Ship & Shore Environmental, Inc. Launches Advanced Dust Collector Systems to Capture Particulate Emissions at the Source

LONG BEACH, CA, UNITED STATES, February 24, 2026 /EINPresswire.com/ -- Ship & Shore Environmental, Inc. (S&SE), a leader in industrial air pollution control solutions, has launched its engineered Dust Collector Systems designed to capture dust, fumes, and fine particulates directly at the source. The global industrial dust collector market is projected to reach $8.67 billion in 2026, growing at a CAGR of 5.60% through 2034 amid rising regulatory pressures. These systems tackle key challenges in air quality, worker safety, equipment reliability, and regulatory compliance across various industrial applications.

Ship & Shore Environmental's advanced Dust Collector System in action: Featuring high-efficiency baghouse filtration with multiple cartridge filters, source capture hoods, and intelligent pulse-jet cleaning for over 99% particulate capture.

Ship & Shore's dust collector systems integrate seamlessly into operations and are built for long-term reliability with custom engineering tailored to airflow needs, dust characteristics, process layouts, and facility constraints. Featuring high-efficiency filtration that achieves over 99% capture rates for fine particulates, these systems align with industry standards for optimal performance.

"Dust isn't just a nuisance—it's an explosion hazard and compliance risk," said Anoosheh Oskouian, CEO of Ship & Shore Environmental. "Our systems, backed by rigorous engineering, capture emissions where they start, supporting OSHA and EPA guidelines for local exhaust

ventilation—especially critical as the U.S. sees an average of 28 dust explosions annually, causing injuries and fatalities yearly. We evaluate everything from particle size to maintenance access to ensure dependable, real-world performance."

Ship & Shore Environmental's dust collector systems are designed to capture particulate emissions right at the source, helping industries meet tightened EPA standards like the primary annual PM2.5 limit of 9.0 micrograms per cubic meter.

Technical & Engineering Highlights

Ship & Shore adopts a "Source Capture + High-Efficiency Filtration + Intelligent Control" three-tier architecture, providing comprehensive particulate control throughout the production process:

1. Source Capture (Close Capture LEV)

• Custom-designed hoods and enclosures for near-field capture
• Optimized capture velocities: 0.5–2.5 m/s, depending on process type
• Minimizes dust escape and shop floor dispersion
• Reduces overall ventilation demand and energy consumption

2. High-Efficiency Filtration

The dust collection system can be configured with different filtration technologies depending on dust properties. Pleated media design increases filtration area 3–5× per unit volume, achieving higher airflow handling in a smaller footprint.

3. Intelligent Pulse Cleaning & Control

• Pulse jet cleaning with differential pressure sensors
• On-demand cleaning extends filter life by 30–50%
• PLC/touchscreen centralized control, remote monitoring, and predictive maintenance support

Key Engineering Parameters

Ship & Shore conducts comprehensive engineering assessments and CFD (Computational Fluid Dynamics) analysis during project design to ensure system performance is measurable and verifiable.

• Design airflow: 1,000–100,000+ CFM (scalable)
• Dust concentration: from low smoke to high dust load
• Emission concentration: ≤5–10 mg/m³, customizable to local regulations
• System resistance optimized to reduce fan energy consumption by 15–25%
• Noise control: ≤80 dB(A)

• Filter life: 12–36 months (depending on conditions)

Combustible Dust & Explosion Safety

For combustible dust such as metal powders, flour, wood chips, and plastic dust, the system integrates multiple protective measures, ensuring safety and compliance with OSHA and EPA guidelines.

• Explosion venting panels
• Isolation valves & spark arrestors
• Grounding & anti-static design
• Online spark/temperature monitoring
• Optional automatic fire suppression or explosion mitigation modules
• Modular & Energy-Optimized Design

The system adopts a modular design for flexible deployment, rapid expansion, and energy-efficient operation.

• Independent units for centralized dust collection
• Rapid expansion with production line growth
• Indoor/outdoor/roof installation flexibility
• Variable frequency drive (VFD) fans for demand-based airflow
• Integration with energy recovery and heat reclaim systems

Typical benefits:

− Energy consumption reduced 20–40%
− Maintenance cost reduced 30%
− Downtime significantly reduced

End-to-End Engineering & Delivery

Ship & Shore provides complete lifecycle support:

• Dust risk & airflow assessment
• Process modeling & system selection
• Custom design & fabrication
• On-site installation & commissioning
• Performance verification testing
• Operation training & long-term technical support

Key Industry Applications

• Metalworking, fabrication, and surface finishing (machining, grinding, welding,coating)
• Woodworking and building materials (sawing, sanding, routing)
• Coating, painting, and finishing operations (spraying, overspray control)
• Food processing, agricultural, and powder handling (flour, grain, sugar, spices, conveying, mixing)
• Chemical, pharmaceutical, and battery manufacturing (powders, electrode materials)
• Electronics, plastics, and composite manufacturing (resins, regrind)
• Modular and standalone solutions for evolving operations

Regulatory and Safety Context

OSHA identifies combustible dust risks in materials like food (sugar, flour, grain), plastics, wood, pharmaceuticals, coal, and metals (aluminum, iron, zinc) across industries including agriculture, manufacturing, recycling, and metal processing. OSHA's technical manual recommends local exhaust for point sources to prevent contaminant spread, while the EPA prioritizes it for removing particulates before workplace dispersion—backed by over 3,389 combustible dust violations cited in inspections from 2013-2017.

Ship & Shore Advantages

Systems feature high-efficiency filtration, a comprehensive equipment range, flexible modular design, optimized airflow with low energy use, customized solutions, easy maintenance, and end-to-end support. Engineering evaluates particulate generation points, airflow/capture velocity, dust loading/particle size, equipment integration, and maintenance access for real-world reliability, with S&SE systems delivering up to 99% emissions destruction in related applications.

About Ship & Shore Environmental, Inc.

Ship & Shore Environmental, Inc. (S&SE) is a leading global provider of industrial emissions control, energy recovery, and pollution abatement solutions. With more than 25 years of experience, S&SE designs, engineers, fabricates, installs, and services advanced systems for manufacturers across North America, Europe, and Asia. The company serves a wide range of industries, including renewable energy, battery manufacturing, oil and gas, product testing, furniture and coatings, and advanced industrial manufacturing.

S&SE is recognized for delivering state-of-the-art, energy-efficient technologies that continuously evolve to meet and exceed both client and government environmental targets. Its solutions include VOC destruction, HAP elimination, dust collection, heat recovery, and closed-loop energy systems, helping clients improve operational efficiency, reduce costs, and achieve sustainability goals. S&SE also helps manufacturers secure maximum government incentives, making it the go-to global partner for companies seeking resilient, low-emission operations worldwide. For more information, visit www.shipandshore.com or contact info@shipandshore.com.

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