



Dust Collection System Upgrades

PROBLEM SUMMARY

A plant located in the Midwest region of the United States encountered persistent challenges related to airborne dust emissions during the loading of calcium aluminate and limestone into hoppers. The hoppers, loaded with front-end loaders, lacked an efficient dust collection system to successfully handle the excessive airborne dust. The existing undersized system amplified the issue by exhausting air into the building, exceeding permissible limits for recycling air.

BENETECH SOLUTION

Utilizing industry-leading engineering design and experience, Benetech designed a highly effective dust collection system utilizing cutting-edge cartridge dust collector technology. This solution effectively controlled the displaced air and airborne dust created during the hopper loading process. In addition, a properly designed HEPA filter system was integrated to enhance filtration and ensure optimal air quality within the facility.

Throughout the design process, Benetech was able to implement further enhancements to dust control measures. By reconfiguring an existing dust collector, its capacity to control dust generated during the conveying process was improved. Additionally, a bin vent system was supplied to control dusting associated with the filling of the final product bins.

Benetech products included, but were not limited to:

- 1. Engineered Cartridge Dust Collection System** — A space-saving dust collection system designed for different material factors in confined areas that supports easy maintenance from the outside collector.
- 2. Bin Vent** — A small, compact system used to vent displaced air and dust from a fixed silo, bin, or enclosure.



IT PAYS TO IMPLEMENT BENETECH SOLUTIONS

- Reduced airborne dust by 90%
- Decreased clean-up by over 90%
- Satisfied OSHA and federal regulations
- Enhanced system capacity and reliability
- Created ease of maintenance and repair
- Improved safety profile

SUCCESSFUL RESULTS

Significant advancements have been made in minimizing the presence of airborne dust, leading to an exceptional transformation within the facility, where workers no longer require the use of protective masks. The implementation of Benetech's state-of-the-art engineered cartridge dust collection system, in conjunction with a bin vent, has yielded remarkable results.

The Plant Manager has confirmed an outstanding 90% reduction in airborne dust levels since the installation of these advanced solutions. Furthermore, the plant has seen a significant reduction in housekeeping efforts, shifting from a daily cleaning regimen spanning two to three hours to a more efficient biweekly cleaning routine.

BEFORE



AFTER



BEFORE



AFTER



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