

Uttar Pradesh Rural Roads Now Get the Green Technology - StabilRoad

Reducing GHG emissions and being environmentally sustainable is a key issue that every industry today is concerned about. To make the world more suitable for future generations, companies are adopting green measures and technologies to create a positive impact and ensure activities are less harming to the environment and moreover moving towards being carbon-free. Although the principles of sustainability have entered the construction and infrastructure space, there are very few solutions in the Road Construction space – for Highways, City Roads, Rural Roads and Runways.

One such sustainability-oriented engineering process that we have adopted over the last 6 years in Road Construction is the use of StabilRoad – a proven German technology which reduces the use of aggregate, a key ingredient in building roads. A powdered white additive made of 100% natural minerals, StabilRoad when mixed with cement enhances the construction process.



StabilRoad is one of the few additives that engages with the existing soil to create a strong mix, therefore reducing the need for aggregate (savings of almost 85%). This makes it a prime ingredient in areas where the availability of aggregate is difficult or must be transported over a long distance. The process is highly mechanised with 7-8 machines needed to complete the assigned stretch, automatically reducing the dependency on manpower. Saving cost and time are the strongest benefits which entrusted us to use StabilRoad in our projects.

A sustainable pavement is one – that is durable, minimizes the use of energy and renewable resources, generates less pollutants, reduces the maintenance and construction cost – all of which are achieved in our projects with StabilRoad.

With the circulars by MoRTH & NHAI (in June 2022) mandating the use of new/alternate materials (up to 10%: NHAI) in the construction of roads, to improve strength and to reduce the use of aggregate, it accentuates the responsibilities of us infrastructure companies to ensure the right additive is used to maintain quality and timely completion of projects.

One of our current projects in Uttar Pradesh, a progressive State adopting green technologies in road construction, depicts a classic case study of how the quantum of savings increases the ecological benefits to the State. The process adopted is Full Depth Reclamation (FDR) – a pavement rehabilitation technique in which the full flexible pavement



section and a pre-determined portion of the underlying materials are uniformly pulverised or blended resulting in a stabilised base course. The StabilRoad additive in the FDR process in combination with cement improves the conventional cement treated base (CTB).

Project Details: Vishwa Samudra Engineering has been assigned to construct 257.62 Kms of Rural Roads under UPRRDA – Pradhan Mantri Gram Sadak Yojana, with Full Depth Reclamation.

Districts: Sitapur (7 packages), Lucknow (1 package) and Hardoi (1 package).

As the soil is of alluvial type, the process of Full Depth Reclamation (FDR) of the existing base is ideal as it enhances the performance of the pavement.

Vishwa Samudra Engineering has been able to differentiate itself in the market with its speed of project execution. With 5 sets of machinery for Soil Stabilisation/ Full Depth Reclamation, it has the capacity to execute up to 5 Km a day at different stretches. The 6th set of machinery will be added soon to enhance the capacity.

Currently we are executing 1 Km length of road (at a width of 3.75 m) per day with 1 set of machinery. We intend to reach



2 Km a day shortly with 1 set. The cement hydration property in StabilRoad increases the pace of the project and most often we complete the project in record times.

Uttar Pradesh being a state with extreme weather conditions, ranging from 0 °C to 50 °C, and unpredictable rains making the surface very dry or very wet, the strength of the pavement must be intelligently engineered to withstand all adversities. These roads built with StabilRoad Full Depth Reclamation ensures a pavement strength of 6-8 MPa, much more than the required 4.5 MPa. The constructed surface prevents cracking or rutting. The maintenance of these roads is extremely low, as their durability periods range from 10-15 years. Cement when mixed with StabilRoad makes the soil highly



resistant to absorption of water ensuring there is no seepage through the surface.

One of the key aspects to highlight in this project is the amount of savings done in terms of aggregate and CO₂ emissions.

Aggregate Saving (tonnes): 6,61,938

Aggregate Saving (trucks): 26,477

This amounts to a reduction of 9650 tonnes of CO₂ emissions.

Apart from CO₂ emissions, StabilRoad ensures no toxic substances are emitted to the soil or water during the process of Full Depth Reclamation/Soil Stabilisation, which is an indispensable property of the additive if we are looking at green processes in road construction.

StabilRoad has been certified by the Indian Roads Congress (IRC) and the Central Road Research Institute (CRRRI), along with approvals on being toxic-free and other criteria from reputed research institutes like IIT Chennai, IIT Roorkee and IITR Lucknow.

StabilRoad is our exclusive partner in India giving us the edge in Soil Stabilisation/FDR with the additive. It is a product of B&K Industries, Germany – an innovative company with strong emphasis on research & development along with a visionary approach in ensuring ecological benefits to the road construction industry.

Vishwa Samudra Engineering has successfully implemented the Soil Stabilization/FDR technology with StabilRoad in over 450 Lane-Km,



Prof. Dr. Behme
CEO
B&K Industries
Germany

“It is a privilege to be working on projects in India over the last 6 years. India’s focus on eco-sustainability is clear-sighted and we deeply appreciate the progressive thought process of agencies like NHA, NHIDCL, NRIDA and others under MoRTH, to adopt new technologies to preserve the eco-landscape in India. We are grateful to UPRRDA for the opportunity to work on this project, which would be part of a crucial network of rural roads in Uttar Pradesh.”

which includes Highways (National & State), Runways, Port Roads, City Roads and Rural Roads across the country and has saved over 11,00,000 tonnes in aggregate and over 20,000 tonnes in CO₂ emissions, making us one of the few ecologically positive companies in India. ■

For further information,

Mr. Anil Yendluri
Managing Director
Vishwa Samudra Engineering
Pvt. Ltd.
www.vishwasamudra.in

