

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.

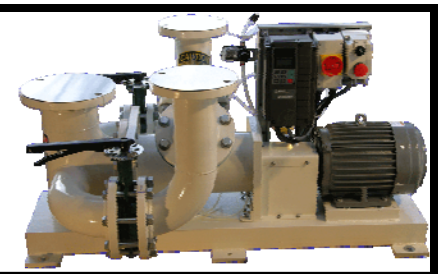
Trial Unit

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

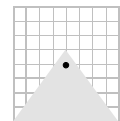
- ◆ MOBILIZED FLY ASH STUCK OVER 5 YEARS
- ◆ DENSE PHASE TRANSFER RATE UP 70%
- ◆ CLEANED PRODUCT DOWN TO AIR-SLIDE

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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.