

Geomembrane structures for infrastructure “Under water installation”



In the civil engineering infrastructure sector the access roads to underpasses, aqueducts and below ground level locations are often built using a geomembrane structure as a water barrier for the groundwater. The waterproof geomembranes for these projects have to be installed at such a level that the vertical equilibrium is guaranteed in order to prevent the structure from floating.

Installing the geomembrane below ground can be undertaken in two ways: in the wet, which is known as submerging of geosynthetics, and installation in dry condition (dry installation: see the factsheet ‘Foil Structures for Infrastructure – dry installation’).

Installing a geomembrane structure in the wet, which is known as submerging of geomembrane structures, is one of the specialist activities of Genap BV. The first project was undertaken as far back as the 1970s close to Amelisweerd (Netherlands) and now it is an essential technique for civil engineering infrastructure projects.

The immersion of a geomembrane structure is usually less expensive than the alternative, which involves using underwater concrete and dewatering. Dewatering also has an adverse side-effect because it also reduces the groundwater level in the area. This is often undesirable; however, this problem is solved by submerging a geomembrane structure.

Two methods have been developed for submerging a geomembrane structure: submerging with the assistance of a pontoon and submerging on the basis of the geomembrane’s own weight. Both methods are described in detail in the “Under water installation of geotextile and geomembrane structures”.