

Case Study

SoilTech: Greater Construction Efficiency & Strength for Heavy Traffic

LOCATION

Espírito Santo, Brazil

APPLICATION DATE

July 2026

THE CHALLENGE

Forest roads subjected to heavy vehicle traffic require adequate ride quality, strength, and stability to withstand demanding operating conditions.

The objective of the application was to **increase road durability and extend the service life of the stabilized layer**, while reducing the need for frequent maintenance.

THE SOLUTION

One of the key outcomes of the application was the **reduction of cement content to just 2%**, while maintaining the mechanical performance required for the project.

This optimization was achieved using **SoilTech, a high-efficiency liquid biopolymer for soil stabilization**. During mixing and compaction, its lubricating action facilitates particle rearrangement, promoting a denser and more cohesive layer. When used in combination with cement, SoilTech contributes to achieving **high strength and durability**.

For this application, the mix consisted of **0.02% SoilTech and 2% CP II cement**.

CONSTRUCTION EFFICIENCY

The construction process combined a **soil recycler with conventional earthwork equipment**, enabling uniform distribution of the materials and increased productivity.

The recycler was used for **homogenizing the mix**, while the motor grader was responsible for the **shaping, grading, and finishing of the stabilized layer**.

This division of operations contributed to **improved surface finish and a significant increase in productivity**.



FIELD RESULTS

Optimized Cement Content

More Efficient Use of Cement

The application reduced cement content from 5% to just 2%, while maintaining the mechanical performance required for the stabilized layer.

101% ✓

Degree of Compaction

The stabilized layer achieved a 101% degree of compaction, based on in-situ density testing, demonstrating the high level of densification achieved during field construction.

High Mechanical Strength

Field Observation of the Stabilized Layer

According to the contractor, the layer exhibited high strength and cohesion, reinforcing SoilTech's contribution to a more robust structure capable of withstanding heavy traffic.



PERFORMANCE AND SUSTAINABILITY

SoilTech is a high-efficiency biopolymer derived from marine algae, a renewable source of raw material. Its application can contribute to optimizing the use of resources and conventional construction materials, such as lime, cement, and aggregate, providing an alternative that is safer for soil, fauna, and flora.

TECHNICAL DETAILS

Soil

- Yellow clay

Composition

- 70% natural soil + 30% graded aggregate base (BGS)

Dosage

- 0.02% SoilTech + 2% CP II cement

Equipment

- Water truck, soil recycler, motor grader, and vibratory roller

Quality Control

- Moisture control, mix homogenization, and in-situ density testing



CONCLUSION

The application demonstrated SoilTech's potential to **combine construction efficiency, material optimization, and mechanical performance**. With just **0.02% SoilTech**, the solution reduced cement content from 5% to 2%, achieved a **101% degree of compaction**, and resulted in a layer exhibiting high strength and cohesion in the field.

These results demonstrate how the technology can contribute to **optimizing material use and improving the durability of stabilized layers designed to withstand heavy traffic**.

Looking for the right soil stabilization strategy for your project? Talk to our technical team to discuss your soil conditions, performance requirements, and project goals.

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