

LOWERING THE GROUND WATER TABLE WITH ROAD CONSTRUCTION IN BEST - HOLLAND

Geotechnics Holland has delivered Geolock vertical cut-off screen for the project in Best, Holland. The Geolock screen is being installed as an alternative to the conventional steel sheet piling proposed in the specification.

The E25 (or N2) motorway from Den Bosch to Eindhoven currently has huge traffic junctions near Best. Multi-level intersections have to be built to relieve the congestion for through traffic on the motorway. Surrounding residential areas mean that there is no room for a viaduct and another solution was therefore sought. The motorway is being constructed at a lower level over a length of several kilometres. To do this, however, the water table has to be permanently lowered.

The embankment is being created from a natural slope, which will be landscaped once construction work is complete. An environmentally-friendly approach, in which Geolock is being used to keep out the ground water.

Geolock is supplied in rolls of the correct size - in other words the panels are already the right length in accordance with the specified installation depth. In this case, about 28 metres. At this depth, the Geolock beds into the layer of clay under the site, creating a watertight seal at the bottom of the structure.

A special excavator is used to dig out the trench for the deep wall. In order to achieve good stability in the trench walls, a bentonite cement mixture is pumped in during excavation. This is conveyed by pumps and pipelines from the mixer on the site. The normal hardening time of the bentonite cement is extended by adding retardants to the mixture. This has to be done so that the Geolock panels can be installed in the bentonite cement wall without friction.

The Geolock screen is attached to a special frame, with the top bolted to tensioning cylinders. The frame is hoisted up so that the Geolock material unrolls. An anchor strip is then attached to the bottom of the screen, and this in turn is fastened to the frame. The Geolock is tensioned before it is installed.

During installation it is essential to ensure that the locking groove connects properly over the full length of the screen with the section of the locking system already installed. To do this, a test piece known as a 'runner' is placed on the joint before guiding the panel into place. If the installation is correct, the new Geolock panel pushes the runner ahead of itself into the soil. This can easily be checked with the aid of a special connecting wire.

The wealth of technical know-how and experience of every possible Geolock application contribute to a modern high-quality product.

Project data

Depth : 27,0 m
Sheet width : 200 cm
Area : 20.000 m²
Execution period : 1989