Dust Collection Systems

Dust collection system design for material handling applications requires specialized knowledge and equipment to ensure airborne dust is effectively captured at the hood, conveyed at proper velocities through the ductwork, and efficiently filtered from the collected air in the dust collector.

Our team has several options that allow system customization to the needs for each application.

These include both Wet Extraction and Dry Collection, each with benefits for specific applications, as the driver for collecting dust through customized hoods and ductwork systems.

DRY DUST COLLECTION

Dry Dust Collection Systems utilize dry filters and separate fans to collect the dust.

These can be large baghouse systems that utilize multiple sock-type filters to collect dust, and use blowers or compressed air to clean the bags.

For more cost effective designs, collectors can use cartridge or envelope type filters. These collectors can have single or multiple hoods with interconnecting ductwork, or can be bin vents/insertable units that are set on top of enclosures (bins, silos, skirting systems, etc.) to collect dust at a localized generation point.

Filters can be customized for fine dusts, abrasive dusts, high temperatures, increased moisture, corrosive airstreams, or other special requirements.

Systems can also be integrated for challenges with combustible dust to maintain a safe operating system.

WET DUST EXTRACTION

Wet Dust Extraction Systems utilize an extractor with an integral fan that has various water sprays and mist collection systems to remove the wet dust from the airstream.

Our wet dust extraction solutions provide simplified maintenance engineering and lower installation costs in flexible custom packages.

Dust Collection Assessments

BENETECH'S ASSESSMENT PROGRAMS

Controlling airborne dust is a requirement for the safety of personnel and the community around your facility. Keeping dust collection systems in proper operating condition is an essential element of airborne dust control.

Benetech offers several types of assessments to help keep the systems running at peak efficiency.

OPERATIONAL ASSESSMENT

Benetech's Operational Assessment reviews the mechanics of a dust collection system. This is a maintenance check of the collector and its components, ensuring that mechanically the system is able to operate as designed.

Checks include review of solenoids/diaphragm valves, timer boards, compressed air supply, hopper/housing damage, rotary valves, filters, cages, and fans as examples. Deliverables include a simple picture report and itemized listing of suggested repairs and parts.

ROI DUST ASSESSMENT

Benetech's ROI Dust Assessment Program provides site personnel a path for improved dust and spillage control focusing on REPAIR, OPTIMIZE, and IMPROVE methodologies.

- **REPAIR** assessment ensures the dust collection system is mechanically able to properly operate. Includes review of gauges, filter material/condition, solenoids, diaphragms, fan, ductwork condition, etc. Recommendations will also include services including specific maintenance tasks and system airflow balancing.
- **OPTIMIZE** assessment outlines improvements to the collection system to attain proper duct velocities, improved system design to ensure the dustiest areas are being addressed within the abilities of the existing collector and fan. Includes hood design, hood placement, ductwork velocities, and elimination of unnecessary/improper duct/hoods. This review can also include explosion protection evaluation when dealing with combustible dusts.
- **IMPROVE** assessment addresses shortcomings in the design of the dust collection system by offering other technologies to assist in keeping the material on the belt. Reviews technology including load zone improvements (skirting design, liners, seals, belt support, etc.) belt cleaners, belt tracking, return plows, and engineered access doors.

The goal of the ROI assessment is to ensure proper operation of the dust collection system, offering improvements as possible within the capabilities of the existing dust collection system, while providing additional cost-effective tools that can effectively support a dust and spillage control program.

This assessment is a visual, hands-on review of the system. No changes or alterations to the dust collection system will made during this review. Deliverables include detailed report with pictures, data, and recommendations to address the shortcomings of the system.