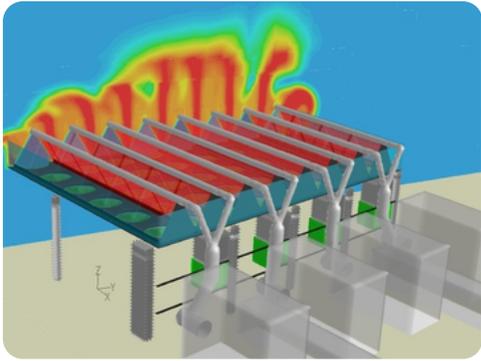


CURRAN'S ADVANCED FINFAN SERVICES & TUBE REPAIR SOLUTIONS

Three Turnkey Service Lines - One Trusted Partner



1

Air-Side Performance Audits

Comprehensive diagnostic surveys for air-cooled heat exchangers. We measure fan performance, identify fouling, and deliver actionable ROI-backed recommendations.

- ✓ Fan-by-fan airflow measurement
- ✓ Thermal performance analysis
- ✓ Energy savings projections
- ✓ Prioritized repair schedule
- ✓ Infrared imaging & diagnostics



2

Tubular Grit Blasting

Restore heat transfer efficiency with precision grit blasting and fin cleaning services. ID & OD cleaning for all tube types in refineries, petrochemical plants, and power generation.

- ✓ No Rework
- ✓ No Water
- ✓ Superior Inspection Data
- ✓ Small Footprint
- ✓ Increased Schedule Certainty



3

Alloy Tube Liners & Ferrules

Extend equipment life with precision-fitted alloy tube liners and inlet ferrules. Protect against corrosion, erosion, and impingement — at a fraction of full retube cost.

- ✓ Mitigate Plugging
- ✓ Major Cost Savings
- ✓ Minimize Downtime
- ✓ Extend Run Time
- ✓ Custom Metallurgy to Alloy Up

FINFAN AIR-SIDE PERFORMANCE AUDIT

Identify Hidden Inefficiencies. Cut Costs.

What Is a Finfan Air Audit?

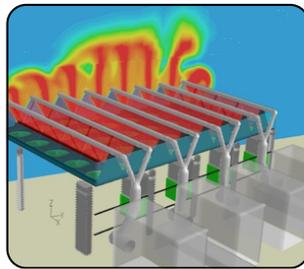
Curran's Finfan Air-Side Performance Audit is a comprehensive diagnostic survey that evaluates your air-cooled heat exchangers' mechanical condition, airflow performance, and thermal efficiency. Our engineers measure actual fan performance against design specifications, identify fouling and degradation, and deliver actionable recommendations with clear ROI projections.



1

Mechanical Inspection

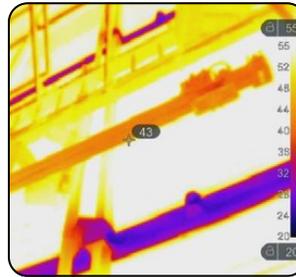
Complete assessment of fans, belts, bearings, motors, and structural integrity



2

Airflow Measurement

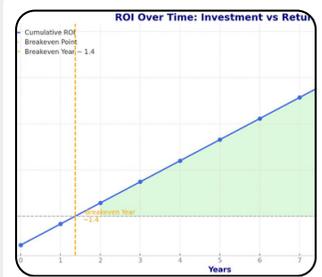
Precise air velocity measurements at each fan vs. design specifications



3

Thermal Analysis

Infrared imaging and thermal performance calculations for each bay



4

ROI Forecast

Prioritized upgrade plan with payback periods and cost-benefit analysis

Typical finding: 15-30% airflow underperformance | 60%+ excess motor power consumption

Why Audit Your Fin Fans?



Reduce Energy Costs

Underperforming fans waste significant motor power. Audits reveal opportunities to reduce electricity consumption by 20-40%.



Extend Equipment Life

Early detection of mechanical wear, corrosion, and fouling prevents catastrophic failures and extends service intervals.



Improve Process Throughput

Restored airflow means better cooling capacity, eliminating process bottlenecks caused by degraded heat exchange.

Sample Audit Findings

Metric	Design Spec	Measured	Variance
Total Airflow (CFM)	850,000	722,500	-15%
Motor Power (kW)	445 Per	712	+60%
Fan Tip Clearance	spec	Excessive in 4/8 fans	Needs fix
Belt Condition	Good	Slip in 3/8 fans	Replace
Fin Bundle Fouling	Clean	Moderate-Heavy	Clean req.
Thermal Performance	100%	68%	-32%

Typical ROI: Payback in 1-2 Years

Based on real client data: fan upgrades, belt replacements, and cleaning programs typically pay for themselves within 1.4 years through reduced energy costs and improved process capacity.



15-30%

Airflow Gap
Typically Found



1.4 yr

Average
Payback Period



\$500K+

Potential
Client Savings

CURRAN FIN FAN GRIT BLASTING

Eliminate Stubborn Scale & Deposits

Curran's patented dry abrasive tube cleaning outperforms traditional hydro blasting methods and scrapers/darts by eliminating the need for water, prevents rework, and delivers superior inspection data.

Our cleaning offers unparalleled predictability and efficiency. Typical applications include fin fans, heat exchangers, condensers, and boilers (SRU Units).



Why Choose Us



Safely providing TA Services for 42+ Years

Safety is our top priority. We meticulously inspect all utilized equipment. All hose connections use whip check safety devices. Our stringent safety measures ensure reliable and efficient service on every job. Industry leading EMR.



Old Way vs New Way

Traditional cleaning methods (Hydro Blasting / Darts / Scrapers) requires rework and water management, leading to inconsistent results. Curran's method eliminates these issues, providing a more effective and efficient solution to NDE Cleaning.

Before & After On The Same Tube

Hydroblasted



1 min Grit Blasted



"Get White Metal/IRIS Clean"

The Curran Grit Blasting Advantage



No Rework Needed

Our grit blast cleaning ensures precise, efficient inspections with no need for additional cleaning, saving time and resources.



No Water Needed

Curran's patented nozzles deliver a high-velocity dry abrasive blast along the entire tube ID, ensuring effective cleaning without water management.



Precise Inspection Data

Curran's grit blast cleaning method allows for accurate, high-integrity NDE data acquisition, minimizing maintenance impacts.



Global Capabilities

Curran International has full-service shops in 6 locations around the world: USA, Canada, Netherlands, Saudi Arabia, India, and Singapore. Our field crews have international capabilities.



In-Situ Flexibility

We can do in-situ cleaning during TAs and maintenance outages. Our ability to move equipment between units allows us to maintain schedule, keeping us ahead of inspections.

Predictable & Faster Inspections



Predictable Cleaning Times

Curran crews establish precise per tube cleaning times during the first shift, ensuring consistent and reliable performance.



Faster Inspection Times

By eliminating the need for rework, our grit blasting service reduces downtime and accelerates inspection processes.

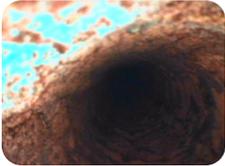
Super Major Refinery Fin Fan Cleaning

Top image is before Curran Grit Blast.

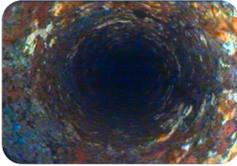
Bottom image shows the tube ID after **3 minutes** of Curran Grit Blast for IRIS level inspection.



Grit Blasting Vs Scrapers, Darts, Bullets



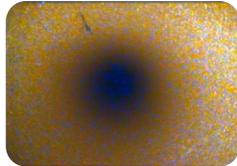
Condenser Tube Before



Tube After Nylon Brush



Condenser Tube After Metal Scraper



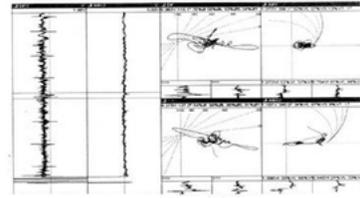
Condenser Tube After Curran Grit Blast



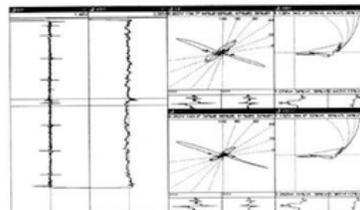
Unmatched Cleaning

Our Grit Blasting removes hard deposits more effectively than mechanical methods like scrapers, darts, and bullets. Ensuring thorough cleaning and exposing the tube wall for better heat transfer and inspection results.

Inspection Data After Traditional Cleaning Methods



Inspection Data After Curran Grit Blasting



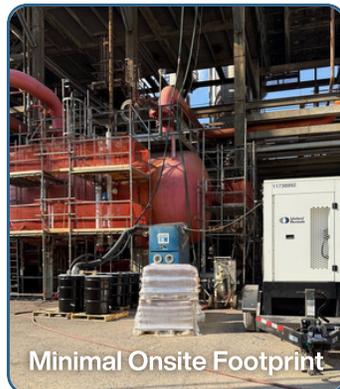
Curran Fin Fan Cleaning: Maximum Efficiency

MOBILIZATION



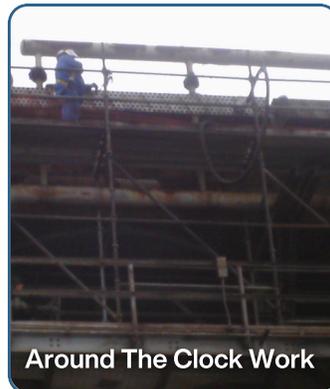
Small Experienced Crews

FAST SETUP



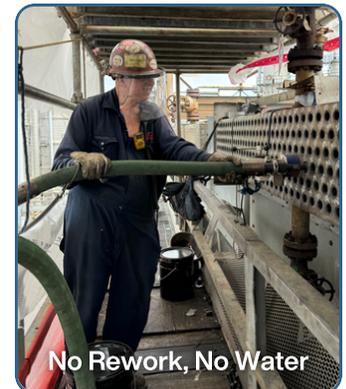
Minimal Onsite Footprint

INSPECTION APPROVES

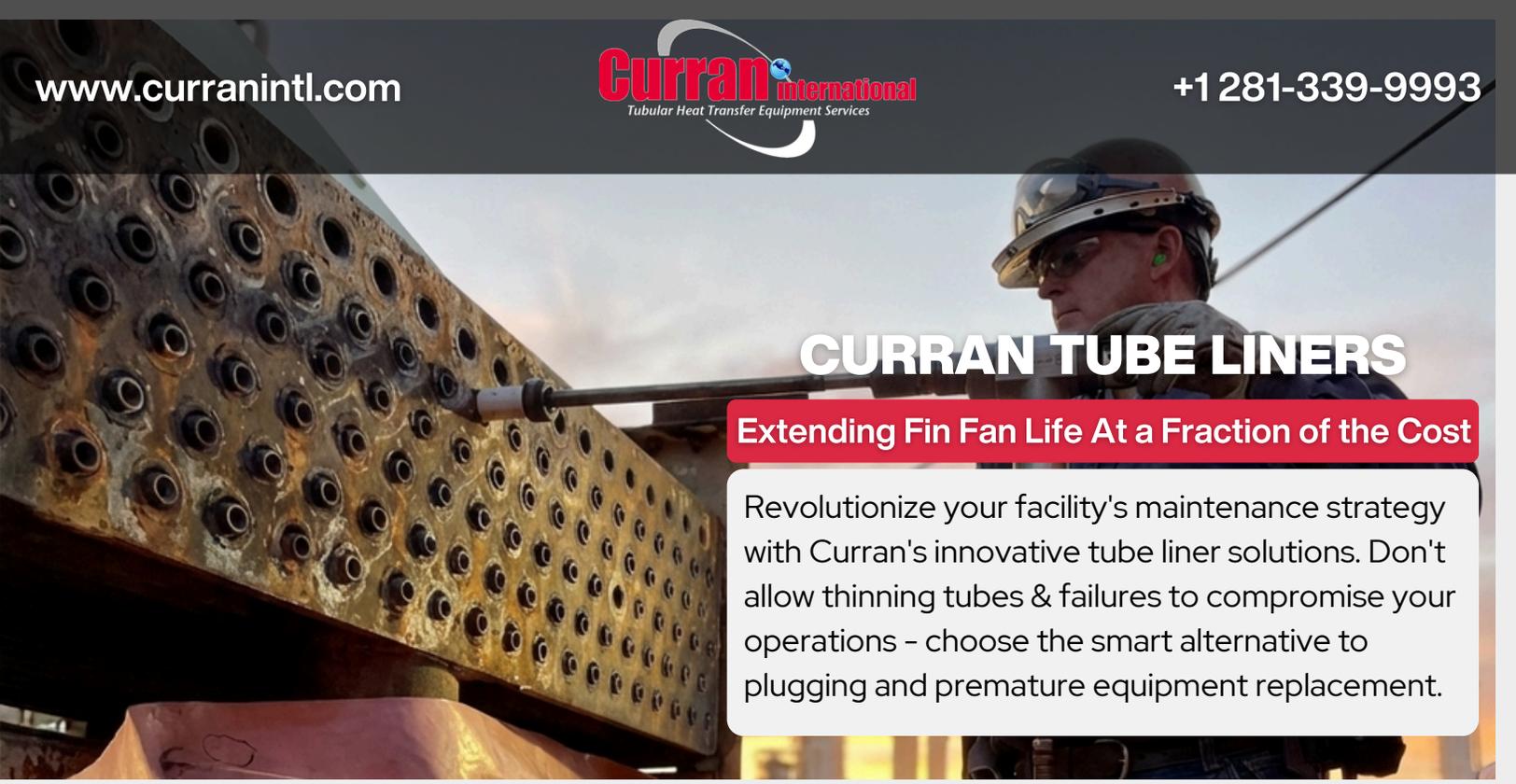


Around The Clock Work

CLEAN & DEMOB



No Rework, No Water



CURRAN TUBE LINERS

Extending Fin Fan Life At a Fraction of the Cost

Revolutionize your facility's maintenance strategy with Curran's innovative tube liner solutions. Don't allow thinning tubes & failures to compromise your operations - choose the smart alternative to plugging and premature equipment replacement.

Curran's Tube Lining Solution

Curran International offers a game-changing alternative to the cycle of plugging and replacement. Our alloy tube ID liners provide a robust solution to extend the life of your heat exchangers and fin fans. By installing full or partial length liners, we address the root cause of tube failures and significantly improve equipment longevity.



Tube ID Liners Features & Capabilities



Custom Metallurgy

Liners are available in various alloys to suit your specific needs, from stainless steel to duplex, Inconel, CuNi, C276 and beyond.



Versatile Application

Ideal for tubes experiencing thinning, wall loss, cracking, pitting or through-wall defects.



Restored Performance

Curran thin-wall liners (typically 0.020" or 0.028") minimize impact on velocities and thermal heat transfer impact.



Expert Installation

Proprietary sizing techniques and the use of hydraulic and mechanical installations ensure the proper fit, maximum efficiency, and longevity of liners.

Curran Coated Tube Liners

Take tube protection further. Curran offers anti-fouling coatings systems applied directly to our alloy tube liners/ferrules, combining two proven technologies into a single, long-lasting defense against tube degradation.



Anti-Fouling Protection

Reduced deposit buildup and fouling on tube ID surfaces, maintaining cleaner tubes longer between maintenance cycles



Mitigate Cleaning Events

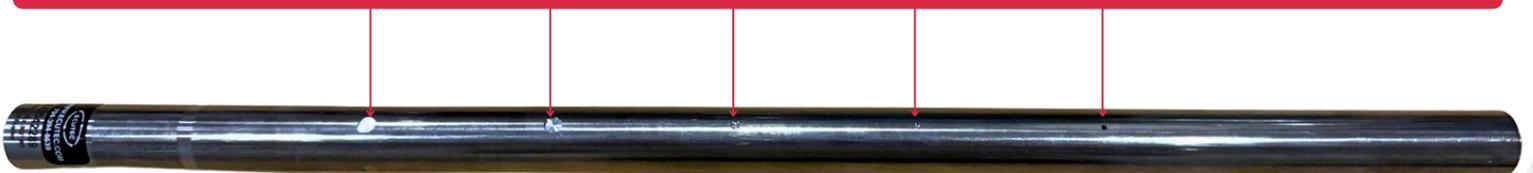
Minimox reduces fouling and deposit adhesion. By limiting buildup, coated liners maintain performance longer and require fewer cleaning events.



Curran Calibration Tubes

To ensure lined heat exchanger tubes remain fully inspectable, Curran procures and lines a calibration tube in parallel with the exchanger during the liner installation process. The calibration tube matches the same metallurgy and dimensions as the equipment and contains precisely machined reference defects used to calibrate NDE inspection equipment such as eddy current. This provides inspectors with a reliable reference signal, confirming that lined tubes can be accurately inspected for corrosion, pitting, or cracking throughout the exchanger's service life.

Manufactured Imperfections for Calibration and Testing



Proven Tube Liner Benefits



Mitigate Plugging

Improve unit performance and regain operational volume by opting for Curran liners instead of plugging.



Onsite Installation

Our crews mobilize to your site to perform installations, ensuring minimal disruption for your operations.



Cost Savings

By avoiding unit replacement costs customers achieve substantial long-term savings.

Client sees: "\$500,000+ Savings by using curran's grit blasting + liners installation instead of retubing or replacement."

Our Liner Installation Process: From Aging To Pristine

Curran's expert tube liner installation process revitalizes aging equipment into peak efficiency. Our streamlined approach ensures minimal downtime and maximum effectiveness. Discover how our key steps can take your tubes from deteriorated to pristine condition.



1. Identify & Isolate

Your team identifies and pinpoints problematic tubes in your heat exchangers or fin fans, determining the percentage of tubes needing liners.

2. Size & Manufacture

We accurately size the liners based on the parent tube dimensions. Then, we manufacture the custom liners to ensure a perfect fit.

3. Clean, Install & Expand

We thoroughly clean tube IDs using our patented grit blasting method. Custom liners are then inserted & expanded for a perfect fit, and cut and rolled to specifications.

4. Quality Control

Final QC checks and testing ensure each lined tube meets our exacting standards for performance and reliability.



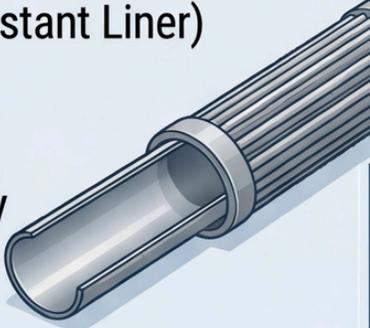
THE CURRAN ADVANTAGE: KEY TAKE AWAYS

CONVENTIONAL METHODS

-   **TUBE PLUGGING**
Reduces Heat Transfer, Capacity Loss.
-   **FULL REPLACEMENT**
High Cost, Long Downtime, Extensive Planning.
-   **HYDROBLASTING/ CHEMICAL CLEANING**
Incomplete Cleaning (No IRIS), Water Waste, Environmental Concerns.

CURRAN'S SOLUTION (GRIT BLAST & LINERS)

- 
- IRIS-Ready Cleanliness
- Restores & Upgrades Asset (Corrosion-Resistant Liner)
- No Scaffolding, 24/7 Execution, Environmentally Friendly



REDUCED SAFETY & CONGESTION (SMALL FOOTPRINT)



REDUCED SAFETY RISKS

Small, specialized crew. Minimal work at height.



REDUCED TURNAROUND CONGESTION

Small equipment footprint allows other crafts to work nearby.

COST SAVINGS & MAXIMIZED EFFICIENCY



SIGNIFICANT COST SAVINGS

Avoids expensive full replacement and scaffolding costs.



MAXIMIZED EFFICIENCY

Rapid cleaning, 24/7 critical path execution, first-pass success.

Frequently Asked Questions

▼ What types of equipment can benefit from Curran's tube liners?

Curran's tube liners are ideal for fin fans, shell and tube heat exchangers, condensers, and other tubular equipment across refining, petrochemical, power generation, and more.

▼ How long does the tube lining process take?

The duration varies based on the number of liners being installed, the condition, and the configuration of your equipment. Our efficient process completes projects faster than full equipment replacement, typically within a single turnaround window.

▼ Can Curran perform grit blasting and liner installation together?

Yes! Our integrated approach means we can clean your tubes via grit blasting and immediately install liners in the same mobilization, saving time and cost.

▼ What about the Finfan air audit, can that be bundled too?

Absolutely. Many clients start with an air-side performance audit to identify which fans need attention, then proceed with cleaning and lining services.

Some Of Our Clients



ExxonMobil



MO-TIVA



Reach Out Today To Learn More

“Discipline to procedure & Safety is our top priority.”

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+1 281-339-9993



NACE

