

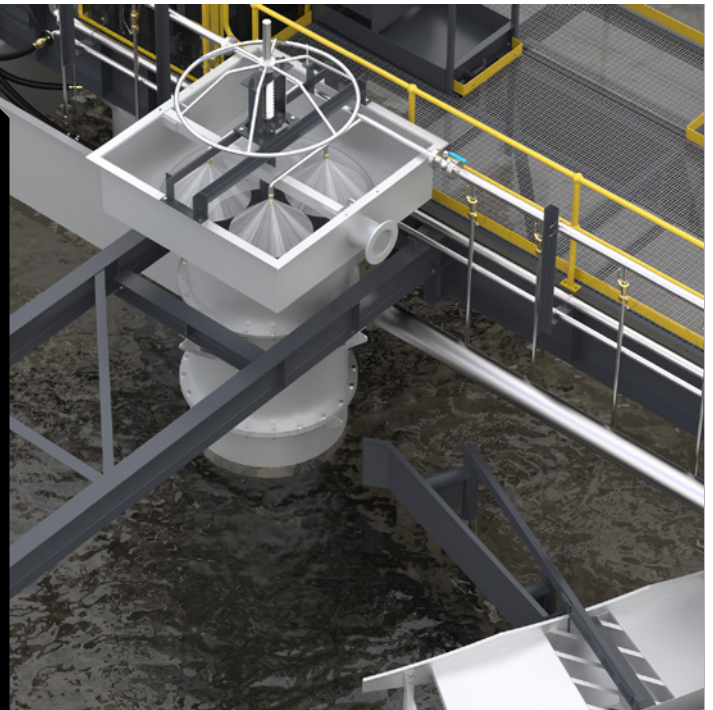
Metso

For thickeners

Froth control

Solution

Thickeners are presented with froth from upstream processes or inadequate designed feed tanks. Mitigation of froth is required to avoid an underperforming thickener. By reducing or eliminating froth, this results in improved mineral recoveries and a lower environmental impact.



High levels of froth reporting to a thickener are a major challenge for thickener design. Having a highly aerated feed reduces the efficiency of flocculant and leads to a poorly performing feedwell. Inefficient flocculation will result in loss of product due to excessive solids in the overflow. Froth mitigation ensures lower maintenance costs and prevent an underperforming thickener.

Although most concentrate thickeners require some form of effective froth management due to entrained air from proceeding processes, having a well-executed feed tank before the thickener will avoid additional froth creation. Most feed tanks prior to concentrate thickeners provide very little deaeration and thus, often exacerbates the froth situation.

Deaeration tanks can be very effective at limiting froth entering a thickener. However, without level control, these tanks run empty and entrain more air into the feed. The Metso DA tank provides level control with a dart actuated valve in a compact design mounted internal to the thickener. This forms part of the Metso advanced froth control solutions.

With a vast installed base stretching over 30 years and supported by many successful case studies, Metso has a versatile froth management toolbox that can effectively manage froth problems. The suite of products is now packaged into different levels to match the needs of any operation.

Level 1: Froth booms, bridge sprays and launder froth baffle

This is used for low froth applications designed to mobilize froth on the thickener surface. Best suited to pumped feed and where the feed pipe is not laundering.

Level 2: Froth booms, bridge sprays, launder froth baffle and DA tank

Applied for more challenging froth where laundering feed pipes may be present and deaeration of the feed is essential.

Level 3: Froth skimmer, bridge sprays, launder froth baffle, DA tank, froth collection box and feedwell froth baffle

A froth removal system for highly tenacious froth that causes build-up on the thickener surface.

The Metso froth management equipment are available in standard configurations or can be combined to provide solutions for site-specific challenges.

Benefits

- Improved minerals recovery
- Decreased amount of solids in returned process water by lowering the solids in the overflow
- Reduced operating costs through decreased reagent consumption
- Lower maintenance costs due to less frequent cleaning of launders and process water dam / tanks