CASE STUDY

SOLMAX

A9 MOTORWAY, SAXON-MARTIGNY, SWITZERLAND

Management and depollution of run-off water from a motorway with aquatextiles

Industry: Site development
Sub-industry: Stormwater management
Location: Saxon-Martigny, Switzerland
Product: OSMORIA™ Geoclean®

Overview

Between 2018 and 2022, the Swiss Federal Roads Office (OFROU) undertook an extensive project to upgrade the safety of the A9 motorway, specifically focusing on the Saxon-Martigny section and the surrounding area. The project aimed to improve the quality of life for local residents and protect the environment through new infrastructure developments. Key interventions included the replacement of surfacing and joints, installation of new guardrails, removal of vegetation from the central berm, widening of the hard shoulder, and notably, the integrated management of run-off water from the traffic lanes.

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Challenge

Managing run-off water on motorways is critical due to the risk of aquaplaning, which poses significant safety hazards to motorists. Beyond safety, the challenge also involved rethinking run-off water management to encourage its infiltration at the source while simultaneously depolluting it. The goal was to protect natural areas and their biodiversity from hydrocarbon pollution. The site presented a specific challenge due to a shallow water table, particularly during periods of high water. Effective solutions needed to address both the safety and environmental concerns associated with the run-off water from the motorway.

Solution

To tackle these challenges, three separate ditches, each around 50 m long, were constructed along the Saxon-Martigny section to collect run-off water from 5,500 m^2 of asphalt motorway. These ditches were equipped with OSMORIA Geoclean Pure, a highly permeable depolluting aquatextile covered with 30 cm of permeable topsoil. The OSMORIA Geoclean aquatextile is designed to instantly and irreversibly fix more than 99.9% of C_{10}-C_{40} hydrocarbons and between 62% and 78% of PAHs commonly present in road run-off. This ensures that the run-off water is effectively depolluted before gradually infiltrating into the soil. Areas not equipped with these infiltration ditches must collect run-off water in basins for treatment. OSMORIA Geoclean lasts for over 100 years, maintaining its effectiveness in fixing hydrocarbons for the same duration. The aquatextile's permeable structure and mineral nutrients support rapid colonization by endemic microorganisms, enhancing long-term hydrocarbon degradation. OSMORIA Geoclean provides an easy, affordable solution for managing diffuse and accidental pollution while protecting the environment. The aquatextile-equipped ditches blend harmoniously into the landscape, offering a durable, maintenance-free solution for run-off water management.