JÄGER
Umwelt-Technik

CASE STUDY

ENDLESS TUBE DIFFUSER INSTALLATION

HIGH PERFORMANCE UNDER TIME PRESSURE

CHALLENGE

SMALL TIME WINDOW FOR A NEW SYSTEM

A CETP plant was in need of a new aeration system during a renovating period. Available was a newly constructed tank with 11.45mL x 8.40mW dimension and a water level of 5m.

The challenge of this job was the given time. The installation of the complete aeration system including blowers has to be done within 5 days. 5 skilled workers were assigned to this job.

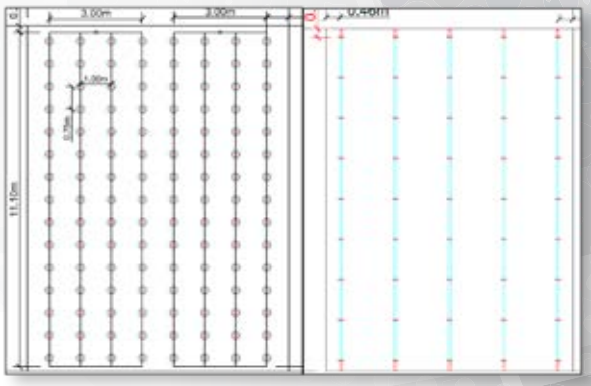
SOLUTION

COMPARING THE OPTIONS

As installing air piping as per tubular or disc type diffuser would surely exceed the given time, the endless tube type (ET75) diffuser was mandatory. The below layout drawings shows option 1 with piping and HD270 disc diffusers and option 2 with ET75.

Option 1 would require 120 diffusers and more than 90m PE piping, not to mention pipe supports, flanges and gluing pipe connections. The endless tube design allows for five lines, each 10m in length.

Each ET line has individual drop lines while the disc diffuser are grouped in two each with four headers.



EQUIPMENT AND INSTALLATION

The required SOR was calculated to be ca. 50 kgO2/h. Therefore a roots blower that provides an air capacity of 600 m3/h @ 600mbar was chosen. The ET75 was delivered as a 50m roll including specific clamps.

Each diffuser line has separated SS drop pipes that are regulated by butterfly valves. In order to fix the ET75 to the floor S-brackets were prepared and was placed every 1.0m.

Steel rods with 8mm diameter were used to straighten the endless tubes. These were inserted into the opening provided in the ET75 hose and secured with clamps.

RESULT

INSTALLATION IN RECORD TIME

Installing the blower was finished within one day. Piping preparation and welding works were done in one day, as well. The installation of the drop pipe and the endless tube took 2 days. The last day was left for start-up and testing the system for leakage with clean water.

At start-up the blower shows a pressure of 560mbar which means that piping and diffuser causes together about 60mbar head loss. Up to now the system has been running for one year without problems.

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