

Case Study:

Lamella Settlement Tank Emptying



ENQUIRY

Castle Pumps received an enquiry from Northern Tanks, a fabricator of fluid storage tanks and transfer systems. They were in the process of designing a steel container which would then enclose a water tank with pressure washers connected, used to wash down site equipment. Once used, the collected water would be passed through a Lamella Separator and Filter to remove any large solid particles and returned to the original water tank to be used again.

The customer was looking for a wastewater pump that would remove the filtered-out sludge at the bottom of the Lamella Settlement Tank and transfer it into a separate container to be disposed of.

KEY CHALLENGES

1. Able to handle 2-3% solid content that is present in the wastewater.
2. Can skilfully handle the viscous sludge without loss of efficiency.



EQUIPMENT SUPPLIED

BOYSER AMP-22 Peristaltic Pump with Integrated Inverter for Flow Control

Model	AMP22A31
Orientation	Horizontal Monoblock
Fluid	Wastewater
Flow	177-649 lph
Speed	1450/29 rpm @ 50hz
Voltage	400v - 3 Phase
Hose	NR (Natural Rubber)
Suction	1" BSP Stainless Steel
Discharge	1" BSP Stainless Steel

SOLUTION

When specifying a wastewater sludge pump for this Lamella Separator application, the first thing we needed to consider was the nature of the fluid. It was estimated that the solid content would typically be around 2-3% and so it was important the pump in question could handle this, as well as the viscous sludge consistency. Due to its only wetted part being the internal hose, a peristaltic pump is ideal for this application due to its solid handling capabilities. There are no valves to clog or seals to wear, making it low maintenance for even more challenging, solid laden fluids.

After discussing the flow rate and pressure requirements in more detail with the customer, we specified a Boyser AMP-22 peristaltic pump. Its dry run capability means that there would be no damage to the pump if it is ever accidentally left running after the sludge has all been removed and the settlement tank is empty. Peristaltic pumps are also self-priming which was important for this installation as the pump was to be installed above the settlement tank and therefore had to draw the fluid up.

We also supplied this wastewater sludge pump with integrated inverter to provide the user with flow control for when the contents of the Lamella settlement tank that need transferring differ. The good news for the end user is that going forward, the peristaltic pump will be very low maintenance thanks to the inner tube being only wearing component.

