



Budgeting Your Dust Collection System

Here's a handy checklist to help you set your budget for a dust collection project.

Dust Collection System Sizing

- ❑ Determine the exhaust volume required:
 - Check the recommended exhaust volumes from equipment suppliers.
 - Refer to Industrial Ventilation: A Manual of Recommended Practice for Design when there are no manufacturer recommendations.

- ❑ Determine the conveying velocity requirements:
 - What material will your system be conveying?
 - Refer to Industrial Ventilation: A Manual of Recommended Practice for Design for recommended conveying velocities.
 - The manual can also help you to determine ductwork sizing.
 - You will need to balance duct size to prevent both drop out and premature wear.
 - Determine spark arrestor or material drop out requirements.

- ❑ Determine the regulatory requirements for your dust collection system:
 - What are the air-to-cloth requirements?
 - What emissions efficiency requirements do you have to meet?
 - What are the stack dispersion requirements?
 - Stack height based on dispersion modeling.
 - Stack velocity based on dispersion modeling.
 - Testing requirements.
 - What explosion mitigation regulations will the system need to comply with:
 - Determine KST value of dust/waste stream.

- ❑ Additional sizing considerations:
 - Air-to-cloth ratio, the lower the requirement the larger the collector.
 - Interstitial and can velocities are critical to collector efficiency.
 - The construction materials that will be used on your project are determined by exhaust stream chemistry.

www.ivinc.com

W6395 Specialty Drive • Greenville, WI 54942
info@ivinc.com • P: (920) 757-6001 • F: (920) 757-6004

Other factors to consider

- ❑ Location of the dust collection system:
 - The location of the dust collection system may determine that a custom collector is required.
 - Will the collector be located indoors or outdoors?
- ❑ Filter media selection:
 - The appropriate filters are dependent on several factors, such as emissions efficiency, waste material and temperature.
- ❑ Waste discharge system selections:
 - Screw augers vs rotary air locks vs double dump valves.
 - Bulk bag stations vs waste hoppers vs dust mixing systems.
- ❑ Stack selections:
 - Stack height based on dispersion modeling.
 - Stack velocity based on dispersion modeling.
 - Testing requirements.
- ❑ Fan selection:
 - A properly designed collector can reduce the system's static pressure, reducing the motor size needed for the fan.
 - Direct drive (with VFD) vs belt drive.
- ❑ Maintenance requirements:
 - Access decks and/or doors for collector, ductwork and stack.
 - Ladder or staircase access to decks.

Auxiliary project costs

- ❑ Concrete and foundations:
 - The concrete and foundation requirements are influenced by maintenance requirements, soil conditions and wind loading.
- ❑ Electrical controls/Installation:
 - The system sequence of operations will play a large role in the cost of the controls.
 - The more monitoring your system requires, the higher the costs will be.
- ❑ Mechanical installation:
 - Collector placement.

www.ivinc.com

W6395 Specialty Drive • Greenville, WI 54942
info@ivinc.com • P: (920) 757-6001 • F: (920) 757-6004

- Ductwork and hooding.
- ❑ Mechanical piping:
 - Pulse jet collectors require a compressed air system.
 - A properly designed system will also need appropriate air dryers, receivers and regulators.
- ❑ Start-up, testing and balancing costs:
 - Motor rotations.
 - Fluid Checks.
 - Leak Testing.
 - Pre-coating.
 - Air Readings and adjustments.
- ❑ Spare parts and maintenance planning costs

www.ivinc.com

W6395 Specialty Drive • Greenville, WI 54942
info@ivinc.com • P: (920) 757-6001 • F: (920) 757-6004