

Biofilm process for wastewater treatment

The Kaldnes Moving Bed™ process, from Kaldnes Miljøteknologi AS of Norway, is a biofilm process for BOD/ COD removal and nitrification/denitrification in all types of wastewater. The process is applicable in the case of municipal wastewater, industrial wastewater (food & dairy, chemicals & pharmaceuticals, pulp & paper, distilleries & breweries, machinery, textiles, oil refinery), as well as in fish farming for recirculation of water.

At the core of the process are the biofilm carrier elements – small polyethylene wheels in different sizes and shapes, with a density slightly less than water to allow them to be suspended in water. They are designed to provide a large protected surface for the biofilm and optimal conditions for bacterial culture. Its key features include compactness, flexible reactor design, easy operation and control, no clogging or sludge return, and low load on particle separation. Its technical specifications are:

Area (m²/m³)

Total surface area : 800

Protected surface area : 500

Treatment rates (g/Nm³.d)

Oxygen transfer rate : 8.5

Nitrification rate : 400

Denitrification rate : 670

BOD5 oxidation rate : 6,000

Kaldnes Troll is a compact modularised wastewater treatment plant for loads of up to 200,000 pe. The process module is designed as three concentric tanks. The outer section is a three-chamber pre-sedimentation tank. Solids settle in the plastic cones at the bottom, while the water is pumped into the bio reactor, which is the middle section that uses the Moving Bed™ biofilm reactors. The central section is for flocculation as well as final clarification of water.

The KMT process is for municipal wastewater treatment plants with capacities up to 1 million pe. It is a Moving Bed™ biofilm process for nitrogen removal. *Contact: Kaldnes Miljøteknologi AS, P.O. Box 2011, N-3103 Tønsberg, Norway. Tel: 47 (33) 376700; Fax: 47 (33) 315518; E-mail: kaldnes@kmt.no; Website: www.kmt.no.*