

CASE STUDY



GEOFEM

Dubai-Fujairah Freeway, UAE



"Geofem were able to provide wall displacement data going back several years that would otherwise have been very difficult and expensive to obtain by conventional means. They combined this with the construction phase in situ monitoring to provide a complete picture of wall performance."

Mike Dobie, Regional Manager, Tensar International

The Dubai-Fujairah Freeway is a 45 km highway across the UAE, including a section through the rugged Hajar Mountains with enormous volumes of cut and fill. Some sections are supported on record-breaking 70m high reinforced soil walls and on their 10th birthday Tensar wanted to check how they were performing.

THE CHALLENGE

- Performance data was needed but no monitoring equipment had been installed. This meant that no retrospective data could be obtained.
- Performing in situ surveys of such large structures was expensive and required multiple return visits to detect trends.
- Working on the open highway or the steep mountainous terrain was very hazardous.

THE SOLUTION

- InSAR analysis was performed on satellite data of the area over a four-year retrospective period
- The satellite data was combined with the in situ monitoring data collected during and after construction, demonstrating the excellent wall performance over the 10 years since construction.

THE BENEFITS

- Tensar were able to demonstrate ongoing excellent performance of one of their flagship projects.
- Performance trends were immediately obtainable without having to wait months to accumulate monitoring data.
- The data was collected in a safe and non-disruptive manner without needing to visit the site.



Satellite analysis with engineering insight