Lafarge Concrete Malaysia
Dust emission and prevention

Presentation to NRMCA
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Dust emission

General notes

With the rapid development of industrial production, authorities and companies pay more attention on the environment protection than before. More and more concrete batch plants are used at construction site, more efficient dust removal/mitigation equipment and methods are required. The dust emission prevention systems are developed from simple to complex, single to variety, imperfect to perfect…

Dust emission

Sources of dust generation at batch plants

Full plant enclosure

Stockpiles

Dusty surface

- A major source of emissions, the movement of heavy vehicles (tipper trucks and front end loaders) over unpaved or dusty surfaces in and around the plant, can be controlled by good maintenance and wetting of the road surface

Stockpiles

Shed design with water sprinklers

- Enclosed stockpile area to minimize dust emission into the atmosphere
- Water sprinklers are installed for each material bin to further reduce the dust emission

Material transfer and storage/weighing bins

Shed design

- Enclosed ground/storage/weighing bins to minimize dust emission into the atmosphere

Transfer of sand/stone to agitating mixers (dry/wet)

Conveyor top covers

- Conveyor top covers to minimize dust emission into the atmosphere

Mixing and batching area

Enclosure

Enclosed batching area to minimize dust emission into the atmosphere

Concrete mixer

Flanged Round Dust Collector

- Flanged round dust collector with suction fan is used for both venting and suction applications

Concrete mixer

Dust compression bag

- Filter bag (balloon) is used for both venting and pressure release applications during charging of the materials into the concrete mixer. As air and dust are displaced, the dust is captured to prevent it going into the atmosphere

Dry batch plant material discharge

Dry batch filter with suction fans

- Dust collector is designed for dust collection from the truck mixer inlet zone in dry batch plants during loading of the truck mixer drum/agitator

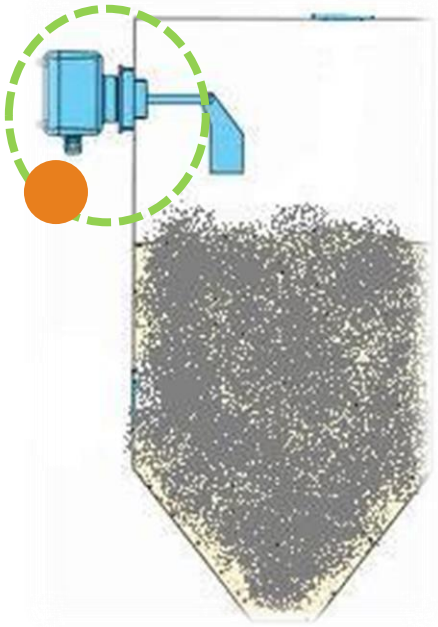
Cement silos

Silo venting filter and pressure relieve valve

- Silo Venting Filter: Dust separated from the air drops back into the silo after the automatic reverse air jet cleaning system has removed the dust particles from the filter
- Pressure Relief Valve: Designed as a safety feature for silos to deal with abnormal pressure conditions and to avoid blockage as well as the formation of material crusts, the special double-acting diaphragm, which is pervious to air deals with both excess and suction pressure relief

Cement silos

Silo venting filter and pressure relieve valve



- Rotary level indicator (high level switch): Indicates minimum and/or maximum cement level inside the silo. Prevents cement overflow inside the silo

- Indicator lights with siren: Positioned at cement tanker unloading, these lights notify truck drivers when the silo is full and cement pumping shall stop

Cement silos

Interlocking “key” system for cement pumping

- Cement silo intake pipes are locked and tanker driver needs to retrieve the key from batching room
- In order to release the key, batcher has to turn it to 'ON‘ position. The key can be pull out and passed to tanker driver to unlock the intake pipe

Mixer trucks maneuvering area

Dusty surface

- Movement of mixer trucks over unpaved or dusty surfaces in and around the plant, can be controlled by good maintenance and wetting of the surface area

In summary…

Types of controls used may include:

- Enclosures
- Water sprays
- Curtains
- Movable and telescoping chutes
- Central duct collection systems etc.

THANK YOU