Heat Management

# SCG Thai Gypsum

Application: Grate-fired biomass boiler
Efficiency solution: Infrasound Cleaning
Cleaning area: Economizer and air preheater

## General info

Plant: Gypsum board production
Boiler: BIB (Bangkok Industrial Boilers)
Fuel: Wood chips (rubber wood)
Capacity: 13MW$_{th}$

## Installation

Type: APM350
Year of installation: 2024

## Situation description

The customer operates a grate fired boiler from Bangkok Industrial Boilers (BIB), producing 20 tons of steam per hour at design load and 15 tons per hour in normal operation. The boiler fires mainly rubber wood chips and was cleaned using traditional steam sootblowing, typically one to three times per day depending on boiler load.



Sootblowing was initiated based on the flue gas outlet temperature, which served as an indicator of fouling in the heat transfer surfaces. Over time, ash and dust accumulation in the economizer (ECO) and air preheater (APH) reduced heat transfer efficiency, causing temperature increases and the need for frequent sootblowing.

This cleaning method consumed valuable steam, imposed thermal and mechanical stress on boiler components, and increased wear on sootblowing equipment. The customer sought a more efficient and less intrusive cleaning solution to stabilize performance and reduce operating costs.



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Results

An Infrasound Cleaning System was installed to target the ECO (upward pass with three bundles) and APH (downward pass with three bundles). The system was commissioned with the goal of reducing sootblowing frequency while maintaining stable boiler performance.



The results have been significant:

- **Sootblowing frequency reduced** by at least 50 percent.
- **63 percent reduction achieved** during the evaluation period in January 2025.
- **Stable flue gas outlet temperature** maintained at high boiler load.
- **Continuous operation achieved without sootblowing** in the ECO and APH.
- **Reduced steam use for cleaning** and **improved boiler efficiency.**
- **Lower maintenance needs** and **less wear** on sootblowers and heat transfer surfaces.

The Customer could further optimize steam use by installing HISS® Essential on the evaporator sootblowers. The evaporator section has three rotary sootblowers cycling 6 or more times per day, operating at approximately 600°C, a temperature where infrasound is not suitable.

By integrating HISS® Essential, the customer can reduce sootblowing demand and steam consumption while maintaining strong focus on the hottest part of the boiler, ensuring the flue gas entering the economizer remains as cool and clean as possible to minimize ash adhesion.



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