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Travelling in upward direction can therefore take place in a virtually unhindered way. Due to the corrugations, particles will all tend to move through the top of the corrugation. This builds up flocs thus increasing buoyancy.

Any heavy particles settle down and are removed from the plate pack co-currently.

The clarified water leaves the plate assembly at the bottom side and is discharged via effluent channels and an adjustable overflow weir. This weir is adjusted to the actual conditions of flow and sludge characteristics.

Part of the treated water is recirculated for the aeration of the raw water. Air is dosed into the suction pipe of the recirculation pump. This is a specially designed multi-stage pump, which pressurises the water/air mixture to 4-8 bars.

Most of the air is dissolved in the water by the mixing action of the pump. In an aeration pipe in the pump discharge the air is further dissolved. At the highest point of this pipe a de-aeration valve is mounted to let undissolved air escape.

The pressurisation takes place just before the aerated water is mixed with the raw water.

Due to de-pressurisation to atmospheric pressure most of the air is released as micro-sized air bubbles. In the Poseidon flotation system air bubbles in the range of 30-50 μm are formed, which are ideally sized for removal of fine particles.