

PROJECT CASE

RD 22 – Pre-consolidation platform for the creation of a road LA CHAPELLE D'ARMENTIERES (59)

Date
2003

Surface area
15,000 m²

Product(s)
SOMTUBE FTF2 D20

Company
RAZEL-BEC

Project owner
CUDEL

Consulting firm
GEOROUTE Ingénierie

Issue(s)

A compressible soil problem emerged during the creation of the RD22 road between La Chapelle d'Armentières and Erquinghem les lys (59) in 2003. Due to the geological context, which involved 20-metre deep sandy silts and green clay (known as "Flanders" clay), an estimated 40-cm compaction over 20 years was calculated with a traditional pre-consolidation embankment. The settlements duration expectation, conflicting with a short-term use of the track, have been solved with the use of geosynthetics.

Solution(s)

To enable commissioning within two years, the project manager determined a residual compaction level of 5 cm after an 18-month pre-consolidation period. To achieve this performance, i.e. 35-cm compaction within 18 months in impervious soil, a solution combining vertical drains at a depth of 22 m with a SOMTUBE FTF draining geocomposite was selected. This solution helped:

- Ensure consolidation within the timeframe specified by the project manager;
- Facilitate implementation by avoiding the installation of granular material;

The pre-consolidation campaign was monitored by settlement gauges which helped validate the technique and effectiveness of the process.



Installation of vertical drains



Vertical drains on the platform

Description and purpose of the product

SOMTUBE is a filtration/drainage/protective geocomposite resulting from the factory assembly of the following elements:

- non-woven needled filter,
- polypropylene mini-drains with regular perforations along 2 alternating axes at 90° to each other, 20 mm diameter,
- non-woven needled drainage layer
- non-woven needled filter.

The elements are coupled together by needling.

Packaging

SOMTUBE FTF comes in rolls 3.90 m wide and 50 to 100 m long.

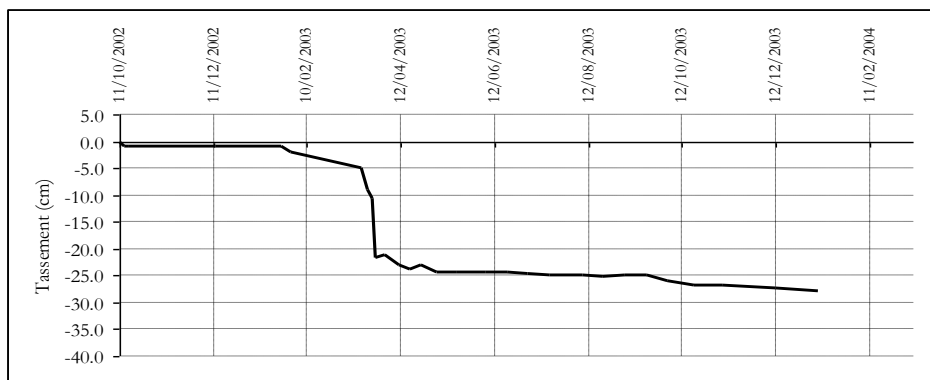


Packaging of AFITER 3D

Work progress



Work progress



Compaction measurements – 74% of the target achieved after 12 months

Advantages of the proposed solution

This combined solution helps:

- Achieve consolidation objectives much quicker than with traditional solutions;
- Receive a drainage solution on site with optimised packaging and delivery

