

# OR-TEC Belt Thickener

## 500, 1000, 1500 & 2000 Series



If you're looking for an economical and simple solution to your sludge thickening needs, you'll find an answer in the **OR-TEC Belt Thickener System**. The system is designed with ease of operation, low maintenance, cost effectiveness and thickening efficiency in mind. Its robust frame is constructed of stainless steel and can be trailer mounted for multiple site operation. Available in 0.5, 1.0, 1.5 and 2.0 meter capacities.



The **OR-TEC Belt Thickener** is a completely operational and self contained system which can include:

- Thickener
- Controls
- Screw Auger
- Pumps
- Flocculation System
- Chemical Dosing Unit



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Type of sludge	Feed Sludge Conc %	Sludge Feed Rate (gph)	Dry Solids Feed Rate (1 lb./hr)	Poly Conc %	Poly Feed Rate (lbs/ton d.s.)	Final Cake %
Activated Sludge from Municipal WWTP	1.5	2,500 (0.5m)	312 (0.5m)	0.25	0.25	6 - 8
		5,000 (1.0m)	625 (1.0m)			
	0.25	7,500 (1.5m)	938 (1.5m)	8-10	6 - 8	
		10,000 (2.0m)	1,250 (2.0m)			
Activated Sludge from Anaerobic WWTP	3.5	1,068 (0.5m)	312 (0.5m)	0.25	8-12	6 - 8
		2,140 (1.0m)	625 (1.0m)			
	0.25	3,213 (1.5m)	938 (1.5m)	8-12	6 - 8	
		4,282 (2.0m)	1,250 (2.0m)			

### Process Description....

#### CHEMICAL DOSING

An OR-TEC Blend polymer feed system automatically makes up and delivers the polymer and water solution to the injection site.

#### FLOCCULATION

Sludge is pumped to a stainless steel flocculation tank by a variable capacity pump. Prepared polymer is simultaneously injected into the inlet of the flocculation tank by the polymer dosing system. Here thorough mixing occurs, aided by a variable speed flocculator fitted in the tank.

#### THICKENING AREA

Flocculated sludge flows from the flocculator down a sludge feed chute. This chute provides a gentle, even distribution of sludge over the gravity drainage section and a uniform thickness on the dewatering belt. The drainage area allows for the separation of the free water contained within the sludge and its consequent discharge into the drainage tray. Capillary action takes place as the thickening belt moves across stainless steel supported UHMW belt supports. The drainage area is sealed by polypropylene skirting that is bolted to the top trays and rests on the filter cloth.

#### SLUDGE DISCHARGE

Thickened sludge is continuously removed by a fixed scraper blade acting against the final roller. A thickened sludge pump or screw auger can be used to convey the thickened sludge.

#### FILTER BELT WASHING

The filter belt is continually washed by pump generated high pressure water sprayed through fine nozzles. Belt wash water and filtrate are collected in a stainless steel drainage tray. This runoff is funneled to the customer's drainage system via the supplied flanged outlet in the tray. In most cases, the filtrate is acceptable as reuse for wash water, as is the final effluent of the W.W.T.P.

#### CONTROLS

The system can be operated in automatic or manual modes. Start-up is simple and requires a minimum of time. A PLC monitors the system at all times during operation. Automatic Belt Tracking, a Thickened Sludge monitoring system and Emergency systems help to ensure trouble free, easy operation.

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