

# DUST SUPPRESSION SYSTEM

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# Introduction

- CSS is a professional & technical solution provider in the domain of air pollution control system in material handling industry.
- Inception in the year of 2007
- Major Clients: Tata Steel, NMDC DIOM, JSW, JSPL, Thermax Global, Dalmia Cement, Tata Metalliks, Welspun Metalliks, Essar Power, IOT, IMFA Choudwar etc.

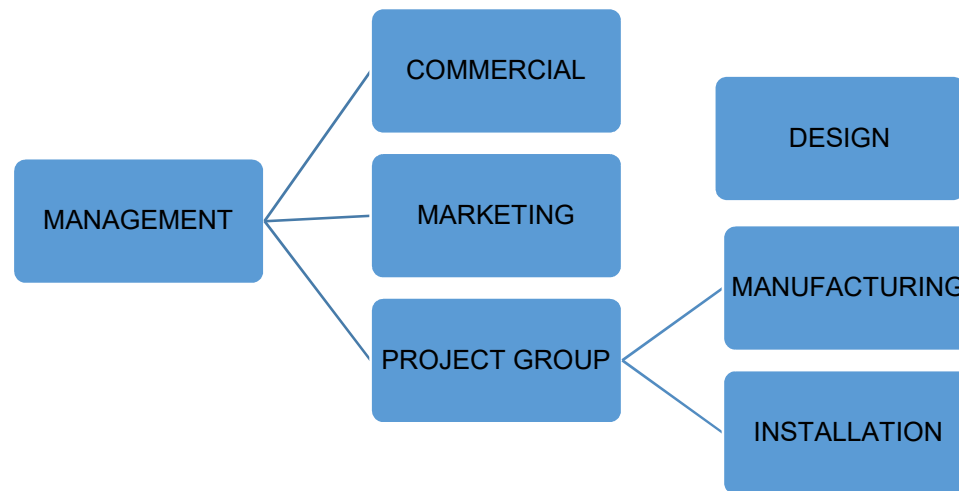


Fig.: Organizational Structure

# Dust Suppression System

## **What is Dust Suppression System?**

Dust suppression is a **process used to restrict airborne dust particles**. Dust suppression systems often spray a fine mist of water and air or only water in different environments such as quarries, mines, roads etc.,

## **Why Dust Suppression System?**

To control fine dust particles including PM2.5 & PM10 to get air bone.

Helps for clean working environment,

Helps workers from dust related health issues which sometime get serious,

## **Types of Dust Suppression System:**

1. Dry Fog Dust Suppression System
2. Cold Fog Dust Suppression System
3. Plain Water Dust Suppression System
4. Sprinkling System
5. Fog Canon

# Dry Fog Dust Suppression System (DFDS)

- Dry Fog is the most effective and popular dust suppression systems and been widely used worldwide.
- The "Dry Fog" Dust Control System works on the principle of agglomeration.
- Uses both water and compressed air.
- Moisture addition is less than 0.01%



**Fig:** Screen House (without Dust Suppression System)



**Fig:** Screen House (with Dust Suppression System)

## **Benefits:**

- Low Capital Cost
- Low Maintenance
- No expensive chemicals used
- No modification required to existing plant.

## **Common Application Points:**

- Transfer Points
- Screening & Crushing House
- Loading facility: Silo, docks etc.
- Hoppers, feeders and bins

# Cold Fog Dust Suppression System (CFDS)

- Ultra fine mist created using water at high pressure through specialized nozzles is widely used to control dust in industries.
- The Cold Fog Dust Control System works on the principle of agglomeration.
- Uses only water at high pressure (70-80 bar).
- Moisture addition is approximately 1-2%



Fig: Cold Fog Dust Suppression System

## Benefits:

- No requirement of Compressed air.
- Low Maintenance
- No expensive chemicals used
- No modification required to existing plant.



Fig: Cold Fog Dust suppression System at discharge of conveyor

## Common Application Points:

- Transfer Points
- Screening & Crushing House
- Loading facility: Silo, docks etc.
- Hoppers, feeders and bins

# Plain Water Dust Suppression System (PWDS)

- Plain water mist type Dust Suppression Systems is the oldest and most economical dust suppression system used all around the worldwide.
- The Plain Water Dust Control System works on the principle of agglomeration.
- Uses only water at normal pressure (5-6 bar).
- Moisture addition is approximately 3-5%



Fig: Iron Ore discharge from tipper (without DSS)

## Benefits:

- No requirement of Compressed air.
- Low Maintenance
- Easy Installation
- No modification required to existing plant.



Fig: Iron Ore discharge from tipper (with DSS)

## Common Application Points:

- Transfer Points
- Screening & Crushing House
- Loading facility: Silo, docks etc.
- Hoppers, feeders and bins

# Sprinkling System

- Sprinkling system creates artificial rain to wet the surface of Stockpile/ Haul Road or any surface which may generate dust.

Artificial rain created by sprinklers wet the top surface of the stockpile or Haul road to wet and agglomerate dust to prevent dust generation by wind or vehicle movement.

## Common Applications

- \* Stockpile of all type of materials in material Handling Plants,
- \* Haul Roads in Mines,
- \* Steel, Power, Mining etc.



Haul Road Sprinkling



Stockpile Sprinkling



# Fog Canon

- Fog Canon is the most effective and popular dust suppression systems for **open area** application where mine mist/fog can be spread at wide area to arrest air borne dust.
- A high velocity fan in the cannon carries the mist/fog with forced air at large distance to a target dust generation source.
- Swings automatically- 0-330 deg.
- Portable from one place to other with trolley mounting system.



Fig: Fog Canon

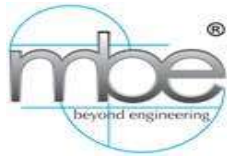
## Benefits:

- Suitable for open area.
- Can be toed anywhere.
- Plug & play Model.
- Low Maintenance Cost

## Common Application Points:

- Truck Unloading
- Wagon Tippler
- Stockpile stacking & reclaiming
- Any Open area.

# Clientle



# Clientle



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**THANK YOU**