and weak against strong waves.

As a result, the beachfront has significantly narrowed, and the scenic views and long stretches of sand have been destroyed.

The targeted shoreline area was trimmed back before laying the filled Geobags in an overlapping shingle style from the embankment's base. This method ensured maximum stability and protection during high water flows.

CASE STUDY

Protecting Langkawi's Meritus Pelangi Beach with **GEOTUBE®**

Solution

The installation process involved deploying scour aprons and filling anchor tubes prior to placing the **GEOTUBE®** unit. The targeted shoreline area was trimmed back before laying the filled Geobags in an overlapping shingle style from the embankment's base. This method ensured maximum stability and protection during high water flows. To streamline the filling process, a filling frame was used, and polyester lifting straps were employed to lift and position the bags securely.

The **GEOTUBE®** unit utilized a robust composite fabric in a beach sand color, capable of trapping sand within its structure. This resulted in a stable **GEOTUBE®** System that could withstand waves, storm surges, weathering, and prolonged exposure to sunlight. Following site preparation, the **GEOTUBE®** GT650MC unit was laid out, and sand was hydraulically pumped from the sea into the **GEOTUBE®** unit through one of the fill ports until reaching the desired height of 1.24 m (4.08 ft).



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