

A DIVISION OF



Fin-tubed Exchanger Cleaning

FINFOAM® Safely & Thoroughly Cleans Fin-tube Units for Maximum Heat Transfer Efficiency

FINFOAM® is the most thorough and environmentally friendly solution for externally cleaning air-cooled heat exchangers (fin fans), steam preheater coils and refinery/petrochemical units' convection sections safely and efficiently. This proprietary process, proven for nearly 20 years worldwide, executed by highly skilled and safety-trained personnel, will bring your equipment to peak performance and maximum production levels.

Dirty fins or coil tubes drastically reduces an exchanger's efficiency and throughout. The low pressure, high volume foaming process is 100% safe and gentle on delicate fins, while completely breaking through dirt and debris throughout the entire bundle. You'll notice an immediate return on investment with improved heat transfer efficiency, energy savings, and prolonged unit life.

Numerous Case Studies Show Increased Production

A Southern California refinery needed their Alkylation unit's air-cooled heat exchangers cleaned, which had previously been attempted by a different service provider with poor results. With over 100 fans in the unit, the job took just 12 days, and average results showed a 35 degree increase in Delta T. Not only was the client thrilled with the results, but they realized their return on investment before the job was even completed. They even realized around \$3 million in annual cost savings.

Energy Coordinator, Major Southeast Refinery

"A total of 310 fans were cleaned and all the work was done safely and without the slightest incident, plus it was all performed with our operations continuing on-line throughout. Since our fans were pretty dirty prior to cleaning, we saw a substantial benefit from the work you did. In fact, our calculations show that the cleaning paid out in less than a month! Please pass along our thanks once again to the whole crew for the great work they did."



Benefits:

- Improved cooling performance and unit efficiency
- Increased production capacity
- Extends unit life & reduces maintenance & power costs
- Can be automated with ROBOFOAM
- Units remain in service with the fan off for only 1-1.5 hours.
- Global company with 100% mobile operations
- Zero damage to fins
- Environmentally safe pH-balanced cleaning formula

The FINFOAM® Cleaning Process

FINFOAM is the best choice for cleaning delicate fin fans. Traditional methods like pressure washing can bend or break fragile cooling fins, as well as compact dirt and debris toward the center of the heat exchanger bundle. FINFOAM's process is 100% safe for your equipment because it is a LOW-PRESSURE, HIGH VOLUME treatment that causes zero damage, and can be performed while on-line in only 1-1.5 hours with the fan off.

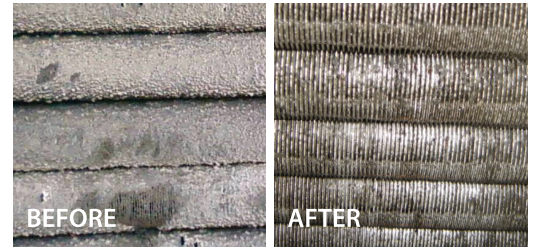
Our proprietary foaming solution fully encapsulates the entire surface area of your fins or coils and even dislodges blockages trapped in the center of the bundles. Where traditional pressure washing only effects the uppermost exposed surfaces, FINFOAM uses a unique process to ensure a complete flow is maintained from the top of the exchanger to the bottom - freeing the unit of efficiency-robbing deposits.

Once a complete foaming breakthrough is achieved, the low pressure, high volume rinse flushes all FINFOAM solution and debris to grade. FINFOAM is pH balanced, biodegradable and non-hazardous so it won't adversely affect your waste stream. Debris is pushed out in the same direction it originally entered your exchanger, keeping your equipment safe and fully operational.

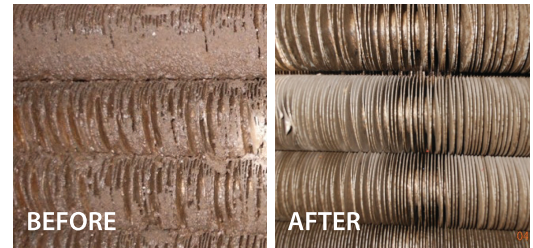
Before & After Data

Actual data from a west coast refinery's South Exchanger Bank - 16 exchangers

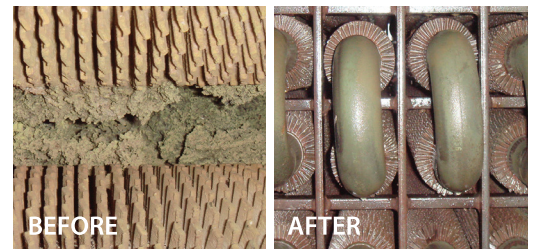
BEFORE FINFOAM CLEANING:	408,000 bbl/day
AFTER FINFOAM CLEANING:	467,000 bbl/day
PERCENT INCREASE:	14%



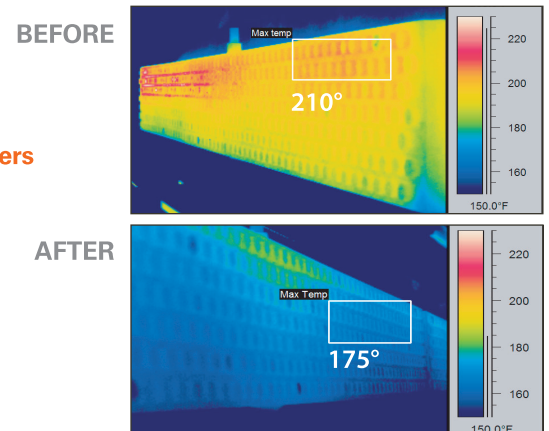
Air-cooled aluminum fins



Steam preheater coils



Convection furnace finned tube bundle



Additional Services:

LIFECYCLE SERVICE SOLUTIONS

- Construction phase cleaning support
- Pre-commissioning cleaning
- Daily maintenance support
- Outages/Shutdowns/TARs
- Decommissioning

HYDROBLAST VACUUM + BIG PUMP

- Automated hydroblasting 12K-40K PSI
- High volume hydroblasting (30x traditional volume)
- Wet, dry, sludge vacuuming
- Pneumatic + hydro-vacuum excavation

CHEMICAL CLEANING + FINFOAM®

- Custom-engineered chemical cleaning
- FINFOAM® air-cooled heat exchanger cleaning
- Tank cleaning + Vapor phase degassing/pipe cleaning

SPECIALTY + CUSTOM SOLUTIONS

- Dry ice blasting
- Combustible dust remediation
- Industrial drone inspections
- Coatings + Liner removal
- Sponge media abrasive blasting
- HRSGs with EPIC™ technology