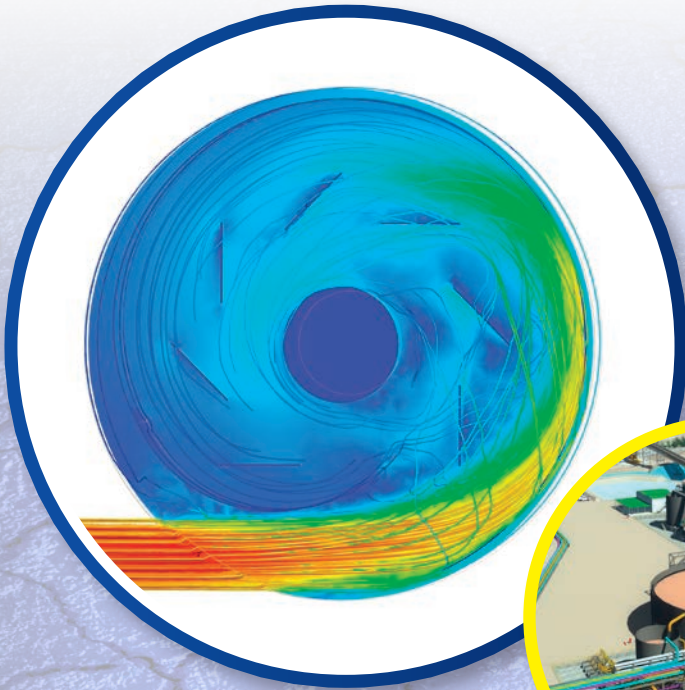




Building Relationships in Process Engineering

# EvoFlow Core<sup>®</sup>

Discover the Future of **Thickener Performance**



# EvoFlow Core<sup>®</sup>

## Discover the Future of Thickener Performance with PEQON's EvoFlow Core<sup>®</sup>

The EvoFlow Core<sup>®</sup> Feedwell is meticulously engineered using cutting-edge CFD analysis and setting a new standard in feedwell technology.

Our iterative design process and rigorous testing have led to pivotal modifications that optimise performance.

The EvoFlow Core<sup>®</sup> Feedwell effectively dissipates incoming slurry energy, ensures optimal mixing with flocculant, eliminates short-circuiting and provides a precise slurry velocity profile for superior hydraulic loading.

### Features of a High-Performance Feedwell

#### Solids Distribution

It must deliver uniform settling and maximum thickening efficiency by effectively distributing incoming solids and liquids across the entire surface area of the thickener.

#### Overflow Clarity

It must assist in delivering a clear overflow, demonstrating effective solids settling and minimal carryover of suspended solids.

#### Sludge Density

It must achieve a high degree of thickening, by creating a dense sludge layer at the bottom of the thickener and maximising the concentration of solids in the underflow.

#### Hydraulic Loading

It must manage the flow rate per unit area effectively, preventing hydraulic short-circuiting and ensuring optimal thickener operation.

#### Energy Efficiency

It must promote efficient settling and thickening, minimising energy requirements for agitation or pumping while maintaining desired process outcomes.

### Key features of the EvoFlow Core<sup>®</sup>

#### Feed Solids Optimisation

- **Maintain Performance:**  
The EvoFlow Core<sup>®</sup> performs optimally at a feed concentration of 12.5% solids by mass and an inlet velocity of 25% above critical.

#### Flow Pattern Optimisation

- **Baffle Configuration:**  
The EvoFlow Core<sup>®</sup> has a unique baffle configuration that generates ideal flow patterns in the intermediate and lower zones of the feedwell.
- **Effective Mixing:**  
The EvoFlow Core<sup>®</sup> achieves effective mixing in the upper zone and gentle mixing in the intermediate zone.
- **Enhanced Controllability:**  
The EvoFlow Core<sup>®</sup> baffle configuration guides the slurry flow toward the centre of the feedwell ensuring optimal mixing.

#### Design Practicality and Durability

The baffle plates are constructed with the necessary thickness and impact resistance to withstand high wear and ensure durability.

### Proven Performance

Our computational fluid dynamics analysis confirms that the EvoFlow Core<sup>®</sup> Feedwell significantly advances thickener performance, setting new benchmarks in the industry, and our iterative design process and rigorous testing have led to pivotal modifications that optimises performance.

#### The EvoFlow Core<sup>®</sup> Feedwell effectively:

- Dissipates incoming slurry energy (Zone 1 to 5).
- Ensures optimal mixing with flocculant (Main Zone).
- Eliminates short-circuiting (Intermediate Zone).
- Provides a precise slurry velocity profile for superior hydraulic loading (Lower Zone).

Our CFD, in Figure 1, shows the significant change in the velocity profile of the incoming slurry and Figure 2, provides a cross-sectional profile of the smooth and controlled slurry transition through the intermediate zone into the lower settling area maintaining a very stable velocity profile.

Zone	1	2	3	4	5
Velocity (m/s)	3.5	2.5	2.0	1.5	1.0

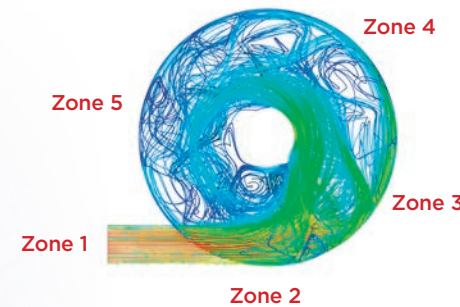


Figure 1

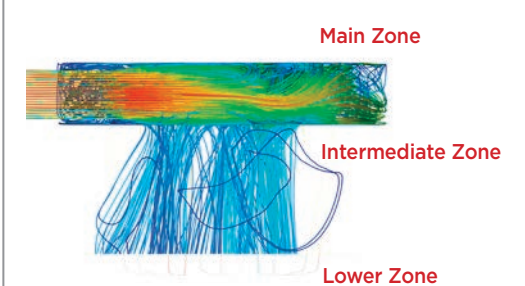


Figure 2

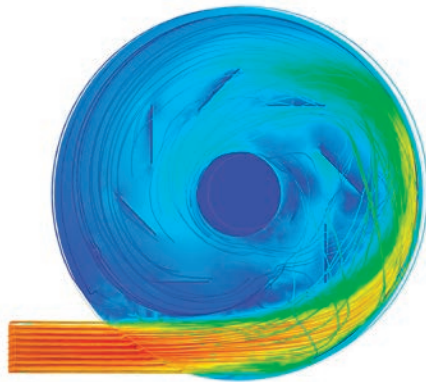
The overall evaluation of the EvoFlow Core<sup>®</sup> can be summarised in the following table which evaluates the feedwell performance across a range of feed densities. Optimally the feedwell performs best at 12.5 % solids where the most significant reduction in kinetic energy is achieved with all other performance metrics at optimal levels.

Feed Solids	5%	10%	15%	20%	12.5%
KE Reduction Ratio*	4.51	4.89	4.84	5.15	7.07
Turbulence	4	3	2	2	4
Controlled Discharge	2	3	4	3	4
Functional	3	4	4	4	4

Scale: 1 = poor. 5 = excellent, \* calculated values



Join the revolution and experience unparalleled thickening efficiency, reduced operating costs and minimised environmental impact.



## EvoFlow Core<sup>®</sup>

Where Innovation Meets Excellence

Contact us today to learn more about how the EvoFlow Core<sup>®</sup> can transform your thickener performance.

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-  [www.peqonseparation.com](http://www.peqonseparation.com)