

Stabilizing Swampy Ground with ACETex[®] at Pan Borneo Highway Sarawak

◆ Background & Challenges

For promoting the socio-economic development of East Malaysia, the local government decided to advance the construction of the Pan Borneo Highway, which commenced in 2015. The Sarawak segment of the highway will act as the main artery between the Sabah and Sarawak states.

The newly constructed road extends approximately 1,060km from Telok Melano to Merapok and crosses several swampy areas with poor soil conditions. Heavy rainfall is certain in this region and the infiltration of rainwater would further induce the function loss of the pavement as well as accelerate the formation of potholes. What's even worse, the passage of high volume traffic and heavy vehicles exceeding the bearing capacity of existing roads would exacerbate the situation. Upgrading, widening and improving the condition of the route were simultaneously the most urgent issues to be resolved.



◆ The Solution

Unearthing solutions for the weak subgrade conditions and decreased road bearing capacity especially encountered during rainy seasons, the pavement design introduces a fresh construction method – incorporate geosynthetic materials to improve the performance of the road. This method totally dispenses the large-scale soil replacement or treatment process which immensely cuts material and transportation costs.

The site subgrade preparation initiates the construction, then the smooth installation of the ACETex[®] PP, prefabricated vertical drains (PVD), and ACETex[®] PET follows for the purpose of separation, filtration, drainage, and furthermore, functions as reinforcement. Lastly, the entire pavement structure is completed once backfilled to the required elevation. The usage of geosynthetic materials not only accelerates consolidation of the subgrade but also increases the bearing capacity of the weak soil layers, and allows the safe passage of heavy vehicles on the road. The project is expected to be completed in 2020 and millions of square meters of ACETex[®] will be applied.



◆ The Contribution

The ACETex[®] pavement system has effectively converted unworkable ground conditions into a safe and stable high traffic route that in the near future, will save countless transit hours and contribute to the raised productivity of East Malaysia.