

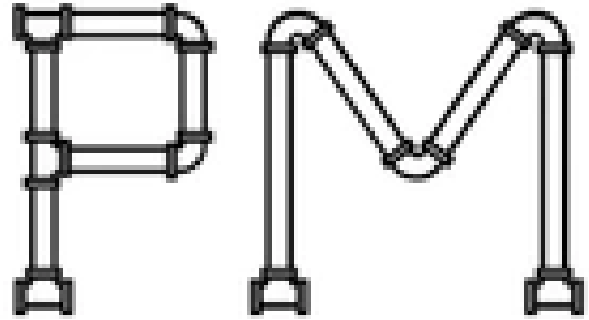


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DUST COLLECTORS

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Background

WF Cabinetry, headquartered in Alexander City, Alabama, has over 30 years of experience in designing and manufacturing high-quality, customizable cabinetry. Known for their commitment to craftsmanship and customer service, WF Cabinetry produces a range of kitchen and bathroom cabinets, offering personalized finishes, door styles, and custom touches that cater to residential





customers and contractors alike. WF Cabinetry has become an industry leader in solid wood processing, working with materials like oak, maple, and birch to create beautifully finished cabinets and doors. As a growing company, WF Cabinetry required a state-of-the-art dust collection system to support its high-volume production environment. With large volumes of fine dust and wood

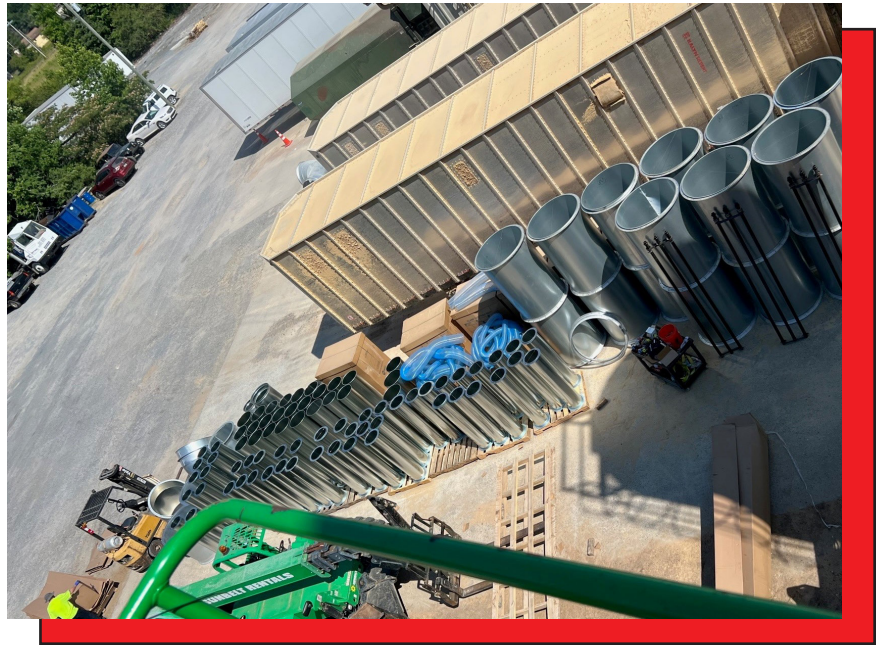
particulates generated daily, a robust dust management solution was essential to maintain air quality, improve safety, and comply with industry standards. The chosen system needed to seamlessly integrate into their existing workflow without interrupting production and to ensure safety for both staff and equipment. In response to these needs, WF Cabinetry partnered with Preston Machinery to design and install an N.R. Murphy Limited dust collection system capable of handling the high particulate load in a demanding solid wood processing environment. With a strict 150-day deadline from initial deposit to final installation, the project required careful coordination to ensure the dust collection system was operational on schedule. This timeline was made even more challenging by the disruptions of the COVID-19 pandemic, which strained global supply chains and logistics. Working in close collaboration, N.R. Murphy Limited was responsible for supplying the dust collection system, while Preston Machinery expertly handled the installation. The installation team scheduled work in the evening and nighttime hours to ensure that WF Cabinetry's production would not be interrupted, ultimately achieving a smooth installation process.



Design Criteria

The supply and installation of a high efficiency dust collection system, capable of handling all of their machinery requirements, had some strict objectives:

1. Complete the supply and installation within a strict 150 day timeline, from deposit to commissioning.
2. Complete the installation while causing minimal interference to the day-to-day operations of the facility.
3. Comply with NFPA safety standards, including ATEX-certified explosion venting and non-return valves.



Equipment Specifications & Features

N.R. Murphy Limited supplied two powerful HEC-252-12 model dust collectors, delivering a combined airflow capacity of 70,000 CFM to meet WF Cabinetry's demanding requirements. These dust collector's were powered by remote mounted size 36 1/2 Type BINOL exhaust fans that featured 125 HP motors and Type "C" spark resistant construction. Key features of the system include:

- Clean side filter access for filter removal and maintenance.
- 2 x 40" dia. ATEX certified inlet line no return valves.
- ATEX certified composite explosion venting.
- 2 x 40" dia. full flow inline ducting silencers to reduce return air noise and vibrations.
- Shared filter access walkway and platform complete with caged safety ladder and self-closing gates.
- 2 x Size 3 rotary air locks fitted with our heaviest duty nitrile wipers.
- Airlock discharge into a closed loop ducting system with a material handling size 13 EHL transfer fan to direct waste to a waste trailer for the most efficient and automated continuous waste disposal method.
- 3 prewired CSA/UL approved control panels, complete with self-contained air conditioning units to maintain electronics.
- Single spark detection system to monitor both trunk lines. Tied into two abort dampers.



System Quick Facts

- 70,000 total C.F.M.
- 8.0 : 1 air to filter ratio.
- 512 total filter bags.
- Dual 125 HP premium efficiency motors.
- Spark resistant exhaust fan construction.
- Heavy duty rotary air locks feeding into a closed loop system via use of a material handling transfer fan.
- ATEX certified explosion isolation no return valves.
- ATEX certified explosion venting.
- Variable frequency drive starters.
- Air conditioned electrical control panels.
- Field adjustable time and dwell controls.
- Spark detection and suppression system tied into dual abort dampers for fire protection.
- Built from 40,900 lbs of steel.
- Installed during the evenings to avoid disruptions to customer production scheduling.
- Delivered and installed within 150 days from deposit.





Challenges & Solutions

One of the most significant challenges of this project was the tight 150-day timeline, which required meticulous coordination to ensure the system was designed, manufactured, shipped, and installed on time. N.R. Murphy Limited and Preston Machinery were able to mitigate some of these challenges by:

- Having worked together on my other projects, the two parties were able to expedite the design and approval process through effective communication and experience of similar projects.
- Prepared the site as much as possible ahead of the equipment delivery. Preston Machinery utilized their window before the dust collection systems were finished production, to complete as much of the system as possible to reduce the work required during their crunch time.

Results & Takeaways

The dual dust collection system successfully improved air quality and operational safety within WF Cabinetry's facility, meeting all NFPA and ATEX standards while handling a combined 70,000 CFM. The continuous discharge setup has enhanced waste management, contributing to a cleaner and more efficient workspace. This project demonstrates N.R. Murphy Limited's ability to design and deliver high-capacity dust collection systems within challenging timelines, alongside Preston Machinery's skill in precise, efficient installation under demanding conditions. The successful completion of this project amidst the logistical hurdles underscores the dedication of both teams in providing top-tier solutions for industrial clients.

