

Case history – Trivento (CB) - Molise

DRAINAGE OF A LANDSLIDE AREA: intervention with **DRENTER PIPE1000 + DRENTER 500**

SOLUTION: DRENTER PIPE drainage panels were used in combination with DRENTER500 drainage panels. DRENTER PIPE drainage panels feature a micro-slotted HDPE pipe at the bottom, duly joined using sleeves to ensure water tightness.



Figure 1. Overview of the DRENTER PIPE product, before being joined and installed

Excavation and installation phases

Stage 1: Creation of a trench using a mechanical excavator

The first stage of the work was to excavate the trench using a mechanical excavator equipped with a universal excavator bucket. Particular attention was paid to ensuring that the bottom of the trench was level so that there were no counter-slopes. To facilitate the subsequent installation of the drainage mattresses, it was recommended to

careful attention was paid to profiling the walls of the excavation and finishing the bottom of the excavation so that they were smooth and horizontal.



Figure 2. Trench dug using an excavator, slightly wider than the drainage system

Phase 2: Joining the drainage modules and laying the sheath in the trench

The joining phase of the drainage modules involved the off-site joining of the DRENTER PIPE modules, which were then covered with a second row of DRENTER 500 panels. The micro-slotted HDPE pipe at the bottom and the double row of panels were chosen to improve the capacity and hydraulic tightness of the system and to prevent water dispersion at the bottom.

The drainage modules were joined using double wire at each corner of the parallelepiped of each module, in order to obtain a drainage system equal to the length of the trench excavation. The mattresses thus joined were then covered with the geotextile strap supplied with each module.

The pipe connection between one panel and the next was achieved using polypropylene sleeves.



Figure 3. DRENTER PIPE panels joined using sleeves to ensure a perfect hydraulic seal

A roll of sheathing was fixed to the base of the DRENTER PIPE to waterproof the system and prevent any water leakage into the ground.

The row of panels thus obtained is then lowered into the previously dug trench.



Figure 4. Overview of the sheath drainage system. trench DRENTER PIPE and DRENTER 500 correctly joined



Figure 5. Drainage system lowered into the

Phase 3: Filling the excavation with the previously excavated material

Once the panels have been lowered into the trench, the excavated soil is used to stabilise the drainage panels in the correct position and to seal the entire system.



Figure 6. Overview of the drainage system stabilised underground, before being completely covered