

TEXTILE PROCESS WASTEWATER TREATMENT

HEADWORKS MBBR/IFAS TECHNOLOGIES EFFECTIVE IN
TREATING CHALLENGING WASTEWATERS



THE NATURE OF THE CHALLENGE

The textile industry involves multi-step processes including sizing and de-sizing, scouring, bleaching, mercerization, dyeing, printing, finishing, and washing. These processes produce wastewaters with high concentrations of chemical and biological oxygen demand (COD/BOD), dissolved solids, acids, alkalis, dyes, hydrogen peroxide, starch, surfactants, dispersing agents, and metal soaps.

Treating such wastewaters effectively is a challenge. For instance, color dyes are known to inhibit biological activity in conventional activated sludge by as much as 50%. Thus, combinations of physical-chemical coagulation/flocculation, biologically-activated sludge, and advanced oxidation treatments such as ozonation and membrane filtration are commonly employed.

HEADWORKS HAS THE ANSWER

Process Expertise and Experience
Proven MBBR/IFAS Treatment
Technologies offering:

Concentrated Treatment

Small Footprint

Easy Expansion

Resilient Process

Durability

Low Maintenance, Simple Operation

Flexibility-Ideal for Retrofits

Nutrient Control

Water Re-use

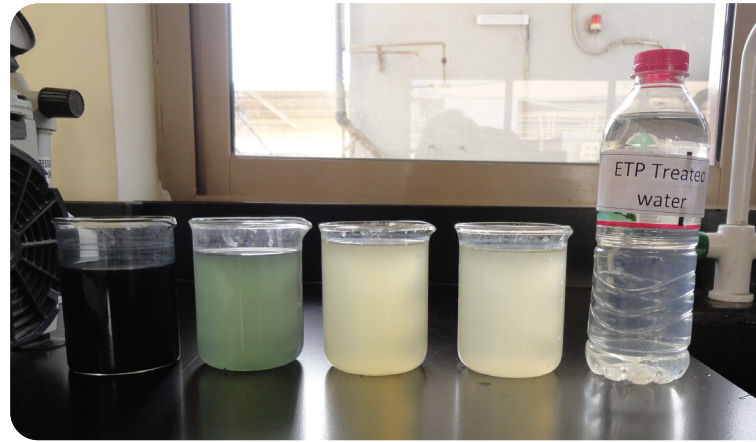
→ Orta Anolou Textile Plant, Bahrain

Orta Anolou is one of the largest denim manufacturers in the GCC. The company was experiencing failure of its MBBR wastewater treatment facility to adequately remove BOD/COD to acceptable discharge levels. Orta hired Headworks to analyze their system and solve their treatment problem. Headworks carried out extensive on-site testing and performance analysis, ultimately replacing the original biofilm carrier media with Headworks ActiveCell[®] media while upgrading the process to handle almost double the original treatment capacity using only existing infrastructure. Headworks accomplished all this without the need for a plant shutdown.

HEADWORKS TO THE RESCUE

Headworks has long been acknowledged for its process expertise in designing integrated wastewater treatment solutions for all manner of industrial wastewaters. For textile wastewaters, the heart of the treatment employs Headworks ActiveCell® Moving Bed Biofilm Reactor (MBBR) technology, a high-rate aerobic treatment process. In applications where COD in the wastewater is very high (COD > 3,000 mg/L), Headworks recommends its EnergyCell™ anaerobic MBBR treatment system. This process incorporates an anaerobic stage to knock down 80-90% of the COD, followed by an aerobic MBBR polishing stage to remove residual COD before discharge.

Often, dye chemicals in the process wastewater contain complex organic nitrogenous compounds that create unacceptable levels of ammonia and total nitrogen. In such instances, Headworks applies MBBR with activated sludge recirculation, known as the Integrated Fixed-Film Activated Sludge (IFAS) process, to provide both nitrification and denitrification in reducing effluent ammonia and total nitrogen levels.



HEADWORKS UNDERSTANDS TEXTILE WASTEWATER TREATMENT

