CASE STUDY

CA MAU FERTILIZER PLANT

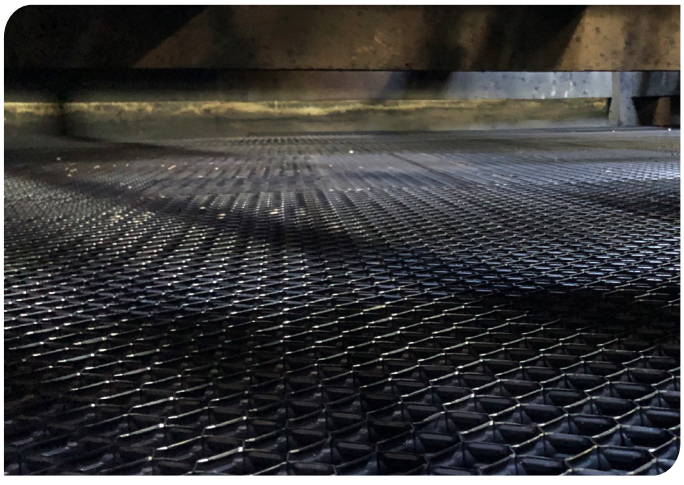
At the Ca Mau Fertilizer Plant in Vietnam, the cooling tower's performance had significantly degraded due to severe fouling of its fill packs. The existing cross-fluted film fill, in use for ten years, increased by an average of 617% in weight, leading to significant performance loss observed by the facility. To solve this, Brentwood partnered with Bateco Group to replace the old fill with OF21MA, an offset-fluted film fill. This upgrade reduced the cooling tower's approach temperature from an average of 4.8 °C to 2.9 °C, and lowered the cold-water temperature from 32.0 °C to 29.9 °C.

OVERVIEW

The project took place at the Ca Mau Fertilizer Plant in Vietnam between April and August 2023. The plant's cooling tower, which had been operating for a decade, was experiencing significant thermal inefficiency. The plant's circulating water is sourced from a river, which is more prone to containing high concentrations of suspended solids like mud, silt, and biomatter, especially in rapidly flowing rivers.

PROBLEM

After ten years of operation, the cooling tower's existing cross-fluted film fill was heavily fouled, causing a severe drop in thermal efficiency. Measurements showed that the weight of the fill packs had increased by an **average of 617%.** The fouling, composed of suspended solids and scale from the river water source, was particularly heavy on the top and bottom layers of the fill. This fouling led to significant losses of performance observed by the facility.



Brentwood's OF21MA is installed, delivering proven performance.

SOLUTION

Brentwood and Bateco Group collaborated to replace the aging, fouled components. The solution involved installing Brentwood's **OF21MA film fill.** This offset-vertical flute design was chosen for its anti-fouling characteristics, proven performance, and ability to keep performance levels higher than traditional cross-flute fills when fouling weight increases.

RESULTS

The installation of the new OF21MA fill delivered several key performance improvements:

- The cooling tower's approach temperature was reduced from an **average of 4.8 °C to a new average of 2.9 °C,** meeting the project's requirement of being less than **3.2 °C.**
- The cold-water temperature decreased from **32.0 °C to 29.9 °C.**

The project was officially accepted and put into full operation after a successful trial run, with the results verified by both the Ca Mau Fertilizer Plant and Bateco Group.

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