

Benefits

- Empties cement 'bin-bottoms' stagnant for years
- Effectively increases active capacity 10 to 15%
- 70% more dense-phase transfer of Fly-Ash
- 20-25% increase in dilute-phase transfers
- Air usage (energy) reduced by 50%
- Dramatic increase in fluidity
- Easy installation outside of silo
- Low power needs
- Doubles airslide reach
- Preprogrammed multi-frequency system
- Amplitude control
- Patented
- Full control-room interface

Another Innovative Solution from Technology Evaluations Inc.



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Why Use Pneumatic Modulation ?

THE PROBLEM

In many large silos, domes and bunkers, fluidized beds and air-slides are used to transport powders. Too often, sticky and cohesive powders resist the uniform passage of air, which leads to pneumatic fracturing, channeling and rat-holing.

These no-flow conditions destroy the effectiveness of the air induced transport system, leaving storage units with substantially reduced capacity and stuck product inventory.

A 10% increase in effective storage capacity can have a significant impact on market availability, operating logistics and product delivery. This is particularly true at bulk cement ship terminals, where demurrage costs are high.

THE SOLUTION

Pneumatic modulation has been used for years to shear fine powders. Whether created through mechanical vibration or air blasts, traditional pneumatic modulation works in many cases. But when material on air-slides stops flowing in large silos, then something more is needed.

Technology Evaluations Inc. was awarded a patent for taking pneumatic modulation one step further. By applying multi-frequency sub sonic pulsations, stagnant powder storage is remobilized and rat hole formation is inhibited.

TEI FLUIDIZER

The **TEI Fluidizer** connects to existing air flow pipe-work outside of the silo, dome or bunker storage unit. It is a low cost solution and easy to install. The Fluidizer requires minimal operating power and can double the fluidizing capacity of an existing air blower.

Energy savings can be substantial.

Saving 100 HP @ \$0.08/kW hr

Adds **\$52,000 Per Year** to the Bottom Line



Advanced Air-slide Performance Pneumatic Modulation



TEI FLUIDIZER



**Gets Powders Moving Again
Recovers Stuck Inventory
Half the Energy
Faster Conveying**

Cement • Fly-Ash • Alumina • Lime

Get More Storage Capacity with the TEI Fluidizer

When your powder discharge system slows to a crawl, you can't afford to still have 10 to 15 feet of inventory piled up in the bottom of your silo or dome.

Suction trucks are slow, expensive and waste product. Other mechanical devices are labor intensive and expensive to operate; they may also waste large amounts of inventory and require considerable effort to install.

Only the TEI Fluidizers works from outside the storage unit and does not require labor to operate while it discharges inventory right down to the fabric.



-Thinking of new capacity but have space constraints and environmental permitting seems daunting ?

-The TEI Fluidizer can improve existing storage capacity utilization & double the reach of air conveyors.

-The TEI Fluidizer allows you to use all your inventory !

< Photo:
Operators about to discover their "emptied" silo still has 12ft+ of material on the air-slides.

Pneumatic Modulation Technology

While air blasters and mechanical vibrators work for steel silos, you can't attach these devices to the outside of a concrete-walled storage unit.

The **TEI Fluidizer** advantage for large storage bunkers (2,000 to 200,000 tons) is its ability to convey a vibrating energy into a silo from the outside, and cut fluidizing energy requirements in half. By connecting a TEI Fluidizer to the existing exterior pipe work and air supply, it will transmit air pulsations to where it is most effective – the air- slide surface.

The **TEI Fluidizer** is installed outside the storage unit. It introduces multiple out-of-phase frequencies to adjacent air-slides and discharge air-pads. This patented process and design induces inter-particle shear in the material located between pile formations, and keeps more evenly distributed the air into the mass of particles, which gets your product moving again.

The **TEI Fluidizer** is easy to operate and compact in size.

Wasted Inventory

Even after exhaustive attempts to discharge product have failed, silo blockage can leave stuck inventory piled over ten feet (here it measured 12+ feet high). Normally, this condition would require manual extraction, or the beginning of an expensive shut down and maintenance procedure.

Not so with the **TEI Fluidizer**.



PM Technology Empties Silo to the Airslide Fabric

The **TEI Fluidizer** can clean out your inventory, right down to the air-slide fabric. It uses a patented Pneumatic Modulation Technology. Simple, safe, and fast.



Above photo shows the result of trial, demonstrating the effect of Pneumatic Modulation Technology applied to just a few airslide panels.

(Scale - the piles on the side and back are ~ 12 feet tall)



TEI Fluidizer Success:
Customer approval is key...
When you're happy, we are happy !

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