

MF003

MetaFLO Technologies

Liquid Waste Solidification Reagent

⌚ 30min

Case Study

HDD Slurry Ready for Transport in 30 Minutes

LOCATION

State of São Paulo, Brazil

APPLICATION DATE

May 2026

THE CHALLENGE

The job site for this HDD (Horizontal Directional Drilling) operation in the State of São Paulo maintained an intense pace, generating a constant volume of **330 m³ of bentonite mud per week**, with an average moisture content of 45%.

The traditional treatment method required a complex and costly logistical operation: to accelerate solidification, large volumes of dry soil had to be transported from the consortium's other sites to be mixed with the mud. Even with this massive movement of earth and external inputs, the waste remained dependent on weather conditions and **took between 6 and 14 days of natural drying** to reach ideal transport conditions.

Because the weekly generation (330 m³) was faster than the natural drying time, **the job site was constantly overloaded, accumulating around 470 m³ of material drying simultaneously**. This scenario caused critical space saturation, environmental risks of leakage, and high freight and rework costs due to moving soil between sites.

KEY RESULTS

- ✓ **Drastic time reduction:** From a 6-14 day cycle down to just **30 minutes** for bentonite mud conditioning.
- ✓ **Total logistical independence:** 100% elimination of the need to incorporate dry soil brought in from the consortium's other construction sites.
- ✓ **End of the storage bottleneck:** Freed up usable area on-site, eliminating a backlog that reached up to **470 m³** of waste drying simultaneously.
- ✓ **Clean and streamlined operation:** Process carried out **using only the MF003 reagent** and the excavator already available on-site, with no additional equipment required.

THE SOLUTION

To cut the dependency on external soil, solve the space deficit, and eliminate prolonged drying times, the engineering team adopted MF003, a high-performance technological solidification reagent developed for the rapid absorption of free water in semi-solid waste.

The major operational turning point was the exclusive application of MF003 (using only the reagent). The product was applied at an average dosage of just 0.4% by weight of the generated bentonite mud. Using only the excavator that was already operating on the front line to blend the mixture, the reagent acted immediately on the waste's molecular structure, completely dispensing with the need for dry soil addition.

RESULTS

The transformation was instantaneous. The freshly excavated bentonite mud, which previously stalled work fronts for up to two weeks and formed massive piles on-site, reached the ideal solid state for loading and transport in **under 30 minutes**.

The solution cleared the consortium's logistical flow, eliminated truck traffic bringing in outside soil, and provided total predictability for the continuous disposal of the 330 m³ generated weekly.

HDD muck **ready for transport in 30 minutes**, eliminating reliance on external soil and weeks of drying



SOLUTION IMPACTS

Operational & Technical

Extreme agility:

Reduction in conditioning time from up to 14 days to just 30 minutes.

Unobstructed Job Site:

Immediate release of storage areas, eliminating the accumulation of roughly 470 m³ of mud that was left drying in the open.

Self-Sufficient Process:

End of weather dependency (rain or shine) for the daily clearance of waste.

Logistical & Economic

Freight cost cuts:

Complete elimination of the transport and handling of dry soil coming from other consortium sites.

Reduced machinery usage:

End of the rework involved in constantly moving and mixing earth and mud (drastic reduction in machine hours spent).

Financial predictability:

Real-time alignment of waste generation (330 m³/week) with final disposal, preventing schedule delays.

Environmental

Site Safety:

Elimination of the wet waste stockpile, drastically reducing the risk of leaching or environmental accidents.

Sustainability:

Reduction of the project's carbon footprint due to the elimination of inter-city/inter-site transport of dump trucks carrying dry soil.



CONCLUSION

The implementation of MF003 proved that chemical innovation can solve severe logistical bottlenecks in infrastructure operations. By replacing a process that took up to 14 days and accumulated hundreds of cubic meters on-site with a 30-minute operation performed strictly with the reagent, the consortium eliminated its reliance on external soil and achieved a new standard of efficiency, cost savings, and environmental safety in continuous waste management.

Aquí tienes la versión traducida y adaptada al español, manteniendo el mismo tono profesional, técnico y comercial para resaltar al máximo los beneficios logísticos y el ahorro de tiempo.

CLIENT TESTIMONIAL

"The MetaFLO product is very good. The results achieved with its use are very satisfactory. It is easy to apply, safe for workers, and, most importantly, environmentally friendly. An innovative product!"

— Environmental Engineer responsible for the project



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