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Embankments

Embankment on soft soils

Innovative drainage solution for an industrial lot condominium

Hydrain®



First application of Hydrain in Brazil.



Installation of Hydrain in the new development area.

Situation

The development of the Brasporto industrial lot condominium, in Jacarei, Brazil, required treatment of the designated street area, where the soils were subject to significant settlement.

To accelerate settlement and soil consolidation and to shorten waiting times, the design called for vertical wick drains (prefabricated vertical drains) installed on a 1.5 m square grid, to an average depth of 13 m.

In certain sections, two surcharge fills of 2.6 m each were planned, with a 130-day waiting period required for each stage. Total settlement could reach 1.5 m in the worst-case scenario, which called for adequate monitoring of ground behavior throughout construction.

A joint analysis by the technical and commercial teams of HUESKER and Fixsolo Soluções Construtivas, a HUESKER representative for more than 20 years and responsible for brokering the supply and supporting implementation, led to an innovative geosynthetic solution that was applied for the first time on a project in Brazil.

Challenge

For the treatment of the street area, the original design provided a drainage solution based on a sand drainage blanket, a conventional technique for creating a drainage path at the base of embankments over soft soils. After carrying out studies, Brasporto chose to replace this technique with Hydrain. This drainage geocomposite, developed by HUESKER, consists of extruded monofilaments thermally bonded to two geotextiles for filtration and separation.

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This was the first application of Hydrain in Brazil, an innovation for the domestic market. Because it was a new solution, it was first tested in a small area, which was then accepted by the technical lead and the director of the contracting company after meeting technical and operational expectations.

Once validated, the product was applied to the rest of the street area, totaling approximately 40,000 m².

Monitoring with settlement plates and piezometers helped to control soil behaviour during the surcharge stages, allowing any ground movement in each loading step to be inspected.



Placement of the soil layer over Hydrain.

Conclusion

Replacing the sand drainage blanket with Hydrain resulted in a lightweight, flexible solution. Installation was simple and quick across an area of approximately 40,000 m² and was supported by the Fixsolo team.

Combined with vertical wick drains, the use of this technology made it possible to accelerate settlement and reduce the waiting times planned for building the streets.

Carrying out a test section made it possible to validate a solution that was new to the country, giving the client the confidence to adopt it across the entire area.



Application of Hydrain over approximately 40,000 m².

Advantages

- Lightweight, flexible solution that replaces the traditional sand drainage blanket
- Simple, quick installation over approximately 40,000 m²
- Accelerated settlement and shorter waiting times when combined with vertical wick drains



Overview of the site.

* Os projetos apresentados foram realizados com produtos que, desde 29 de outubro de 2026, são comercializados sob o nome de Hydrain. As designações originais dos produtos podem diferir.

Constuction project:	Brasporto Industrial Lot Condominium
Customer:	Construtora e Incorporadora Brasporto
Construction:	Ribeiro Aquino Pavimentadora e Construtora
Location:	Jacareí, São Paulo, Brazil
Planning:	Solofund Engenharia
Construction time:	May 2026 to July 2026
Products used:	Hydrain®

HUESKER Ltda.

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