



SoilTech Powers Sustainable Roadway Stabilization

MetaFLO's innovative stabilization solution provided essential cost savings, productivity gains, and environmental benefits to keep a large-scale roadway project on schedule and within budget.

CASE STUDY



PROJECT

SOILTECH – SUBGRADE REGULARIZATION FOR ROADWAY CONSTRUCTION

Hidrolândia, GO, Brazil

SOILTECH

MetaFLO Technologies

Challenge

Traditional subgrade regularization methods are resource-intensive, even when managing soils containing a mix of silt, clay, lateritic gravel, and quartz gravel. These methods often require large volumes of water, resulting in high operational costs and prolonged completion times. To address these challenges, a sustainable and efficient solution was needed to optimize resource allocation, enhance soil durability, and boost site productivity.

Solution

MetaFLO applied 0.037% of SoilTech biopolymer to a 500x12x0.2m³ track to demonstrate the technology's potential for road stabilization. After being diluted directly in a water truck and applied to the track, SoilTech binds with the soil to form a hydrogel, and improves the soil's mechanical properties after it cures. The treated soil exhibited increased mass density, better compaction, enhanced layer stabilization, and improved impermeability.

Outcome

✓ COST SAVINGS

On top of being environmentally friendly, SoilTech's fast-acting soil stabilization reduced fuel consumption and polluting gas emissions by 25%, and saved the client 3 hours of labor—resulting in a total cost savings of 20% compared to traditional methods.

✓ WATER SAVINGS

Using SoilTech instead of traditional subgrade regularization methods saved a total of 80,000 liters of water throughout the project, reducing total water consumption by 33% and avoiding excessive water usage.

✓ ROAD QUALITY

24 hours after curing, particle cohesion in the soil was enhanced, compaction was improved, and impermeability was increased, leading to a more durable, safe and resilient road surface.



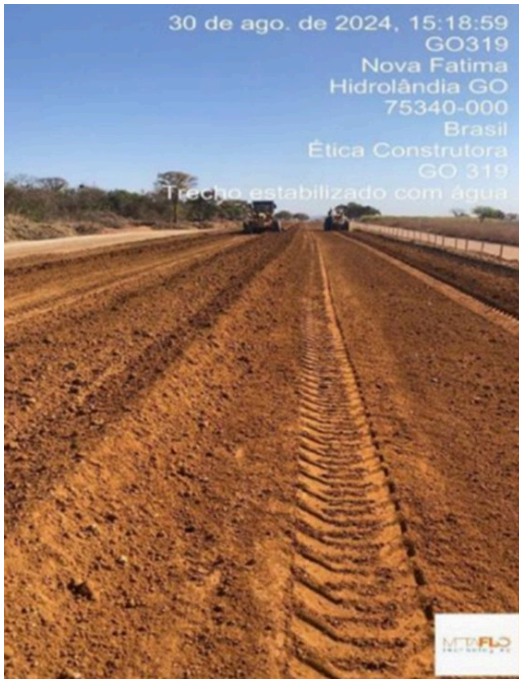


Figure 1: Soil stabilization without SoilTech



Figure 2: Soil stabilization with SoilTech