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SAND BLASTING DUST COLLECTOR

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INTRODUCTION

Abrasive blasting more commonly kn own as sand blasting it is a operation of f orcibly propelling a stream of abrasive mate rial against a surface under a high pressure to smooth a rough surface, roughen a sm ooth surface, shape a surface or remove a surface contamination. A pressurized fluid ty pically compressed air, or a centrifugal whe el is used to propel the blasting material o ften called media.

Abrasive blasting is utilized for man y different purposes by foundries, shipyards, steel fabrication plants special purpose job, machine shops, gas transmission stations, s teel mills, building cleaner.

Cleaning operations using abrasive blasting can prevents risk for workers health and s afety specifically in portable air blasting or blast room's applications. There is a large amount of dust created through blasting ro oms are not hazardous in themselves (steel shot and grit, cast iron, aluminium oxide, nickel slag, staurolite) have varying degree of hazard. However In all cases their use c an present serious danger to worker or ope rators, such as burns due to projections (with skin and eye lessions) falls due to wa lking on round shots scattered on the groun d, exposure to hazardous dust, heat exhaus

tion, creation of explosive atmosphere and e xposure to excessive noise. Blasting rooms and portable blasters equipment have been adopted to these dangers. Blasting lead ba sed paint can fill the air with lead particle s which can be harmful for nervous system

In the US the occupational safety and hea lth administration (OSHA) mandates enginee red solutions to potential hazards however s ilica sand continues to be allow even throu gh most commonly used blast helmets are not sufficiently effective at protecting the bl ast operator if ambient level of dust exceed allowable limits.

Dust collectors vary widely in design, ope ration, space requirements, constructions effe ctiveness, capital, operating and maintenance costs. Each has its advantages and disadvantages. However the selection of dust collector should be based on various general fact ors.

Degree of dust collection required depends on its potential as a health hazard or pub lic nuisance, the plant location, the allowabl e emission rate, the nature of dust its salva ge value, and so forth. The selection of du

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st collector should be based on efficiency r equired and consider the need for high efficiency.

We have collect the dust s per specific c haracteristics. In that the moderate to heavy concentrations of many dust (such as dust from silica sand or metal ores) can be ab rasive to dry centrifugal collectors. Some particles sizes and shapes may rule out the u s of electrostatic precipaters.

Method of dust removal and disposal vary with the material, plant process, volume a nd type of collector used. Collectors can u nload continuously or in batches.



FIG- SAND BLASTING BOOTH

In sand blasting or shot blasting is preferr ed for surface preparation before painting. While performing this operations huge amount of dust generated in sand booth area. To reduce this measure challenge in industries to collect the leftout sand and reuse to a void the wastage of large amount of sand. Also recollection of sand consumes more time and manpower also generated dust parti

cles of sand cause health problems to the workers or the operators. Hence we have t o collects the sand to avoid health problem s.Hence we are design the collector using magnet in which the magnetic power have capacity to absorb dust. The magnet used in device are Neodymium magnet having grade 11800 gauss.

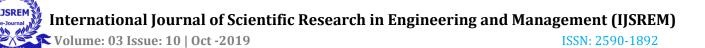
FUTURE SCOPE OF PROJECT

This work focus on the magnetic for ce generated on the device. It can be decre ased the time as well human efforts. So th at we can collect more amount of dust par ticles with short timing.

CONCLUSION

This machine is development of dust collectio n operation. After making actual working model this machine useful for the industry to increas e the efficiency by reducing manpower and eas y operation with minimum time. It is very flex ible process in which duct collection is done b y the magnetic force only. Less efficiency requi red for this machine. Sand duct collector used in industry for recollection of duct at less man power and time. This machine required less hu man efforts with a good integrated result. This machine can be enquires low maintenance, doe s not require skilled labor has high rate of acti on , has longer span of time, require less capit al investment, has low running cost hence can be implemented in the industry to help to lowe r down the production cost and increase the av ailability of time as well reduce the required m anpower for cleaning. From the above conclusio n overall time can be reduced.

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