

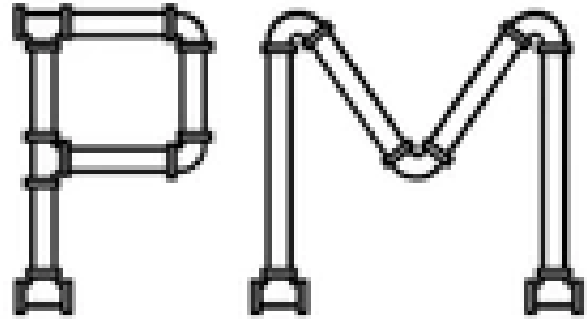


N.R. MURPHY LTD.

DUST COLLECTORS

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Background

Professional Plastics, a leading supplier of high-performance plastic shapes, sheets, rods, tubes, films, and fabricated components, operates multiple facilities across North America, Asia, and Europe to serve its diverse customer base. With a location in Atlanta, Georgia, Professional Plastics specializes in machining, fabricating, and distributing high-quality plastic materials for various industries, including



aerospace, medical, semiconductor, and industrial markets. To maintain strict air quality standards in a facility handling such precise and often fine-particle plastic fabrication, Professional Plastics needed an advanced dust collection solution that could handle high airflow demands while ensuring safety and compliance with industry standards.

Professional Plastics selected Preston Machinery to install an N.R. Murphy Limited high-capacity dust collection system specifically designed to meet the requirements of their Atlanta facility. To

support efficient and uninterrupted production, N.R. Murphy Limited recommended the HEC-193-10 model—a high-efficiency, round dust collector rated at 16,362 CFM at 2,589 FPM with 12 inches of static pressure. With specialized features to ensure NFPA compliance, this dust collector is ideal for high-demand plastic processing facilities requiring both robust filtration and comprehensive safety measures.

Preston Machinery, a trusted installation partner, was responsible for the rapid and expert installation of the system. Working against an ambitious timeline, the Preston Machinery team completed the entire installation in just nine days, minimizing downtime and ensuring Professional Plastics could quickly benefit from the improved air quality and safety measures.



Design Criteria

The project was developed to achieve several key goals:

- **Enhanced Air Quality:** Improve indoor air quality by efficiently capturing and containing dust and particulates generated during plastic processing, creating a safer work environment for employees.
- **Compliance with Safety Standards:** Ensure the system met NFPA standards with ATEX-certified explosion venting and NFPA-compliant Vigiflap and rotary airlock features to manage combustible dust effectively and protect facility personnel and equipment.
- **Minimal Production Disruption:** Complete the installation rapidly within a nine-day period to reduce downtime, allowing Professional Plastics to maintain its production schedule and meet client demands without interruption.

Equipment Specification & Features

While not something done often, N.R. Murphy Limited recommended a round HEC-193-10 dust collector to best filter out the long, stringy plastic waste and to meet the rigorous airflow and static pressure requirements necessary for dust control in plastic processing. This dust collector would be capable of 16,362 C.F.M. at 2,589 F.P.M. with 12" of static pressure. The unit was supplied with a remote mounted size 3300 BINOL industrial exhauster that featured Type "C" spark resistant construction and a 50 HP premium efficiency motor. Other key system features included:

- Advanced NFPA compliance, ATEX certified accessories, including a 24" dia. Vigiflap valve, composite explosion venting, and a rotary air lock.
- High-efficiency filtration, by combining the cyclonic pre-filter with the high efficiency pulse jet filtration system, this collector was designed to preserve the filter media to ensure optimal usage and filtration.



System Quick Facts

- 16,362 C.F.M. @ 2,589 F.P.M.
- 5.88 : 1 air to cloth ratio.
- Centrifugal quarter scroll inlet
- Type "C" spark resistant size 3300 BINOL exhaust fan.
- ATEX certified explosion venting.
- NFPA-69 compliant rotary air lock.
- Prewired CSA/UL approved control panel complete with soft start for main exhauster.
- Set of access walkways to the clean air plenum complete with caged safety ladders and self-closing gate.
- Field adjustable time and dwell controls.
- Installed in just 9 days!



Challenges & Solutions

Delivering a comprehensive dust collection solution within a strict nine-day installation window required seamless coordination between N.R. Murphy Limited, Preston Machinery, and Professional Plastics. Preston Machinery's installation team worked with precision to complete the setup within the facility, overcoming technical demands and adhering to the project timeline to avoid operational delays.

Results & Takeaways

The newly installed dust collection system has significantly improved air quality and safety in Professional Plastics' Atlanta facility. With enhanced efficiency and NFPA-compliant safety measures, the facility is now well-equipped to manage dust control challenges, ensuring a safer and cleaner environment that aligns with Professional Plastics' commitment to industry standards. The customer has plans to utilize N.R. Murphy Limited and Preston Machinery for future installations at their other various facilities.

