

A system for reducing froth in paper recycling

A solution from PNR Italia ensures the accurate elimination of froth in a tank for paper recycling



SCENARIO FOR THE SECTOR

The recycling of paper

Paper's cellulose fibers can be recovered several times for many processing cycles.

It is possible to obtain a "secondary raw material" from paper and cardboard delivered through the separate collection. This material is used to produce new paper products.

Paper's recycling process

The paper recycling process takes place in dedicated plants and is divided into seven phases.

The dough obtained can then be started to the most suitable production cycle.

In some of the described phases, the froth may be in the tanks due to the chemical agents and it is vital to eliminate it to return the water to the plant.



1 | COLLECTION AND STORAGE

of paper and cardboard delivered through the separate collection;



2 | SELECTING

the most suitable materials for recycling;



3 | PRESSING

the material in large bales to facilitate transport to paper mills;



4 | CHOPPING

to work the material;



5 | BLEACHING AND DE-INKING

to remove residual inks;



6 | REDUCING IN PULP

the obtained material;



7 | REFINEMENT

to eliminate impurities.

INDUSTRY

Paper industry



APPLICATION

Froth elimination



PROBLEM

Froth in a paper recycling tank



SOLUTION

System of manifolds and full cone - spiral nozzles



THE PROBLEM OF OUR CLIENT

Our technical department was involved in designing a system for eliminating the froth in a recycling paper mill.

Some froth may form in the tanks with cellulose and water during paper recycling. It's crucial to eliminate the foam to put back the water into circulation. For this reason, studying a system with spray nozzles and manifolds was essential.

PNR ITALIA SOLUTION

Our technical department designed a system of manifolds and spiral nozzles to reduce the froth.

The system consists of two types of E spiral spray nozzles arranged to have an overlap of the jet that does not exceed the tank boundaries. This optimizes the consumption of liquid and energy. A total of 4 nozzles are used, one of which has an opening angle of 90° while the other 3 have a 120° opening angle.

The nozzles are at 80cm height from the water surface, and the tank measures 14m².

ADVANTAGES FOR OUR CLIENT

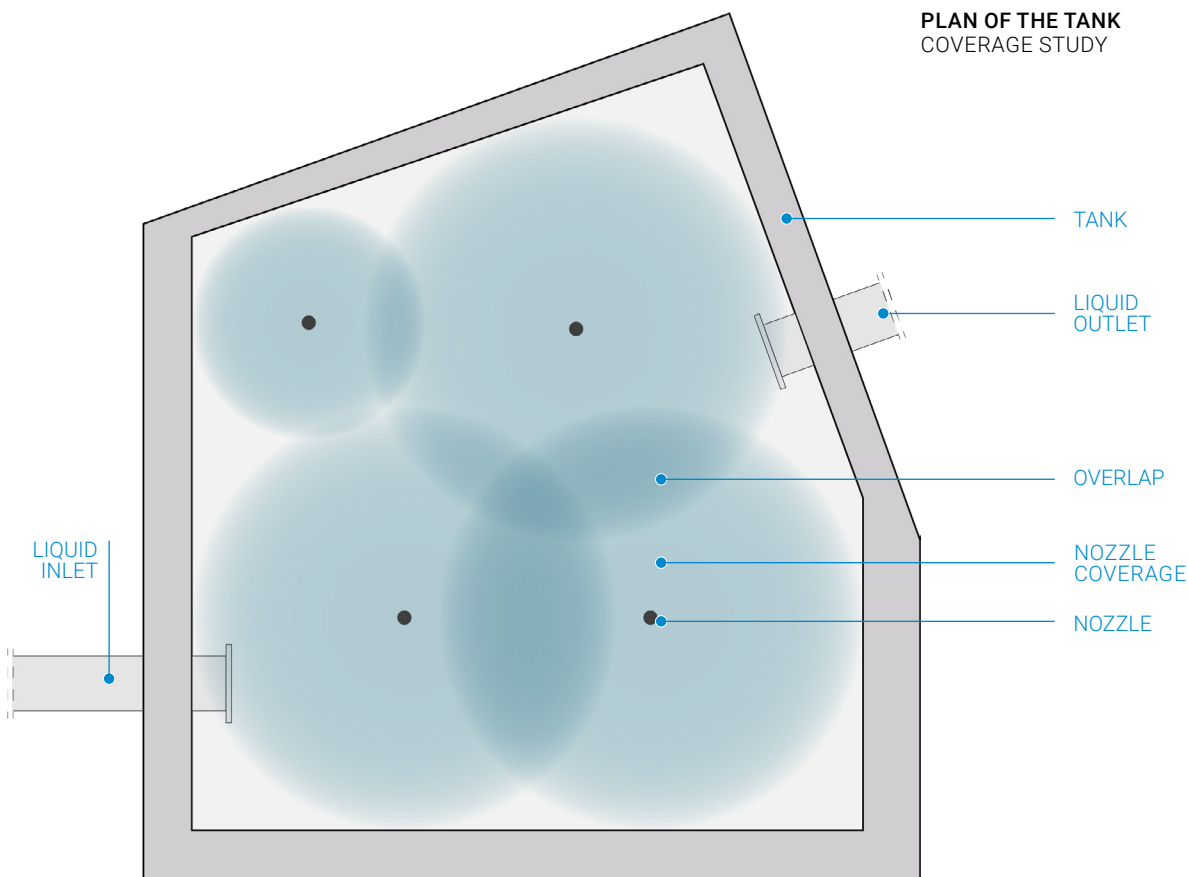
The chosen nozzles effectively cover the entire area of the tank, successfully reducing the froth.

FOCUS ON THE PRODUCT



E
SPIRAL FULL CONE NOZZLE

The full cone E nozzle operates on the principle of jet deflection, deviated by a spiral profile surface that determines the desired spray angle. Their unique shape minimizes occlusion and produces a broader spray coverage than other nozzles under the same operating conditions.



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