



Dan Lehman, President
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Capability Statement

1. Executive Summary & Core Value Proposition

Air Dynamics is a Veteran-Owned Small Business (VOSB) specializing in engineering, custom manufacturing, and deployment of industrial ventilation, dust collection, contamination control, and environmental simulation systems. Operating on an **engineering-first methodology**, we bypass commodity hardware sales to design custom, high-reliability infrastructure optimized for aerospace, defense, and advanced manufacturing environments.

Our systems mitigate complex industrial hygiene hazards, control volatile process streams, and enforce rigid environmental boundaries to guarantee operational continuity, regulatory compliance, and product integrity.

2. Core Technical Competencies

Industrial Ventilation & Process Exhaust Systems

Aerospace Applications: Composite fabrication (layup, cutting, trimming), robotic welding lines, chemical coatings, and component assembly.

Engineering Focus: Source-capture geometry, localized containment, toxic fume extraction (e.g., ozone, hexavalent chromium), and custom HVAC resource recovery.

Compliance & Design Standards: Engineered strictly to **ACGIH** Industrial Ventilation principles and **EPA** emission boundaries.

Advanced Dust Collection & Material Mitigation

Aerospace Applications: Carbon fiber, fiberglass, exotic metalics, additive manufacturing, and surface finishing (grinding, sanding).

Engineering Focus: Source-capture extraction walls, high-efficiency multi-stage filtration (HEPA), and reactive-media containment booths.

Compliance & Design Standards: Comprehensive **NFPA** and **OSHA**-compliant systems explicitly engineered for combustible dust mitigation and Deflagration Hazard Analysis (DHA) strategies.

Industrial Vacuum & Foreign Object Debris (FOD) Control

Aerospace Applications: Clean-room maintenance, aircraft assembly bays, fuselage staging areas, hazardous material collection, and high-precision tooling cells.

Engineering Focus: Centralized industrial vacuum networks engineered to maintain strict aircraft-quality housekeeping standards and eliminate critical FOD risks.

Compliance & Design Standards: Engineered to support aerospace cleanliness and contamination-control objectives through NFPA-compliant design practices, ACGIH ventilation principles, and facility-specific FOD prevention requirements.

Environmental Testing & Simulation Systems

Aerospace Applications: Defense aircraft component qualification, weapon systems testing, and specialized R&D laboratory validation.

Engineering Focus: Custom-engineered environmental test chambers simulating extreme operational stressors including thermal shock, altitude fluctuation, and precise temperature/humidity profiles.

Compliance & Design Standards: Engineered to satisfy strict **MIL-STD** product qualification and environmental stress screening (ESS) criteria.

Engineering & Technical Services

Engineering-driven project development supported by CFD modeling, airflow analysis, system design, manufacturing, commissioning, and performance verification.



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Specialized Manufacturing Expertise

Air Dynamics has extensive experience supporting:

- Composite manufacturing and processing;
- Carbon fiber and fiberglass operations;
- Aircraft maintenance, repair, and overhaul (MRO);
- Defense manufacturing operations;
- Government testing laboratories;
- Environmental qualification testing facilities; and
- Contamination-sensitive production environments.

3. Demonstrated Performance

Our engineered systems are deployed across mission-critical military installations and Tier-1 defense manufacturing facilities:

Customer / Agency	Application / Process	Technical Scope of Supply & Impact
Government & Defense		
Naval Surface Warfare Center (Panama City)	Advanced composite repair operations	Turnkey engineering, structural fabrication, installation, and commissioning of a specialized dust-control containment booth.
Seymour Johnson Air Force Base	F-15 Radome repair & refinishing	Designed and deployed a progressive-media dust extraction booth optimized for fiberglass sanding and volatile primer-removal operations.
Tinker Air Force Base	Aircraft preparation & surface sanding	Engineered high-capacity dust collection systems meticulously mapped to NFPA and ACGIH safety thresholds.
Aerospace & Aircraft Support		
VT San Antonio Aerospace	Large-scale aerospace manufacturing	Engineered an industrial, high-volume airflow dust-control booth integrated with multi-stage HEPA filtration arrays.
Aerometals	Carbon fiber & fiberglass grinding	Engineered a push/pull dust containment booth featuring automated pulse-jet filter cleaning, touchscreen PLCs, and explosion-proof components.
Composite Manufacturing & Combustible Dust		
BAE Systems	Robotic aluminum GMAW welding for defense components	Engineered an HVAC resource-recovery and air pollution control matrix that reduced localized ozone exposure by >89% under continuous 24/7 production parameters.
U.S. Fiberglass Composite Manufacturer	Composite finishing & advanced material processing	Engineered a source-capture dust collection system utilizing ActiveWall™ technology to mitigate explosive combustible dust hazards, control airborne particulate migration, and eliminate worker exposure concerns.



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4. Aerospace & Defense Applications

Industry Segment	Typical Applications	Air Dynamics Solutions
Aircraft Manufacturing Facilities	Aircraft assembly operations; advanced manufacturing environments; contamination-sensitive production areas	Industrial ventilation; dust collection; industrial vacuum systems; FOD-control solutions
Defense Production Operations	Mission-critical manufacturing; secure production environments; high-reliability processes	Process exhaust systems; environmental control systems; industrial air quality engineering
Composite Fabrication Environments	Composite layup; cutting; trimming; sanding; material processing	Composite manufacturing ventilation; dust collection; contaminant capture systems
Research & Development Laboratories	Prototype development; product testing; technology evaluation	Custom environmental simulators; ventilation systems; environmental testing chambers
Environmental Testing Facilities	Product qualification; reliability testing; performance validation	Temperature and humidity chambers; altitude simulation systems; thermal shock testing; environmental stress screening
Maintenance, Repair & Overhaul (MRO) Facilities	Aircraft maintenance; repair operations; facility modernization	Industrial vacuum systems; welding fume extraction; air quality improvements
Government Testing Laboratories	Military and government test programs; environmental qualification testing	MIL-STD environmental testing systems; custom test chambers; engineering support
Military Program Support Facilities	Defense program infrastructure; specialized manufacturing and testing operations	Turnkey environmental control systems; contamination-control solutions; custom engineered systems

5. The Air Dynamics Advantage

- **Engineering-Driven Solutions:** Every project begins with detailed engineering analysis to optimize performance, regulatory compliance, reliability, maintainability, and total lifecycle cost.
- **Mission-Critical Aerospace & Defense Experience:** Proven success supporting aerospace manufacturers, military installations, defense contractors, government laboratories, and testing facilities where operational continuity, environmental control, safety, and system reliability are paramount.
- **Industrial Ventilation & Air Quality Expertise:** Specialized expertise in source-capture ventilation, contaminant control, airflow management, industrial hygiene, exposure reduction, combustible dust mitigation, and regulatory compliance.
- **Custom-Engineered Systems:** Solutions designed around mission requirements, facility constraints, and process objectives rather than standardized equipment offerings.
- **Regulatory & Standards Expertise:** Experience supporting OSHA, NFPA, EPA, ACGIH, military specifications, and aerospace industry requirements.
- **Dust Collection & Combustible Dust Mitigation:** Engineered solutions that address combustible dust hazards, housekeeping requirements, OSHA compliance, and NFPA standards.
- **Industrial Vacuum & FOD Control Systems:** Central vacuum and material handling solutions that support housekeeping programs, foreign object debris (FOD) control, contamination prevention, and manufacturing cleanliness requirements.
- **Testing, Validation & Environmental Control:** Capabilities that support environmental simulation, qualification testing, product validation, and controlled testing environments.
- **Single-Source Project Execution:** One accountable partner from engineering and manufacturing through installation support, commissioning, operator training, and long-term technical support.
- **U.S.-Based Engineering & Manufacturing:** Engineering, fabrication, and system integration performed in the United States, providing enhanced quality control, responsiveness, supply chain reliability, and long-term customer support.



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6. Composite & Advanced Materials Experience

Material / Process	Demonstrated Experience
Fiberglass Composites	Sanding; trimming; de-flashing; cut-ins; finishing operations
Carbon Fiber Components	Grinding; sanding; particulate capture; contamination control
Aircraft Composite Repairs	F-15 radome repair and refinishing operations
Composite Manufacturing Facilities	Dust collection; source capture; HEPA filtration; industrial ventilation
Combustible Composite Dust	DHA-driven mitigation strategies; NFPA-focused engineering controls
Product Quality Improvement	Reduction of airborne particulate contamination affecting finished products

7. Corporate Identity & Procurement Data

Category	Details
Legal Entity	Air Dynamics Industrial Systems Corporation
Headquarters	York, Pennsylvania, USA
Core Markets	Aerospace; Defense; Government; Food & Beverage; Industrial Manufacturing
Primary Services	Industrial Ventilation; Dust Collection; Industrial Vacuum Systems; Air Scrubbers; Environmental Testing
Delivery Model	Design; Engineering; Manufacturing; Installation Support; Commissioning
Socioeconomic Status	Veteran-Owned Small Business (VOSB)
Geographic Coverage	United States
Manufacturing Origin	100% Made in the USA
Certifications	Add as applicable
CAGE Code	3EXT1
Primary NAICS	333413 – Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
UEI	PPG1EWQU5N35
Regulatory Reference Frameworks	OSHA, NFPA, EPA, ACGIH, MIL-STD