

## FLOOTECH DESIGN AND CONSTRUCT 8.5ML PER DAY TREATMENT PLANT FOR NEWSPRINT FACTORY IN MADRID

### Background

Holmen Paper Madrid in Spain produces newsprint from wastepaper. In 2001 the mill had to improve their wastewater treatment process before the discharge to a municipal sewer.

### Process

Holmen Paper chose a treatment method based on SCBP technology. Treatment process consisted of two 1,250 m<sup>3</sup> MBBR bioreactors in series followed by a microflotation unit. Carrier filling degree inside the bioreactors was 40 %. Treatment results were excellent and only three weeks after the start-up all the guarantee values were achieved.

In 2006 Holmen Paper started a new paper machine in the same mill area and the production capacity almost tripled to 470,000 t/a. This meant that also the capacity of the wastewater treatment plant had to be increased. It was natural that the upgrading of the plant was done by using the technology, which had proved to be reliable. Two new 1,500 m<sup>3</sup> MBBR bioreactors with 20 % carrier filling degree and a new microflotation unit were built next to the existing equipment. The new process was operated in two similar parallel lines with the older reactors as the first biological treatment phase and the new ones as the second phase.



Nowadays the average flow to the treatment plant is approx. 8,500 m<sup>3</sup>/d. The average inlet COD and BOD<sub>5</sub> concentrations are 2,590 and 1,180 mg/l, respectively. This means that the average volumetric loads over the whole process are 4.0kgCOD/m<sup>3</sup>\*d and 1.8kgBOD/m<sup>3</sup>\*d. However, daily maximum volumetric loads are even 6.2 kgCOD/m<sup>3</sup>\*d and 2.8kgBOD/m<sup>3</sup>\*d. Outlet average concentrations of COD, BOD<sub>5</sub>, and SS after the microflotation units are 400, 70 and 25 ppm, respectively. Treated water is led to municipal sewer.



### Performance

Since the initial start-up of the plant, the system has operated trouble free with excellent results.

	BOD <sub>5</sub>	COD
Raw water	1000-1500mg/L	2500-3000mg/L
Treated water	<70mg/L	<400mg/L