## GEOSYNTHETICS



**CASE STUDY** Segamat River upgrading and flood mitigation works, Johore, Malaysia



Protective Fabrics Space Composites Aerospace Composites Advanced Armour Geosynthetics Industrial Fabrics Grass



## Riverbank erosion protection with sand filled mattress

Segamat River upgrading and flood mitigation works, Malaysia

Sections of Segamat River in the town areas have been widened and levees raised during previous flood mitigation works. However, downstream of Segamat town the river flows through villages as natural channels that tend to be narrower, prior to joining with the main Muar River. An exceptional flood event occurred in Dec 2006 followed with another in Jan 2007. Water overflowed the banks of Segamat River on 20<sup>th</sup> Dec, flooding the town and the floodplains of the river and its tributaries. The floods in Segamat town soon subsided only to be hit for a second time on Jan 15<sup>th</sup> 2007. In Jan 2011 another severe flood event occurred in Segamat district. This time nearly 55,000 people were evacuated to 104 flood relief centres in Segamat district.

In 2013 a contract was awarded to improve the 8 km section of Segamat River that ends at the confluence with Muar River. The contract involves realignment, raising of levees, channel widening, and riverbank erosion protection works. The riverbank erosion protection works included the use of sand filled mattress and erosion control geomat to line the banks. This is a green solution and is more economical than the conventional use of rock riprap. Sand is readily available from the silted riverbed for the filling of the geomattress. The geomattress is a double layered engineered fabric stitch bonded together at regular intervals to create sandwiched space for filling with sand. TenCate Geomattress SFM2000C was used for this project. The top exposed surface of Geomattress SFM2000C is a special engineered composite fabric that is extremely robust and durable to meet the long term design exposure requirements. Additionally, this special engineered composite fabric easily entraps river sediments to quickly build up a top soil layer and establish vegetation naturally.





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