

# CASE STUDY

Geotextile

Project: Tauranga Eastern Link  
Date: April 2013  
Client: NZTA  
Location: Kaituna River Bridge, Tauranga



## Mirafi PET

A new bridge was required to cross the Kaituna river as part of the TEL road alignment project. The road alignment is over very soft and very deep peat soils and so reinforcement was required along the base of the embankment and within the side slopes. The fill embankment was expected to settle and therefore the solution would have to be compatible with the expected settlement as well as providing the required strength during the period of settlement and consolidation of the soft foundation soils.

It was identified relatively early on in the design process that an MSE wall would be the preferred solution to support the fill behind the bridge abutment. The MSE wall was designed as a wrap around structure incorporating **Miragrid GX100/30** geogrid that could accommodate the expected settlement. This approach allowed for an easy increase or reduction in height depending on the amount of settlement measured.

Speed of construction to realise construction efficiencies was crucial for the project. The original design suggested the use of sand bags filled with a lean mix of 5% cement to form the wall face however sand bags can be labour intensive and a faster solution was investigated. This resulted in the use of a temporary formwork system incorporating **bidim® A39** placed within the **Miragrid** geogrid wrap around to contain the cement stabilised fill zone and also to prevent movement of fines through the geogrid wrapped face.

The MSE wall was built over layers of **Mirafi PET1000/50**, a high strength woven geotextile. These were identified as an essential part of the design to provide stability to the embankment during consolidation of the weak foundation soils. **Mirafi PET 1000/50** geotextile was provided in specific roll lengths to match the embankment width which enabled a reduction in product wastage. All materials were supplied to the site on a 'just in time' basis from our local storage facility. This was done to reduce damage and material loss on site and was part of the logistical support offered.



Mirafi installed installation during embankment



Miragrid GX retaining wall construction



The construction of embankment over Kaituna bridge

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