

Pavement Stabilization at Lumbini, Nepal

Lumbini, Nepal



TYPE OF PROJECT
**Asphalt Pavement
Reinforcement**

YEAR OF CONSTRUCTION
2025

CLIENT
Lumbini Development

CONTRACTOR
**Buddha Himal Construction
Pvt. Ltd.**

DESIGNER
**Civil Information And
Solution Pvt. Ltd.**

PROD. RELATED
MacGrid AR (MacGrid AR 5A.7 - 10,000 Sqm)

Challenge

Lumbini, one of Nepal's important cultural and tourist destinations, is undergoing road infrastructure upgradation to support improved connectivity and long-term pavement performance. With regular vehicular movement and increasing service demands, the existing pavement system required enhanced structural stability to withstand traffic loads and reduce the risk of surface deformation, rutting and premature deterioration.

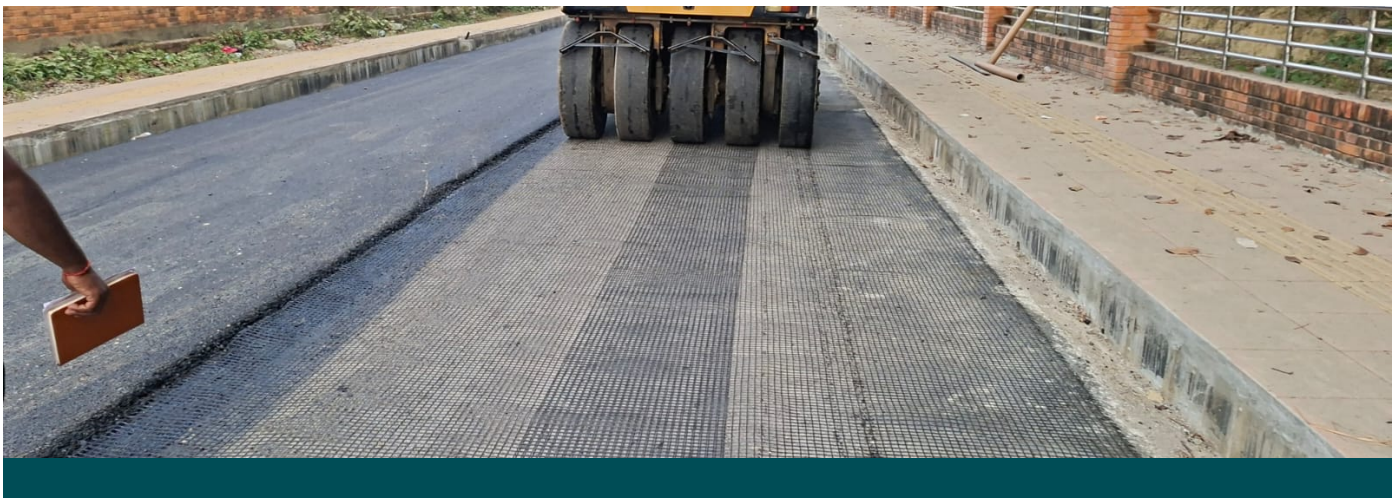
The project required a pavement stabilization solution that could improve load distribution within the pavement layers, enhance the bearing capacity of the road structure, and minimize the need for frequent periodic maintenance. Conventional pavement construction alone may require higher pavement thickness and continued maintenance intervention, especially under repeated traffic loading. Therefore, a reliable reinforcement solution was needed to improve pavement durability, optimize construction requirements, and extend the service life of the upgraded road network.



Solution

To address the pavement stabilization requirements, Maccaferri's MacGrid AR 5A.7 was incorporated within the pavement structure as a reinforcement layer. The geogrid helps improve the interaction between granular layers, enhances confinement of the aggregate, and supports better load distribution across the pavement system. This results in improved pavement stability and reduced susceptibility to rutting and deformation under repeated vehicular loading.

By using MacGrid® AR 5A.7, the pavement design could achieve improved structural performance while allowing optimization of pavement thickness and reducing dependency on frequent maintenance. The solution contributes to longer pavement service life, improved durability, and enhanced performance of the upgraded road infrastructure at Lumbini. Its use also supports faster and more efficient construction, making it a practical and sustainable alternative for pavement stabilization in infrastructure development projects.





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