Check Sheet

Company Name: Fl. Div. of Sky Co
Permit Number: AC53-160479
PSD Number:
County: Polk
Permit Engineer:
Others involved:

160859

Application:
- [x] Initial Application
- [x] Incompleteness Letters
- [x] Responses
- [ ] Final Application (if applicable)
- [ ] Waiver of Department Action
- [ ] Department Response
- [ ] Other

Intent:
- [x] Intent to Issue
- [x] Notice to Public
- [x] Technical Evaluation
- [ ] BACT Determination
- [x] Unsigned Permit
- [ ] Correspondence with:
  - [ ] EPA
  - [ ] Park Services
  - [ ] County
  - [ ] Other
- [ ] Proof of Publication
- [ ] Petitions - (Related to extensions, hearings, etc.)
- [ ] Other

withdrawn

Final Determination:
- [ ] Final Determination
- [ ] Signed Permit
- [ ] BACT Determination
- [ ] Other

Post Permit Correspondence:
- [ ] Extensions
- [ ] Amendments/Modifications
- [ ] Response from EPA
- [ ] Response from County
- [ ] Response from Park Services
- [ ] Other

In the folder labeled as follows there are documents, listed below, which were not reproduced in this electronic file. That folder can be found in the supplementary documents file drawer. Folders in that drawer are arranged alphabetically, then by permit number.

Folder Name: Florida Tile Division of Sikes Corporation

Permit(s) Numbered:

AC 53 -160479

Documents: Period during which document was received	Detailed Description
Application 8 FEB 1989	1. 24"×36" BLUEPRINT: FLORIDA TILE LAKELAND, FLORIDA DUST COLLECTION SYSTEM FOR TRIM PRESS OPERATIONS (DWG NO.: M-2801) 2. 24"×36" BLUEPRINT: FLORIDATILE LAKELAND PLANT RENOVATION PHASE A (DWG NO.: FL TILE PH A)
TE & PD 22 JUN 1989	3. 24"×36" BLUEPRINT: FLORIDATILE LAKELAND, FL. DUST COLLECTION SYSTEM FOR TRIM PRESS OPERATIONS (DWG NO.: M-2821-D)

PERMIT #: AC 53-160479 APPLICANT NAME: Fla. Tile Div./Sikes Corporation

TYPE OF PERMIT: AC SUBTYPE: 1E

STATUS: ____(IS, DE, GP, EX, WI) PERMIT PROCESSING [FORM #: DER-CA 01]

OFFICE: BAQ

DATE	TIME BEGIN	TIME END	TOTAL TIME (15 MIN)	TASK	POSITION TITLE
2-9-89	10:30	10:50	30 min.	Log in, PATS entry, complete. cash listing, assign to engineer + distribute	Planner I

Applications in this file were replaced. No construction permits issued following the enclosed Preliminary Determination.

Willard Hanks

KIM

PERMIT #: AC 53-160479 APPLICANT NAME: Fla. Tile Div./Sikes Corporation

TYPE OF PERMIT: AC SUBTYPE: IE

STATUS: ____(IS, DE, GP, EX, WI) PERMIT PROCESSING [FORM #: DER-CA 01]

OFFICE: BAQ

DATE	TIME BEGIN	TIME END	TOTAL TIME (15 MIN)	TASK	POSITION TITLE
2/14/89	10:52	11:42	0:50	typed draft I/c letter	Sect Spc
2/20/89	10:41	11:14	0:33	finalized draft	
5/8/89	11:30	11:46	16 mins.	typed draft permit	WPS-O
5/8/89	2:00	3:00	1 hr.	cont'd typing draft permit	"
5/8/89	3:10	3:40	30 min.	" " " " + printed	"
5/8/89	4:15	5:00	45 min.	Typed Draft Pkg	"

Willard -
Also included extra tracking sheet for typist.

5-9-89
Pat,
DONE PAT
The Florida Tile permit is one that is being tracked. I forgot to give you the attached form. Please recall or estimate the time you spent typing the Tech. Eval. + Prel. Det.
Willard

DOCUMENT SUMMARY

Library:
Title: Boakes/Letter - Sikes Corp.
Document ID:
Author: Willard Hanks
Operator: K. Sholar

Comments:

Number of Copies: 1
From Page: 1 To Page: 2
Starting Print Date/Time: 02/20/89 10:44

Notify U999 on System SYSTEM

STATISTICS

OPERATION	DATE	TIME	WORKTIME	KEYSTROKES
Created	02/14/89	10:52	:50	1773
Revised	02/20/89	10:41	:33	156
Last Retrieved	/ /	:	from:	
Last Archived	/ /	:	to:	

Total Pages: 2

Total Worktime: 1:23
Total Keystrokes: 1929

DOCUMENT SUMMARY

Library:
Title: Boakes/Letter - Sike$Corp.
Document ID:
Author: Willard Hanks
Operator: K. Sholar

Comments:

Number of Copies: 1
From Page: 1 To Page: 1
Starting Print Date/Time: 02/14/89 11:01

Notify U999 on System SYSTEM

STATISTICS

OPERATION	DATE	TIME	WORKTIME	KEYSTROKES
Created	02/14/89	10:52	:00	
Revised	/ /	:	:00	
Last Retrieved	/ /	:	from:	
Last Archived	/ /	:	to:	

Total Pages: 1 Total Worktime: :00
Total Keystrokes:

DRAFT
final

February 16, 1989

working date 3 days after final typed

CM - RRR?

Mr. William R. Boakes, Vice President
Sikes Corporation
Florida Tile Division
Post Office Box 447
Lakeland, Florida 33802

Dear Mr. Boakes:

Re: Construction Permit Applications to Upgrade Sikes Corporation

The Department has made a preliminary review of your application for permit to upgrade the Dorst and trim presses (File No. AC 53-160479) at your tile manufacturing plant in Lakeland, Polk County, Florida. Before this application can be processed, we need the following information:

1. Please provide a general description of the operations

performed by the Dorst and trim presses during the manufacture of the tiles.

2. How will the dust collect by the baghouses by recycles to the process and what precautions will be taken to minimize unconfined emissions during this operation?

3. What percentage of the particulate matter emissions from the proposed baghouses will be PM_{10}? What is the basis for this estimate?

4. What will be the maximum process weight rate be for the replacement trim presses when they are placed in normal production?

We will resume processing this application after we receive the requested information. ~~Also, we are still waiting on emission data for the numerous vent filters used on the storage tanks and process equipment to complete the application for your body preparation plant (File No. AC 53-158856).~~

If you have any questions on this matter, please write or call Willard Hanks at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/WH/s

cc: Bill Thomas, SW District

Randal Reynolds, P.E.

work

Presses

PERMIT #: AC 53-160479 APPLICANT NAME: Fla. Tile Div./Sikes Corporation

TYPE OF PERMIT: AC SUBTYPE: 1E

STATUS: ____(IS, DE, GP, EX, WI) PERMIT PROCESSING (FORM #: DER-CA 01)

OFFICE: BAQ

DATE	TIME BEGIN	TIME END	TOTAL TIME (15 MIN)	TASK	POSITION TITLE
2/13/89	8:30	10:30	2:00	Examined applic	Eng IV
2/13	2:00	3:00	1:00	Write letter more info	
2/14	11:15	11:30	0:15	provided draft l/c letter	
2/17	2:30	3:45	1:15	began drafting PD	
2/20	9:15	11:00	1:45	model import	
2/20	12:45	2:00	1:15	Continue drafting PD	
2/23	2:25	3:15	0:50	modeled import	
3/6	9:30	11:00	1:30	Cont Draft PD	
3/21	2:15	2:30	0:15	Reviewing Draft Prel Det	
3/22	8:00	8:45	0:45	Reviewing and l/c letter	
3/23	7:45	9:30	1:45	Review mod & data	
5/8	7:45	8:30	0:45	Drafting transmittal letters	
5/9	8:15	9:30	1:15	Proofing PD (1st reading) - No permit	
5/10	1:15	1:45	0:30	Proofing proposed permit & transmittal letters	
6/22	1:45	3:15	1:30	Changes PD	
7/17	8:00	10:30	2:30	Looking @ applic Comments	
				Proofed new Prel Det/to ST	

file copy

LAKE ENGINEERING, INC.
6000 LAKE FORREST DRIVE
SUITE 350
ATLANTA, GEORGIA 30328

June 20, 1989

Mr. C.H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Florida Tile and Lake Engineering have received your letter dated May 31, 1989, and accompanying permits AC53-160479 and 160859. Several design changes have occurred which require your review prior to publication of the intent to issue. These revisions are described below. An additional drawing (M-2821-D) is also enclosed to clarify the revisions. We intend to postpone publishing the notice until your staff has reviewed the information enclosed.

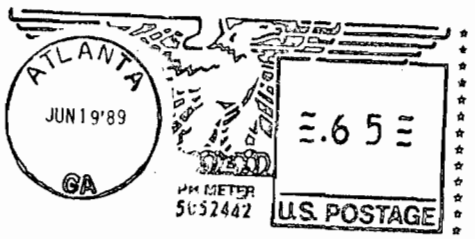
System 1

This system has been revised to include two Monoporosa presses and dryers to be installed by the end of 1989. In 1990, three trim straight lines will be added. By 1991, five trim presses will also be installed. Only about 10,000 CFM will be dust laden air when System 1 begins operation. A revised application will be submitted to your office describing System 1. Also a separate application for the Monoporosa roller kiln is being prepared for submittal to your office.

System 2

This system has been modified to include six existing Dorst presses and four replacement trim presses. A revised application will also be submitted to your office for System 2.

TELEPHONE: (404) 257-9634 TELEX: 4931284LAKE UI FAX: (404) 847-9496



LAKE ENGINEERING, INC.
6000 LAKE FOREST DRIVE, SUITE 350
ATLANTA, GEORGIA 30328

Mr. C.H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

We hope this letter and the revised applications to be submitted will clarify the situation for you. If you have additional questions please give me a call.

Sincerely,

LAKE ENGINEERING, INC.

Randal M. Reynolds

Randal M. Reynolds, P.E.
Project Manager

RMR:mhm

Enclosures

cc: Mr. Bill Thomas
FDER - SW District

Mr. Bill Boakes
Mr. Al Burgess

328.2.1

copied: H. Hanks
CHF/BT

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) File No. AC53-160479	Initial / Date
2.	Initial / Date
3.	Initial / Date
4.	Initial / Date

REMARKS:

Application replaced by AC 53-167121

Submitted June 6, 1989

INFORMATION	
	Review & Return
	Review & File
	Initial & Forward

DISPOSITION	
	Review & Respond
	Prepare Response
	For My Signature
	For Your Signature
	Let's Discuss
	Set Up Meeting
	Investigate & Report
	Initial & Forward
	Distribute
	Concurrence
	For Processing
	Initial & Return

FROM: Patty Adams

DATE

PHONE

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:	4. Article Number
Mr. William R. Boakes, Vice Pres. Sikes Corp./Fla. Tile Division P. O. Box 447 Lakeland, FL 33802	P 938 762 580
	Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise
	Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature — Agent X	
7. Date of Delivery 6-5-89	

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 938 762 580

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. William R. Boakes, Sikes Corp.	
Street and No. P.O. Box 447	
P.O., State and ZIP Code Lakeland, FL 33802	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 6-2-89 Permit: AC 53-160479 AC 53-160859	

PS Form 3800, June 1985

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

May 31, 1989

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. William R. Boakes, Vice President
Sikes Corporation - Florida Tile Division
Post Office Box 447
Lakeland, Florida 33802

Dear Mr. Boakes:

Attached is one copy of the Technical Evaluation and Preliminary Determination and proposed permits for Sikes Corporation to construct (modify) the Trim Press System (File No. AC 53-160479) and the Dorst Press System (File No. AC 53-160859) at the existing ceramic tile plant in Lakeland, Polk County, Florida.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. Bill Thomas of the Bureau of Air Quality Management.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/WH/plm

Attachments

cc: Bill Thomas, SW District
Randal Reynolds, Lake Eng., Inc.

major change in applicant's plans after this Prel. Det. mailed. A Final Determination and construct permit was not issued on this determination.

Willard Hanks

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In the Matter of
Application for Permit by:

Sikes Corporation
Florida tile Division
P. O. Box 447
Lakeland, FL 33802

DER File No. AC 53-160479
AC 53-160859

INTENT TO ISSUE

The Department of Environmental Regulation hereby gives notice of its intent to issue permits (copies attached) for the proposed project as detailed in the application specified above. The Department is issuing this Intent to Issue for the reasons stated in the attached Technical Evaluation and Preliminary Determination.

The applicant, Sikes Corporation - Florida Tile Division, applied on February 8, 1989, to the Department of Environmental Regulation for permits to construct (modify) the Trim Press System (File No. AC 53-160479) and the Dorst Press System (File No. AC 53-160859) at their existing ceramic tile plant in Lakeland, Polk County, Florida.

The Department has permitting jurisdiction under Chapter 403, Florida Statutes, and Florida Administrative Code Rules 17-2 and 17-4. The project is not exempt from permitting procedures. The Department has determined that an air construction permit is required for the proposed work.

Pursuant to Section 403.815, F.S. and DER Rule 17-103.150, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Notice of Intent to Issue Permit. The notice shall be published one time only within 30 days, in the legal ad section of a newspaper of general circulation in the area affected. For the purpose of this rule, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. The applicant shall provide proof of publication to the Department, at the address specified within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

The Department will issue the permit with the attached conditions unless a petition for an administrative proceeding (hearing) is filed pursuant to the provisions of Section 120.57, F.S.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Petitions filed by the permit applicant and the parties listed below must be filed within 14 days of receipt of this intent. Petitions filed by other persons must be filed within 14 days of publication of the public notice or within 14 days of receipt of this intent, whichever first occurs. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;

(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;

(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;

(d) A statement of the material facts disputed by Petitioner, if any;

(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;

(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and

(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the applicant have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office in General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

Copies furnished to:

Bill Thomas, SW Dist.
Randal Reynolds, Lake Eng., Inc.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this NOTICE OF INTENT TO ISSUE and all copies were mailed before the close of business on June 2, 1989.

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to §120.52(9), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Martha Wise June 2, 1989
Clerk Date

State of Florida
Department of Environmental Regulation
Notice of Intent to Issue

The Department of Environmental Regulation hereby gives notice of its intent to issue permits to Sikes Corporation - Florida Tile Division, P. O. Box 447, Lakeland, FL, 33802, to construct (modify) the press systems at their ceramic tile manufacturing plant located at 1 Sikes Blvd., Lakeland, Polk County, Florida. The project involves renovation of 5 existing Dorst presses and four replacement trim presses. The total particulate matter emissions from the project of 5.14 TPY will not cause a violation of any ambient air quality standard. A determination of Best Available Control Technology (BACT) was not required. The Department is issuing this Intent to Issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within fourteen (14) days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information:

(a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
(b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
(c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
(d) A statement of the material facts disputed by Petitioner, if any;
(e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
(f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
(g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dept. of Environmental Regulation
Southwest District
4520 Live Oak Fair Blvd.
Tampa, FL 33610-7347

Lakeland Public Library
100 Lake Morton Drive
Lakeland, FL 33802

Any person may send written comments on the proposed action to Mr. Bill Thomas at the Department's Tallahassee address. All comments mailed within 14 days of the publication of this notice will be considered in the Department's final determination.

Technical Evaluation
and
Preliminary Determination

Sikes Corporation
Florida Tile Division
Lakeland, Polk County, Florida

Tile Press Area Modification

Sources	File Numbers
Trim Press System No. 1	AC 53-160479
Dorst Press System No. 2	AC 53-160859

Department of Environmental Regulation
Division of Air Resources Management
Bureau of Air Quality Management
Central Air Permitting

May 31, 1989

I. General Information

A. Applicant

Sikes Corporation
Florida Tile Division
Post Office Box 447
Lakeland, Florida 33802

B. Request

On February 8, 1989, Mr. William R. Boakes, Vice President for Development and Engineering, submitted an application for permit to construct/modify the press area of their ceramic tile manufacturing plant (SIC 3253) as part of a continuation of a general program of upgrading and modifying the production equipment at the Florida Tile Division's Lakeland plant. The application was considered complete on March 17, 1989, when additional information (March 15 letter) on the project was received by the Department.

C. Project and Location

This project involves the renovation of five existing Dorst presses (File No. AC 53-160859) and four replacement trim presses (File No. AC 53-160479) used to shape the ceramic tile products at Sikes Corporation's Florida Tile Division plant located at 1 Sikes Boulevard, Lakeland, Polk County, Florida. The UTM coordinates of this plant are Zone 17, 405.2 km E and 3102.4 km N.

Four replacement trim presses and a Pneumafil filter, designated press area system No. 1, will be installed and initially operated on an experimental basis. The filter will also be used to control several future presses. The design production rate of each trim press is 3.25 TPH.

The existing Mikropulsaire baghouse (permit No. AO 53-148916) will be modified to delete the control of the Dorst presses. A new Pneumafil filter will be installed to control the 5 Dorst presses and several future trim presses. This Pneumafil filter will be designated press area system No. 2.

The applicant plans to install and connect additional process equipment to systems Nos. 1 and 2 in the future. Although the systems are designed to handle the additional equipment, their installation is not covered by this determination. New applications for permit to construct will be required for this proposed equipment.

D. Process and Emissions

The trim and Dorst presses take pneumatically conveyed prill from the body preparation plant and compress it into a variety of tile shapes called greenware. The greenware is conveyed to other equipment at this facility, which is not addressed in this determination, for additional processing.

System No. 1 (replacement trim presses) will use a Pneumafil 13.5-456-12 straight fire filter having 7045 sq. ft. of filter area to treat an estimated 52,800 ACFM of air. Initially, 16,000 ACFM of contaminated air will come from the four replacement trim presses. The collection efficiency of the filter is 99.6% for particles above 10 microns in size. Particulate matter emission from system No. 1 is estimated to be 0.55 lbs/hr (2.26 TPY) or 0.0012 grains per cubic foot. Allowable emission will be set at 10% above the estimate to account for fluctuations in production. The PM_{10} emissions are estimated at 1.86 TPY.

System No. 2 (Dorst presses) uses a similiar filter to treat 55,200 ACFM which includes 17,000 ACFM of contaminated air from the 5 Dorst presses. Particulate matter emissions from system No. 2 is estimated to be 0.58 lbs/hr (2.40 TPY) or 0.0012 grains per cubic foot. Allowable emission will be set at 10% above the estimate to account for fluctuations in production. The PM_{10} emissions are estimated at 1.98 TPY.

If the installation of the future presses mentioned in the proceeding section of this determination are approved by the Department, particulate matter emissions from systems No. 1 and 2 will increase.

In a letter dated February 15, 1989, the permittee's engineer stated that the tile presses, No. 4 straight line unit, and mixer No. 3 along with the Sly H-9054-A baghouse that controls this process equipment (AO 53-153937) has been shut down and will be dismantled immediately. They requested the permit for this equipment be canceled and that credit for the actual reduction in emissions of 23.6 TPY particulate matter (PM) and 20 TPY PM_{10} be applied to the ongoing program of upgrading and modifying this tile production facility.

As a result of this credit, this facility will have a net contemporaneous emission reduction of 2.39 TPY PM (23.6 TPY dismantled equipment -16.07 TPY body preparation plant -5.14 TPY presses) at this stage of the facility modification. As a result of the shut-down of the Sly baghouse, the construction of the body preparation plant and the presses covered by this determination, PM_{10} emissions will be reduced by 6.93 TPY.

II. Rule Applicability

The proposed project, modification to the press area for a ceramic tile manufacturing facility (SIC 3253), is subject to preconstruction review under the provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administrative Code.

The plant is in an area designated attainment for all criteria pollutants (17-2.420).

The plant is being built at a major facility whose allowable particulate matter (PM) emissions exceed 100 TPY (17-2.100). Tile manufacturing plants are not on the list of major facility categories, Table 500-1. The increase in emissions from the proposed project are less than the significant emissions rates listed in Table 500-2.

The project is subject to F.A.C. 17-2.520, Sources Not Subject to Prevention of Significant Deterioration or Nonattainment Requirements. The allowable emissions will be set at the rates requested by the applicant. Higher emissions could subject this project to different regulations.

III. Technical Evaluation

The only pollutant emitted from the press area is particulate matter.

The four new replacement trim presses will be controlled by a 99.6% efficient Pneumafil 13.5-456-12 straight fire filter. This unit is called trim press area system No. 1. Maximum particulate matter emissions from the four replacement trim presses will be 0.61 lbs/hr and, based on 8,232 hrs/yr operation, 2.5 TPY. PM_{10} emissions are estimated to be 1.86 TPY.

Five existing Dorst presses will be removed from the existing Mikropulsaire baghouse (permit No. AO 53-148916) and connected to another 99.6% efficient Pneumafil 13.5-456-12 straight fire filter. This unit is called press area system No. 2. Maximum particulate matter emissions from the five existing Dorst presses will be 0.64 lbs/hr and, based on 8,232 hrs/yr operation, 2.64 TPY. PM_{10} emissions are estimated to be 1.98 TPY.

Dust collected by the filters will be recycled to the body preparation plant by an air transport system.

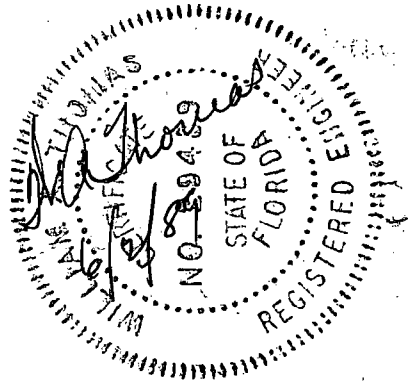
IV. Air Quality Analysis

The impact from this contemporaneous emissions change in particulate matter emissions for the new equipment will not violate any ambient air quality standard or allowable

increment for total suspended particulate or PM_{10}.

V. Conclusion

Based on the information provided by Florida Tile Company, the Department has reasonable assurance that the proposed tile press area modification as described in this evaluation and subject to the conditions proposed herein, will not cause or contribute to a violation of any ambient air quality standard or PSD increment, or violate any other technical provision of Chapter 17-2 of the Florida Administrative Code.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
Sikes Corporation
Florida Tile Division
P. O. Box 447
Lakeland, Florida 33802

Permit Number: AC 53-160859
Expiration Date: November 30, 1989
County: Polk
Latitude/Longitude: 28°02'45"N
81°57'45"W
Project: Dorst Press System No. 2

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Installation of a Pneumafil Straight Fire Model 13.5-456-12 dust filter to control the emissions from 5 Dorst presses processing 6.2 TPH of tile greenware. The Dorst presses are located at the permittee's plant at 1 Sikes Blvd., Lakeland, Polk County, Florida. The UTM coordinates of this plant are Zone 17, 405.2 km E and 3,102.4 km N.

Construction shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received February 8, 1989.
2. DER's letter dated February 22, 1989.
3. Lake Eng.'s February 15, 1989 letter.
4. Lake Eng.'s March 15, 1989 letter.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. The 5 Dorst presses are allowed to process up to 6.2 TPH (total) tile greenwares.

2. The trim presses may operate 24 hrs/day, 7 days/wk, and 49 wks/yr or 8,232 hrs/yr.

3. The permittee shall maintain logs that can be used to determine compliance with Specific Conditions No. 1 and 2.

SPECIFIC CONDITIONS:

4. All reasonable precautions shall be taken to minimize generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. 17-2.610(3). These provisions are applicable to any source including, but not limited to, vehicular movement, transportation of materials, construction, demolition or wrecking, or industrial related activities such as loading, unloading, storing, handling, and processing of materials. Reasonable precautions shall include, but are not limited to, wetting or cleaning of areas generating unconfined emissions.

5. Pursuant to F.A.C. 17-2.620(2), the permittee shall not allow the discharge of air pollutants which cause or contribute to an objectionable odor.

6. Particulate matter emissions from the Pneumafil dust filter for the Dorst Press System No. 2 shall not exceed 0.64 lbs/hr (2.63 TPY) or 5% opacity.

7. This source shall be tested for particulate matter emissions, while operating at its permitted capacity, by EPA Methods 1, 2, 3, 4, and 5 if visible emissions, as determined by EPA method 9, exceed 5% opacity. Specifications for the referenced test methods are listed in F.A.C. 17-2700(6)(b), (Dec. 5, 1988).

8. The Department's Southwest District office in Tampa shall be notified at least 15 days prior to any compliance tests.

9. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to BAQM prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

10. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviation from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

PERMITTEE:
Sikes Corporation

Permit No. AC 53-160859
Expiration Date: November 30, 1989

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Dale Twachtmann, Secretary

Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

PERMITTEE:
Sikes Corporation
Florida Tile Division
P. O. Box 447
Lakeland, Florida 33802

Permit Number: AC 53-160479
Expiration Date: November 30, 1989
County: Polk
Latitude/Longitude: 28°02'45"N
81°57'45"W
Project: Trim Press System No. 1

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Installation of four replacement ceramic tile trim presses and a Pneumafil Straight Fire Model 13.5-456-12 dust filter. Each press will process approximately 3.25 TPH of tile greenware. The trim presses are located at the permittee's plant at 1 Sikes Blvd., Lakeland, Polk County, Florida. The UTM coordinates of this plant are Zone 17, 405.2 km E and 3,102.4 km N.

Construction shall be in accordance with the permit application, plans, documents, amendments and drawings, except as otherwise noted in the General and Specific Conditions.

Attachments are listed below:

1. Application received February 8, 1989.
2. DER's letter dated February 22, 1989.
3. Lake Eng.'s February 15, 1989 letter.
4. Lake Eng.'s March 15, 1989 letter.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

a. Having access to and copying any records that must be kept under the conditions of the permit;

b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and

c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the Department with the following information:

a. a description of and cause of non-compliance; and

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the Department, may be used by the Department as evidence in any enforcement case arising under the Florida Statutes or Department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:

a. Upon request, the permittee shall furnish all records and plans required under Department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the Department, during the course of any unresolved enforcement action.

GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

SPECIFIC CONDITIONS:

1. Each of the four presses is allowed to process 3.25 TPH tile greenware.

2. The trim presses may operate 24 hrs/day, 7 days/wk, and 49 wks/yr or 8,232 hrs/yr.

3. The permittee shall maintain logs that can be used to determine compliance with Specific Conditions No. 1 and 2.

SPECIFIC CONDITIONS:

4. All reasonable precautions shall be taken to minimize generation of unconfined emissions of particulate matter in accordance with the provisions in F.A.C. 17-2.610(3). These provisions are applicable to any source including, but not limited to, vehicular movement, transportation of materials, construction, demolition or wrecking, or industrial related activities such as loading, unloading, storing, handling, and processing of materials. Reasonable precautions shall include, but are not limited to, wetting or cleaning of areas generating unconfined emissions.

5. Pursuant to F.A.C. 17-2.620(2), the permittee shall not allow the discharge of air pollutants which cause or contribute to an objectionable odor.

6. Particulate matter emissions from the Pneumafil dust filter for the trim press system No. 1 shall not exceed 0.61 lbs/hr (2.51 TPY) or 5% opacity.

7. This source shall be tested for particulate matter emissions, while it is operating at its permitted capacity, by EPA Methods 1, 2, 3, 4, and 5 if visible emissions, as determined by EPA Method 9, exceed 5% opacity. Specifications for the referenced test methods are listed in F.A.C. 17-2.700(6)(b), (Dec. 5, 1988).

8. The Department's Southwest District office in Tampa shall be notified at least 15 days prior to any compliance tests.

9. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to BAQM prior to 60 days before the expiration of the permit (F.A.C. 17-4.090).

10. An application for an operation permit must be submitted to the Southwest District office at least 90 days prior to the expiration date of this construction permit or within 45 days after completion of compliance testing, whichever occurs first. To properly apply for an operation permit, the applicant shall submit the appropriate application form, fee, certification that construction was completed noting any deviation from the conditions in the construction permit, and compliance test reports as required by this permit (F.A.C. 17-4.220).

PERMITTEE:
Sikes Corporation

Permit No. AC 53-160479
Expiration Date: November 30, 1989

Issued this _____ day
of _____, 1989

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

_____
Dale Twachtmann, Secretary

ATTACHMENTS ABAILABLE UPON REQUEST

LAKE ENGINEERING, INC.
6000 LAKE FORREST DRIVE
SUITE 350
ATLANTA, GEORGIA 30328

May 31, 1989

VIA TELEFAX

Mr. Clair Fancy
Deputy Chief
DER BAQM
2600 Blairstone Road
Tallahassee, FL 32399-2400

Re: Florida Tile Div./Sikes Corporation
Air permit application: Press Area Renovations

Dear Mr. Fancy:

Drawing no. M-2801 for the application referenced above incorrectly shows six Dorst presses served by new System No. 2. Only five Dorst presses will be utilized as stated in the application and as shown on the overall site plan. A portion of corrected drawing no. M-2801 is attached.

If you have any questions, please give me a call.

Sincerely,

LAKE ENGINEERING, INC.

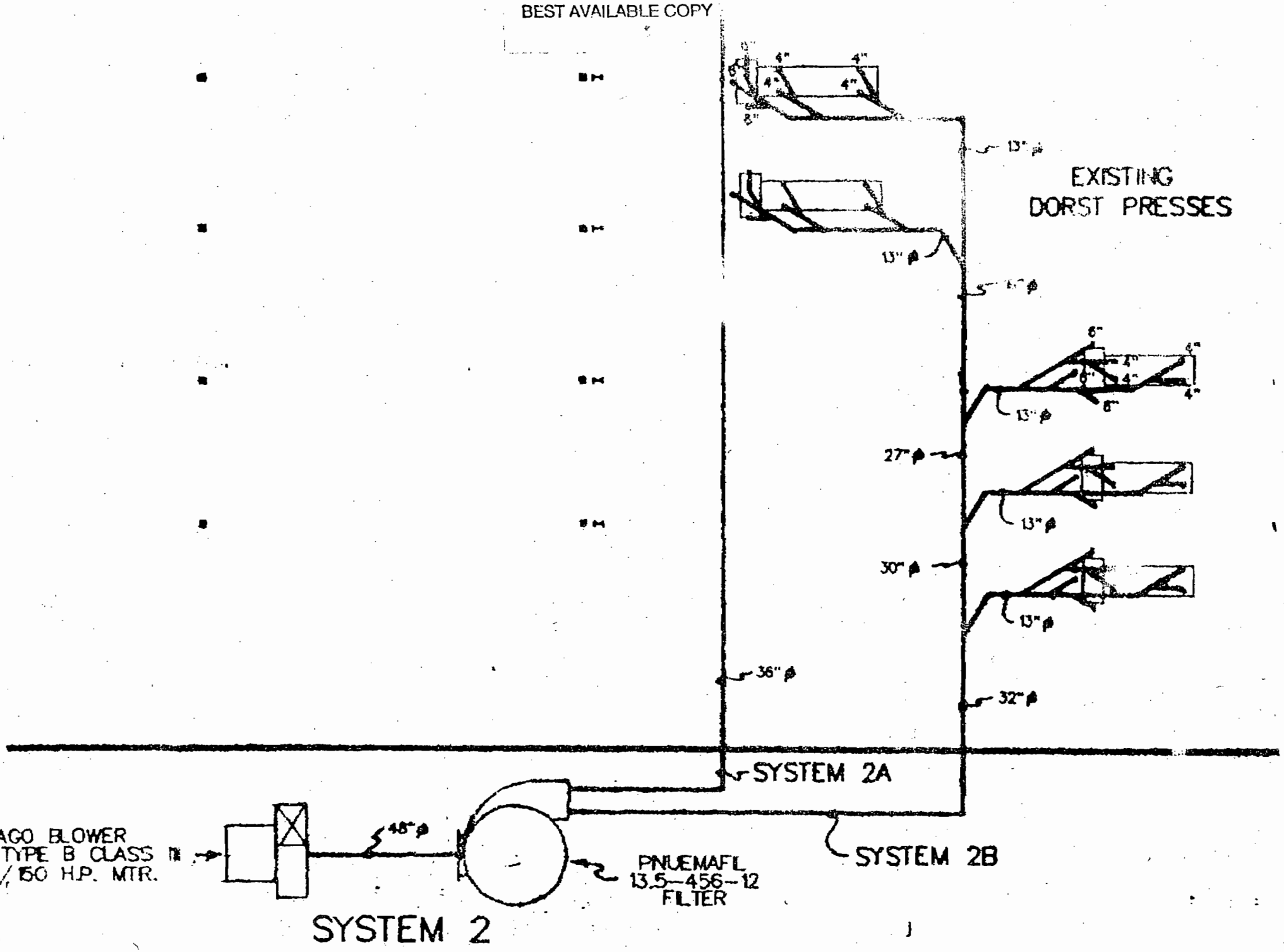
Randal M. Reynolds

Randal M. Reynolds, P.E.
Project Manager

RMR:mhm

cc: Mr. Bill Boakes
Mr. Al Burgess

328.2.1



file copy

LAKE ENGINEERING, INC.
6000 LAKE FORREST DRIVE
SUITE 350
ATLANTA, GEORGIA 30328

March 15, 1989

Mr. C.H. Fancy, P.E., Deputy Chief
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Florida Tile has received your letter dated February 22, 1989, and has requested that I respond. I have listed the responses below:

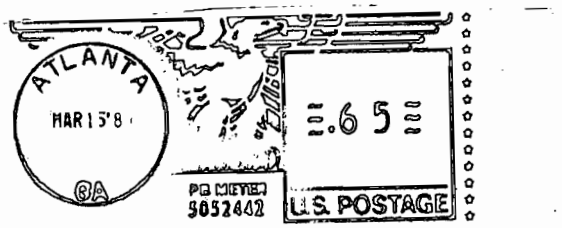
1. The Dorst and trim presses will receive a clay-based spray-dried powder from the body preparation system via a closed pneumatic conveyor and hopper located above each press. The powder is gravity fed at a controlled rate into the presses where it is compressed into a variety of tile shapes called greenware. The Dorst presses form square or rectangular shapes which will become wall tile. The trim presses form square or rectangular shapes with rounded edges and/or curves which will become trim.

2. The dust collected by the baghouses will be recycled via a dense phase, closed air transportation system to the body preparation area where it will be stored in a bin-vented holding bin prior to being batched as a raw material in the body preparation process.

3. The particulate emissions from the proposed baghouses will contain varying estimated PM_{10} percentages. These estimates are based on AP-42, Appendix C.2, Table C.2-1. Category 3, "Aggregate Unprocessed Ores," is the most appropriate generalized particle size category for this facility. All calculation sheets are attached for your review.

   Please note that on February 15, 1989, your office was notified that the Sly baghouse and associated processes ceased all operation. This resulted in a substantial reduction of total particulate and PM_{10} emissions. These calculations are also attached. Table 1 summarizes the estimated PM_{10} emissions changes to date.

TELEPHONE: (404) 257-9634 TELEX: 4931284LAKE UI FAX: (404) 847-9496



LAKE ENGINEERING, INC.
6000 LAKE FOREST DRIVE, SUITE 350
ATLANTA, GEORGIA 30328

Mr. C.H. Fancy, P.E.
Deputy Chief
Florida Department of Environmental
Regulation
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

4. Maximum process rates:
   Dorst press 12,357 lbs/hr each press.
   Trim presses 6,500 lbs/hr each press.

If you have any questions, please contact me.

Sincerely,

LAKE ENGINEERING, INC.

Randy Reynolds

Randal M. Reynolds, P.E.
Project Manager

RMR:mhm

cc: Mr. Bill Boakes

328.2.1

copied: M. Hanks
B. Thomas, SW Dist.
CHF/BT

Table 1

Estimated PM_{10} Emissions

Florida Tile Division/Sikes Corp.
Lakeland, FL

Source	"Credits"	"Debits"	Balance
Spray dryer exhaust		5.83	5.83
Material handling baghouse exhaust		3.33	9.16
Vacuum system exhaust		0.07	9.32
Shut-down of Sly baghouse	20.0		-10.77
Press Area, System No. 1		1.86	- 8.91
Press Area, System No. 2		1.98	- 6.93

Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corporation
Lakeland, FL

Process description: Press Area, System 1

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 564 tons/yr. (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	85	192	288

CONTROLLED SIZE EMISSIONS*

Type of control device: Fabric Filter (baghouse)

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (Table C.2-3):	99	99.5	99.5
Mass in size range** before control (tons/year):	85	107	96
Mass in size range after control: (tons/year):	0.85	0.535	0.48
Cumulative mass (tons/year):	0.85	1.385	1.865

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corp.
Lakeland, FL

Process description: Press Area, System 2

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 600 tons/yr. (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	90	204	306

CONTROLLED SIZE EMISSIONS*

Type of control device:

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (Table C.2-3):	99	99.5	99.5
Mass in size range** before control (tons/year):	90	114	102
Mass in size range after control: (tons/year):	0.90	0.57	0.51
Cumulative mass (tons/year):	0.90	1.47	1.98

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

Emissions Credit
Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corp.
Lakeland, FL

Process description: W.W. Sly baghouse shut-down

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 901 tons/yr. (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	135	306	460

CONTROLLED SIZE EMISSIONS*

Type of control device: shaker baghouse

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (estimated Table C.x-x):	90	98	98
Mass in size range** before control (tons/year):	135	171	154
Mass in size range after control: (tons/year):	13.5	3.42	3.08
Cumulative mass (tons/year):	13.5	16.92	20.0

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corp.
Lakeland, FL

Process description: S1- Spray dryer exhaust

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 1682 TPY (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	252.3	571.9	857.8

CONTROLLED SIZE EMISSIONS*

Type of control device: Multiclone, venturi scrubber in series

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (Table C.2-3):	0.98	0.998	0.9995
Mass in size range** before control (tons/year):	252.3	319.6	285.9
Mass in size range after control: (tons/year):	5.05	0.64	0.14
Cumulative mass (tons/year):	5.05	5.69	5.83

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corp.
Lakeland, FL

Process description: S2 - Material handling baghouse exhaust

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 1008 TPY (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	151.2	342.7	514.8

CONTROLLED SIZE EMISSIONS*

Type of control device: baghouse

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (Table C.2-3):	99	99.5	99.5
Mass in size range** before control (tons/year):	151.2	191.5	172.10
Mass in size range after control: (tons/year):	1.51	0.96	0.86
Cumulative mass (tons/year):	1.51	2.47	3.33

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

Figure C.2-2. CALCULATION SHEET.

SOURCE IDENTIFICATION

Source name and address: Florida Tile Div./Sikes Corp.
Lakeland, FL

Process description: S3 - Vacuum system

AP-42 Section: Table C.2-1, Appendix C.2

Uncontrolled AP-42 emission factor: NA (units)

Activity parameter: NA (units)

Uncontrolled emissions: 20.2 TPY (units)

UNCONTROLLED SIZE EMISSIONS

Category name: Aggregrate, unprocessed ores

Category number: 3

	Particle size (μm)		
	≤ 2.5	≤ 6	≤ 10
Generic distribution, Cumulative percent equal to or less than the size:	15	34	51
Cumulative mass ≤ particle size emissions (tons/year):	3.03	6.87	10.3

CONTROLLED SIZE EMISSIONS*

Type of control device: baghouse

	Particle size (μm)		
	0 - 2.5	2.5 - 6	6 - 10
Collection efficiency (Table C.2-3):	99	99.5	99.5
Mass in size range** before control (tons/year):	3.03	3.84	3.43
Mass in size range after control: (tons/year):	0.03	0.019	0.017
Cumulative mass (tons/year):	0.03	0.049	0.066

* These data do not include results for the greater than 10 μm particle size range.
** Uncontrolled size data are cumulative percent equal to or less than the size. Control efficiency data apply only to size range and are not cumulative.

P 274 007 596

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to: Mr. William R. Boakes, Sikes Corp.
Street and No.: P.O. Box 447
P.O., State and ZIP Code: Lakeland, FL 33802

Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	Mailed: 2-22-89 Permit: AC 53-160479 AC 53-158856

PS Form 3800, June 1985 ★ U.S.G.P.O. 1985-480-794

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)* 2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mr. William R. Boakes, Vice Pres.
Sikes Corp./Fla. Tile Division
P. O. Box 447
Lakeland, FL 33802

4. Article Number
P 274 007 596

Type of Service:
☐ Registered ☐ Insured
☑ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X Rose Howard

7. Date of Delivery
2-24-89

8. Addressee's Address *(ONLY if requested and fee paid)*

PS Form 3811, Mar. 1988 ★ U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor Dale Twachtmann, Secretary John Shearer, Assistant Secretary

February 22, 1989

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William R. Boakes, Vice President
Sikes Corporation
Florida Tile Division
Post Office Box 447
Lakeland, Florida 33802

Dear Mr. Boakes:

Re: Construction Permit Applications to Upgrade Sikes Corporation

The Department has made a preliminary review of your application for permit to upgrade the Dorst and trim presses (File No. AC 53-160479) at your tile manufacturing plant in Lakeland, Polk County, Florida. Before this application can be processed, we need the following information:

1. Please provide a general description of the operations performed by the Dorst and trim presses during the manufacture of the tiles.

2. How will the dust collected by the baghouses be recycled to the process and what precautions will be taken to minimize unconfined emissions during this operation?

3. What percentage of the particulate matter emissions from the proposed baghouses will be PM_{10}? What is the basis for this estimate?

4. What will be the maximum process weight rate for the replacement trim presses when they are placed in normal production?

We will resume processing this application after we receive the requested information. Also, we are still waiting on emission data for the numerous vent filters used on the storage tanks and process equipment to complete the application for your body preparation plant (File No. AC 53-158856).

If you have any questions on this matter, please write or call Willard Hanks at (904)488-1344.

Sincerely,

C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality
Management

CHF/WH/s

cc: Bill Thomas, SW District
Randal Reynolds, P.E.

Willard,
Will you be writing separate Prelim. Det. packages on these? Or do you know yet?
Patty
1 Prel. Det. & 2 permits for Fl. Tile

*** TITLE OF SOURCE £ 2 ***

*** TEST OF MPTPLU ***

>>>INPUT PARAMETERS<<<

OPTIONS
IF = 1, USE OPTION
IF = 0, IGNORE OPTION
IOPT(1) = 0 (GRAD PLUME RISE)
IOPT(2) = 0 (STACK DOWNWASH)
IOPT(3) = 0 (BUOY. INDUCED DISP.)
IOPT(4) = 1 (EXTRAPOLATED WIND)

METEOROLOGY
AMBIENT AIR TEMPERATURE = 293.00 (K)
MIXING HEIGHT   = 2000.00 (M)
ANEMOMETER HEIGHT   =   10.00 (M)
WIND EXTRAPOLATION EXPONENTS = A: .10, B: .15, C: .20
                                D: .25, E: .30, F: .30

RECEPTOR HEIGHT   =   .00 (M)

SOURCE
EMISSION RATE = 8.06E-02 (G/SEC)
STACK HEIGHT =   6.10 (M)
EXIT TEMP.   =   294.11 (K)
EXIT VELOCITY =   19.77 (M/SEC)
STACK DIAM.   =   1.30 (M)
VOLUME FLOW   = 2.61E+01 (M**3/SEC)

>>>CALCULATED PARAMETERS<<<

VOLUMETRIC FLOW = 2.61E+01 (M**3/SEC)
BUOYANCY FLUX PARAMETER =   .31 (M**4/SEC**3)

*** MAXIMUM CONCENTRATION FOR SOURCE £ 2 ***

**** STACK TOP WINDS EXTRAPOLATED FROM 10.0 METERS ****

*** WIND SPEED AT 10.0 METER HEIGHT IS GIVEN HERE ***

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	1.00	6.9474E+00	1.896	32.6

**** CORRESPONDING SPATIAL DISTRIBUTION ****

DISTANCE (KM)	CONCENTRATION (UG/M**3)
.1	.0000E+00
.2	1.4903E-11
.3	2.3226E-05
.5	1.0362E-01
.7	1.2931E+00
1.0	4.0900E+00
1.5	6.5505E+00
2.0	6.9287E+00
3.0	5.7782E+00
5.0	3.7916E+00
7.0	2.7094E+00
10.0	1.8503E+00
15.0	1.1705E+00
20.0	8.5158E-01

30.0	5.4028E-01
50.0	3.0912E-01

** OVERALL MAXIMUM CONCENTRATION IS FOUND IN SOURCE # 1 ***

*** WIND SPEED AT 10.0 METER HEIGHT IS GIVEN HERE ***

STABILITY	WIND SPEED (M/SEC)	MAX CONC (UG/CU M)	DIST OF MAX (KM)	PLUME HT (M)
6	1.00	7.0209E+00	1.825	31.9

(1) THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

(2) THE PLUME IS CALCULATED TO BE AT A HEIGHT WHERE CARE SHOULD BE USED IN INTERPRETING THE COMPUTATION.

(3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 50 KILOMETERS FROM THE SOURCE.

*** SPATIAL DISTRIBUTION OF WORST CONDITIONS ***
(CUMULATED FOR THE LAST 2 SOURCE(S))

DISTANCE (KM)	MAX CONC (UG/M**3)	STABILITY	WIND (M/S)
.1	1.1735E+01	3	15.00
.2	1.0964E+01	4	15.00
.3	1.0007E+01	4	10.00
.5	7.7260E+00	4	5.00
.7	1.0376E+01	5	2.00
1.0	1.0821E+01	5	2.00
1.5	1.3293E+01	6	1.00
2.0	1.3895E+01	6	1.00
3.0	1.1478E+01	6	1.00
5.0	7.4835E+00	6	1.00
7.0	5.3325E+00	6	1.00
10.0	3.6345E+00	6	1.00
15.0	2.2955E+00	6	1.00
20.0	1.6688E+00	6	1.00
30.0	1.0580E+00	6	1.00
50.0	6.0492E-01	6	1.00

Stop - Program terminated.

Est. Max 24 hr Impact = 0.4 x 7.48 ug/m3 ≈ 3 ug/m3 for Pramo

IMPACT BODY PREP EST HIGH ≈ 35 ug/m3

Total (BIAS HIGH) ≈ 38 ug/m3

37 ug/m3

ALLOWABLE

THIS IS OK BECAUSE OF HIGH EST FOR BODY PREP

BEST AVAILABLE COPY

#435 P01

8-15-94

LAKE ENGINEERING, INC.

Bill T.

If you do not receive all of the pages indicated above please call the sender at 404/257-9534.

Facsimile Operator

40 TPA 53.0009

AIR-072

No entry for permit noted

BEST AVAILABLE COPY

AIR040 40TPA53000904 PM
TILE PRESSES W/2 BAGHOUSE
(PANGBORN + W.W. SLY)

Pot. Em = 0.49 lbs/hr
Est. Em = 1.0 TPY
Act Em = 47.2 TPY
Allow Em = 0.49 lbs/hr (15 TPY)

[illegible]

... emission of approximately [illegible] tons per year ... appropriate ... for this ... referenced above.

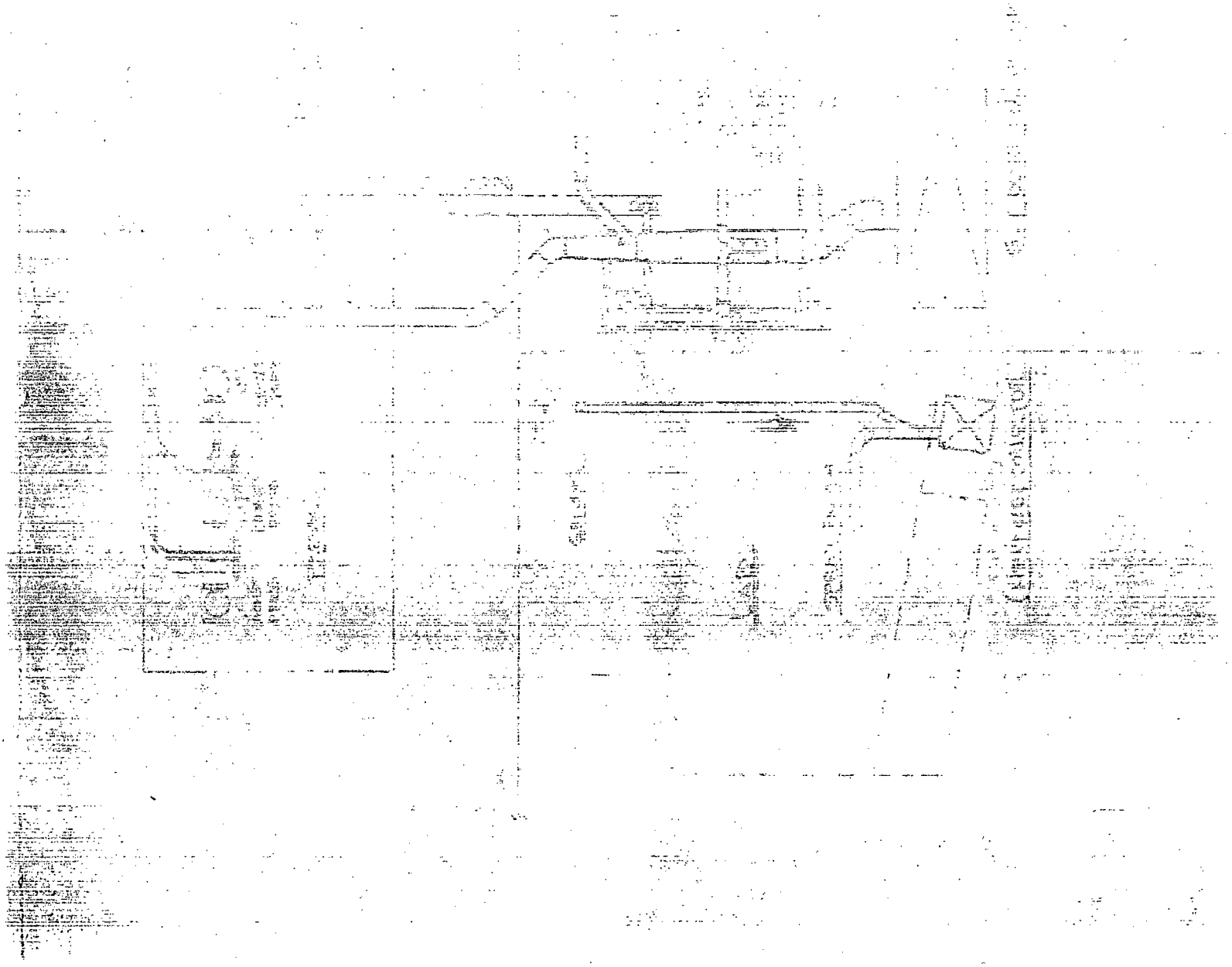
... sources ... straight line ... of these sources has been discontinued and will ... immediately ... for your review.

If you have any questions, please contact me.

Sincerely,

LAKE ENGINEERING, INC.

Randal M. Reynolds, P.E.
Project Manager



Fed. Express 1924613246 - Feb 7, 1989 Atlanta, GA

LAKE ENGINEERING, INC.
6000 LAKE FORREST DRIVE
SUITE 350
ATLANTA, GEORGIA 30328

February 7, 1989

VIA FEDERAL EXPRESS

Mr. Clair Fancy
Deputy Chief
DER BAQM
2600 Blairstone Road
Tallahassee, FL 32399-2400

Re: Florida Tile Div./Sikes Corporation
Air permit application: Press Area Renovations

Dear Mr. Fancy:

Enclosed for your review is an original and three copies of the application referenced above. Also enclosed is a check for $200.00 to cover the application fee.

The enclosed permit application includes estimated total emissions of particulates of 4.66 tons per year. We believe that these estimated emissions plus 10 percent, to allow for future wear and tear and aging of the equipment, would be acceptable for permit conditions. The adjusted total permitted emissions from the two baghouses described in the application would be 5.13 tons per year.

If you have any questions, please contact me at your convenience.

Sincerely,

LAKE ENGINEERING, INC.

Randal M. Reynolds

Randal M. Reynolds, P.E.
Project Manager

RMR:mhm

cc: Mr. Bill Boakes

328.2.1
copied: W. Hanks
B. Thomas, SW Dist.

FEDERAL EXPRESS — AIRBILL

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 1924613246

8261M 1924613246

RECIPIENT'S COPY

Date: 2-7-89

1 From (Your Name) Please Print: Sandy Reynolds
Your Phone Number (Very Important): 404) 257-963
Company: LAKE ENGINEERING & DEV
Department/Floor No.:
Street Address: 000 LAKE FOREST DR STE 350
City: ATLANTA State: GA ZIP Required: 3 0 3 2 7

2 To (Recipient's Name) Please Print: Mr. Clair Fancy
Recipient's Phone Number (Very Important): ( )
Company: DER BAQM
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 2600 Blairstone Road
City: Tallahassee State: FL ZIP Required: 32399-2

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.): 328.1

PAYMENT ☒ Bill Sender ☐ Bill Recipient's FedEx Acct. No. ☐ Bill 3rd Party FedEx Acct. No. ☐ Bill Credit Card ☐ Cash

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

4 SERVICES

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2 ☐ COURIER-PAK OVERNIGHT ENVELOPE*
3 ☐ OVERNIGHT BOX
4 ☐ OVERNIGHT TUBE
5 ☐ STANDARD AIR Delivery not later than second business day
6 ☐ OVERNIGHT LETTER*
7 ☐
8 ☐
9 ☐
10 ☐
*Declared Value Limit $100

DELIVERY AND SPECIAL HANDLING

1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☒ DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) ☐
4 ☐ DANGEROUS GOODS (Extra charge)
5 ☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Release Signature Not Applicable)
6 ☐ DRY ICE _____ Lbs
7 ☐ OTHER SPECIAL SERVICE _____
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐
11 ☐
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT	YOUR DECLARED VALUE	OVER SIZE
	LBS		
	LBS		
	LBS		
	LBS		
Total	Total	Total	

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3 ☐ Drop Box 4 ☐ B.S.C. 5 ☐ Station

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☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold
Street Address:
City: State: Zip:
Received By: X
Date/Time Received: FedEx Employee Number:

5 Sender authorizes Federal Express to deliver this shipment without obtaining a delivery signature and shall indemnify and hold harmless Federal Express from any claims resulting therefrom.
Release Signature: _____

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Declared Value Charge:
Other 1:
Other 2:
Total Charges:

PART #111800
REVISION DATE 7/88
PRINTED IN U.S.A. FXEM
009

Sikes

SIKES CORPORATION • P. O. BOX 447 • LAKELAND, FLORIDA 33802

№ 010574 [redacted] 631 588

SUN FIRST NATIONAL BANK OF POLK COUNTY
LAKELAND, FLORIDA

DATE February 6, 1989 $ *200.00*

PAY SIKES CORP. 200 DOLS 00 CTS DOLLARS

TO THE ORDER OF Florida Department of Environmental Regulation

SIKES CORPORATION

David F. McSween

AUTHORIZED SIGNATURE

[redacted]

DETACH AND RETAIN THIS STATEMENT
The Attached Check Is In Payment of Items Described Below
If Not Correct Please Notify Us Promptly. No Receipt Desired

DESCRIPTION		
Construction permit applicaton fee for the two dust collectors.		
2-6-89	200.00	11-175-429

SIKES CORPORATION

№ 010574

RECEIVED
FEB 8 1989
DER - BAQM

#200 pd. 2-8-89

AC53-160479

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

RECEIVED
FEB 8 1989
DER - BAQM

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Stationary industrial [X] New[1] [ ] Existing[1]

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Florida Tile Div./Sikes Corporation COUNTY: Polk

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit No. 2, Gas Fired) Press areas including five existing Dorst presses, four replacement trim presses and two pneumafil baghouses.

SOURCE LOCATION: Street 1 Sikes Blvd. City Lakeland

UTM: East 405,200 North 3,102,400

Latitude 28 ° 02 ' 45 "N Longitude 81 ° 57 ' 45 "W

APPLICANT NAME AND TITLE: William R. Boakes, Vice President, Devel. & Engineering

APPLICANT ADDRESS: P.O. Box 447, Lakeland, FL 33802

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Florida Tile Div./Sikes Corp.

I certify that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: William R. Boakes

William R. Boakes, Vice President
Name and Title (Please Type)

Development and Engineering
Date: Feb. 3, 1989 Telephone No. 813/687-7171

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollutant sources.

RANDAL M. REYNOLDS CERTIFICATE No. 38884 STATE OF FLORIDA REGISTERED ENGINEER

(Affix Seal)

Signed: Randal M. Reynolds

Randal M. Reynolds, P.E.
Name (Please Type)

Lake Engineering, Inc.
Company Name (Please Type)

6000 Lake Forrest Dr., Suite 350
Mailing Address (Please Type)

Atlanta, GA 30328

Florida Registration No. 38884 Date: 1-31-89 Telephone No. 404-257-9634

[1]See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

(See attached sheet)

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction Feb. 1989 Completion of Construction April 1989

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Equipment & installation	$326,000
Electrical	50,000
Foundations	20,000
	$396,000

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

existing Dorst presses (5 ea.) only

A053-148916 Issued: 8/30/88 Expires: 8/26/93

E. Is this application associated with or part of a Development of Regional Impact (DRI) pursuant to Chapter 380, Florida Statutes, and Chapter 22F-2, Florida Administrative Code? ____ Yes XX No

F. Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 49 ; if power plant, hrs/yr NA ; if seasonal, describe: NA

G. If this is a new source or major modification, answer the following questions. (Yes or No)

1. Is this source in a non-attainment area for a particular pollutant?	No
a. If yes, has "offset" been applied?	NA
b. If yes, has "Lowest Achievable Emission Rate" been applied?	NA
c. If yes, list non-attainment pollutants.	
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	No
3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.	No
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	No
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	No

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION II. GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment and expected improvements in source performance as a result of installation. State whether the project will result in full compliance.

This project is a continuation of a general program of upgrading and modifying the production equipment at the Lakeland facility. Initially five existing Dorst presses and four replacement trim presses will be included in the pressing area renovations included in this application. In the future, two Sacmi presses, three additional Dorst presses and eight additional trim presses will be added. The permit will be modified at the time that these additional sources are installed.

The four replacement trim presses will initially be operated only as experimental units with varying operating schedules producing varying types of ceramic tile trim pieces. A Pneumafil filter will also be installed with the four replacement trim presses as well as several future presses. This collector will be designated press area System No. 1.

For the five existing Dorst presses and for several future trim presses, a Pneumafil fabric filter will be used for dust collection. The existing Mikropulsaire baghouse permit (A053-148916) will be modified to delete the Dorst presses. The proposed Pneumafil filter will be designated as press area System No. 2.

Substantial improvements are expected in the press area as a result of this project. The Pneumafil filters are more than capable of handling the proposed and future presses. Also, the Mikropulsaire baghouse will be required to service significantly less sources as a result of this project. It is expected that this project will be in full compliance when properly installed, maintained and operated.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Tile body prills	Particulates	<0.5%	12,375	NA

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): 12,375 lbs/hr.

2. Product Weight (lbs/hr): (Tile greenware) 12,375 lbs/hr.

C. Airborne Contaminants Emitted:

	Name of Contaminant	Emission[1]		Allowed Emission[2] Rate per Ch. 17-2, F.A.C.	Allowable[3] Emission lbs/hr	Potential Emission[4]		Relate to Flow Diagram
		Maximum lbs/hr	Actual T/yr			lbs/hr	T/yr	
#1	Particulates	0.55	2.26	NA	NA	137	564	NA
#2	Particulates	0.58	2.40	NA	NA	146	600	NA

D. Control Devices: (See Section V, Item 4)

	Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles[5] Size Collected (in microns)	Basis for Efficiency (Sec. V, It[5]
#1	Pneumafil 13.5-456-12	Particulates	99.6	10 to 100	Mfg.'s data
#2	Pneumafil 13.5-456-12	Particulates	99.6	10 to 100	Mfg.'s data

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard

[4]Emission, if source operated without control (See Section V, Item 3)

[5]If Applicable

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
(Not applicable)			

*Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr

Fuel Analysis:

Percent Sulfur: (Not applicable) Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

F. If applicable, indicate the percent of fuel used for space heating. Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Collected dust is recycled to process.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: (See Table 1) ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated	(Not applicable)						

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ days/week _____

Manufacturer _____

Date Constructed _____ Model No. _____

TABLE 1

Emission Stack Geometry and Flow Characteristics

	System No. 1	System No. 2
Stack height, feet	20	20
Stack diameter, inches	51	51
Gas flow, ACFM	52,800	55,200
Gas temperature, °F	(ambient)	(ambient)
Moisture content, %	(ambient)	(ambient)
Exit velocity, fps	62.0	64.8

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (^oF)
			Type	BTU/hr	
Primary Chamber		(Not applicable)			
Secondary Chamber					

Stack Height: _____ ft. Stack Diameter _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner [ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

SECTION V: SUPPLEMENTAL REQUIREMENTS

(See attached sheets)

Please provide the following supplements where required for this application.

1. Total process input rate and product weight — show derivation.
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

SECTION V: SUPPLEMENTAL REQUIREMENTS

Total process input rate and product weight - show derivation

Utilization rate for four Dorst presses*: 9,900 lbs./hr.

5/4 x 9,900 = 12,375 lbs./hr.

Assume that the four replacement trim presses are operated only on an experimental basis with varying schedules producing varying types of trim pieces.

Basis of Potential Discharge

System No. 1: four replacement trim presses at 4,000 ACFM each: 16,000 ACFM (dust laden)

Non-dust laden air: 36,800 ACFM

TOTAL 52,800 ACFM

Dust laden air at 1.0 gr/ACF:
(16,000 x 1.0 x 60)/7,000 = 137 lbs./hr.

System No. 2: five Dorst presses at 3,400 ACFM each: 17,000 ACFM

Non-dust laden air: 38,200 ACFM

TOTAL 55,200 ACFM

Dust laden air at 1.0 gr/ACF:
(17,000 x 1.0 x 60)/7,000 = 146 lbs./hr.

Basis of Emission Estimates

	System No. 1	System No.2
Inlet dust loading, lbs./hr.	137	146
Collection efficiency, %	99.6	99.6
Exit dust loading, lbs./hr.	0.55	0.58
Exit dust loading, tpy	2.26	2.40

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*Based on application dated May 1983.

Air Emission Control Equipment

Name/Model Nos.: Pneumafil Model 13.5-456-12 (2 each)

No. of bags: 456

Cloth area: 7,045 sq. ft.

Bag length: 12 ft.

See Attachment 1 for additional literature details.

Drawings

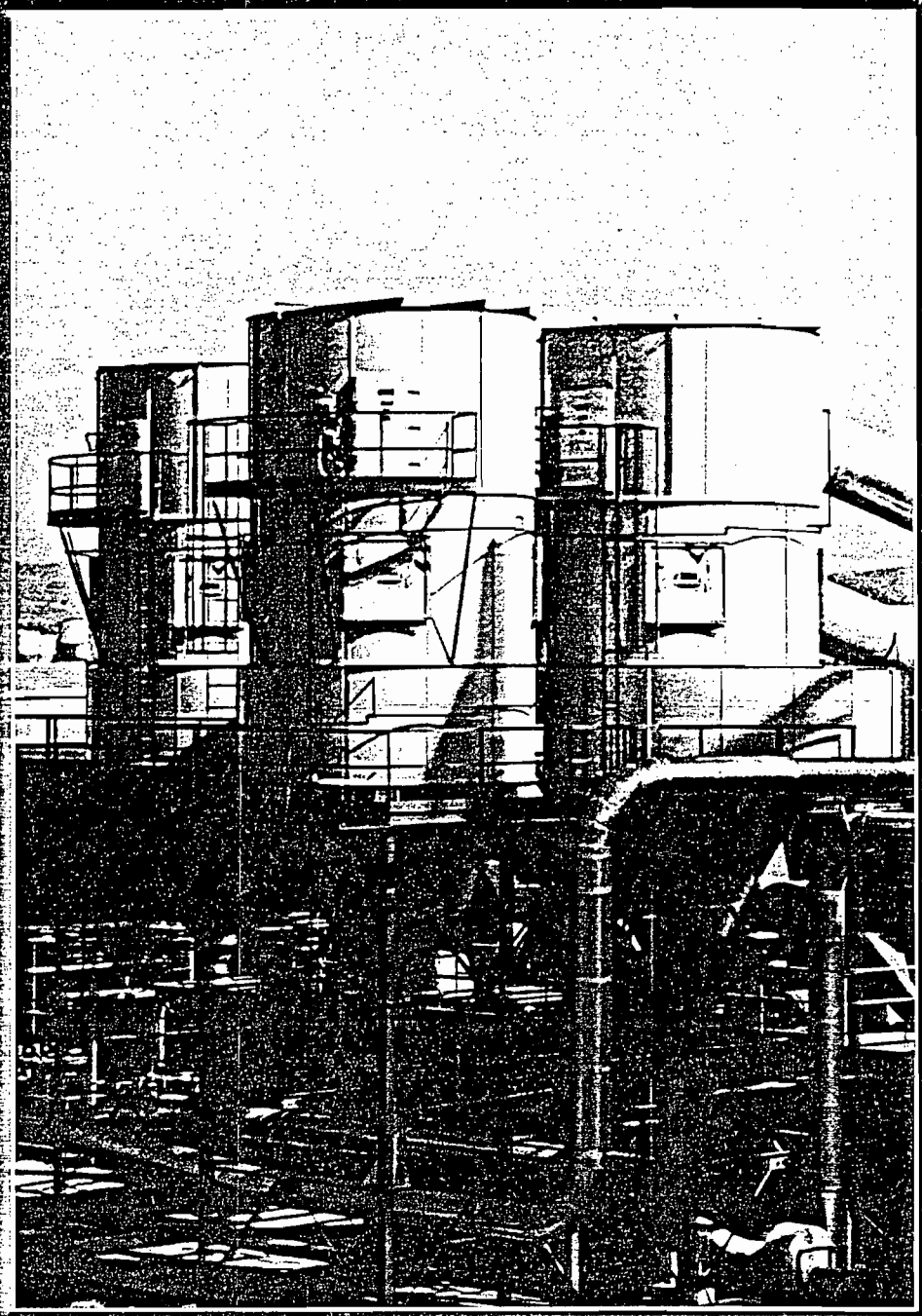
See Attachment 2.

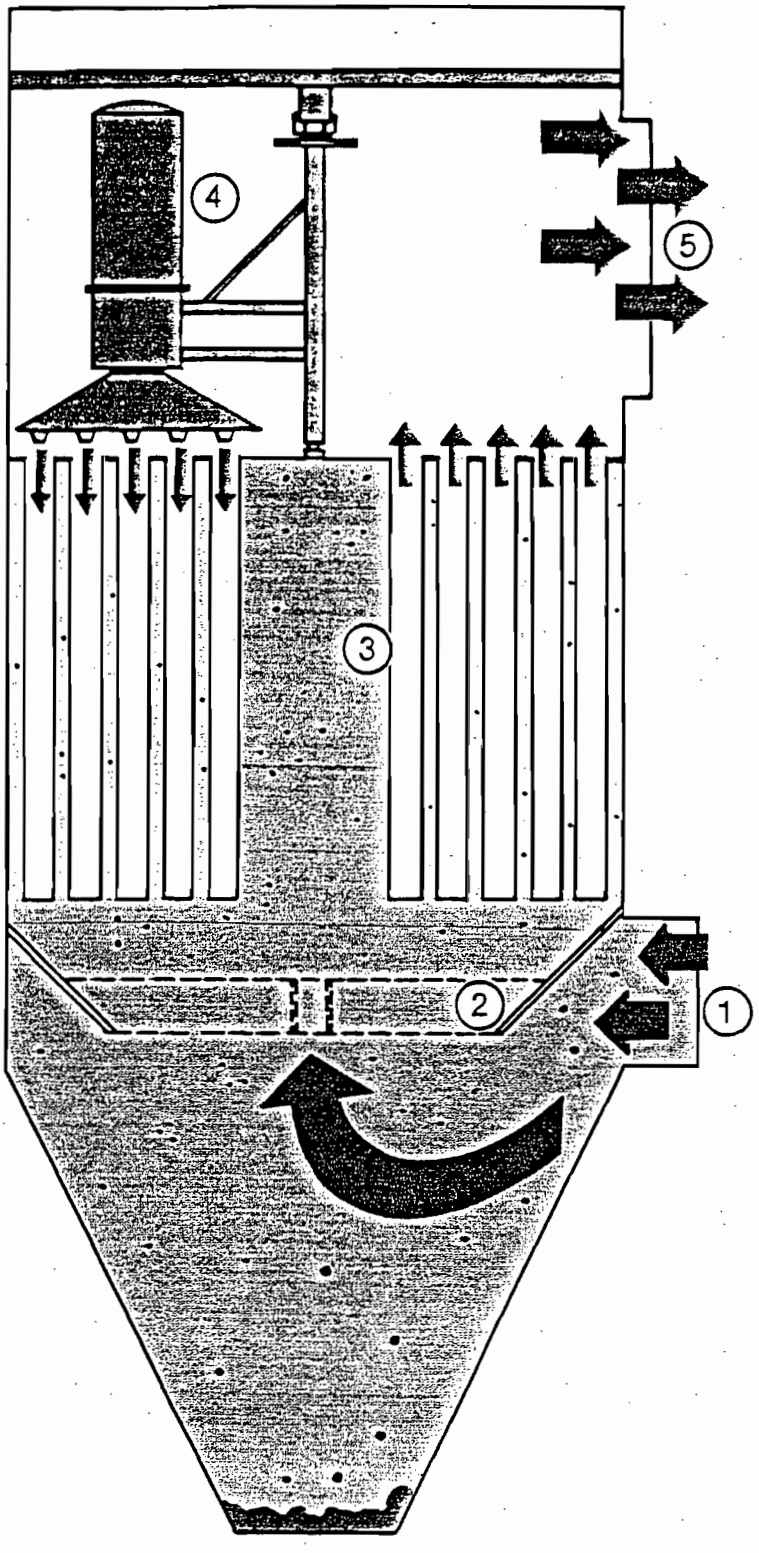
Attachment 1

Air Emission Control

Equipment Brochures

The Pneumafil Straight Fire Filter





How the filter works

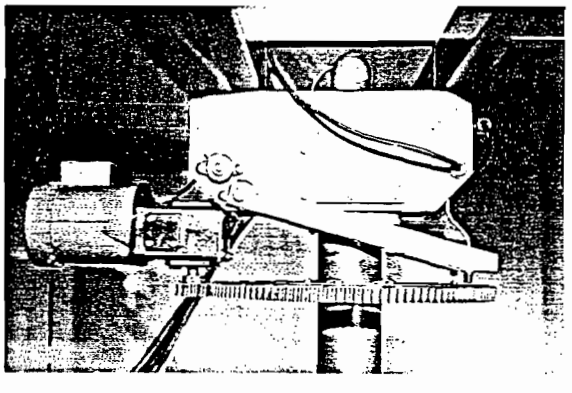
1. Contaminated air enters the Straight Fire Filter through a tangential air inlet. Its large size slows down the air stream, minimizes entrance pressure loss and reduces power requirements.

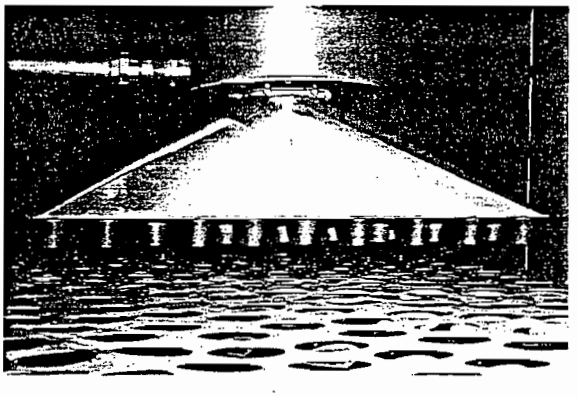
2. The combination of the tangential air inlet and deep particle deflection with a built-in vortex breaker results in the cyclonic downward deflection of the larger particles to the hopper. This allows heavier loading, less abrasion to the filter bags, higher collection efficiencies and less energy to remove the remaining particles from the air stream.

3. The filter bags remove dust particles from the air stream. Clean air passes upward through the filter bags and into the walk-in clean air plenum.

4. The Straight Fire Filter uses medium pressure (7 - 9 psig) air to clean collected dust from the filter bags. Air is stored in the accumulator tank that is rotated over the filter grid plate. An electronic sensor opens a diaphram valve and releases the stored air into the cleaning manifold. The cleaning manifold is equipped with nozzles designed to maximize the pulse of cleaning air and induce additional cleaning air from the clean air plenum. There are no losses in cleaning pressure or energy because the accumulator tank is positioned directly atop the cleaning manifold. When the cleaning pulse is activated, dust is dislodged from the filter bags and is collected in the conical hopper. The Straight Fire pulses keep the filter bags clean, maintaining a constant porosity and low pressure drop across the filter, resulting in an extremely high collection efficiency with low energy usage.

5. The clean, dust-free air is exhausted through the large air outlet to be either vented to the atmosphere or recycled to the plant. Because of the short contact time required for the air to pass through the Straight Fire Filter, no additional energy is required to either heat or cool the air stream.





The Pneumafil Straight Fire Filter

How it compares ...

... in energy savings

A true evaluation of a dust control system should consider energy consumption as it applies to the complete filter system — and not merely to any one component. This is why all Pneumafil dust filters are designed to function as an integral part of the total system in combination with its other exceptional capabilities for reducing overall operating costs.

For example, our Straight Fire Filters are cleaned by either a 2, 5 or 7½ hp motor and cost very little to operate. But more important, each bag is cleaned once every 120 seconds in a precise sequence utilizing the medium pressure air (7 to 9 psig). This complete and systematic cleaning dramatically reduces the pressure drop across the media as well as the load demands on the complete dust collection system fan. The result is energy savings! Conversely, a system that employs a random air pump cleaning sequence may only require the same amount of horsepower in driving the air pump — however, this type of system *does not* clean the bags every 120 seconds. The cleaning air discharge is regulated by whenever and wherever the pressure build up activates the air jets. Because of this random firing, some bags could remain uncleaned indefinitely. This means higher pressure drops across the media, increased demands on the total fan system and ultimately higher energy costs.

Our low tangential air entry utilizes less overall energy than filters with a high air inlet. The low tangential entry with a built-in vortex breaker allows heavy dust particles to "drop out" into the filter hopper. This *cyclonic* action causes an initial sorting out of larger dust particles which results in greater energy savings and less wear and tear on filter bags. Each contributes to lower operating costs.

Additional energy savings are obtained by recycling plant air previously heated or cooled. With the short contact time of air passing through the filter, the cleaned air is not affected by outside temperatures — and no additional energy is expanded to heat or cool make-up air.

... with filter maintenance

All filter bag inspection and removal operations were designed to simplify maintenance procedures and keep maintenance costs down.

With a Pneumafil dust filter, bag inspection can be accomplished without entering the walk-in, clean air plenum. A viewing port and lighted plenum allows the operator to visually inspect the bag cleaning mechanism from outside the filter.

Our walk-in plenum permits top bag removal from the clean air side. This operation simply requires extracting two screws before removing and inserting a new bag. Captive clips on the bag cage eliminate misplacing or clips dropping into the hopper section.

Pneumafil bags are designed and constructed to deliver maximum collection efficiency and a consistent high level of performance. Bags are made of 16 oz. polyester felt with a special scrim reinforcement, triple thickness of media at the top to seal the bags and a 2″ wear strip at the bottom to protect against abrasion. All bags can be washed or dry cleaned.

... in special features

Wear against the tube sheet by the cleaning mechanism is non-existent. The cleaning manifold and air accumulator are suspended precisely above the tube sheet for a maximum burst of cleaning air.

The Pneumafil Straight Fire bag cleaning operation is accomplished by effectively using *all* of the cleaning power. When the cleaning manifold is positioned precisely over the filter bag centers, a burst of medium pressure air is pulsed. This air and induced air from the clean air plenum dislodges the dust from the filter bags which falls into the hopper for disposal.

Hopper Design

Our hopper design eliminates the need for any additional and expensive auger discharge. Any bridging of collected dust is prevented by the use of a conical hopper with a 60° slope. Each hopper is equipped with a large, bolted access door and flanged outlets.

... *in general construction and painting*

The filter is constructed of hot rolled, pickled and oiled mild steel. Our unique standing seam design provides considerable reinforcement and rigidity to the overall structural integrity, making the filter ideally suited for any environment. All filters are constructed to withstand ± 20 in. water gauge.

Each filter is equipped with relief panels in accordance with NFPA standards. The doors are secured with safety chains of uneven lengths to reduce the possibility of the door becoming a projectile. Another example of how Pneumafil pays attention to details.

Every unit is epoxy primed (2.0-2.5 mils) inside and outside and finished outside with polyester epoxy paint (2.0-3.5 mils). Pneumafil offers many standard colors to choose from. Special colors are available to meet customer specifications. Unlike units that have only a single coat of paint, Pneumafil's painting method means additional savings in maintenance costs over the life of the filter. Our paint surface preparation meet the SSPC-SP6 standard and passed a 500 hour salt spray test.

... *with options*

1. Support structure
2. Maintenance platform with OSHA approved handrails and access ladder
3. Customer color preference
4. Non-sparking air entry wear plates
5. 70° hopper
6. Sprinkler heads
7. Explosion proof motor for Class II-G and F applications
8. Additional bracing for higher pressures
9. Factory insulation
10. High level and high temperature sensors
11. Rotary air locks
12. Modified to customer specifications
13. Special media available

Specifications

Notes

1. Standard height from hopper to grade is 4'6". Optional heights are available upon request. Dimensions B,C,D and H change accordingly.

2. Entry section may be rotated 360° except where it would interfere with ladder.

3. Discharge section and ladder may be rotated together 360° in approximately 6" increments except where they would interfere with the entry elbow.

4. Counterclockwise shown, clockwise opposite.

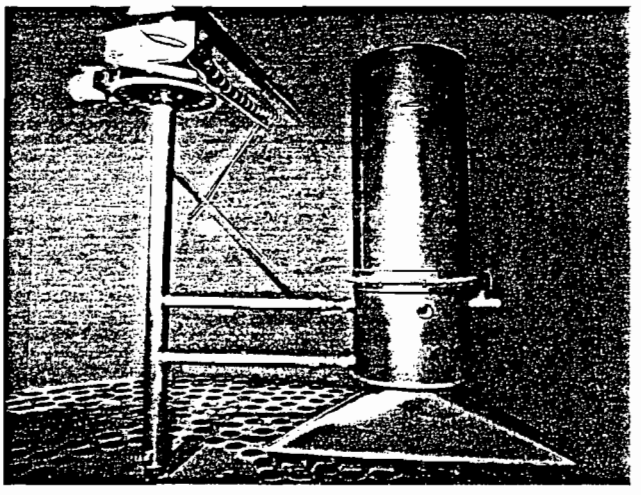
5. Structural supports are designed for 25 P.S.I. when loading and 50 P.C.F. dust loading unless otherwise specified.

6. Filters are available as bin vents.

7. All units have a 360° mounting ring.

8. 4.5' and 5.5' units are not walk-in filters.

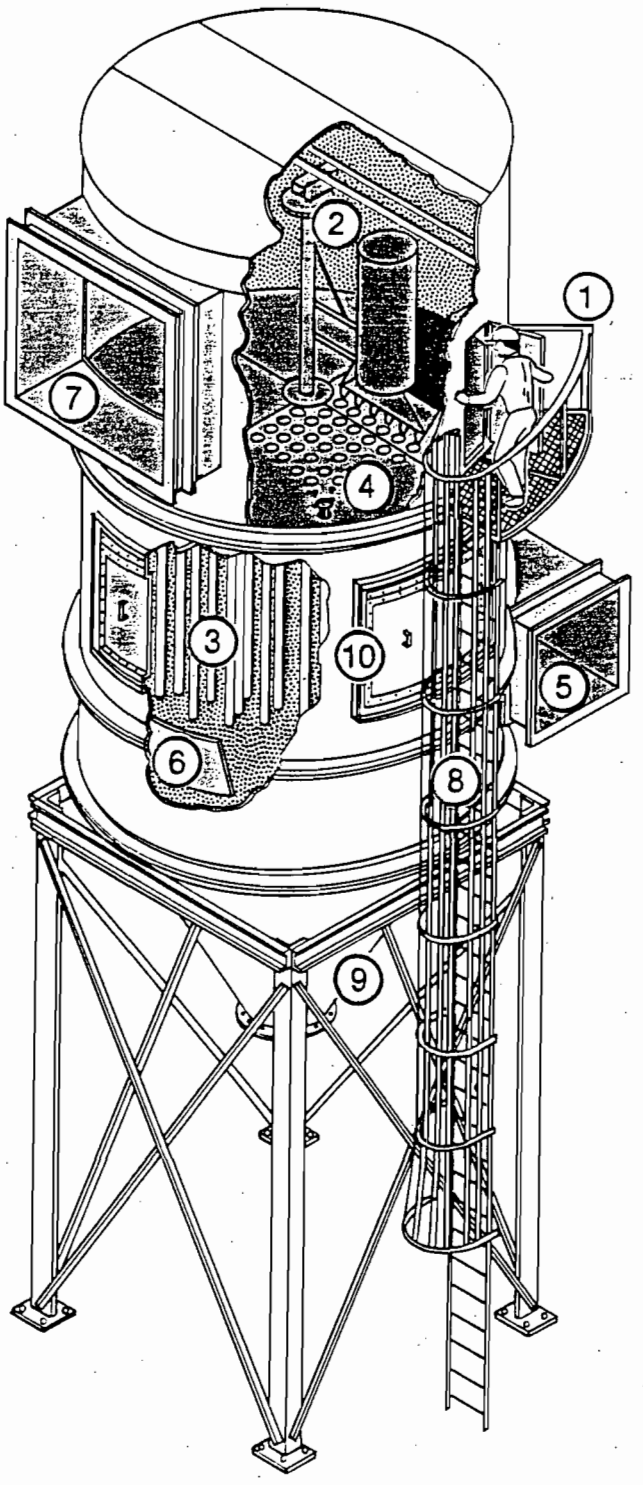
Pneumafil's unique construction features

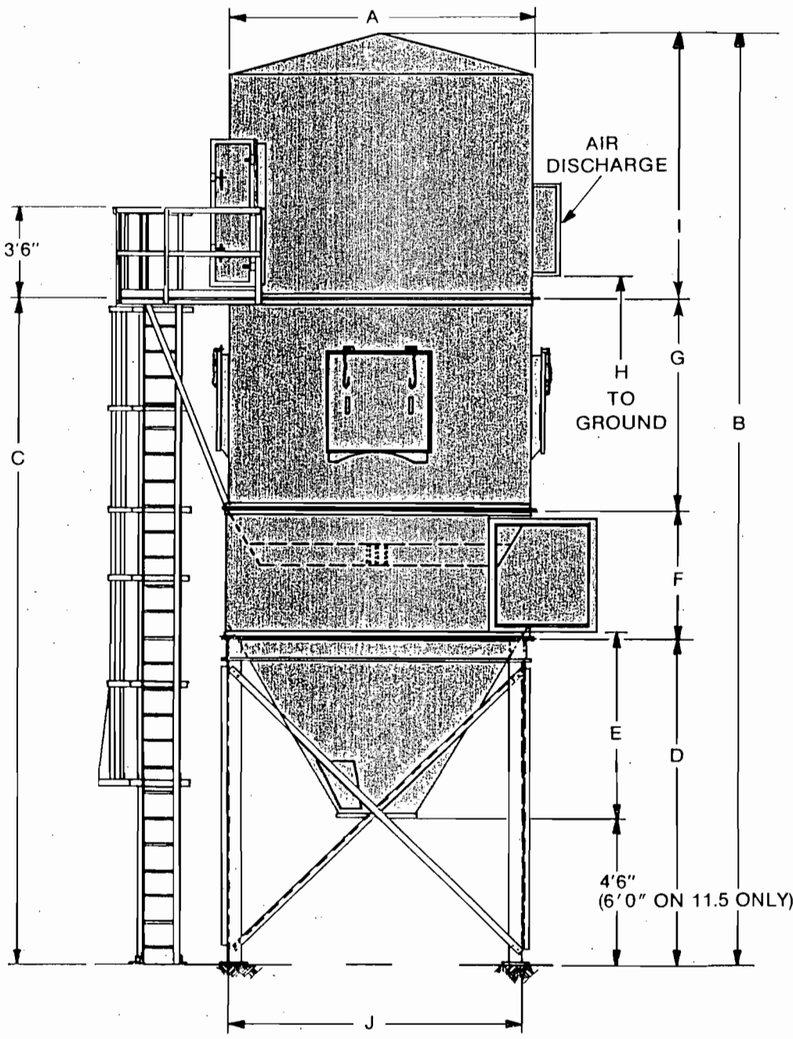


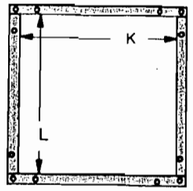
There are distinctive design features about a Pneumafil Straight Fire Filter that set it apart from other filters. These features translate to direct benefits making a strong case for selecting Pneumafil.

Pneumafil is dedicated to manufacturing a superior product for their customers by using the very best materials, exercising the highest standards in workmanship and employing the latest in applied technology. This dedication is reflected in the attention to details, simplicity of construction and economical cost of operation.

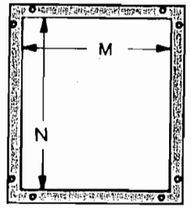
1. Walk-in clean air compartment for inspection, maintenance and filter bag cleaning. Top removal filter bags eliminates personnel from entering the dirty side of the filter.
2. Straight Fire Filter bag cleaning mechanism consists of a rotating cleaning manifold with an air accumulator that is mounted atop to eliminate pressure loss resulting in stronger cleaning pulses.
3. Fabric filter bags — 16 oz. polyester felt, nylon scrim reinforcement with 2″ wear strips on bottom for long life and abrasion resistance. Other filter media available upon request.
4. Sectional tube sheet for precision alignment of cleaning manifold for cleaning of filter bags.
5. Large, low tangential air inlet for lower pressure drop and cyclonic cleaning action.
6. Built-in particle deflector with vortex breakers for abrasion protection of filter bags; thus longer bag life and lower maintenance.
7. Large clean air outlet for lower pressure drop resulting in energy savings.
8. Support steel, ladder and access platform conforms to all applicable building codes.
9. 60° conical hopper for dust collection.
10. Explosion relief panels for safety.
11. Hot rolled, pickled and oiled mild steel with a unique surface preparation for superior corrosion resistant finish, insuring longer filter life and substantial maintenance savings. (Meets SSPC-SP6 Standard)
12. Epoxy primed interior and exterior (2.0 - 2.5 mils), polyester epoxy exterior (2.0 - 2.5 mils). Total paint finish of 3.5 - 5.5 mils passed 500 hour salt spray test.
13. Filters constructed to withstand ± 20″ W.G.
14. Components factory assembled and tested.
15. Highest quality control standards in the industry.
16. All filters meet EPA and OSHA regulations.



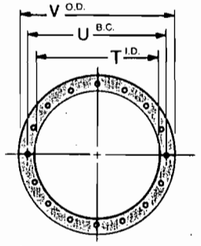




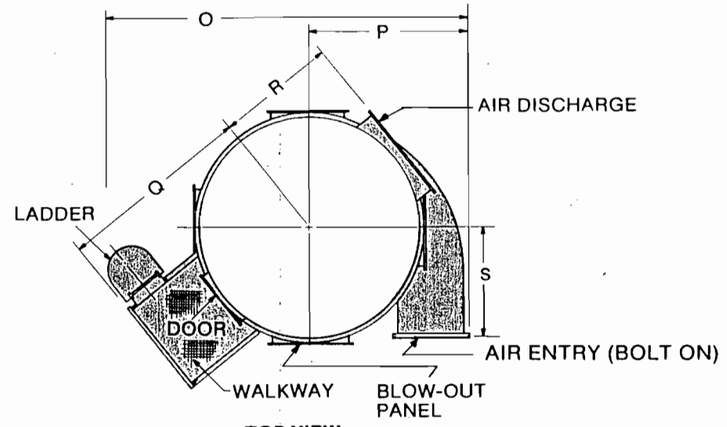
AIR DISCHARGE



AIR ENTRY

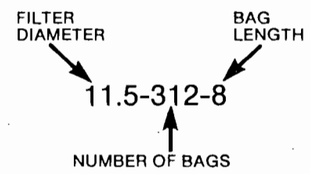


HOPPER OUTLET



TOP VIEW

Filter Nomenclature

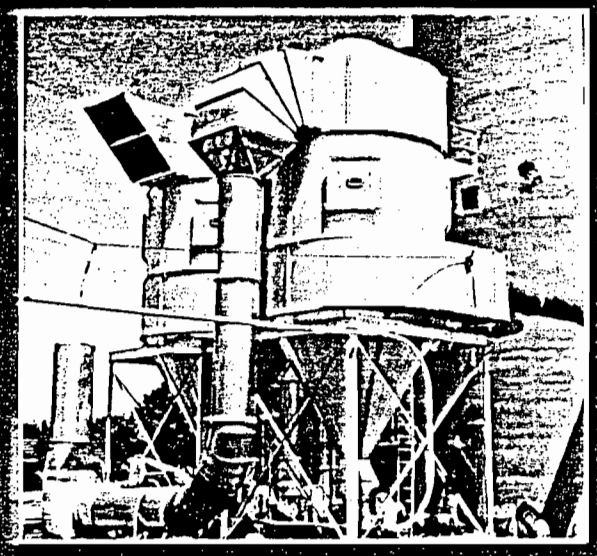


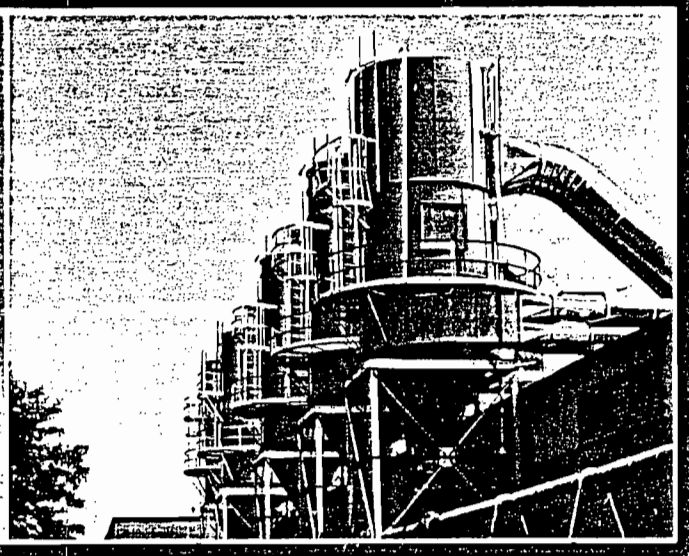
Note:
Initial specifications can call for less than the maximum number of bags; however, filter dimensions remain unchanged. Additional bags may be added as filtering demands increase.

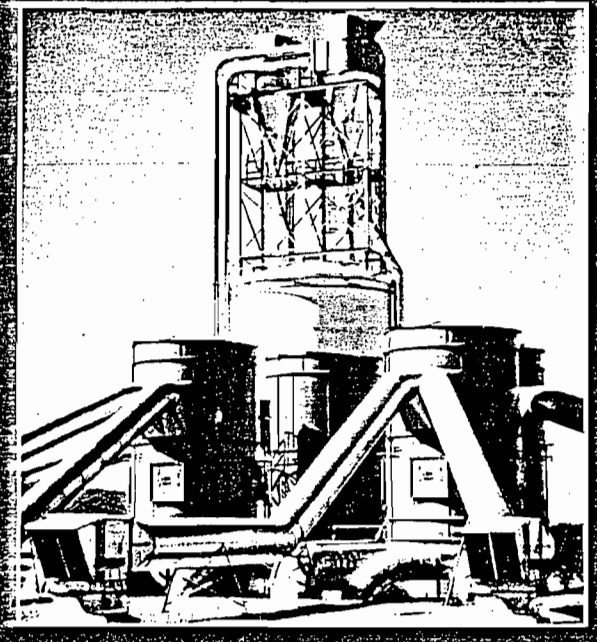
MODEL	MEDIA AREA (SQ.FT.)	BLOWER MOTOR (H.P.)	DRIVE MOTOR (H.P.)	5:1 CFM	10:1 CFM	15:1 CFM
4.5-40-8	412	1½	¼	2060	4120	6180
4.5-40-10	515	1½	¼	2575	5150	7725
5.5-60-8	618	1½	¼	3090	6180	9270
5.5-60-10	772	1½	¼	3860	7720	11580
6.5-96-8	989	2	¼	4740	9480	14220
6.5-96-10	1236	2	¼	5920	11840	17760
8.5-162-8	1699	3	¼	8035	16070	24105
8.5-162-10	2085	3	¼	10040	20080	30120
8.5-162-12	2503	3	¼	12048	24096	36144
10.5-270-8	2781	5	¼	13905	27810	41715
10.5-270-10	3475	5	¼	17375	34750	52125
10.5-270-12	4172	5	¼	20860	41720	62580
11.5-312-8	3214	5	¼	16070	32140	48210
11.5-312-10	4015	5	¼	20075	40150	60225
11.5-312-12	4820	5	¼	24100	48200	72300
13.5-456-8	4697	7½	¼	23485	46970	70455
13.5-456-10	5869	7½	¼	29345	58690	88035
13.5-456-12	7045	7½	¼	35225	70450	105675

	DIMENSIONS																						TOTAL WEIGHT	
MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	FILTER UNIT	COMPLETE STRUCTURE
4.5-40-8	4'6"	20'5 7/16"	16'3 15/16"	6'3 9/16"	2'1 1/16"	2'1"	7'11"	7'3 1/16"	4'2¼"	4'4½"	1'6"	1'6"	1'4"	1'4"	10'0¼"	3'8¼"	6'5"	2'6"	2'3"	2'0¼"	2'1¼"	2'3¼"	2842	3837
4.5-40-10	4'6"	22'5 7/16"	18'3 15/16"	6'3 9/16"	2'1 1/16"	2'1"	9'11"	19'3 1/16"	4'2¼"	4'4½"	1'6"	1'6"	1'4"	1'4"	10'0¼"	3'8¼"	6'5"	2'6"	2'3"	2'0¼"	2'1¼"	2'3¼"	3126	4220
5.5-60-8	5'6"	28'1"	19'6¾"	8'0"	3'4¼"	3'6"	8'0"	20'5"	8'7"	5'6"	2'8"	2'6"	2'6"	2'6"	13'4¼"	5'8¼"	7'8"	3'8¼"	3'3"	2'0¼"	2'1¼"	2'3¼"	5859	7594
5.5-60-10	5'6"	32'0"	21'6¾"	8'0"	3'4¼"	3'6"	10'0"	22'5"	10'7"	5'6"	2'8"	2'6"	2'6"	2'6"	13'4¼"	5'8¼"	7'8"	3'8¼"	3'3"	2'0¼"	2'1¼"	2'3¼"	6738	8733
6.5-96-8	6'6"	30'0"	19'6¾"	8'0"	3'9¼"	3'6"	8'0"	20'5"	10'6"	6'4"	3'6"	3'6"	2'6"	2'6"	13'4¼"	5'8¼"	7'8"	3'5¼"	3'3"	2'0¼"	2'1¼"	2'3¼"	5859	7594
6.5-96-10	6'6"	32'0"	21'6¾"	8'0"	3'9¼"	3'6"	10'0"	22'5"	10'6"	6'4"	3'6"	3'6"	2'6"	2'6"	13'4¼"	5'8¼"	7'8"	3'5¼"	3'3"	2'0¼"	2'1¼"	2'3¼"	6738	8733
8.5-162-8	8'6"	31'8¾"	21'3½"	9'8¾"	5'6¾"	3'6"	8'0"	22'1¾"	10'6"	8'3¾"	3'6"	3'6"	3'0"	2'6"	15'4¼"	6'8¼"	8'8"	4'6¾"	4'3"	2'0¼"	2'1¼"	2'3¼"	7992	10217
8.5-162-10	8'6"	33'8¾"	23'3½"	9'8¾"	5'6¾"	3'6"	10'0"	24'1¾"	10'6"	8'3¾"	3'6"	3'6"	3'0"	2'6"	15'4¼"	6'8¼"	8'8"	4'6¾"	4'3"	2'0¼"	2'1¼"	2'3¼"	9190	11750
8.5-162-12	8'6"	37'8¾"	25'3½"	9'8¾"	5'6¾"	3'6"	12'0"	26'1¾"	12'6"	8'3¾"	3'6"	3'6"	3'0"	2'6"	15'4¼"	6'8¼"	8'8"	4'6¾"	4'3"	2'0¼"	2'1¼"	2'3¼"	10388	13283
10.5-270-8	10'6"	37'0"	26'6¾"	11'6"	7'3¾"	5'0"	10'0"	26'11"	10'6"	10'3"	4'0"	4'1"	3'6"	4'0"	17'4¼"	7'8¼"	9'8"	5'5½"	5'3"	2'0"	2'2"	2'4"	11250	15150
10.5-270-10	10'6"	37'0"	26'6¾"	11'6"	7'3¾"	5'0"	10'0"	26'11"	10'6"	10'3"	4'0"	4'1"	3'6"	4'0"	17'4¼"	7'8¼"	9'8"	5'5½"	5'3"	2'0"	2'2"	2'4"	13100	17585
10.5-270-12	10'6"	41'0"	28'6¾"	11'6"	7'3¾"	5'0"	12'0"	28'11"	12'6"	10'3"	4'0"	4'1"	3'6"	4'0"	17'4¼"	7'8¼"	9'8"	5'5½"	5'3"	2'0"	2'2"	2'4"	14925	19995
11.5-312-8	11'6"	38'6"	28'0¾"	13'0"	7'3¾"	5'0"	10'0"	28'5"	10'6"	11'3"	4'0"	4'1"	3'6"	4'0"	18'4¼"	8'2¼"	10'2"	5'11 5/16"	5'9"	3'0¼"	3'2¾"	3'4¼"	12521	16421
11.5-312-10	11'6"	38'6"	28'0¾"	13'0"	7'3¾"	5'0"	10'0"	28'5"	10'6"	11'3"	4'0"	4'1"	3'6"	4'0"	18'4¼"	8'2¼"	10'2"	5'11 5/16"	5'9"	3'0¼"	3'2¾"	3'4¼"	14399	18884
11.5-312-12	11'6"	42'6"	30'0¾"	13'0"	7'3¾"	5'0"	12'0"	30'5"	12'6"	11'3"	4'0"	4'1"	3'6"	4'0"	18'4¼"	8'2¼"	10'2"	5'11 5/16"	5'9"	3'0¼"	3'2¾"	3'4¼"	16277	21347
13.5-456-8	13'6"	40'1 13/32"	30'5 27/32"	14'5 3/32"	6'0 13/32"	6'0"	10'0"	30'10 3/32"	10'6"	13'2½"	5'2"	4'1"	5'0"	5'0"	21'4¼"	10'2¼"	11'2"	6'1 1/16"	6'9"	2'0"	2'2"	2'4"	16811	20686
13.5-456-10	13'6"	40'1 13/32"	30'5 27/32"	14'5 3/32"	6'0 13/32"	6'0"	10'0"	30'10 3/32"	10'6"	13'2¼"	5'2"	4'1"	5'0"	5'0"	21'4¼"	10'2¼"	11'2"	6'1 1/16"	6'9"	2'0"	2'2"	2'4"	19333	23789
13.5-456-12	13'6"	44'1 13/32"	32'5 27/32"	14'5 3/32"	6'0 13/32"	6'0"	12'0"	32'10 3/32"	12'6"	13'2¼"	5'2"	4'1"	5'0"	5'0"	21'4¼"	10'2¼"	11'2"	6'1 1/16"	6'9"	2'0"	2'2"	2'4"	20672	26758

Model dimensions are nominal only. Please consult factory if exact specifications are required.







Users of Pneumafil Filters

AMAX Coal Co.	General Mills
Archer Daniels Midland	Georgia Pacific
Broyhill Industries	International Paper
Burlington Furniture	Kingsford Charcoal
Carolina Power & Light	Northern States Power
Cargill	Pillsbury Company
Continental Grain	St. Regis Paper
General Electric	

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Attachment 2

Drawings