
PROCESS DESCRIPTION

Air classifiers P041 through P044 for sources (ovens) P037 through P040 respectively. The classifiers purify the product glass by removing the fine particulates which are passed through a scrubber before the air stream is released to the atmosphere.

B.A.T. DETERMINATION

The use of a wet scrubber to remove particulates from the air stream.

APPLICABLE RULES & REGULATIONS

3745-17-07 Control of visible particulate emissions from stationary sources
3745-17-11 Restrictions on particulate emissions from industrial process
3745-31-05 Criteria for decision by the director

CALCULATIONS

P041 through P044

From Table I in OAC 3745-17-11 the allowable rate of particulate emissions based on the process flow rate is approximately 3.5 pounds per hour. However the BAT requirements will have more stringent emissions limitations.

Potential to Emit will be equal to allowable:

Assume mass flow rate max of 7,500 lbs per hour (total through all 4 ovens) and that a maximum of 6.0% PM losses occur. Flow to the scrubber would be 450 lbs/hr. With a control efficiency of 99.5% the PM emissions would be 2.25 lbs PM/hr or 0.563 lbs/hr per air classifier. Operating 8760 hours per year, Annual PM emissions would be 9.86 tons per year or 2.46 tons per unit per year of PM.

Actual Emissions

Actual flow to the scrubber is approximately 225 lbs/hr. So with 99.5% control efficiency, the actual emissions would be 1.13 lbs PM/hr or 0.28 lbs PM/hr per unit.

FEES

(4) Processes 1001 to 5000 pounds per hour = \$400 * 4 =\$1600

AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for Johns Manville located in Lucas County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

| Ohio EPA Source Number | Source Identification/ Description | BAT Determination | Applicable Federal and OAC Rules | Permit Allowable Mass Emissions and/or Control & Usage Requirements |
|-------------------------------|---|---------------------------------|---|--|
| P041 | Air Classifier for line 5 & bagger | Wet scrubber w/99.5% efficiency | 3745-31-05 | 0.56lbs PM/hr 2.46 tons PM/yr |
| | | | 3745-17-07 | Less than 20% opacity from stack, as a six minute average |
| | | | *3745-17-11 | see below |
| P042 | Air Classifier for line 6 | Wet scrubber w/99.5% efficiency | 3745-31-05 | 0.56 lbs PM/hr 2.46 tons PM/yr |
| | | | 3745-17-07 | Less than 20% opacity from stack, as a six minute average |
| | | | *3745-17-11 | see below |
| P043 | Air Classifier for line 7 | Wet scrubber w/99.5% efficiency | 3745-31-05 | 0.56 lbs PM/hr 2.46 tons PM/yr |
| | | | 3745-17-07 | Less than 20% opacity from stack, as a six minute average |
| | | | *3745-17-11 | see below |
| P044 | Air Classifier for line 8 | Wet scrubber w/99.5% efficiency | 3745-31-05 | 0.56 lbs PM/hr 2.46 tons PM/yr |
| | | | 3745-17-07 | Less than 20% opacity from stack, as a six minute average |
| | | | *3745-17-11 | see below |

* The emissions limitations from these rules are less stringent than BAT

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Johns Manville
PTI # 04-1126

0448000012

Pollutant

Tons/Year

PM

9.86

ADDITIONAL SPECIAL TERMS AND CONDITIONS

P041

A. Operational Restrictions

1. This emissions unit must employ a wet scrubbing system at all times during operation.
2. The pressure drop across the scrubber shall be continuously maintained at a value of not less than [will be determined during initial stack testing] inches of water at all times while the emissions unit is in operation.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than [will be determined during initial stack testing] gallons per minute at all times while the emissions unit is in operation.

B. Monitoring/Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
2. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water.
 - b. The scrubber water flow rate, in gallons per minute.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

C. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across the scrubber.
 - b. The scrubber water flow rate.

D. Compliance Demonstration

- I. Emission testing shall be required consistent with OEPA Engineering Guide #16. Emission tests for particulate shall be conducted in accordance with the tests methods and procedures specified in Method 5 of 40 CFR Part 60, Appendix A. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity compliance. The test(s) shall be conducted while the emissions unit is operating at its maximum rated capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency . The "Intent to Test" notification shall describe in

detail the proposed test methods and procedures, the source operating parameters, the time(s) and date(s) of the test, and the person(s) who will be conducting the test. Failure to submit such notification for review and approval prior to the test may result in the field office's refusal to accept the results of the emission test.

Personnel from the Ohio EPA or local air agency shall be permitted to witness the test, examine the testing equipment and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emission test shall be submitted within 30 days following completion of the test.

2. Compliance with the emission limitation(s) in this permit shall be determined in accordance with the following method(s):

- | | | |
|----|-------------------------------|---|
| a. | Emissions Limitation: | Less than 20% opacity from stack, as a six minute average |
| | Applicable Compliance Method: | USEPA Method 9 |
| b. | Emissions Limitation: | 2.46 tons PM/yr |
| | Applicable Compliance Method: | Multiply the emission factor of 0.56 lb PM/hr by 8760 hours and divide by 2000 lbs/ton. |
| c. | Emissions Limitation: | 0.56 lb PM/hr |
| | Applicable Compliance Method: | USEPA Method 5 |

3. Emissions units P041-P044 shall all be in operation at or near maximum when performing the USEPA Method 5 test for PM. The total PM emission rate for P041 through P044, in pounds per hour, will be divided proportionally, based on flow, among the four units, to determine the individual pounds per hour of PM emissions for each unit.

E. Miscellaneous
none

P042

A. Operational Restrictions

1. This emissions unit must employ a wet scrubbing system at all times during operation.
2. The pressure drop across the scrubber shall be continuously maintained at a value of not less than [will be determined during initial stack testing] inches of water at all times while the emissions unit is in operation.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than [will be determined during initial stack testing] gallons per minute at all times while the emissions unit is in operation.

B. Monitoring/Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
2. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water.
 - b. The scrubber water flow rate, in gallons per minute.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

C. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:
 - a. The static pressure drop across the scrubber.
 - b. The scrubber water flow rate.

D. Compliance Demonstration

- I. Emission testing shall be required consistent with OEPA Engineering Guide #16. Emission tests for particulate shall be conducted in accordance with the tests methods and procedures specified in Method 5 of 40 CFR Part 60, Appendix A. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity compliance. The test(s) shall be conducted while the emissions unit is operating at its maximum rated capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency . The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the source operating parameters, the time(s) and date(s) of the test, and the person(s) who will be conducting the test. Failure to submit such notification for review and approval prior to the test may result in the field office's refusal to accept the results of the emission test.

Personnel from the Ohio EPA or local air agency shall be permitted to witness the test, examine the testing equipment and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emission test shall be submitted within 30 days following completion of the test.

2. Compliance with the emission limitation(s) in this permit shall be determined in accordance with the following method(s):

- a. Emissions Limitation: Less than 20% opacity from stack, as a six minute average
Applicable Compliance Method: USEPA Method 9
 - b. Emissions Limitation: 2.46 tons PM/yr
Applicable Compliance Method: Multiply the emission factor of 0.56 lb PM/hr by 8760 hours and divide by 2000 lbs/ton.
 - c. Emissions Limitation: 0.56 lb PM/hr
Applicable Compliance Method: USEPA Method 5
3. Emissions units P041-P044 shall all be in operation at or near maximum when performing the USEPA Method 5 test for PM. The total PM emission rate for P041 through P044, in pounds per hour, will be divided proportionally, based on flow, among the four units, to determine the individual pounds per hour of PM emissions for each unit.

E. Miscellaneous
none

P043

A. Operational Restrictions

1. This emissions unit must employ a wet scrubbing system at all times during operation.
2. The pressure drop across the scrubber shall be continuously maintained at a value of not less than [will be determined during initial stack testing] inches of water at all times while the emissions unit is in operation.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than [will be determined during initial stack testing] gallons per minute at all times while the emissions unit is in operation.

B. Monitoring/Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
2. The permittee shall collect and record the following information each day:
 - a. The pressure drop across the scrubber, in inches of water.
 - b. The scrubber water flow rate, in gallons per minute.
 - c. The operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

C. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

- a. The static pressure drop across the scrubber.
- b. The scrubber water flow rate.

D. Compliance Demonstration

- 1. Emission testing shall be required consistent with OEPA Engineering Guide #16. Emission tests for particulate shall be conducted in accordance with the tests methods and procedures specified in Method 5 of 40 CFR Part 60, Appendix A. Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity compliance. The test(s) shall be conducted while the emissions unit is operating at its maximum rated capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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A comprehensive written report on the results of the emission test shall be submitted within 30 days following completion of the test.

2. Compliance with the emission limitation(s) in this permit shall be determined in accordance with the following method(s):

- a. Emissions Limitation: Less than 20% opacity from stack, as a six minute average
Applicable Compliance Method: USEPA Method 9
- b. Emissions Limitation: 2.46 tons PM/yr
Applicable Compliance Method: Multiply the emission factor of 0.56 lb PM/hr by 8760 hours and divide by 2000 lbs/ton.
- c. Emissions Limitation: 0.56 lb PM/hr
Applicable Compliance Method: USEPA Method 5

- 3. Emissions units P041-P044 shall all be in operation at or near maximum when performing the USEPA Method 5 test for PM. The total PM emission rate for P041 through P044, in pounds per hour, will be divided proportionally, based on flow, among the four units, to determine the individual pounds per hour of PM emissions for each unit.

E. Miscellaneous

none

P044

A. Operational Restrictions

1. This emissions unit must employ a wet scrubbing system at all times during operation.
2. The pressure drop across the scrubber shall be continuously maintained at a value of not less than [will be determined during initial stack testing] inches of water at all times while the emissions unit is in operation.
3. The scrubber water flow rate shall be continuously maintained at a value of not less than [will be determined during initial stack testing] gallons per minute at all times while the emissions unit is in operation.

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| | Applicable Compliance Method: | USEPA Method 9 |
| b. | Emissions Limitation: | 2.46 tons PM/yr |
| | Applicable Compliance Method: | Multiply the emission factor of 0.56 lb PM/hr by 8760 hours and divide by 2000 lbs/ton. |
| c. | Emissions Limitation: | 0.56 lb PM/hr |
| | Applicable Compliance Method: | USEPA Method 5 |

3. Emissions units P041-P044 shall all be in operation at or near maximum when performing the USEPA Method 5 test for PM. The total PM emission rate for P041 through P044, in pounds per hour, will be divided proportionally, based on flow, among the four units, to determine the individual pounds per hour of PM emissions for each unit.

E. Miscellaneous

none

Johns Manville
PTI # 04-1126

0448000012

NEW SOURCE REVIEW FORM B

(REVISED 5/1/89)

PTI NUMBER 04-1126 PREMISE NO. 0448000012
FACILITY NAME Johns Manville River Road Facility COUNTY Lucas
FACILITY DESCRIPTION Fiber Glass Manufacturer CITY/TWP Waterville
SIC CODE 3229,3296 SCC CODE 30501299
SOURCE DESCRIPTION Air Classifier & bagger for oven line 5
START-UP DATE Upon Issue of PTI

| Pollutants | Air Quality Designation | Actual Emissions | | PTI Allowable Emissions | |
|---------------------------------------|-------------------------|------------------|------|-------------------------|------|
| | | lb/hr | TPY | lb/hr, etc. | TPY |
| Particulate Matter | N/A | 0.28 | 1.13 | 0.56 | 2.46 |
| PM ₁₀ | Unclassified | | | | |
| Sulfur Dioxide | | | | | |
| Organic Compounds | Attainment | | | | |
| Nitrogen Oxides | Attainment | | | | |
| Carbon Monoxide | | | | | |
| Lead | Attainment | | | | |
| Other: Air Toxics (See Other Side) | Unclassified | | | | |

APPLICABLE FEDERAL RULES: ___ NSPS ___ NESHAPS ___ PSD ___ OFFSET POLICY

WHAT IS THE BAT DETERMINATION AND WHAT IS THE BASIS FOR THE DETERMINATION?

Wet scrubbing system with 99.5% efficiency

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? _____

PERSON COMPLETING FORM Adam Zolciak

DATE 8-14-98

*IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? _____ YES _____ X _____ NO
((If yes, turn to other side and complete "Toxic Air Contaminants" Section)

Johns Manville
PTI # 04-1126

0448000012

NEW SOURCE REVIEW FORM B

(REVISED 5/1/89)

PTI NUMBER 04-1126 PREMISE NO. 0448000012
FACILITY NAME Johns Manville River Road Facility COUNTY Lucas
FACILITY DESCRIPTION Fiber Glass Manufacturer CITY/TWP Waterville
SIC CODE 3229,3296 SCC CODE 30501299
SOURCE DESCRIPTION Air Classifier for oven line 6
START-UP DATE Upon Issue of PTI

| Pollutants | Air Quality Designation | Actual Emissions | | PTI Allowable Emissions | |
|---------------------------------------|-------------------------|------------------|------|-------------------------|------|
| | | lb/hr | TPY | lb/hr, etc. | TPY |
| Particulate Matter | N/A | 0.28 | 1.13 | 0.56 | 2.46 |
| PM ₁₀ | Unclassified | | | | |
| Sulfur Dioxide | | | | | |
| Organic Compounds | Attainment | | | | |
| Nitrogen Oxides | Attainment | | | | |
| Carbon Monoxide | | | | | |
| Lead | Attainment | | | | |
| Other: Air Toxics (See Other Side) | Unclassified | | | | |

APPLICABLE FEDERAL RULES: ___ NSPS ___ NESHAPS ___ PSD ___ OFFSET POLICY

WHAT IS THE BAT DETERMINATION AND WHAT IS THE BASIS FOR THE DETERMINATION?

Wet scrubbing system with 99.5% efficiency

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PERSON COMPLETING FORM Adam Zolciak

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Johns Manville
PTI # 04-1126

0448000012

NEW SOURCE REVIEW FORM B

(REVISED 5/1/89)

PTI NUMBER 04-1126 PREMISE NO. 0448000012
FACILITY NAME Johns Manville River Road Facility COUNTY Lucas
FACILITY DESCRIPTION Fiber Glass Manufacturer CITY/TWP Waterville
SIC CODE 3229,3296 SCC CODE 30501299
SOURCE DESCRIPTION Air Classifier for oven line 7
START-UP DATE Upon Issue of PTI

| Pollutants | Air Quality Designation | Actual Emissions | | PTI Allowable Emissions | |
|---------------------------------------|-------------------------|------------------|------|-------------------------|------|
| | | lb/hr | TPY | lb/hr, etc. | TPY |
| Particulate Matter | N/A | 0.28 | 1.13 | 0.56 | 2.46 |
| PM ₁₀ | Unclassified | | | | |
| Sulfur Dioxide | | | | | |
| Organic Compounds | Attainment | | | | |
| Nitrogen Oxides | Attainment | | | | |
| Carbon Monoxide | | | | | |
| Lead | Attainment | | | | |
| Other: Air Toxics (See Other Side) | Unclassified | | | | |

APPLICABLE FEDERAL RULES: ___ NSPS ___ NESHAPS ___ PSD ___ OFFSET POLICY

WHAT IS THE BAT DETERMINATION AND WHAT IS THE BASIS FOR THE DETERMINATION?

Wet scrubbing system with 99.5% efficiency

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? _____

PERSON COMPLETING FORM Adam Zolciak

DATE 8-14-98

*IS THIS SOURCE SUBJECT TO THE AIR TOXICS POLICY? _____ YES _____ X _____ NO
((If yes, turn to other side and complete "Toxic Air Contaminants" Section)

Johns Manville
PTI # 04-1126

0448000012

NEW SOURCE REVIEW FORM B

(REVISED 5/1/89)

PTI NUMBER 04-1126 PREMISE NO. 0448000012
FACILITY NAME Johns Manville River Road Facility COUNTY Lucas
FACILITY DESCRIPTION Fiber Glass Manufacturer CITY/TWP Waterville
SIC CODE 3229,3296 SCC CODE 30501299
SOURCE DESCRIPTION Air Classifier for oven line 8
START-UP DATE Upon Issue of PTI

| Pollutants | Air Quality Designation | Actual Emissions | | PTI Allowable Emissions | |
|---------------------------------------|-------------------------|------------------|------|-------------------------|------|
| | | lb/hr | TPY | lb/hr, etc. | TPY |
| Particulate Matter | N/A | 0.28 | 1.13 | 0.56 | 2.46 |
| PM ₁₀ | Unclassified | | | | |
| Sulfur Dioxide | | | | | |
| Organic Compounds | Attainment | | | | |
| Nitrogen Oxides | Attainment | | | | |
| Carbon Monoxide | | | | | |
| Lead | Attainment | | | | |
| Other: Air Toxics (See Other Side) | Unclassified | | | | |

APPLICABLE FEDERAL RULES: ___ NSPS ___ NESHAPS ___ PSD ___ OFFSET POLICY

WHAT IS THE BAT DETERMINATION AND WHAT IS THE BASIS FOR THE DETERMINATION?

Wet scrubbing system with 99.5% efficiency

OPTIONAL: WHAT IS THE CAPITAL COST OF CONTROL EQUIPMENT? _____

PERSON COMPLETING FORM Adam Zolciak

DATE 8-14-98

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((If yes, turn to other side and complete "Toxic Air Contaminants" Section)