

# TEI Fluidizer

## Air-Slide Booster Benefits Cement Terminals!

### Benefits

#### Cement Silo Clean Out

- Provides low cost solution to silo clean out problems
- Easy connection to existing pipework on outside of silo
- Fluidizes stagnant powders when continuous air flow fails
- No entry into silo is required (equipment or personnel)
- Clean out performed during active operations
- Low power consumption — uses 50% less air than continuous flow
- Once pipework fitted, system up and running in minutes
- Cleans out cement down to air slide fabric
- Recovers bin bottoms
- Rejuvenates air-slide chutes
- Short-term rental & trials

CALL 630-879-0297

SCHEDULE A TRIAL TODAY

#### **PATENTED PNEUMATIC TECHNOLOGY:**

What makes the TEI Fluidizer an innovative technical leap is its ability to harness the existing energy of an airslide system, and apply multiple frequencies to the product - air-slide fabric interface, where the vibrations are most effective. This pneumatic modulation technology (PMT) inhibits the coalescence of air bubbles. Simpler said, the TEI Fluidizer can **eliminate rat holes**.

**ENERGY SAVINGS:** The multiple sub sonic frequencies are so effective in vibrating product, that when compared to a traditional air-slide system, only **one-half the air flow** is needed. That means a facility using multiple compressors for air slides may be able to eliminate one of the units.

**ENVIRONMENTAL VALUE:** Because PMT requires only one-half the air to move the same amount of product, bag house collectors receive **less particulate loading**.

**OPERATING FLEXIBILITY:** Every hour is critical when a plant is not operating. The TEI Fluidizer can provide a terminal with **operating flexibility** - clean a silo during routine operations or empty a silo of all product before preparing for shutdown. With more usable storage capacity, sales can continue during maintenance.

**FASTER TRANSFER RATES:** Cement moves faster when a TEI Fluidizer is connected to an air-slide system. Results of field trials have shown a dense phase transfer rate increase of 70% for Class C Fly Ash. For cement, trials have shown a dilute phase **transfer rate increase of 20%**. More throughput, more sales, more profit.

**INCREASED CAPACITY:** Many storage units equipped with air slides have difficulty accessing the last 10% to 15% of product, holding stagnant cement *for years*. With the TEI Fluidizer, the stagnant product can be recovered down to the air slide, recapturing that 10% to 15% of unusable capacity.

According to published experts, shipping terminals have a particular sensitivity to storage capacity. Research shows that a **one percent increase in storage yields as much as a three percent increase in throughput**. For a 500,000 TPY shipping terminal, a five percent increase in storage would add 75,000 tons throughput.

**MULTIPLE APPLICATIONS:** The TEI Fluidizer is suitable for large domes, bunkers and silos sized 2,000 tons to 200,000 tons, and works best when a storage unit is partially full. Connects to existing pipework on the outside of a unit. Can also work with air slide chutes.

### Trial Unit

6" Flange inlet  
2x 4" Flange outlets  
460V: 3PH: 5Amps  
— 230V option  
NEMA 4 controls  
1250 to 3000 CFM



### 6" Production Unit

Easy to install  
Multiple frequencies  
Amplitude control



## SHIPPING TERMINAL BENEFITS ADDING VALUE

### ENERGY SAVINGS

Flexibility in scheduled maintenance services  
 Environmentally 'friendly'  
 New technology reduces energy  
 One-half load on bag house  
 Significant reduction in cost per ton

Eliminate a compressor 100 HP ~ \$52,000/YR  
(\$0.08/kWh, 24 - 7)

### CAPACITY INCREASE

10% to 15% more useable capacity  
 Increase number of ships per year \$22 MM/YR REVENUE  
*(NB: 1% increase in storage capacity yields 3 times greater increase in throughput\*)* (Storage increases 10%,  
1 MMT throughput \$75/T)

### SPEED INCREASE

20% less pumping time, less energy & wear \$0.05/T  
(2.25 kWh/T)\*\*

\*Ad Ligthart, Cement Distribution Consultants, World Cement March 1999  
 \*\*Jan Karlsson, BMH Marin AB, Intercem Conference, Amsterdam 2002

## TRUCKING TERMINAL BENEFITS ADDING VALUE

### ENERGY SAVINGS

Flexibility in scheduled maintenance services  
 Environmentally 'friendly'  
 New technology reduces energy  
 One-half load on bag house  
 Significant reduction in cost per ton

Reduction in energy costs 50 HP ~\$9,000/YR  
(\$0.08/kWh 10h 285 days)

### CAPACITY INCREASE

10% to 15% more capacity in sales  
 Better asset utilization - lower cost per ton

Recovery of stagnant inventory \$37,000  
(5,000T silo, \$75/T,  
10% recovery)

### SPEED INCREASE

70% dense phase increase (C Fly Ash)

Increase in sales \$1,900 per truck  
(25 T @ \$75/T)

Less truck demurrage

More truck turns per day

40% less pumping time \$0.10/T  
(2.25kWh/T)

## CEMENT SHIPPING TERMINAL



### RECENT RESULTS—CEMENT

- ◆ MOBILIZED CEMENT STUCK FOR YEARS
- ◆ DILUTE PHASE TRANSFER RATE UP 20%
- ◆ INCREASE ACTIVE STORAGE BY 15%
- ◆ CLEANED DOWN TO AIR-SLIDE FABRIC

## TRUCK DISTRIBUTION TERMINAL



### RECENT RESULTS—CLASS C FLY ASH

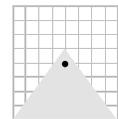
- ◆ MOBILIZED FLY ASH STUCK OVER 5 YEARS
- ◆ DENSE PHASE TRANSFER RATE UP 70%
- ◆ CLEANED PRODUCT DOWN TO AIR-SLIDE

### Technology Evaluations Inc.

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*Licensed: TEI Fluidizer is patented, designed and manufactured under license. Companies interested in this technology, its application and licensing rights, should contact Technology Evaluations, Inc.*

*Note: As with any piece of equipment that incorporates a vibrating energy source, whether it be pneumatic, hydraulic or a direct mechanical connect, stresses on infrastructure and equipment will occur. Plant is responsible to ensure equipment is compatible and properly secured.*

*Warranty: Field tests are used to ascertain the TEI Fluidizer's performance under site specific conditions. We offer a return policy on purchased equipment not meeting the field test unit's performance.*