

# Thickener Optimization Package

Advanced Thickening Technology



**WESTECH**<sup>®</sup>

# Thickener Optimization Package



WesTech Engineering has taken the next step in advancing thickener technology with our Thickener Optimization Package (TOP™). The TOP™ thickener design approach adds innovative features to the thickener to provide a better process solution.

## Why Choose a TOP™ Thickener?

WesTech offers a full range of thickening equipment to meet the requirements for any minerals or industrial application. The unique characteristics of each slurry dictate the process design parameters for our thickeners.

The TOP™ design features can be used in any combination with a WesTech thickener to offer a customized design with reliable performance. TOP™ design features provide:

- **Even feed distribution**
- **Optimal feed slurry dilution**
- **Minimized flocculent consumption**
- **Enhanced thickening**
- **Improved dewatering and underflow control**

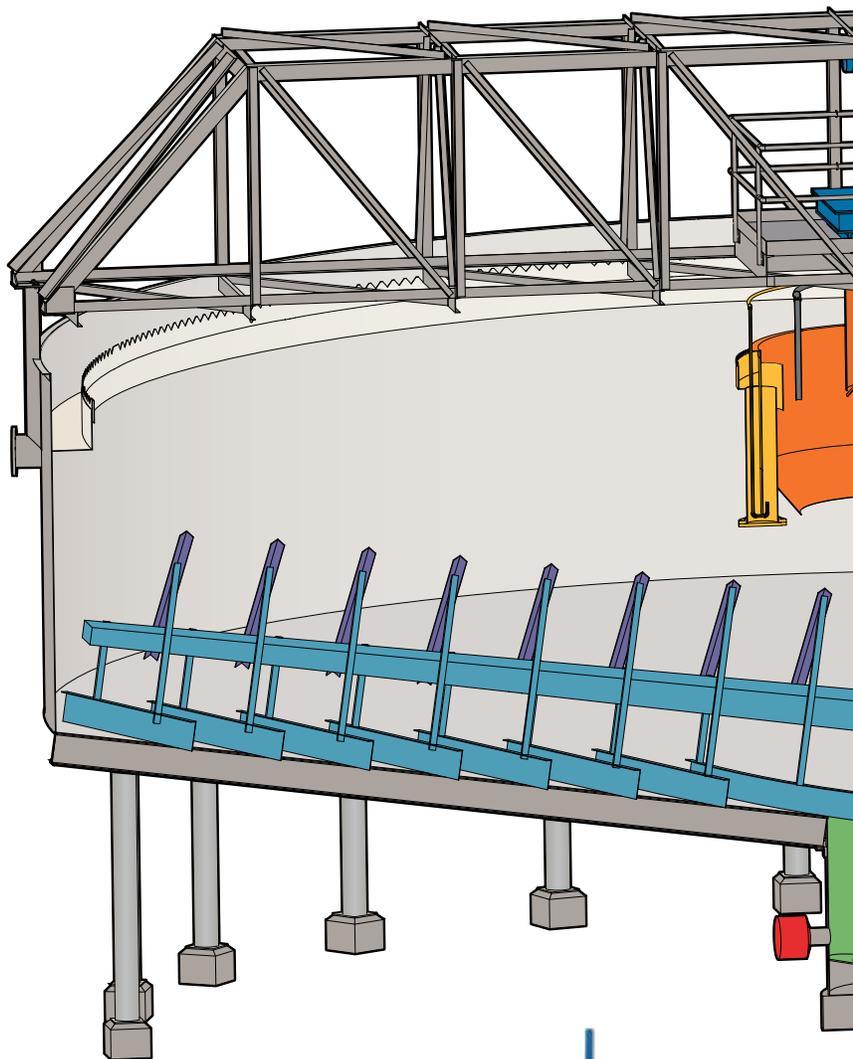
Contact WesTech to find the right thickener for your processing needs.

### TOP™ Control System

Each TOP™ control system package is customized to meet the specific needs for a given application. Designs can range from a reactive control logic, with a high level of operator interface to a proactive control logic, with complete automation and minimal operator interface.

### AirLift™ Feedwell Dilution

This option allows thickener operators to target a specific dilution flow rate with controlled precision without upsetting quiescent settling conditions. Optimized feedwell dilution can minimize chemical consumption while maximizing the solids settling rate.



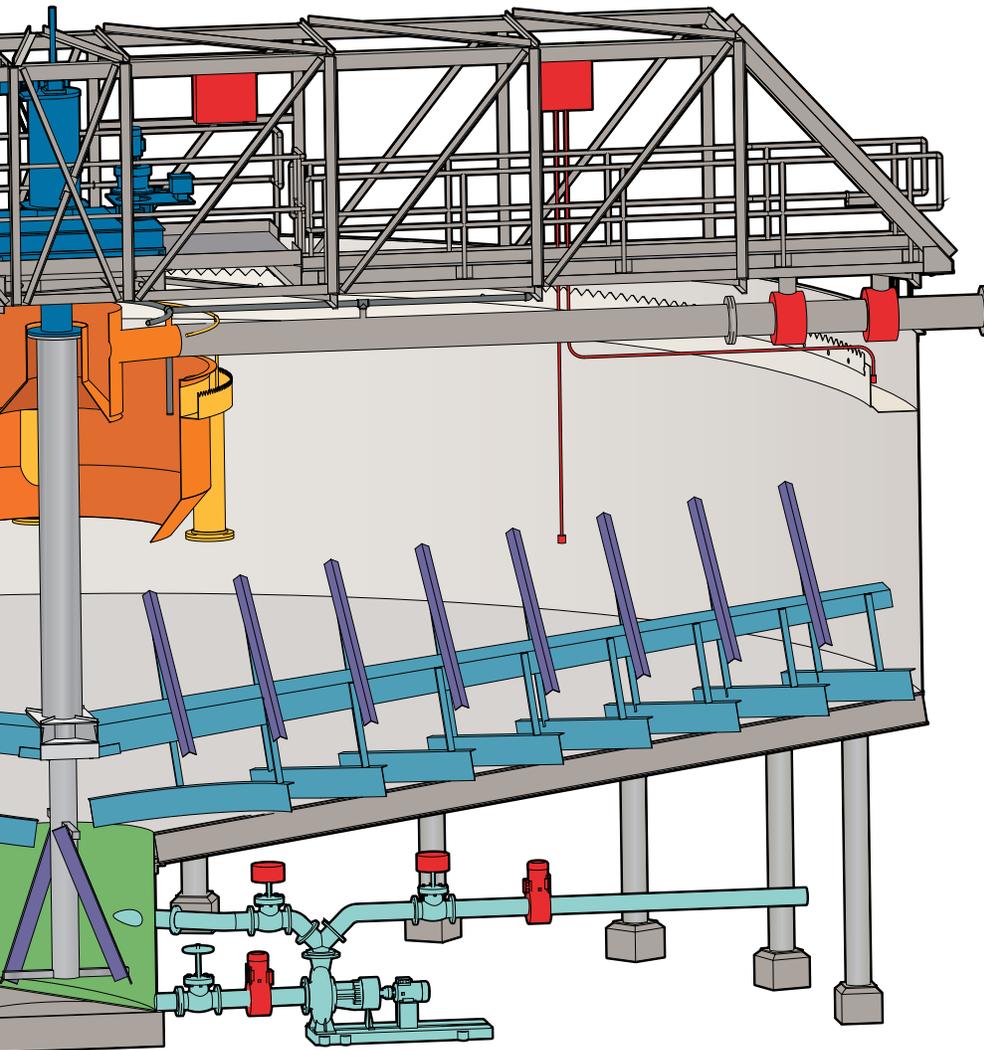
### Extreme Duty Drive

WesTech's TOP™ thickener drive design includes direct in-line high-efficiency reducer and motor stacks, a durable precision bearing, state-of-the-art torque protection, rake lifting capability, and a customized design for each application.



### Dewatering Chamber

The geometry of the TOP™ dewatering chamber provides additional solids residence time and a larger inventory for compacted solids. Inclined scrapers are used for further dewatering within the chamber.



### CFD Analysis

WesTech uses CFD analysis to model feed flows to optimize even distribution, detention times, and flocculation.



### Vortex Recirculation

WesTech's Vortex recirculation system stabilizes underflow density control. An intermittent recirculation loop is used when underflow density is below specification.

### Low-profile Raking System

Low-profile rake support structures cut through the compacted slurry. Blade extension posts elevate the support structures from the solids transport zone. This results in lower energy consumption and more available torque for solids transport.

### Customized Tank Design

WesTech's approach to elevated tank design is unique. An algorithm has been developed to simultaneously analyze parameters such as beam size, beam quantity, leg size, and leg location. Designs are verified using structural analysis software.

### Inclined Dewatering Pickets

As settling solids begin to compact together, water becomes trapped in the interstitial spaces between the solids. In contrast to vertical pickets, inclined pickets provide a progressive cavity that allows for a continuous and unhindered pathway for water to escape from the compacted zone.

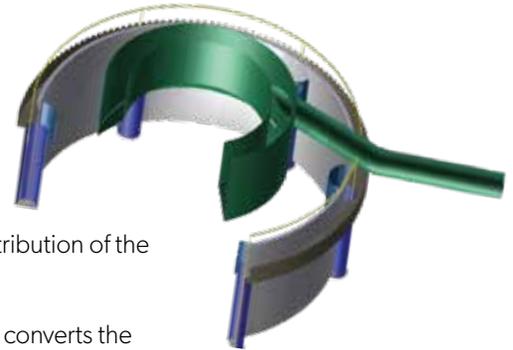
### EvenFlo® Feedwell

A properly designed feedwell should provide energy dissipation as well as even distribution of the feed into the thickener. WesTech's EvenFlo® design consists of a two-part feedwell system. An inner chamber converts the feed energy into a concentric radial flow for optimal mixing of flocculent and solids in all areas of the main chamber. The main feedwell chamber then evenly distributes the feed into the sedimentation zone of the thickener.

# A BETTER PROCESS SOLUTION

WesTech Engineering has taken the next step in advancing thickener technology with our Thickener Optimization Package (TOP™). The TOP thickener design approach adds innovative features to the thickener to provide a better process solution.

- **Even feed distribution**
- **Optimal feed slurry dilution**
- **Minimized flocculent consumption**
- **Enhanced thickening**
- **Improved dewatering and underflow control**



## EvenFlo® Feedwell

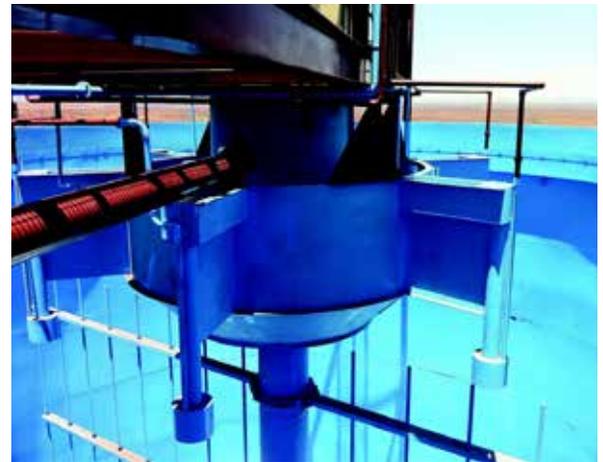
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## AirLift™ Dilution

WesTech's AirLift dilution system uses an airlift pump to draw clarified water evenly from the thickener surface into the feedwell.

An even draw from multiple points prevents flow disturbances in the quiescent settling zone while ensuring proper dilution/feed mixing inside the feedwell. Dilution flow can be regulated with precision by operator adjustment of the airflow to the system.



*EvenFlo® Feedwell and AirLift Dilution*

## Dewatering Pickets

WesTech's unique combination of inclined dewatering pickets with a dewatering chamber provides a better method of removing water from the compacted solids. This results in higher densities and allows for stable thickener control.

## Underflow Control

The TOP Vortex Recirculation system is used when the underflow density is below specification. The underflow slurry is recirculated until the correct underflow density is reached. The recirculation loop is then adjusted and the slurry is fed forward at the correct density. When the density drops below specification, the system reverts to the recirculation loop.



*Underflow Control System*

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