



Ventilation design

OVERVIEW

The Industrial Ventilation Experts

KBD Technic can provide efficient and effective Industrial Ventilation design services. These services include:

- Review of process and ventilation requirements to meet applicable codes, regulations and plant requirements.
- Accurate determination of air volumes and hood requirements to control pollutants and/or heat.
- Calculation of duct sizes, system static pressure requirements and fan horsepower using ACGIH methods as recommended in the Industrial Ventilation Manual.
- Review of installation and maintenance issues for optimum routing of ductwork and access to control equipment.
- Consideration for the constructability of the system.
- Specification of the best available technology to control pollutants and offer least cost for initial installation plus energy consumption over the project life.
- Evaluation of alternate control methods and techniques to provide best design at least total cost.
- Consideration of materials of construction and metal thickness for special processes and gasses.
- Understanding of codes, NFPA and other special regulations that can impact system design.

KBD Technic's staff of professional engineers and designers has experience in the design and analysis of industrial ventilation systems including the control of VOC's, toxic gasses, difficult particulates such as aluminum and magnesium and compounds of arsenic, lead and other specific applications:

- Detailed design for installation by design/build contractors.
- Alternate designs and presentation using P&ID's and isometric drawings.
- Detailed double line drawings in AutoCAD with all flange details and shop drawings of individual components.
- System and equipment specifications for new and modified systems.
- Provides objective services with no business or legal ties to any manufacturing or contracting companies.
- Can partner with fabricating/installing contractors and equipment manufacturers to provide turnkey services if desired.
- Focused industrial ventilation expertise adding value to your project by designing or specifying reliable, cost effective air pollution control systems.



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OVERVIEW

The System Analysis Experts

KBD Technic has the capability to solve the problems encountered with Industrial Ventilation Systems that:

- Are not performing to specification.
- Are not in balance, either at start-up or after operation.
- Have had branch ducts added, capped or removed.
- Have collectors, fans or other parts that have deteriorated since start-up.
- Analysis of existing ventilation system conditions to evaluate original design parameters or current performance against optimum operating conditions, including budgetary cost estimates for optimization.

KBD Technic staff, carrying certification from NEBB (National Environmental Balancing Bureau), use a systematic approach to a solution, including:

- As-built conditions of duct system and equipment specifications.
- Computer generated system calculation sheets considering heat, moisture, elevation and duct static pressure.
- Calculation of the actual system losses and operating point.
- Measurement of existing conditions (volume, pressure, temperature, moisture).
- Comparison of actual conditions to the calculated base point.
- Recommendations to return the system to operating condition.
- Testing, adjusting and balancing (TAB) services on all varieties of ventilation systems. KBD Technic is one of very few engineering firms maintaining National Environmental Balancing Bureau (NEBB) certification.

A system that is operating to original design specifications may not meet current requirements to clean the plant air, protect workers or ventilate the process. In those cases, KBD has the expertise to:

- Evaluate hood design and capture of contaminants.
- Consider air balance issues such as the amount and distribution of make-up air.
- Consider process requirements such as mass, heat and moisture flow into the system.
- Recommend design changes such as ductwork size, fan speed and power or the possibility of using dampers to redistribute air to needed areas.
- Identification of existing system deficiencies and presentation of recommendations for ideal system performance.

KBD Technic can provide complete Evaluation, Testing, Balancing and Emission Testing of your plant ventilation. Your problems can be solved and KBD Technic will find the solution.



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Stack/emissions testing

OVERVIEW

The Emission Testing Experts

KBD Technic has the capability, experience and in house equipment to conduct emission surveys on a variety of processes and pollution abatement equipment, including:

- Surface coating operations where solvent-based coatings are applied to paper, metal, plastic etc.
- Finishing systems for automobile and light duty truck manufacturing and related pollution control equipment such as thermal incinerators, regenerative thermal oxidizers and rotary carbon concentrators
- Finishing systems for painting and finishing miscellaneous metal or plastic parts and related pollution control equipment such as incineration and carbon adsorption
- Printing presses-offset web and flexographic
- Coil coaters
- Combustion equipment such as boilers, generators and incinerators
- Permanent and temporary total enclosure verification
- Facility Continuous Emission Monitors (CEM's)
- Any process with the potential to generate air pollutants

KBD Technic uses USEPA Reference methods for compliance and engineering evaluations of your pollution control systems including but not limited to:

- Method 1, 1A, 2, 2C, 3, 3B, 4 for airflow, temperature and moisture determination
- Method 5, 5A, 5B, 17 for particulate matter
- Method 6, 6C, 8 for sulfur dioxide
- Method 7E for nitrogen oxides
- Method 9 for opacity
- Method 10 for carbon monoxide
- Method 12 for lead
- Method 18, 25 and 25A for Volatile Organic Compounds
- Methods 26 and 26A for hydrogen chlorides, fluoride and chlorine
- Method 29 for metals
- Method 201A and 202 for PM10/2.5 filterable and condensable particulate matter
- Method 204 A through F for VOC capture efficiency and total enclosure verification.
- Method 306 for chromium
- Method 308 for methanol
- Performance Specifications for CEM's/RATA's for Part 60 and 75 regulated sources (PS-2, PS-3, PS-6, PS-16)
- Particle Sizing by Anderson cascade impactor or Scanning Electron Microscopy
- Others including Conditional Test Methods and NIOSH and OSHA screening Methods

For each project, KBD will conduct a pre-survey of the process and abatement equipment, review your permit, prepare a comprehensive proposal, prepare a Compliance Test Protocol for the Agency, conduct the field survey and submit an Agency acceptable final report detailing the findings of the emission survey.



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Water compliance services

OVERVIEW

The Water Compliance Experts

KBD Technic has the capability to complete many water program permitting related activities for facilities including:

- Preparation of Stormwater and Wastewater Permit-to-Install (PTI) applications.
- Preparation of NPDES Direct and Indirect Discharge Permit applications including the sampling and analysis of the discharge streams.
- Preparation of Industrial Activity Stormwater Discharge Permit applications.
- Preparation of POTW issued Wastewater Discharge Permit applications.
- Preparation of Construction Activity Stormwater Discharge Permit applications.
- Regulatory compliance assistance and troubleshooting of treatment systems.
- Regulatory agency permit negotiation assistance.

KBD Technic has the capability to assist facilities with the water related sampling and analysis programs.

- Routine stormwater monitoring required by general or individual stormwater discharge permits.
- NPDES permit renewal required sampling and analysis of stormwater and wastewater discharges.

KBD Technic has the capability to assist facilities in the development, revision, and implementation of water program related plans including:

- Development and revision of Industrial Activity Stormwater Pollution Prevention Plans (SWPPP).
- Development and revision of Construction Activity Stormwater Pollution Prevention Plans (Construction SWPPP).
- Development and revision of Spill Prevention, Control and Countermeasure (SPCC) Plans.
- Development and revision of Facility Response Plans (FRP).
- Development and revision of Accidental Discharge Plans (ADP).
- Development and revision of Mercury Best Management Practices (Mercury BMP) Plans.
- Development and revision of Groundwater Protection Plans (GPP).
- Development and revision of Toxic Organic Management Plans (TOMP).

KBD Technic has the capability to assist facilities evaluate their environmental compliance status through Multi-media Environmental Compliance Audits of manufacturing and support facilities.



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