

Case Study

Rural Road Paving Using SoilTech on a Farm

LOCATION

Ribas do Rio Pardo – MS, Brazil

CONTEXT

In this forestry operation, Hexatrem trucks carrying up to 200 tons of eucalyptus logs travel daily on unpaved roads. The high traffic volume and heavy axle loads caused rutting, erosion, and loss of bearing capacity, compromising logistical efficiency and increasing maintenance demands.

The challenge was to enhance the structural capacity and long-term durability of the roadway without resorting to costly or environmentally aggressive stabilization methods.

RESULTS

Even in predominantly sandy soil conditions, the application of only 0.02% SoilTech delivered a stable, robust, and durable foundation, significantly reducing future maintenance costs.

CHALLENGES

Ensure load-bearing capacity and track stability

Reduce erosion and settlement caused by heavy truck traffic

Implement a long-lasting solution with minimal maintenance requirements

SOLUTION

MetaFLO applied SoilTech, an innovative, seaweed-derived biopolymer. The product is environmentally safe and works by agglomerating soil particles, significantly increasing base strength and cohesion—even in highly sandy soils.

APPLIED FORMULATION

✓ 0.02% SoilTech + 2% CP II Cement*

✓ Layer composed of 70% natural soil (90% sand) + 30% graded crushed stone (BGS)

✓ Initial natural CBR: 2.7%

✓ Density: 1.77 g/cm³



EXECUTION

The work was carried out using conventional equipment, including a soil recycler, water truck, and compaction rollers. Use of a standard motor grader ensured speed, operational simplicity, and an excellent cost-benefit ratio.

Note: In this application, SoilTech was used in combination with cement, yielding above-average performance. The biopolymer, however, can also be applied on its own or with reduced BGS content.



Results

Technical Performance:

- ✓ **Final CBR:** 126.7% (up from 2.7%)
- ✓ **Final density:** 2.26 g/cm³
- ✓ **Durability:** Extended service life with minimal maintenance

Productivity and Efficiency:

- ✓ Rapid execution using standard equipment, with special emphasis on the Watanabe Soil Recycler
- ✓ High-quality surface finish and optimized construction processes, reducing overall execution time
- ✓ Material logistics aligned with schedule and budget requirements

SOILTECH

MetaFLO Technologies

CONCLUSION

SoilTech stands out as a differentiated solution for soil stabilization. In addition to being organically derived and environmentally safe, it requires very low dosages and can be applied using conventional water trucks and grading equipment. The product delivers improved strength, increased CBR, enhanced waterproofing, and low maintenance needs—all with an excellent cost-benefit ratio.

Innovation that drives your success!

MetaFLO's Industrial Solutions

MetaFLO develops solutions that combine technical efficiency, process optimization, and operational gains for a variety of projects.

Our technologies are applied to projects seeking greater performance, cost-effectiveness, and reliability, always focusing on concrete and sustainable results.

Our team is available to present you our solutions and explain how we can contribute to the success of your project.



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