



A Duty to Protect

Oil refinery at Nynäshamn in Sweden uses British technology to fulfil corporate goals of environmental responsibility

THE OIL REFINERY on Sweden's Baltic Coast at Nynäshamn, 30 minutes from Stockholm, has been refining crude oil since 1928. Owned by Nynas AB, the refinery is the only one in the world with a wood-burning power station. The wood biomass is carbon neutral and the local supply is ample, helping the refinery to reduce CO₂ emissions in the region by 100,000 tons per year. Surplus heat is distributed to the local network, providing energy to heat almost 2,000 homes.

In keeping with the company's environmentally responsible ethos, the plant has its own wastewater treatment plant to process water used during the refining and storage of the oil products at the installation.

In 2012, the decision was taken to rebuild the waste treatment plant to improve the levels of purification. Key to the new plant were two waste ponds, through which the contaminated water passes as part of the purification process. On reaching the ponds (1276.5m² and 49m²),



the water has a high pH value and is highly contaminated. To protect the surrounding lands and groundwater, a highly effective barrier membrane was required to line the waste ponds.

The solution was an innovative product, developed and produced by Industrial Textiles & Plastics, a British firm headquartered in rural North Yorkshire. Puraflex® is a new chemical resistant barrier membrane specifically developed to resist hydrocarbons and toxic industrial chemicals. It has a wide spectrum of chemical resistance compared to conventional HDPE geosynthetic membranes.

ITP's innovative membrane has been rigorously tested and conforms to British and internationally recognised standards, including EN 14414 (Chemical Resistance to leachates and aggressive chemicals), EN 14415 (Test method for determining the resistance to leaching) and ISO 15105-2 (Plastics-Film and sheeting-Determination of gas-transmission rate). The membrane's flexibility also makes it easier to install than HDPE.

ITP has developed permeation modeller software to assist environmental consultants and design engineers in preparing environmental risk assessments. The Puraflex Permeation Modeller calculates project and site specific permeation rates for soil contaminants.



LOCATION

Nynäshamn, Sweden

PROJECT

Oil Refinery Wastewater Treatment Plant

PRODUCT

Puraflex® Hydrocarbon & Chemical Resistant Barrier Membrane

CONTRACTOR

Bäckström anläggning AB

INSTALLER

ViaCon AB

STATUS

Completed

