

One project, two asphalt problems, two Tensar solutions



Upgrading Link Road from E11 to Military Airbase - Madinat Zayed

Abu Dhabi, UAE

The existing road from E11 to Madinat Zayed was rehabilitated and dualled in a design build contract. The asphalt thickness over 18km length was justified by a re-design incorporating Tensar AX5-GN interlayer to improve fatigue performance. A further 2km length using a thin overlay, incorporated Tensar Glasstex Grid R60N+ interlayer to control cracking and increase life.

CLIENT'S CHALLENGE

The project was let as a design build contract. Initial assessment showed that the 50km existing road has deteriorated to varying degrees. The original proposal was to fully reconstruct some sections and remove and replace asphalt for a 33km stretch. However, by the time construction was to start, the pavement had deteriorated further, forcing the contractor to reassess the design and increase overlay thickness. An alternative solution was needed to control the escalating cost.

TENSAR SOLUTION

Tensar proposed incorporating Tensar AX5-GN over the 18km length to improve the fatigue life of the asphalt layer and to achieve the required pavement life without increasing asphalt thickness. Tensar Glasstex Grid R60N+ was proposed for a 2km section, where a thin overlay was to be installed over the existing road surface, to control reflective cracking and extend the overlay life.

B E N E F I T S

- **Lower carbon footprint** by reducing asphalt volumes
- **Cost savings** by reductions in asphalt thickness and installation time
- **Pavement life extension** by improved fatigue performance and crack control

Tensar®

A Division of CMC

PROJECT DETAILS

Constructed in
2022

Client
ALDAR

Consultant
CORE Engineering Consultancy LLC

Contractor
Nael & Bin Harmal Hydroexport

Tensar Distributor
Pioneers of the Middle East Bridges and Tunnels Maintenance L.L.C. – O.P.C.



Tensar AX5-GN asphalt interlayer in place prior to overlaying

Roads Surfaces | No. 500

PROJECT BACKGROUND

The E11 highway runs westward along the coast from Abu Dhabi. A 2-lane link road branches off south to connect Madinat Zayed to the main highway. Deterioration of this 50km road prompted a major rehabilitation project to improve and widen the road to four lanes.

The project was let as a design build contract. The existing condition of the road was assessed. The initial recommendation involved asphalt overlay for 33kms and reconstruction of 17km. But by the time the construction was about to start, the roads have deteriorated further. A reassessment showed that an asphalt overlay solution was suitable for only 20km. The remaining stretch required full reconstruction. The thickness of the asphalt overlay would need to be increased from the initial design thickness. The contractor was keen to find an alternative solution to mitigate the increased costs.

Tensar was able to offer two solutions using Asphalt Interlayer products, Tensar AX5-GN to improve the fatigue life of the new asphalt layers in sections where asphalt was removed and replaced, achieving the required design life without increasing the original design asphalt thickness. The solution was implemented on the existing asphalt which eliminated the cost of milling and overlay. And Tensar Glasstex Grid R60N+ in a section requiring only a thin overlay, to delay the appearance of reflective cracks initiating from the underlying surface, and which will extend the overlay life.

"A major part of the work involved rehabilitation of surfacing layers. By the time the contractor mobilised at site, the existing road had deteriorated further from the time of preliminary assessment. The contractor had to reassess the conditions before proceeding. Tensar's Asphalt Reinforcement solutions helped the contractor stay within the budget and schedule, under these challenging situations."

Amjad Khofash | Operations Manager | Pioneers of the Middle East Bridges and Tunnels Maintenance LLC - OPC

let us help you with your next challenge: tensarinternational.com email: tensarinfo-ae@cmc.com



We're CMC. You'll find our products strengthening and reinforcing the infrastructure nearly everywhere on the planet – in sports stadiums and public buildings as well as highways, bridges, railways and other structures. To serve this global market, CMC maintains facilities across the United States, Europe and Asia. These sites include everything from local recycling centers, steel mini-mills and micro-mills to large-scale fabrication centers, heat-treating facilities as well as other operations. **cmc.com** ©CMC 2024