Lamella Thickener
Ecomin delivers Lamella Thickeners and Combined Thickeners with lamella plate packs installed in conventional circular thickeners with central drive mechanism. The lamella technique is applicable to almost any waste water problem. Its operation has proved to be just safe as conventional thickening. The two basic criteria for gravity settling equipment are good clarity of the overflow and maximum density of the underflow. The area required to clarify a slurry is often greater than that needed for thickening. In such cases the lower section with rakes and drive mechanism can be oversized and the lamella principle can provide substantial advantages.

The construction and main components of the thickener are shown below.

The Ecomin Lamella Thickener consists of a number of prefabricated lamella plate packs radially installed in a circular sedimentation tank equipped with a hydraulic drive unit sludge raking mechanism. This enables very large clarification area machines, built up from pre-fabricated components, to be installed in only a fraction of the floor space required for conventional units. Prefabricated lamella packs can be installed also into existing clarifiers and thickeners for increasing the useful clarification area. Thus an additional thickener is not needed and flocculant consumption is avoided or minimized.
The lamella principle utilizes a series of closely inclined plates to increase the settling area available per unit of plan area. In this way both settling and thickening requirements can be closely matched in plan area to reduce the size and cost of the gravity settler.

Advantages:
- Small floor area footprint
- Filling and emptying time is short and no need to allocate large storage when emptying thanks to its small volume
- Heavy duty rigid construction of tank, sludge hopper and lamella plate packs;
- Wide spacing of lamella plates to handle high density feed pulps and coarse solid particles;
- Prevents short circuiting and reduces turbulences from surface wind or feed temperature variations
- Lower capital costs
- Modular design for future expansions

Ecomin Lamella Thickeners are provided with a large diameter sludge tank. This design allows to achieve higher densities and solids loading with longer retention times.

Automatic lifting devices may be supplied as option.

The lamella thickener consists of two main parts, the upper tank containing the lamella plates at a slope of 55° and the lower cylindrical sludge tank. The feed enters through vertical chambers on either side of the lamella packs and flows into each plate gap through slotted feed ports. Clarification takes place above the slurry inlets to avoid mixing of the clarified fluid with the incoming feed. Above each pack there is a full-length overflow holed launder to create a slight hydraulic back pressure on the incoming feed stream. This back pressure distributes equally the slurry to all lamella chambers with a minimum turbulence at entry points. The solids settle onto and slide down each plate to the sludge tank where they are further thickened and compressed through the raking system.
Ecomin S.r.l. - Via Privata Galla, 4 - 16010 Serra Riccò (GE)
Tel. +39 010 750581 - Fax +39 010 751267 - ecomin@ecomin.it - www.ecomin.it

released 2012 - 05