

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

TIBERI TEST

Emission Factor Calculation

Test is for exhaust of one ^f of two identical dust collectors - therefore inlet measurement must be doubled to calculate total uncontrolled emissions.

Exhaust Loading - 0.0139 grains/ft³

Inlet Loading - 5 to 10 grains/ft³ (assume 7.5 grains/ft³ average)

Total Dust emitted - 0.0068 pounds/44,340 lbs transferred

Exhaust Rate - 115.4 cfm for 30 minutes

$$\frac{\text{Lbs of Cement inlet per dust collector}}{44,340 \text{ lb transferred}} = (7.5 \text{ gr/ft}^3)(115.4 \text{ cfm}) \left(\frac{1 \text{ lb}}{7,000 \text{ gr}} \right) (30 \text{ min})$$
$$= 3.7 \text{ lb per dust collector}$$

Total for both collectors = 7.4 lb/44,340 lbs transferred

= 7.4 lb/22.17 tons transferred

= 0.33 lb/ton



TIBERI ENGINEERING COMPANY

3731 SOUTH MAPLEWOOD AVENUE

(312) 847-1050

CHICAGO ILLINOIS 60632

"TOMORROW'S IDEAS TODAY"

PREVENT

AIR POLLUTION CEMENT LOSS
IMPROPER VENTING
INACCURATE CEMENT INVENTORY

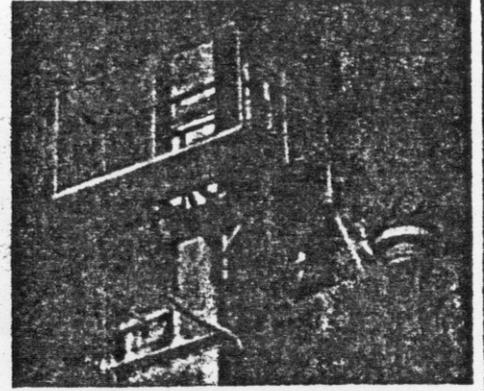
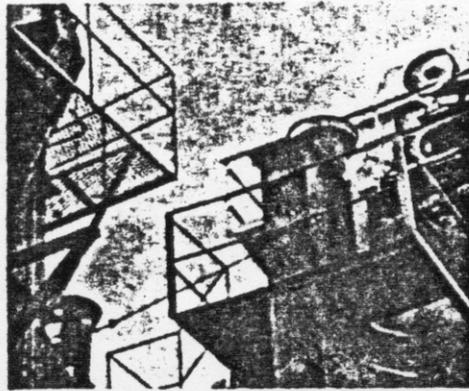
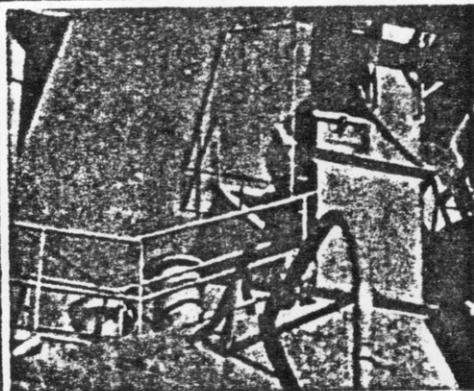
INSTALL THE TECO PATENTED CEMENT VENTING SYSTEM.
SELF-OPERATING SYSTEM VENTS ANY PRESSURIZED LOADING CEMENT
BIN OR SILO. SO EFFECTIVE, IT COMPLETELY ELIMINATES CEMENT
OR OTHER RELATED TYPE MATERIAL DUST EMISSION.

TECO'S CEMENT BIN VENT SYSTEMS ARE CURRENTLY OPERATING IN THE MANUFACTURE OF
READY MIX CONCRETE PRESTRESSED CONCRETE
CONCRETE PIPE BURIAL VAULTS
CONCRETE BLOCK AND BRICK SEPTIC TANKS

and MANY OTHER RELATED PRODUCTS.

FULLY GUARANTEED VENT REQUIRES:

- NO COSTLY INSTALLATION CHARGES
- NO MAINTENANCE
- NO PARTS REPLACEMENTS
- NO WORRY JUST INSTALL IT AND FORGET IT.



THE FOLLOWING ARE RESULTS OF STATE OF ILLINOIS APPROVED ENGINEERING FIRM

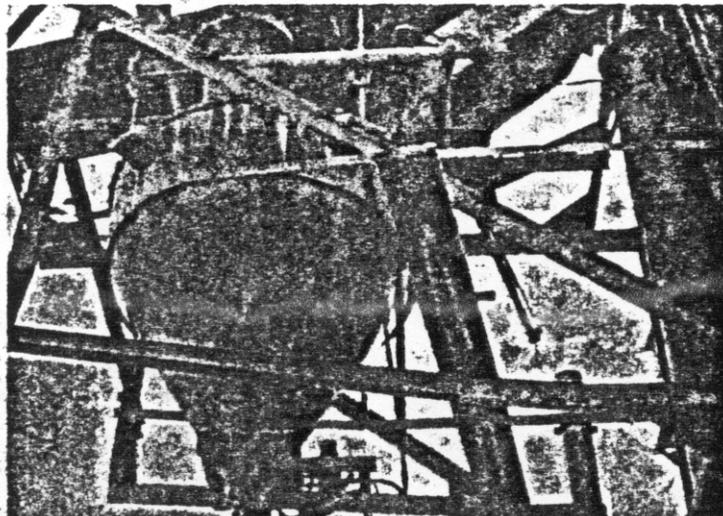
Control Equip. Efficiency : 99.5 plus Per Cent

Particulate Matter Comp	:	100% Cement Dust
Type of Control Equipment	:	Designated as Bag House (2 ea.)
Model	:	No. 1 - Weigh Batch Vent 1 only. No. 2 - 2 vents ea. 15 x 28" Filters No. 3 - 2 vents ea. 15 x 56" Filters
Duct Velocity Inlet (15" opening each vent.)	:	1.6 Feet Per Second
Inlet Grain Loading Inlet	:	* 5 to 10 Grains, per standard Cu.Ft. of air.
Inlet CFM @ 1/2" W.P. Drop	:	Model No. 2 (230) Model No. 3 (460)
Exhaust Rate CFM	:	Model No. 2 (230) Model No. 3 (460)
Geometric Mean Diameter	:	30 Micron Particulate Matter
Pressure Drop	:	1/2 Inches of Water
Filter Ratio	:	11.27 CFM/ Sq. Ft.
Height of Vent above roof	:	Model No. 2 (3 Ft.) Model No. 3 (5 Ft.)
Area of Vent at Exit (opening into atmosphere.)	:	1.25' \rightarrow 1.227 Sq. Feet (Standard Cu. Ft. of air.)
Particulate Matter Exhaust Gas Analysis	:	0.0139 Grain/SCF Concentration Rate
Emission Rate	:	Model No. 2 (.03 lbs. per hour) Model No. 3 (.015 lbs. per hour)
Method of Meas. and Analysis	:	ASME Power Test Code Z7
Method of Monitoring	:	Visual
Cleaning Method	:	Self Cleaning
Filter Material	:	Non-Woven 100% Dacron Fabric PVC Impregnated

(This information is on File with your State Capitol EPA.)

• 7000 GRAINS TO 1 LB. OF CEMENT

WE HAVE SPARED NO EXPENSE TO PROVIDE THE BEST POSSIBLE FILTER FOR PRESSURIZED BIN LOADING. THE COSTLY CEMENT REMAINS IN THE BIN WHERE IT BELONGS - ONLY AIR IS VENTED THROUGH THE FILTER.



MODEL NO. 1 - (ONE VENT ONLY) IS EMPLOYED ONLY ON THE CEMENT WEIGH BATCHER. THE BIN GAUGE MAY BE PURCHASED SEPARATELY.

Test report loading
Cement to Silo

ERF

SUMMARY

with Baghouse Control

The Alar Engineering Corporation was retained by the Tiberi Engineering Company, 3725 South Maplewood, Chicago, Illinois, to conduct a source test at Allied Concrete Supply Company on Tuesday, October 17, 1972. The purpose of this test was to measure the emission of solid particulate matter leaving the dust collector on the cement storage bin during the bin filling. The air flow rate and temperature were also measured.

PROCEDURE

Because of the low air flow rates leaving the dust collector, it was necessary to construct a temporary exhaust stack 6" in diameter by 4' high to obtain reasonable flow rates for source sampling. The relationship between sampling rates and flow rates was calculated prior to the start of testing and pitot tube readings were taken during the test period. The sampling rates were adjusted during the test to insure isokinetic conditions. Air flow rates were measured with a type "S" pitot tube using a Dwyer Series 400 inclined manometer.

The sampling train consisted of a 1/4" stainless steel machined nozzle mounted on a 2' stainless steel long radius sampling probe. Particulates were collected on a Gelman Type "E" glass fiber filter paper and the flow rates were measured by a calibrated gas meter and Dwyer Model RMC rotometer. System vacuum was supplied by a Gast, non-lubricated vacuum pump. The length of the test corresponded to the time required to unload the truck, namely 30 minutes.

ANALYTICAL PROCEDURES

The filter papers used in the test were dried to constant weight prior to the test. After testing was complete, the papers were dried for 24 hours at 105°C. and reweighed. The weight of particulate collected on the filter was determined by the difference in the two weights. All analytical work was performed by Particle Data, P.O. Box 265, Elmhurst, Illinois 60126.

TEST RESULTS

During the test, a truck load of cement (44,340 lbs. net) was conveyed into the cement storage silo being tested, by an air compressor mounted on the truck. The air was exhausted through two identical Tiberi Engineering Company dust collectors mounted on top of the bin. Only one of the dust collectors was tested. The test results are as follows:

Time of test	12:50 to 13:30	40 min to load
Material	Cement	
Quantity	44,340 lbs.	22 tons load
Exhaust rate (per unit)	<u>115.4 cfm</u>	
Exhaust loading	0.0139 grains/ft ³	
Material loss to atmosphere (per unit)	0.0069 lbs./30 minutes	

Based on the above test results, it is the opinion of the Alar Engineering Corporation that the Tiberi Engineering Company dust collector meets the criteria set forth by the Illinois Air Pollution Control Regulations (effective April 14, 1972) under the conditions tested.

Harold R. White, P.E.

