

Design and Fabrication of Atmospheric Dust Collector for Stone Crushers and Crematorium Units

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Abstract: This project aims at developing a machine for reducing the dust from stone crushers and crematorium units. Most of the manufacturing industry faces significant challenges in the control of dust to ensure continued sustainable operation and to meet emissions regulations and goals. The methods for controlling dust emissions can either lie in the prevention of dust emissions or in the removal of dust once it has become airborne. Though the concept for dust collection system seems simple, many things can go wrong if don't pay careful attention to the design details. Dust control systems involve multiple engineering decisions, including the efficient use of available space, the length of duct runs, the ease of returning collected dust to the process, the necessary electrical requirements, and the selection of optimal filter and control equipment. Further, key decisions must be made about whether a centralized or multiple system are best for the circumstances. Critical engineering decisions involve defining the problem, selecting the best equipment for each job and designing the best dust collection system for the needs of an operation. Well-designed dust collection systems need to consider not only the dust as a potential contaminant, but also the attributes of the dust capturing system. There are four key components in a dust collection system is very important like dust collector body, dust collector and the air mover/fan. This project helps to understand as a design guide which provides information that will help to achieve optimum performance and energy efficiency in commercial dust collection systems by properly selecting and sizing of dust collector and air blower or fan. A well-designed dust collection system has multiple benefits resulting in a dust-free environment that increases productivity, comply with emission regulations, and improve industry employee morale.

Keywords: stone crushers