ENVIRONMENTAL TECHNOLOGY

# IMPERIAL TUFTING COMPANY (ITC) - Tielt

## Physicochemical post treatment of biologically treated waste water

The textile company **ITC** is established in Tielt (B) and is part of the BALTA GROUP. ITC produces tufted polyamide wall-to-wall carpet. The waste water is mainly coming from the paint and printing department (rinsing water from paint baths and the carpets), the space department and also for a small part from the latex department. Before 2000, the waste water was discharged untreated into the sewer, since then ITC disposes of an own waste water treatment plant. The waste water is biologically treated and then discharged into surface water.

*Aeration bassins*

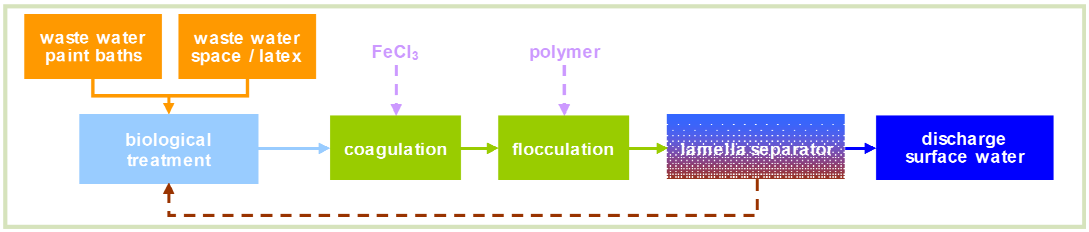
ITC recently had to comply with a number of more stringent discharge conditions, including e.g. suspended solids. TREVI was asked to work out a solution. Initially a comparative study of the various possible techniques was performed to evaluate technical and economic feasibility. Based upon this study and additional lab tests to confirm, ITC decided to focus on a possible post treatment using a lamella separator.

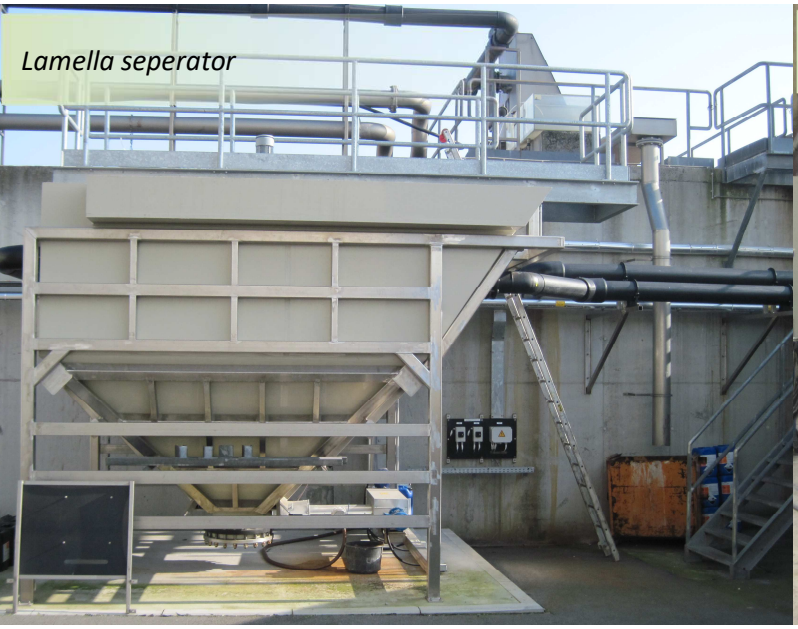
TREVI supplied the design, construction, start-up and follow-up of a post treatment of the effluent of the biological water treatment plant consisting of a prior conditioning with chemicals (the coagulation and flocculation process) and a subsequent sedimentation in a lamella separator and this for a maximum flow rate of about 50 $m^3/h$.

The chemical conditioning consists of two steps: in a first step, the coagulation, strongly loaded irontrichloride 40% is added to the waste water and still present floating substances will coagulate. This means the loading structure of the particles present in the water is destabilized and substances will form small charged particles.

In a second step, the flocculation, a flocculant is added to initiate the formation of flocks by the loaded suspended particles. The flocculant is a high molecular substance or polymer with different loading groups on its structure. On these groups the small loaded particles will adhere.

This chemical conditioning ensures the flocks grow and become heavier than the water phase and consequently will settle at the bottom. To achieve an optimal sedimentation the conditioned water passes a lamella separator. The latter is equipped with a set of parallel plates which generate a larger sedimentation surface within the same volume.





*Lamella seperator*


*Storage tanks chemicals*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